AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	**REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK**

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas - Waco Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:22-cv-01094	October 21, 2022	Western District of Texas - Waco Division

PLAINTIFF	DEFENDANT
Taasera Licensing LLC	CrowdStrike, Inc. and CrowdStrike Holdings, Inc.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,673,137	3/2/2010	Taasera Licensing LLC
2 8,327,441	12/4/2012	Taasera Licensing LLC
3 8,850,517	9/30/2014	Taasera Licensing LLC
4 8,955,038	2/10/2015	Taasera Licensing LLC
5 8,990,948	3/24/2015	Taasera Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,092,616	7/28/2015	Taasera Licensing LLC
2 9,608,997	3/28/2017	Taasera Licensing LLC
3 9,923,918	3/20/2018	Taasera Licensing LLC
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00427	10/31/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	MUSARUBRA US LLC, D/B/A TRELLIX

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,673,137	3/2/2010	Taasera Licensing LLC
2	8,327,441	12/4/2012	Taasera Licensing LLC
3	8,850,517	9/30/2014	Taasera Licensing LLC
4	8,955,038	2/10/2015	Taasera Licensing LLC
5	8,990,948	3/24/2015	Taasera Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00427	10/31/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	MUSARUBRA US LLC, D/B/A TRELLIX

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	9,071,518	6/30/2015	Taasera Licensing LLC
2	9,092,616	7/28/2015	Taasera Licensing LLC
3	9,608,997	3/28/2017	Taasera Licensing LLC
4	9,923,918	3/20/2018	Taasera Licensing LLC
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 **Director of the U.S. Patent and Trademark Office** **P.O. Box 1450** **Alexandria, VA 22313-1450**	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00062	2/25/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	PALO ALTO NETWORKS, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,842,796	1/11/2005	Taasera Licensing LLC
2 7,673,137	3/2/2010	Taasera Licensing LLC
3 8,127,356	2/28/2012	Taasera Licensing LLC
4 8,327,441	12/4/2012	Taasera Licensing LLC
5 8,850,517	9/30/2014	Taasera Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

Trend Micro, Inc.
EX1002-4

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	**REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK**

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00062	2/25/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	PALO ALTO NETWORKS, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,955,038	2/10/2015	Taasera Licensing LLC
2 8,990,948	3/24/2015	Taasera Licensing LLC
3 9,092,616	7/28/2015	Taasera Licensing LLC
4 9,923,918	3/20/2018	Taasera Licensing LLC
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	**REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK**

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00063	2/25/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	CHECK POINT SOFTWARE TECHNOLOGIES LTD.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,842,796	1/11/2005	Taasera Licensing LLC
2 8,327,441	12/4/2012	Taasera Licensing LLC
3 8,955,038	2/10/2015	Taasera Licensing LLC
4 8,990,948	3/24/2015	Taasera Licensing LLC
5 9,092,616	7/28/2015	Taasera Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00063	2/25/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	CHECK POINT SOFTWARE TECHNOLOGIES LTD.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 9,608,997	3/28/2017	Taasera Licensing LLC
2 9,923,918	3/20/2018	Taasera Licensing LLC
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Southern District of New York on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
22cv2306	3/22/2022	for the Southern District of New York

PLAINTIFF	DEFENDANT
PALO ALTO NETWORKS, INC.	TAASERA LICENSING LLC, and QUEST PATENT RESEARCH CORPORATION

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,842,796	1/11/2005	Taasera Licensing LLC
2 7,673,137	3/2/2010	Taasera Licensing LLC
3 8,127,356	2/28/2012	Taasera Licensing LLC
4 8,327,441	12/4/2012	Taasera Licensing LLC
5 8,850,517	9/30/2014	Taasera Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
RUBY J. KRAJICK	/S/ V. BRAHIMI	3/23/2022

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

Trend Micro, Inc.
EX1002-8

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Southern District of New York on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
22cv2306	3/22/2022	for the Southern District of New York

PLAINTIFF	DEFENDANT
PALO ALTO NETWORKS, INC.	TAASERA LICENSING LLC, and QUEST PATENT RESEARCH CORPORATION

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,955,038	2/10/2015	Taasera Licensing LLC
2	8,990,948	3/24/2015	Taasera Licensing LLC
3	9,902,616	7/28/2015	Taasera Licensing LLC
4	9,923,918	3/20/2018	Taasera Licensing LLC
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
Ruby J. KRAJICK	/S/ V. BRAHIMI	3/23/2022

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

Trend Micro, Inc.
EX1002-9

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00062	2/25/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	PALO ALTO NETWORKS, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,842,796	1/11/2005	Taasera Licensing LLC
2 7,673,137	3/2/2010	Taasera Licensing LLC
3 8,127,356	2/28/2012	Taasera Licensing LLC
4 8,327,441	12/4/2012	Taasera Licensing LLC
5 8,850,517	9/30/2014	Taasera Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
David A. O'Toole	nkl	3/22/22

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

Trend Micro, Inc.
EX1002-10

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00062	2/25/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	PALO ALTO NETWORKS, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,955,038	2/10/2015	Taasera Licensing LLC
2 8,990,948	3/24/2015	Taasera Licensing LLC
3 9,092,616	7/28/2015	Taasera Licensing LLC
4 9,923,918	3/20/2018	Taasera Licensing LLC
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

In light of the Notice, which the Court ACCEPTS AND ACKNOWLEDGES, and pursuant to Rule 41(a)(1)(A)(i), all pending claims and causes of action in the above-captioned case are DISMISSED WITHOUT PREJUDICE

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00062	2/25/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	PALO ALTO NETWORKS, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,842,796	1/11/2005	Taasera Licensing LLC
2 7,673,137	3/2/2010	Taasera Licensing LLC
3 8,127,356	2/28/2012	Taasera Licensing LLC
4 8,327,441	12/4/2012	Taasera Licensing LLC
5 8,850,517	9/30/2014	Taasera Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

Trend Micro, Inc.
EX1002-12

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:22-cv-00062	2/25/2022	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	PALO ALTO NETWORKS, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,955,038	2/10/2015	Taasera Licensing LLC
2 8,990,948	3/24/2015	Taasera Licensing LLC
3 9,092,616	7/28/2015	Taasera Licensing LLC
4 9,923,918	3/20/2018	Taasera Licensing LLC
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-00441	11/30/2021	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	TREND MICRO INCORPORATED

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	6,842,796	1/11/2005	Taasera Licensing LLC
2	7,673,137	3/2/2010	Taasera Licensing LLC
3	8,327,441	12/4/2012	Taasera Licensing LLC
4	8,850,517	9/30/2014	Taasera Licensing LLC
5	8,955,038	2/10/2015	Taasera Licensing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-00441	11/30/2021	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	TREND MICRO INCORPORATED

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,990,948	3/24/2015	Taasera Licensing LLC
2	9,092,616	7/28/2015	Taasera Licensing LLC
3	9,608,997	3/28/2017	Taasera Licensing LLC
4	9,923,918	3/20/2018	Taasera Licensing LLC
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-00441	11/30/2021	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	TREND MICRO INCORPORATED

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	6,842,796	1/11/2005	Taasera Licensing LLC
2	7,673,137	3/2/2010	Taasera Licensing LLC
3	8,327,441	12/4/2012	Taasera Licensing LLC
4	8,850,517	9/30/2014	Taasera Licensing LLC
5	8,955,038	2/10/2015	Taasera Licensing LLC

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the Eastern District of Texas, Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-00441	11/30/2021	for the Eastern District of Texas, Marshall Division

PLAINTIFF	DEFENDANT
TAASERA LICENSING LLC	TREND MICRO INCORPORATED

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,990,948	3/24/2015	Taasera Licensing LLC
2	9,092,616	7/28/2015	Taasera Licensing LLC
3	9,608,997	3/28/2017	Taasera Licensing LLC
4	9,923,918	3/20/2018	Taasera Licensing LLC
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

Electronic Acknowledgement Receipt

EFS ID:	19543380
Application Number:	13741878
International Application Number:	
Confirmation Number:	4039
Title of Invention:	RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION
First Named Inventor/Applicant Name:	Srinivas KUMAR
Customer Number:	21839
Filer:	Derek P. Benke/Shaunna Lloyd
Filer Authorized By:	Derek P. Benke
Attorney Docket Number:	0079152-000017
Receipt Date:	10-JUL-2014
Filing Date:	15-JAN-2013
Time Stamp:	15:54:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$920
RAM confirmation Number	2359
Deposit Account	024800
Authorized User	BENKE, DEREK

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Electronic Patent Application Fee Transmittal

Application Number:	13741878
Filing Date:	15-Jan-2013
Title of Invention:	RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION
First Named Inventor/Applicant Name:	Srinivas KUMAR
Filer:	Derek P. Benke/Shaunna Lloyd
Attorney Docket Number:	0079152-000017

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Petition Fee-37CFR 1.17(h) (Group II)	2464	1	70	70
RCE - 2nd and Subsequent Request	2820	1	850	850
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Adjustment date: 03/02/2017 SDIRETA1
07/11/2014 INTEFSW 00002339 13741878
02 FC:2820 -850.00 OP

Refund Ref:
03/02/2017 0030195625

Credit Card Refund Total: $850.00

VISA....: XXXXXXXXXXXX8390

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	09/30/2014	8850517	0079152-000017	4039

21839 7590 09/10/2014
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Srinivas KUMAR, Cupertino, CA;
TAASERA, INC., Erie, PA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	01/15/2013	Srinivas KUMAR	0079152-000017	4039

21839 7590 08/27/2014
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER
PATEL, HARESH N

ART UNIT	PAPER NUMBER
2493	

NOTIFICATION DATE	DELIVERY MODE
08/27/2014	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPDOC1@BIPC.com

Supplemental Notice of Allowability	Application No. 13/741,878	Applicant(s) KUMAR, SRINIVAS	
	Examiner HARESH N. PATEL	Art Unit 2493	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *12/15/13*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-24*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 7/10/14
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/HARESH N PATEL/
Primary Examiner, Art Unit 2493

Trend Micro, Inc.
EX1002-22

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR, SRINIVAS
	Examiner	**Art Unit**
	HARESH N PATEL	2493

CPC

Symbol					Type	Version
G06F		21	/	577	F	2013-01-01
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			

CPC Combination Sets

Symbol					Type	Set	Ranking	Version
			/					
			/					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 24	
/HARESH N PATEL/ Primary Examiner.Art Unit 2493 (Primary Examiner)	08/23/2014 (Date)	O.G. Print Claim(s) 13	O.G. Print Figure 2

Trend Micro, Inc.
EX1002-23

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR, SRINIVAS
	Examiner	**Art Unit**
	HARESH N PATEL	2493

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION									
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED				
726	1	H	0	4	J	1 / 16 (2006.0)					
CROSS REFERENCE(S)		G	0	6	F	17 / 30 (2006.0)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)										
726	3 6										
709	223										

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	24	
/HARESH N PATEL/ Primary Examiner.Art Unit 2493	08/23/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	13	2

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR, SRINIVAS
	Examiner	**Art Unit**
	HARESH N PATEL	2493

☒ **Claims renumbered in the same order as presented by applicant** ☐ **CPA** ☐ **T.D.** ☐ **R.1.47**

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	17	17												
2	2	18	18												
3	3	19	19												
4	4	20	20												
5	5	21	21												
6	6	22	22												
7	7	23	23												
8	8	24	24												
9	9														
10	10														
11	11														
12	12														
13	13														
14	14														
15	15														
16	16														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 24	
/HARESH N PATEL/ Primary Examiner.Art Unit 2493 (Primary Examiner)	08/23/2014 (Date)	O.G. Print Claim(s) 13	O.G. Print Figure 2

Trend Micro, Inc.
EX1002-25

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	13741878
Filing Date	2013-01-15
First Named Inventor	Kumar, Srinivas
Art Unit	2493
Examiner Name	PATEL, HARESH N
Attorney Docket Number	0079152-000017

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20100125911		2010-05-20	Bhaskaran	
	2	20110321175		2011-12-29	Slater	
	3	20110131658		2011-06-02	Bahl	
	4	20090292743		2009-11-26	Bigus et al.	
	5	20080288330		2008-11-20	Hildebrand et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /H.P./

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13741878 13741878 - GAU: 2493
	Filing Date	2013-01-15
	First Named Inventor	Kumar, Srinivas
	Art Unit	2493
	Examiner Name	PATEL, HARESH N
	Attorney Docket Number	0079152-000017

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	May 14, 2014 International Search Report issued in PCT/US2014/011427.	☐
	2	May 14, 2014 Written Opinion issued in PCT/US2014/011427.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/Haresh Patel/ (08/23/2014)	Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /H.P./

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/741,878	01/15/2013	Srinivas KUMAR	0079152-000017

CONFIRMATION NO. 4039

21839
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

PUBLICATION NOTICE

OC000000069659825

Title:RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION

Publication No.US-2014-0201806-A1
Publication Date:07/17/2014

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

PATENT WITHDRAWAL NOTICE

DATE WITHDRAWN	WITHDRAWAL NUMBER
7/15/2014	26097

The following application has been **WITHDRAWN** from the

7/15/2014 issue.

SERIAL NO.	PATENT NUMBER
13741878	8782735

TITLE

RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION

NAME AND ADDRESS

SRINIVAS KUMAR
Cupertino, CA

REASON FOR WITHDRAWAL

Auto-petition to withdraw - Granted
-

APPROVED

/Kimberly Terrell/, Manager

Patent Publication Branch
Office of Data Management

FORM PTO-302 -- (REV. 05-2009)

PTO/SB/30 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Request For Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	13/741,878
Filing Date	January 15, 2013
First Named Inventor	Kumar, Srinivas
Art Unit	2493
Examiner Name	Patel, Haresh N
Attorney Docket Number	0079152-000017-T1

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 C.F.R. 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
   a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
      i ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
      ii ☐ Other _____
   b. ☒ Enclosed
      i ☐ Amendment/Reply
      ii ☐ Affidavit(s)/Declaration(s)
      iii. ☒ Information Disclosure Statement (IDS)
      iv. ☐ Other _____

2. Miscellaneous
   a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. 1.17(i) required)
   b. ☐ Other _____

3. Fees The RCE fee under 37 C.F.R. 1.17 (e) is required by 37 C.F.R. 1.114 when RCE is filed.
   a. ☒ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 02-4800.
      i ☒ RCE fee required under 37 C.F.R. 1.17 (e)
      ii ☐ Extension of time fee (37 C.F.R. 1.136 and 1.17)
      iii ☐ Other _____
   b. ☐ Check in the amount of $ _____ enclosed
   c. ☒ Payment by credit card

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature		Date	July 10, 2014
Name (Print/Type)	Derek P. Benke	Registration No.	56944

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature			
Name (Print/Type)		Date	July 10, 2014

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
WIELAND, CHARLES F., III

BUCHANAN INGERSOLL & ROONEY PC CUSTOMER NO. 21839 P. O. BOX 1404 ALEXANDRIA VA 22313-1404 USA

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 14 May 2014 (14.05.2014)
Applicant's or agent's file reference 0079152-0025	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. **PCT/US2014/011427**	International filing date *(day/month/year)* **14 January 2014 (14.01.2014)**
Applicant **TAASERA, INC.**	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):
When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70
For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 . 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. Following the expiration of 30 months from the priority date, these comments will also be made available to the public.

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19months.

For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the PCT Applicant's Guide, National Chapters.

Name and mailing address of the ISA/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer COMMISSIONER Telephone No. 82-42-481-5875

Form PCT/ISA/220 (July 2010)

* Attention

Copies of the documents cited in the international search report can be searched in the following Korean Intellectual Property Office English website for six months(expire date : **2014.11.15**) from the date of mailing of the international search report.

http://www.kipo.go.kr/en/ => PCT Services => PCT Services

ID : PCT international application number
PW : **UJB949B6**

Inquiries related to PCT International Search Report or Written Opinion prepared by KIPO as an International Searching Authority can be answered not only by KIPO but also through IPKC (Intellectual Property Korea Center), located in Vienna, VA, which functions as a PCT Help Desk for PCT applicants.

Homepage: http://www.ipkcenter.com

Email: ipkc@ipkcenter.com

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 0079152-0025	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. **PCT/US2014/011427**	International filing date *(day/month/year)* **14 January 2014 (14.01.2014)**	(Earliest) Priority Date *(day/month/year)* 15 January 2013 (15.01.2013)
Applicant **TAASERA, INC.**		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language**, the international search was carried out on the basis of:
      ☒ the international application in the language in which it was filed
      ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.
2. ☐ **Certain claims were found unsearchable** (See Box No. II)
3. ☐ **Unity of invention is lacking** (See Box No. III)
4. With regard to the **title**,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established by this Authority to read as follows:
5. With regard to the **abstract**,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. With regard to the drawings,
   a. the figure of the **drawings** to be published with the abstract is Figure No. 4
      ☐ as suggested by the applicant.
      ☒ as selected by this Authority, because the applicant failed to suggest a figure.
      ☐ as selected by this Authority, because this figure better characterizes the invention.
   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/011427

A. CLASSIFICATION OF SUBJECT MATTER

G06F 21/50(2013.01)i, G06F 9/44(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F 21/50; G06F 3/048; G06F 21/24; G06F 17/30; G06F 12/00; G06F 21/00; G06F 9/44

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & keywords: rule, policy, runtime risk, sequence, score, and similar terms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010-0125911 A1 (PRAKASH BHASKARAN) 20 May 2010 See paragraphs 12-38, 74, 81-82; claims 2, 5, 11, 13; and figures 1-11K.	1-24
A	US 2011-0321175 A1 (STEVE SLATER) 29 December 2011 See paragraphs 41-46; and figures 1-5.	1-24
A	US 2011-0131658 A1 (PRADEEP BAHL) 02 June 2011 See paragraphs 88-93; and figures 1-10.	1-24
A	US 2009-0292743 A1 (JOSEPH P. BIGUS) 26 November 2009 See paragraphs 28-57; and figures 1-7.	1-24
A	US 2008-0288330 A1 (DAVID HILDEBRAND et al.) 20 November 2008 See paragraphs 57-95; and figures 2-6.	1-24

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
13 May 2014 (13.05.2014)	**14 May 2014 (14.05.2014)**
Name and mailing address of the ISA/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. +82-42-472-7140	Authorized officer BYUN, Sung Cheal Telephone No. +82-42-481-8262

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/US2014/011427

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2010-0125911 A1	20/05/2010	US 2010-0125891 A1	20/05/2010
		US 2010-0146269 A1	10/06/2010
US 2011-0321175 A1	29/12/2011	US 8566956 B2	22/10/2013
US 2011-0131658 A1	02/06/2011	US 2008-0189788 A1	07/08/2008
		US 7908660 B2	15/03/2011
		US 8595844 B2	26/11/2013
US 2009-0292743 A1	26/11/2009	US 8214364 B2	03/07/2012
US 2008-0288330 A1	20/11/2008	EP 2156315 A1	24/02/2010
		EP 2156315 A4	13/04/2011
		WO 2008-141327 A1	20/11/2008

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
WIELAND, CHARLES F., III

BUCHANAN INGERSOLL & ROONEY PC CUSTOMER NO. 21839 P. O. BOX 1404 ALEXANDRIA VA 22313-1404 USA

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing *(day/month/year)*	**14 May 2014 (14.05.2014)**
Applicant's or agent's file reference 0079152-0025	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2014/011427	**14 January 2014 (14.01.2014)**	15 January 2013 (15.01.2013)

International Patent Classification (IPC) or both national classification and IPC

G06F 21/50(2013.01)i, G06F 9/44(2006.01)i

Applicant
TAASERA, INC.

1. This opinion contains indications relating to the following items:

- [x] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [x] Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR	Date of completion of this opinion	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan City, 302-701, Republic of Korea Facsimile No. +82-42-472-7140	13 May 2014 (13.05.2014)	BYUN, Sung Cheal Telephone No. +82-42-481-8262

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/011427

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

   ☐ on paper

   ☐ in electronic form

   b. (time)

   ☐ in the international application as filed.

   ☐ together with the international application in electronic form.

   ☐ subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additioanl copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Trend Micro, Inc.
EX1002-37

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-24	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-24	NO
Industrial applicability (IA)	Claims	1-24	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following document:

D1: US 2010-0125911 A1 (PRAKASH BHASKARAN) 20 May 2010

2.1 Novelty and Inventive Step (PCT Article 33(2) and (3))

2.1.1 Claims 1-12

D1, which is considered to be the closest prior art to the subject matter of independent claim 1, discloses a method comprising: storing predefined rules in a rule database of a risk management server (see claim 11); storing security policies of an organization for users and user groups of the organization in a policy database (see claim 13), wherein the security policies comprise definitions and rules to be followed by the users in the organization enforced by a security client application (see paragraph 33); and using an generated end risk score for identifying violations of said security policies of the organization by the user (see claim 2).

The subject matter of claim 1 differs from that of D1 in that a method of claim 1 comprises identifying, using at least one assessment policy, a runtime risk for an application or a device, wherein the identified runtime risk identifies and predicts a specific type of threat. However, this feature is virtually suggested by the same document considering that the method of D1 comprises determining a risk involved in activities, for example, information technology (IT) activities performed by a user of resources of an organization at desktops and other endpoints, for determining compliance with the security policies, and for identifying violations of the security policies (see paragraph 12). Therefore, a person skilled in the art would easily conceive the idea of employing the feature of identifying the runtime risk for the application or a device. Accordingly, claim 1 would have been obvious over D1. Therefore, claim 1 lacks an inventive step under PCT Article 33(3).

Claim 2, dependent on claim 1, specifies that a user action is any form of explicit input

Continued on Supplemental Box

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Box No. V

from a user of a computing system. The additional feature is known from D1 (the security client application tracks every activity performed by the user on the computing device: see paragraph 38). Therefore, claim 2 lacks an inventive step under PCT Article 33(3).

Claims 3-4, dependent on claim 1, specify an application action and a system action. The additional feature is known from D1 (the tracked activities further comprise use of electronic mails, peer to peer applications, web uploads, web downloads, changes to system configuration, use of removable storage devices, clipboard activities, print and screenshot activities, file sharing activities, keyboard usage, mouse click events, etc.: see paragraph 38). Therefore, claims 3-4 lack an inventive step under PCT Article 33(3).

Claim 5, dependent on claim 1, specifies that a first action of at least two performed actions is performed at a first time, and a second action of the at least two performed actions is performed at a second time. The additional feature is known from D1 (sequence of the tracked activities, and patterns of the tracked activities within a time frame: see paragraph 13). Therefore, claim 5 lacks an inventive step under PCT Article 33(3).

Claims 6-8, dependent on claim 5, specify the first action and the second action. The additional feature is known from D1 (for Jack's activities on Apr. 8, 2008, Jack is assigned 10 points for launching "services.msc", 10 points for stopping the antivirus service, 5 points for launching instant messaging (IM) application using Skype, 5 points for launching the outlook application, 10 points for downloading attachments using peer-to-peer (P2P) application, 10 points for restarting the antivirus service, and 10 points for launching the web browser: see paragraph 82, figure 11H). Therefore, claims 6-8 lack an inventive step under PCT Article 33(3).

Claim 9, dependent on claim 1, specifies an action sequence. The additional feature is known from D1 (for Jack's activities on Apr. 7, 2008, Jack is assigned 10 points for inserting a USB storage device, 5 points for launching word application, 5 points for sending an instant message (IM) application using Skype, 5 points for launching outlook, 5 points for copying file 1 to the USB storage device, 5 points for copying file 2 to the USB storage device, and 10 points for removing the USB storage device: see paragraph 81, figure 11G). Therefore, claim 9 lacks an inventive step under PCT Article 33(3).

Claim 10, dependent on claim 1, specifies that the runtime risk is identified based on

Continued on The Next Page

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Previous Page

matching rules and probabilistic weights and scores. The additional feature is known from D1 (since there is a match between Jack's activities and the sequence 1, a first level modification is performed; see paragraph 74). Therefore, claim 10 lacks an inventive step under PCT Article 33(3).

Claim 11, dependent on claim 1, specifies that the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions. The additional feature is known from D1 (modifying the assigned points at a second level based on date and time of the tracked activities; see claim 5). Therefore, claim 11 lacks an inventive step under PCT Article 33(3).

Claim 12, dependent on claim 1, specifies assessing, by a processing device, that at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors. The additional feature is known from D1 (modifying the assigned points at a first level based on one of sequences and patterns of the tracked activities; see claim 5). Therefore, claim 12 lacks an inventive step under PCT Article 33(3).

2.1.2 Claims 13-24

Claim 13 relates to a system in accordance with claim 1 relating to a method. As the features of claim 13 essentially correspond to those of claim 1 except for the category of invention, the same reasoning as in claim 1 applies to claim 13. Therefore, independent claim 13 lacks an inventive step under PCT Article 33(3).

The features of claims 14-24 essentially correspond to those of claims 2-12. Therefore, the same reasoning as in claims 2-12 applies to claims 14-24. Therefore, claims 14-24 lack an inventive step under PCT Article 33(3).

2.2 Industrial Applicability (PCT Article 33(4))

Claims 1-24 are industrially applicable under PCT Article 33(4).

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	13741878
Filing Date	2013-01-15
First Named Inventor	Kumar, Srinivas
Art Unit	2493
Examiner Name	PATEL, HARESH N
Attorney Docket Number	0079152-000017

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20100125911		2010-05-20	Bhaskaran	
	2	20110321175		2011-12-29	Slater	
	3	20110131658		2011-06-02	Bahl	
	4	20090292743		2009-11-26	Bigus et al.	
	5	20080288330		2008-11-20	Hildebrand et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13741878
	Filing Date	2013-01-15
	First Named Inventor	Kumar, Srinivas
	Art Unit	2493
	Examiner Name	PATEL, HARESH N
	Attorney Docket Number	0079152-000017

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	May 14, 2014 International Search Report issued in PCT/US2014/011427.	☐
	2	May 14, 2014 Written Opinion issued in PCT/US2014/011427.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13741878
	Filing Date	2013-01-15
	First Named Inventor	Kumar, Srinivas
	Art Unit	2493
	Examiner Name	PATEL, HARESH N
	Attorney Docket Number	0079152-000017

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☒ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Derek P. Benke/	Date (YYYY-MM-DD)	2014-07-10
Name/Print	Derek P. Benke	Registration Number	56944

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	13741878
Filing Date:	15-Jan-2013
Title of Invention:	RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION
First Named Inventor/Applicant Name:	Srinivas KUMAR
Filer:	Derek P. Benke/Shaunna Lloyd
Attorney Docket Number:	0079152-000017

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Petition Fee-37CFR 1.17(h) (Group II)	2464	1	70	70
RCE - 2nd and Subsequent Request	2820	1	850	850
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**920**

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Decision Date : July 10, 2014

In re Application of :

Srinivas KUMAR

DECISION ON PETITION

UNDER CFR 1.313(c)(2)

Application No : 13741878

Filed : 15-Jan-2013

Attorney Docket No : 0079152-000017

This is an electronic decision on the petition under 37 CFR 1.313(c)(2), filed July 10, 2014 , to withdraw the above-identified application from issue after payment of the issue fee.

The petition is **GRANTED.**

The above-identified application is withdrawn from issue for consideration of a submission under 37 CFR 1.114 (request for continued examination). See 37 CFR 1.313(c)(2).

Petitioner is advised that the issue fee paid in this application cannot be refunded. If, however, this application is again allowed, petitioner may request that it be applied towards the issue fee required by the new Notice of Allowance.

Telephone inquiries concerning this decision should be directed to the Patent Electronic Business Center (EBC) at 866-217-9197.

This application file is being referred to Technology Center AU 2493 for processing of the request for continuing examination under 37 CFR 1.114 .

Office of Petitions

Electronic Acknowledgement Receipt

EFS ID:	19543380
Application Number:	13741878
International Application Number:	
Confirmation Number:	4039
Title of Invention:	RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION
First Named Inventor/Applicant Name:	Srinivas KUMAR
Customer Number:	21839
Filer:	Derek P. Benke/Shaunna Lloyd
Filer Authorized By:	Derek P. Benke
Attorney Docket Number:	0079152-000017
Receipt Date:	10-JUL-2014
Filing Date:	15-JAN-2013
Time Stamp:	15:54:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$920
RAM confirmation Number	2359
Deposit Account	024800
Authorized User	BENKE, DEREK

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition automatically granted by EFS	petition-request.pdf	31666 ef1596ee85bf4d91c83a64f1b01cbc157f305ce7	no	2
Warnings:					
Information:					
2	Quick Path Information Disclosure Statement	QPIDS.pdf	840486 cf8965b3bd61bbfdf6f6ae3880bdc3ee5fc2631c	no	1
Warnings:					
Information:					
3	Request for Continued Examination (RCE)	RCE.pdf	954387 c6c05d249a747882e15a08106818651ceed96149	no	1
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
4	Non Patent Literature	ISR.pdf	241501 e505c5c14db4a3eedead2aaadb81a6d10e8a7d72	no	5
Warnings:					
Information:					
5	Non Patent Literature	WO.pdf	251763 efba551865f92c534b65f9255c18f34440939e48	no	5
Warnings:					
Information:					
6	Information Disclosure Statement (IDS) Form (SB08)	IDS.pdf	64819 d796a1c1135fdc7f6bcc29741c350f5675a9702c	no	4
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
7	Fee Worksheet (SB06)	fee-info.pdf	32351 82ae8c1a3020c1a8fe806e3476b3b8ad9b61f7e3	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2416973		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: PET.AUTO Document Description: Petition automatically granted by EFS-Web	PTO/SB/140 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**PETITION TO WITHDRAW AN APPLICATION FROM ISSUE AFTER PAYMENT OF THE ISSUE FEE UNDER 37 CFR 1.313(c)**
Application Number	13741878
Filing Date	15-Jan-2013
First Named Inventor	Srinivas KUMAR
Art Unit	2493
Examiner Name	HARESH PATEL
Attorney Docket Number	0079152-000017
Title	RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION

An application may be withdrawn from issue for further action upon petition by the applicant. To request that the Office withdraw an application from issue, applicant must file a petition under this section including the fee set forth in § 1.17(h) and a showing of good and sufficient reasons why withdrawal of the application from issue is necessary.

APPLICANT HEREBY PETITIONS TO WITHDRAW THIS APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c).

A grantable petition requires the following items:
(1) Petition fee; and
(2) One of the following reasons:
(a) Unpatentability of one or more claims, which must be accompanied by an unequivocal statement that one or more claims are unpatentable, an amendment to such claim or claims, and an explanation as to how the amendment causes such claim or claims to be patentable;
(b) Consideration of a request for continued examination in compliance with § 1.114 (for a utility or plant application only); or
(c) Express abandonment of the application. Such express abandonment may be in favor of a continuing application, but not a CPA under 37 CFR 1.53(d).

Petition Fee

- (●) Small Entity
- ( ) Micro Entity
- ( ) Regular Undiscounted

Reason for withdrawal from issue

○ One or more claims are unpatentable

◉ Consideration of a request for continued examination (RCE) (List of Required Documents and Fees)

○ Applicant hereby expressly abandons the instant application (any attorney/agent signing for this reason must have power of attorney pursuant to 37 CFR 1.32(b)).

RCE request,submission, and fee.

☐ I certify, in accordance with 37 CFR 1.4(d)(4) that : The RCE request ,submission, and fee have already been filed in the above-identified application on

☒ Are attached.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

○ An attorney or agent registered to practice before the Patent and Trademark Office who has been given power of attorney in this application.

◉ An attorney or agent registered to practice before the Patent and Trademark Office, acting in a representative capacity.

○ A sole inventor

○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application

○ A joint inventor; all of whom are signing this e-petition

Signature	/Derek P. Benke/
Name	Derek P. Benke
Registration Number	56944

Document code: WFEE

United States Patent and Trademark Office
Sales Receipt for Accounting Date: 08/22/2014

THARGROV SALE #00000002 Mailroom Dt: 07/10/2014 024800 13741878
01 FC : 2806 90.00 DA

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	07/15/2014	8782735	0079152-000017	4039

21839 7590 06/25/2014
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Srinivas KUMAR, Cupertino, CA;
TAASERA, INC., Erie, PA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

Trend Micro, Inc.
EX1002-54

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

21839 7590 03/12/2014
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	01/15/2013	Srinivas KUMAR	0079152-000017	4039

TITLE OF INVENTION: RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	06/12/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
PATEL, HARESH N	2493	726-001000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 BUCHANAN INGERSOLL & ROONEY PC
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: TAASERA, INC.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): ERIE, PENNSYLVANIA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☒ Payment by credit card.
- ☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 02-4800 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date May 27, 2014

Typed or printed name Charles F Wieland III Registration No. 33,096

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Trend Micro, Inc.
EX1002-55

Electronic Patent Application Fee Transmittal

Application Number:	13741878
Filing Date:	15-Jan-2013
Title of Invention:	RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION
First Named Inventor/Applicant Name:	Srinivas KUMAR
Filer:	Charles F. Wieland III/nina leta
Attorney Docket Number:	0079152-000017

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	480	480
Extension-of-Time:				

Trend Micro, Inc.
EX1002-56

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**480**

Electronic Acknowledgement Receipt

EFS ID:	19128695
Application Number:	13741878
International Application Number:	
Confirmation Number:	4039
Title of Invention:	RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION
First Named Inventor/Applicant Name:	Srinivas KUMAR
Customer Number:	21839
Filer:	Charles F. Wieland III/nina leta
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	0079152-000017
Receipt Date:	27-MAY-2014
Filing Date:	15-JAN-2013
Time Stamp:	13:34:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$480
RAM confirmation Number	12262
Deposit Account	024800
Authorized User	WIELAND, CHARLES F.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Fee_Transmittal.pdf	73778 c2d00efeb4af508d946371e9b1c4e00e2775b59e	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30363 75e01609878194e15c4a2db2ca80af6dfd665817	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	104141	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

21839 7590 03/12/2014
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER
PATEL, HARESH N

ART UNIT	PAPER NUMBER
2493	

DATE MAILED: 03/12/2014

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	01/15/2013	Srinivas KUMAR	0079152-000017	4039

TITLE OF INVENTION: RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	06/12/2014

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 02/11)

Trend Micro, Inc.
EX1002-60

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

21839 7590 03/12/2014
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	01/15/2013	Srinivas KUMAR	0079152-000017	4039

TITLE OF INVENTION: RUNTIME RISK DETECTION BASED ON USER, APPLICATION, AND SYSTEM ACTION SEQUENCE CORRELATION

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	06/12/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
PATEL, HARESH N	2493	726-001000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1_____
2_____
3_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.
(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
❑ Issue Fee
❑ Publication Fee (No small entity discount permitted)
❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above)**
❑ A check is enclosed.
❑ Payment by credit card. Form PTO-2038 is attached.
❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

Trend Micro, Inc.
EX1002-61

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	01/15/2013	Srinivas KUMAR	0079152-000017	4039

21839 7590 03/12/2014
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER
PATEL, HARESH N

ART UNIT	PAPER NUMBER
2493	

DATE MAILED: 03/12/2014

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Trend Micro, Inc.
EX1002-62

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 13/741,878	Applicant(s) KUMAR, SRINIVAS	
	Examiner HARESH N. PATEL	Art Unit 2493	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *12/5/13*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-24*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/HARESH N PATEL/
Primary Examiner, Art Unit 2493

Trend Micro, Inc.
EX1002-64

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR ET AL.
	Examiner	**Art Unit**
	HARESH N PATEL	2493

CPC- SEARCHED

Symbol	Date	Examiner
H04L47/10	3/5/2014	h.p.
H04L63/0227	3/5/2014	h.p.
H04L63/102	3/5/2014	h.p.
H04L47/2458	3/5/2014	h.p.

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner
726	1	5/1/2013	h.p.
726	1-10	3/5/2014	h.p.
709	223	3/5/2014	h.p.

SEARCH NOTES

Search Notes	Date	Examiner
EAST; UPAD (US-PAT), USPGPUB (US-PUB), EPO, JPO, USOCR, DERWENT, IBM_TDB; IEEE Xplore, ACM Digital Library, Google.	5/1/2013	h.p.
INVENTOR NAME SEARCH. Application Continuity Search. Assignee Search.	5/1/2013	h.p.
EAST; UPAD (US-PAT), USPGPUB (US-PUB), EPO, JPO, USOCR, DERWENT, IBM_TDB	3/5/2014	h.p.

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
726	1, 3, 6	3/5/2014	h.p.
709	223	3/5/2014	h.p.

	/HARESH N PATEL/ Primary Examiner.Art Unit 2493

Trend Micro, Inc.
EX1002-65

INTERFERENCE SEARCH			
US Class/ CPC Symbol	**US Subclass / CPC Group**	**Date**	**Examiner**
	General interference and search of claims (USPGPUB (US-PUB), UPAD (US-PAT))	3/5/2014	h.p.
H04L47	10	3/5/2014	h.p.
H04L63	0227	3/5/2014	h.p.
H04L63	102	3/5/2014	h.p.
H04L47	2458	3/5/2014	h.p.

	/HARESH N PATEL/ Primary Examiner.Art Unit 2493

Trend Micro, Inc.
EX1002-66

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 4039

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/741,878	01/15/2013 **RULE**	726	2493	0079152-000017

APPLICANTS
TAASERA, INC., Erie, PA

INVENTORS
Srinivas KUMAR, Cupertino, CA;

** **CONTINUING DATA** **********

** **FOREIGN APPLICATIONS** **********

** **IF REQUIRED, FOREIGN FILING LICENSE GRANTED** ** ** SMALL ENTITY **
02/25/2013

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /HARESH N PATEL/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CA	4	24	2

ADDRESS

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404
UNITED STATES

TITLE

Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation

FILING FEE RECEIVED		
957	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

Trend Micro, Inc.
EX1002-67

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR, SRINIVAS
	Examiner	**Art Unit**
	HARESH N PATEL	2493

CPC

Symbol					Type	Version
H04L		47	/	10	F	20130101
H04L		63	/	0227	I	20130101
H04L		63	/	102	I	20130101
H04L		47	/	2458	I	20130101
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			
			/			

CPC Combination Sets

Symbol					Type	Set	Ranking	Version
			/					
			/					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 24	
/HARESH N PATEL/ Primary Examiner.Art Unit 2493 (Primary Examiner)	03/05/2014 (Date)	O.G. Print Claim(s) 13	O.G. Print Figure 2

Trend Micro, Inc.
EX1002-68

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR, SRINIVAS
	Examiner	**Art Unit**
	HARESH N PATEL	2493

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION									
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED				
726	1	H	0	4	J	1 / 16 (2006.01.01)					
CROSS REFERENCE(S)		G	0	6	F	17 / 30 (2006.01.01)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)										
726	3 6										
709	223										

NONE (Assistant Examiner)	(Date)	Total Claims Allowed: 24	
/HARESH N PATEL/ Primary Examiner.Art Unit 2493 (Primary Examiner)	03/05/2014 (Date)	O.G. Print Claim(s) 13	O.G. Print Figure 2

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR, SRINIVAS
	Examiner	**Art Unit**
	HARESH N PATEL	2493

☒ **Claims renumbered in the same order as presented by applicant** ☐ **CPA** ☐ **T.D.** ☐ **R.1.47**

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	17	17												
2	2	18	18												
3	3	19	19												
4	4	20	20												
5	5	21	21												
6	6	22	22												
7	7	23	23												
8	8	24	24												
9	9														
10	10														
11	11														
12	12														
13	13														
14	14														
15	15														
16	16														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 24	
/HARESH N PATEL/ Primary Examiner.Art Unit 2493 (Primary Examiner)	03/05/2014 (Date)	O.G. Print Claim(s) 13	O.G. Print Figure 2

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	(13/741878).APP.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/03/05 21:05
L3	36567	H04L47/10.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:41
L4	11273	H04L63/102.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:41
L5	5373	H04L63/0227.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:41
L6	1555	H04L47/2458.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:41
L7	9	3 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:42
L8	66	4 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:42
L9	47	5 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:43
L10	2	6 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:43
L11	69259	H04L47/$.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:43
L12	167295	H04L63/$.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:43
L13	13	11 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:43
L14	285	12 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:43
L15	82	14 and runtime	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:43
L16	21975	709/223.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:43
L17	31	16 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:44

L18	178596	"709"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:44
L19	141	18 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:44
L20	41	19 and runtime	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:44
L21	6019	726/1.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:44
L22	124	21 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:44
L23	6089	726/3.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:44
L24	34	23 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:45
L25	3291	726/6.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:45
L26	10	25 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:45
L27	63321	"726"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:45
L28	302	27 and risk same policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:45
L29	105	28 and runtime	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:46
L30	1	("8327441").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/03/05 22:49
L31	9	taasera$.as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L32	29	kumar-srinivas$.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L33	12	L32 and runtime	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L34	5	runtime adj risk and policy and rule and behavior	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L35	0	runtime adj risk with predict$5 and policy and rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L36	0	run adj time adj risk and policy and rule and behavior	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L37	0	run adj time adj risk and	US-PGPUB; USPAT;	OR	ON	2014/03/05

		policy and rule	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			22:49
L38	5	runtime adj risk and policy and rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L39	617	prevent adj attack and policy and rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L40	371	prevent adj attack and policy and rule and behavior	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L41	115	L40 and runtime	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L42	14	predict$4 near threat and policy same rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L43	1	predict$4 near threat and runtime	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L44	1	("20100121744").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/03/05 22:49
L45	6019	726/1.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L46	0	L45 and predict$4 near threat	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L47	10	L45 and predict$4 with threat	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L48	12	L45 and predict$4 with attack	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L49	63321	"726"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L50	319	L49 and predict$4 with attack	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L51	39	L49 and predict$4 with attack and policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L52	94577	"713"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L53	219	L52 and predict$4 with attack	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L54	4	L53 and predict$4 with attack and policy with rule	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/03/05 22:49
L55	1	(13/277781).APP.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/03/05 22:49

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L56	2188	H04L63/0227.cpc.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:49
L57	51884	"726"/$.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:49
L58	12855	H04L47/10.cpc.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:50
L59	4486	H04L63/102.cpc.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:50
L60	564	H04L47/2458.cpc.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:50
L61	18484	709/223.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:50
L62	4743	726/1.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:50
L63	4746	726/3.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:50
L64	2593	726/6.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:50
L65	159	56 and policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:51
L66	1205	57 and policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:51
L67	126	58 and policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:51
L68	258	59 and policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:51
L69	3	60 and policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:51
L70	296	61 and policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:51
L71	705	62 and policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:51
L72	100	63 and policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:51
L73	37	64 and policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:52
L74	40	66 and risk.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:52
L75	14	68 and risk.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:52
L76	6	70 and risk.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:52
L77	24	71 and risk.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:52
L78	52	risk same policy with rule.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/03/05 22:53

3/5/2014 10:53:23 PM
C:\Users\hpatel2\Documents\EAST\Workspaces\13741878.wsp

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

MAILED
DEC 12 2013
OFFICE OF PETITIONS

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA VA 22313-1404

Doc Code: TRACK1.GRANT

Decision Granting Request for Prioritized Examination (Track I or After RCE)	Application No.: 13/741,878

1. THE REQUEST FILED December 5, 2013 IS **GRANTED.**

The above-identified application has met the requirements for prioritized examination

A. ☐ for an original nonprovisional application (Track I).
B. ☒ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination.** The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;
B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims**, or a multiple dependent claim;
C. filing a **request for continued examination**;
D. filing a notice of appeal;
E. filing a request for suspension of action;
F. mailing of a notice of allowance;
G. mailing of a final Office action;
H. completion of examination as defined in 37 CFR 41.102; or
I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to Brian W. Brown at 571-272-5338.

/Brian W. Brown/
[*Signature*]

Petitions Examiner, Office of Petitions
(Title)

U.S. Patent and Trademark Office
PTO-2298 (Rev. 02-2012)

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/SB/424 (12-11)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Kumar, Srinivas	Nonprovisional Application Number (if known):	13/741,878
Title of Invention:	System for and a Method of Cognitive Behavior Recognition		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i), the prioritized examination fee set forth in 37 CFR 1.17(c), and if not already paid, the publication fee set forth in 37 CFR 1.18(d) have been filed with the request. The basic filing fee, search fee, examination fee, and any required excess claims and application size fees are filed with the request or have been already been paid.

2. The application contains or is amended to contain no more than four independent claims and no more than thirty total claims, and no multiple dependent claims.

3. The applicable box is checked below:

I. ☐ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed oath or declaration under 37 CFR 1.63 is filed with the application.

II. ☑ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature	/Derek P. Benke/	Date	December 5, 2013
Name (Print/Typed)	Derek P. Benke	Practitioner Registration Number	56,944

Note: *Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature. If necessary, submit multiple forms for more than one signature, see below*.*

☐ *Total of _____ forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/22 (03-132)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)	Docket Number (Optional) **0079152-000017-T1**
Application Number **13/741,878**	Filed **January 15, 2013**
For **System for and a Method of Cognitive Behavior Recognition**	
Art Unit **2493**	Examiner **Patel, Haresh N**

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Large Fee	Small Fee	Micro Fee	
☒	One month (37 CFR 1.17(a)(1))	$200	$100	$50	$ 100.00
☐	Two month (37 CFR 1.17(a)(2))	$600	$300	$150	$
☐	Three month (37 CFR 1.17(a)(3))	$1,400	$700	$350	$
☐	Four month (37 CFR 1.17(a)(4))	$2,200	$1,100	$550	$
☐	Five month (37 CFR 1.17(a)(5))	$3,000	$1,500	$750	$

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card. .

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number **02-4800**.

☒ Payment made via EFS-Web.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant.

☒ attorney or agent of record. Registration number **56,944**.

☐ attorney or agent acting under 37 CFR 1.34. Registration number.

/Derek P. Benke/	**December 5, 2013**
Signature	Date
Derek P. Benke	**703-836-6620**
Type or printed name	Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required. See below*.

☐ Total of ___ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

PTO/SB/30 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Request For Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	**13/741,878**
Filing Date	**January 15, 2013**
First Named Inventor	**Kumar, Srinivas**
Art Unit	**2493**
Examiner Name	**Patel, Haresh N**
Attorney Docket Number	**0079152-000017-T1**

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 C.F.R. 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
   a. ☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
      i ☒ Consider the arguments in the Amendment Under 37 C.F.R. § 1.116 previously filed on November 12, 2013
      ii ☐ Other _____
   b. ☐ Enclosed
      i ☐ Amendment/Reply
      ii ☐ Affidavit(s)/Declaration(s)
      iii. ☐ Information Disclosure Statement (IDS)
      iv. ☐ Other _____

2. Miscellaneous
   a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. 1.17(i) required)
   b. ☐ Other _____

3. Fees The RCE fee under 37 C.F.R. 1.17 (e) is required by 37 C.F.R. 1.114 when RCE is filed.
   a. ☒ The Director is hereby authorized to charge any additional fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. **02-4800.**
      i ☒ RCE fee required under 37 C.F.R. 1.17 (e)
      ii ☒ Extension of time fee (37 C.F.R. 1.136 and 1.17)
      iii ☐ Other _____
   b. ☐ Check in the amount of $ _____ enclosed
   c. ☒ Payment by credit card

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	**/Derek P. Benke/**	Date	**December 5, 2013**
Name (Print/Type)	**Derek P. Benke**	Registration No.	**56,944**

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature			
Name (Print/Type)		Date	

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal

Application Number:	13741878
Filing Date:	15-Jan-2013
Title of Invention:	Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation
First Named Inventor/Applicant Name:	Srinivas KUMAR
Filer:	Derek P. Benke/Shaunna LLoyd
Attorney Docket Number:	0079152-000017

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Request for Prioritized Examination	2817	1	2000	2000
Pages:				
Claims:				
Miscellaneous-Filing:				
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Extension - 1 month with $0 paid	2251	1	100	100
Miscellaneous:				
Request for Continued Examination	2801	1	600	600
		Total in USD ($)		**2770**

Electronic Acknowledgement Receipt

EFS ID:	17577860
Application Number:	13741878
International Application Number:	
Confirmation Number:	4039
Title of Invention:	Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation
First Named Inventor/Applicant Name:	Srinivas KUMAR
Customer Number:	21839
Filer:	Derek P. Benke/Shaunna LLoyd
Filer Authorized By:	Derek P. Benke
Attorney Docket Number:	0079152-000017
Receipt Date:	05-DEC-2013
Filing Date:	15-JAN-2013
Time Stamp:	15:25:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$2770
RAM confirmation Number	2164
Deposit Account	024800
Authorized User	BENKE, DEREK

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	TrackOne Request	REQ_PRIORITIZED_EXAM.pdf	128328 e427f52de480244b6ee533273fe93ec54eace1af	no	2
Warnings:					
Information:					
2	Extension of Time	PET.pdf	20695 8f25de74ea29ffa961cf1664c208cd4e9e0c324d	no	1
Warnings:					
Information:					
3	Request for Continued Examination (RCE)	RCE.pdf	34779 85858636848c7e32d8a15c420e85ee3a55a01a78	no	1
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	35762 484aa91ea849b104eefa4927b015bee86feec2fe	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	219564		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	01/15/2013	Srinivas KUMAR	0079152-000017	4039

21839 7590 11/19/2013
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER
PATEL, HARESH N

ART UNIT	PAPER NUMBER
2493	

NOTIFICATION DATE	DELIVERY MODE
11/19/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPDOC1@BIPC.com

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/741,878	KUMAR, SRINIVAS	
	Examiner	Art Unit	
	HARESH N. PATEL	2493	

All participants (applicant, applicant's representative, PTO personnel):

(1) *HARESH N. PATEL*. (3)_____.

(2) *Mr. Derek P. Benke, Registration No, 56,944*. (4)_____.

Date of Interview: *08 November 2013*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☒102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1 and 13*.

Identification of prior art discussed: *Basavapatna et al. 2013/0096980* .

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

During the interview, the drawing objection to Figure 1 was first discussed, and Applicant's representative proposed amending Figure 1 so that "Runtime Monitor," "Rules Database," and "Policy Database" are "Application Runtime Monitor," "Action Sequence Rules Database," and "Assessment Policy Database," respectively. The Examiner indicated that the proposed changes to Figure 1 would likely overcome this issue. Next, the objection to Claim 13 was discussed, and the Examiner recommended amending the phrase "configured to store" to be "storing." Claim 13 has been amended in accordance with this suggestion. The phrase "configured to identify" is amended in a similar manner. The 35 U.S.C. § 112, first paragraph, rejection was discussed next, and a proposed amendment to Claim 1 was presented. Specifically, Applicant's representative proposed amending Claim 1 to recite that "the identified runtime risk indicates a risk or threat of the identified action sequence of the application." The Examiner stated that this amendment would overcome the 35 U.S.C. § 112, first paragraph, rejection. Lastly, the art rejections were discussed during the interview, and Applicant's representative explained further claim amendments dated 11/12/13 in view of the cited references, which require further consideration and/or search.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/HARESH N PATEL/ Primary Examiner, Art Unit 2493	

Trend Micro, Inc.
EX1002-85

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** *13/741,878*	**Applicant(s)** KUMAR, SRINIVAS	
	Examiner HARESH N. PATEL	**Art Unit** 2493	**AIA (First Inventor to File) Status** No

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 12 November 2013 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☒ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance;

(2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:

a) ☐ The period for reply expires _____months from the mailing date of the final rejection.

b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because

a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);

b) ☐ They raise the issue of new matter (see NOTE below);

c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: *See Continuation Sheet*. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☐ Applicant's reply has overcome the following rejection(s): _____.

6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): (a) ☒ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.

13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____

14. ☐ Other: _____.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: .

Claim(s) objected to: .

Claim(s) rejected: 1-22.

Claim(s) withdrawn from consideration: .

/HARESH N PATEL/
Primary Examiner, Art Unit 2493

Trend Micro, Inc.
EX1002-87

Continuation of 3. NOTE: the claims 1-24 are rejected with the cited prior arts of the final office action, dated 8/15/13. Applicant proposed amending the rejected claimed subject matter, with additional limitations, for example, identifying by a runtime monitor a behavior score, etc, which require further consideration and/or search.

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/741,878	KUMAR, SRINIVAS	
	Examiner	Art Unit	
	HARESH N. PATEL	2493	

All participants (applicant, applicant's representative, PTO personnel):

(1) *HARESH N. PATEL*. (3)_____.

(2) *Mr. Derek P. Benke, Registration No, 56,944*. (4)_____.

Date of Interview: *08 November 2013*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☒102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1 and 13*.

Identification of prior art discussed: *Basavapatna et al. 2013/0096980* .

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

During the interview, the drawing objection to Figure 1 was first discussed, and Applicant's representative proposed amending Figure 1 so that "Runtime Monitor," "Rules Database," and "Policy Database" are "Application Runtime Monitor," "Action Sequence Rules Database," and "Assessment Policy Database," respectively. The Examiner indicated that the proposed changes to Figure 1 would likely overcome this issue. Next, the objection to Claim 13 was discussed, and the Examiner recommended amending the phrase "configured to store" to be "storing." Claim 13 has been amended in accordance with this suggestion. The phrase "configured to identify" is amended in a similar manner. The 35 U.S.C. § 112, first paragraph, rejection was discussed next, and a proposed amendment to Claim 1 was presented. Specifically, Applicant's representative proposed amending Claim 1 to recite that "the identified runtime risk indicates a risk or threat of the identified action sequence of the application." The Examiner stated that this amendment would overcome the 35 U.S.C. § 112, first paragraph, rejection. Lastly, the art rejections were discussed during the interview, and Applicant's representative explained further claim amendments dated 11/12/13 in view of the cited references, which require further consideration and/or search.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/HARESH N PATEL/ Primary Examiner, Art Unit 2493	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	**MAIL STOP AF**
Kumar, Srinivas	Group Art Unit: 2493
Application No.: 13/741,878	Examiner: Patel, Haresh N
Filed: January 15, 2013	Confirmation No.: 4039
For: Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation	

AMENDMENT UNDER 37 C.F.R. § 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the final Office Action dated August 15, 2013, please amend the above-identified patent application as follows:

OK TO ENTER: /H.P./ (11/15/2013)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	)	**MAIL STOP AF**
Kumar, Srinivas	)	Group Art Unit: 2493
Application No.: 13/741,878	)	Examiner: Patel, Haresh N
Filed: January 15, 2013	)	Confirmation No.: 4039
For: Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation	)	

AMENDMENT UNDER 37 C.F.R. § 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

In response to the final Office Action dated August 15, 2013, please amend the above-identified patent application as follows:

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for assessing runtime risk for an application program that executes on a device, comprising:

storing, in a rules database, a plurality of rules, wherein each rule identifies an action sequence;

storing, in a policy database, a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules;

identifying, using at least one assessment policy, a runtime risk for an application program that executes on a device, wherein the identified runtime risk indicates a risk or threat of the identified action sequence of the application ~~identifies and predicts a specific type of threat~~; and

identifying, by a runtime monitor including a processing device, a behavior score for the application program that executes on the device based on the identified runtime risk, wherein

the action sequence is a sequence of at least two performed actions, and

each performed action is at least one of: a user action, an application action, and a system action.

2. (Original) The method of claim 1, wherein the user action is any form of explicit input from a user of a computing system.

3. (Original) The method of claim 1, wherein the application action is any activity performed by the application initiated programmatically by a task in execution of a computing system.

4. (Original) The method of claim 1, wherein the system action is any operation performed by a computing system on behalf of, or as a consequence of, a user action or application action that changes the state of the computing system.

5. (Original) The method of claim 1, wherein a first action of the at least two performed actions is performed at a first time, and the second action of the at least two performed actions is performed at a second time.

6. (Original) The method of claim 5, wherein
the first action is a user action,
the second action is a system action, and
the second time occurs after the first time.

7. (Original) The method of claim 5, wherein
the first action is a user action,
the second action is an application action, and
the second time occurs after the first time.

8. (Original) The method of claim 5, wherein

the first action is an application action,

the second action is a system action, and

the second time occurs after the first time.

9. (Original) The method of claim 1, wherein

the action sequence includes three performed actions,

a first action of the three performed actions is a user action,

a second action of the three performed actions is an application action,

a third action of the three performed actions is a system action,

the second action is performed temporally after the first action, and

the third action is performed temporally after the second action.

10. (Previously Presented) The method of claim 1, wherein the runtime risk is identified based on matching rules and probabilistic weights and scores of performed actions on the device.

11. (Previously Presented) The method of claim 1, wherein the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions.

12. (Original) The method of claim 1, further comprising:

assessing, by the processing device, that the at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors,

wherein the plurality of factors includes at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency.

13. (Currently Amended) A system for assessing runtime risk for an application program that executes on a device, comprising:

a rules database storing ~~configured to store~~ a plurality of rules, wherein each rule identifies an action sequence;

a policy database storing ~~configured to store~~ a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules; and

a runtime monitor including a processing device ~~configured to~~

identifying ~~identify~~, using at least one assessment policy, a runtime risk for an application program that executes on a device, wherein the identified runtime risk indicates a risk or threat of the identified action sequence of the application ~~identifies and predicts a specific type of threat~~, and

identifying ~~identify~~ a behavior score for the application program that executes on the device based on the identified runtime risk, wherein

the action sequence is a sequence of at least two performed actions, and

each performed action is at least one of: a user action, an application action, and a system action.

14. (Original) The system of claim 13, wherein the user action is any form of explicit input from a user of a computing system.

15. (Original) The system of claim 13, wherein the application action is any activity performed by the application initiated programmatically by a task in execution of a computing system.

16. (Original) The system of claim 13, wherein the system action is any operation performed by a computing system on behalf of, or as a consequence of, a user action or application action that changes the state of the computing system.

17. (Original) The system of claim 13, wherein a first action of the at least two performed actions is performed at a first time, and the second action of the at least two performed actions is performed at a second time.

18. (Original) The system of claim 17, wherein

the first action is a user action,

the second action is a system action, and

the second time occurs after the first time.

19. (Original) The system of claim 17, wherein

the first action is a user action,

the second action is an application action, and

the second time occurs after the first time.

20. (Original) The system of claim 17, wherein

the first action is an application action,

the second action is a system action, and

the second time occurs after the first time.

21. (Original) The system of claim 13, wherein

the action sequence includes three performed actions,

a first action of the three performed actions is a user action,

a second action of the three performed actions is an application action,

a third action of the three performed actions is a system action,

the second action is performed temporally after the first action, and

the third action is performed temporally after the second action.

22. (Previously Presented) The system of claim 13, wherein the runtime risk is identified based on matching rules and probabilistic weights and scores of performed actions on the device.

23. (Original) The system of claim 13, wherein the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions.

24. (Currently Amended) The system of claim 13, wherein

the processing device assesses ~~is further configured to assess~~ that the at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors, and

the plurality of factors includes at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency.

AMENDMENTS TO THE DRAWINGS:

The attached drawing sheet includes changes to Fig. 1. This sheet, which includes Fig. 1, replaces the original sheet including Fig. 1.

1 Replacement Sheet

REMARKS

Favorable reconsideration of this application as presently amended, and in light of the following discussion, is respectfully requested.

Claims 1-24 are pending in this application, Claims 1, 13, and 24 having been presently amended. Support for amended Claims 1, 13, and 24 can be found, for example, in the claims, drawings, and specification as originally filed.[1] No new matter has been added.

In the outstanding Office Action, the drawings and claims were objected to due to informalities; Claims 1-24 were rejected under 35 U.S.C. § 112, first paragraph; Claims 1-5, 10-17, and 22-24 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by Basavapatna et al. (U.S. Patent Publication No. 2013/0096980; hereinafter "Basavapatna"); and Claims 6-9 and 18-21 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Basavapatna.

Applicants acknowledge with appreciation the courtesy of Examiner Patel in granting an interview in this case with the Applicant and Applicant's representative on November 8, 2013, during which time the issues in the outstanding Office Action were discussed as substantially summarized hereinafter and also on the Interview Summary Sheet. During the interview, the drawing objection to Figure 1 was first discussed, and Applicant's representative proposed amending Figure 1 so that "Runtime Monitor," "Rules Database," and "Policy Database" are "Application Runtime Monitor," "Action Sequence Rules Database," and "Assessment Policy Database," respectively. The Examiner indicated that the proposed changes to Figure 1 would likely overcome this issue. Accordingly, this response amends Figure 1 as discussed during the interview.

[1] See paragraph [0031] of the specification.

Next, the objection to Claim 13 was discussed, and the Examiner recommended amending the phrase "configured to store" to be "storing." Claim 13 has been amended in accordance with this suggestion. The phrase "configured to identify" is amended in a similar manner. Thus, Applicant respectfully requests that this objection be withdrawn.

The 35 U.S.C. § 112, first paragraph, rejection was discussed next, and a proposed amendment to Claim 1 was presented. Specifically, Applicant's representative proposed amending Claim 1 to recite that "the identified runtime risk indicates a risk or threat of the identified action sequence of the application." The Examiner stated that this amendment would overcome the 35 U.S.C. § 112, first paragraph, rejection. In light of this indication, we have amended Claim 1 to include the proposed amendment discussed during the interview.

Lastly, the art rejections were discussed during the interview, and Applicant's representative explained how the cited reference fails to teach or suggest "identifying, using at least one assessment policy, a runtime risk for an application program that executes on a device, wherein the identified runtime risk indicates a risk or threat of the identified action sequence of the application," as in Claim 1. The Examiner stated that he needs to more fully consider the amendment and our arguments upon the submission of a formal response.

In response to the rejections under 35 U.S.C. §§ 102 and 103, Applicant respectfully submits that amended Claim 1 recites novel features not taught or rendered obvious by the applied reference.

Amended Claim 1 is directed to a method for assessing runtime risk for an application program that executes on a device, including:

> storing, in a rules database, a plurality of rules, wherein each rule identifies an action sequence;

> storing, in a policy database, a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules;
>
> ***identifying, using at least one assessment policy, a runtime risk for an application program that executes on a device, wherein the identified runtime risk indicates a risk or threat of the identified action sequence of the application***; and
>
> ***identifying, by a runtime monitor including a processing device, a behavior score for the application program that executes on the device based on the identified runtime risk***, wherein
>
> the action sequence is a sequence of at least two performed actions, and
>
> each performed action is at least one of: a user action, an application action, and a system action.

Independent Claim 13, although varying in claim scope and/or statutory class, recites substantially similar features as Claim 1. Thus, the arguments presented below with respect to Claim 1 are also applicable to independent Claim 13.

The claims of the present application are directed towards a method and system for assessing the runtime risk of an application program that executes on a device. To achieve this assessment, rules that identify ***action sequences*** of actions performed by users, applications, or systems are used in assessment policies, which identify a runtime risk for an application program that executes on a device, and ***the identified runtime risk indicates a risk or threat of the identified action sequence of the application***. Basavapatna, on the other hand, is directed towards testing potential countermeasures against ***known*** vulnerabilities of systems (Abstract and paras. [0003] and [0011]). Basavapatna does not identify action sequences as part of the risk assessment, but instead uses countermeasures that have been deployed. Basavapatna also does

not identify a risk or threat of the identified action sequence of the application, but instead assesses risk associated with known vulnerabilities.

Accordingly, Basavapatna fails to teach or suggest "identifying, using at least one assessment policy, a runtime risk for an application program that executes on a device, wherein the identified runtime risk indicates a risk or threat of the identified action sequence of the application," as explained during the interview.

In addition, Applicant respectfully submits that Basavapatna fails to teach or suggest "identifying, by a runtime monitor including a processing device, a behavior score for the application program that executes on the device based on the identified runtime risk, wherein the action sequence is a sequence of at least two performed actions, and each performed action is at least one of: a user action, an application action, and a system action." as recited in Claim 1.

Paragraphs [0052-0054] of Basavapatna describe the calculation of a risk score based on the assessment of the countermeasures against the vulnerability. Nowhere does Basavapatna disclose a rules database including a plurality of rules that identifies an ***action sequence***, as recited in the claims. Instead, the rules in Basavapatna merely define a countermeasure, which are security tools and safeguards designed to protect against known vulnerabilities (para. [0003]).

Furthermore, not only does Basavapatna fail to teach or suggest the rules identifying action sequences, Basavapatna also fails to disclose or suggest action sequences generally. Basavapatna does not teach or suggest any ***sequence of performed actions***, let alone a sequence of performed actions where the performed actions are at least one of a user action, an application action, and a system action, as recited in the claims. Thus, Basavapatna only assesses risk for systems based on countermeasures put into place as selected and defined by the user. The presently claimed invention, on the other hand, assesses risk of action sequences performed by

the user, applications, or the system, and thus can act as a runtime monitor that, in real-time, correlates action sequences to detect threats. As the presently recited systems and methods do not rely on known vulnerabilities, they may offer stronger protection against threats and more accurate risk assessments.

Thus, Applicant respectfully submits that amended independent Claims 1 and 13 (and all claims depending thereon) patentably distinguish over Basavapatna.

Accordingly, Applicant respectfully requests that the rejections under 35 U.S.C. §§ 102 and 103 be withdrawn.

Consequently, in view of the present amendment, and in light of the above discussion, the pending claims as presented herewith are believed to be in condition for formal allowance, and an early and favorable action to that effect is respectfully requested.

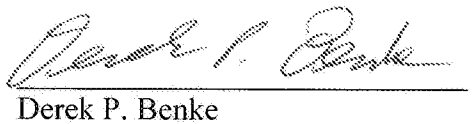
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

If additional fees are required for any reason, please charge Deposit Account No. 02-4800 the necessary amount.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: November 12, 2013

By: 

Derek P. Benke
Registration No. 56,944

Customer No. 21839
703 836 6620

Trend Micro, Inc.
EX1002-106

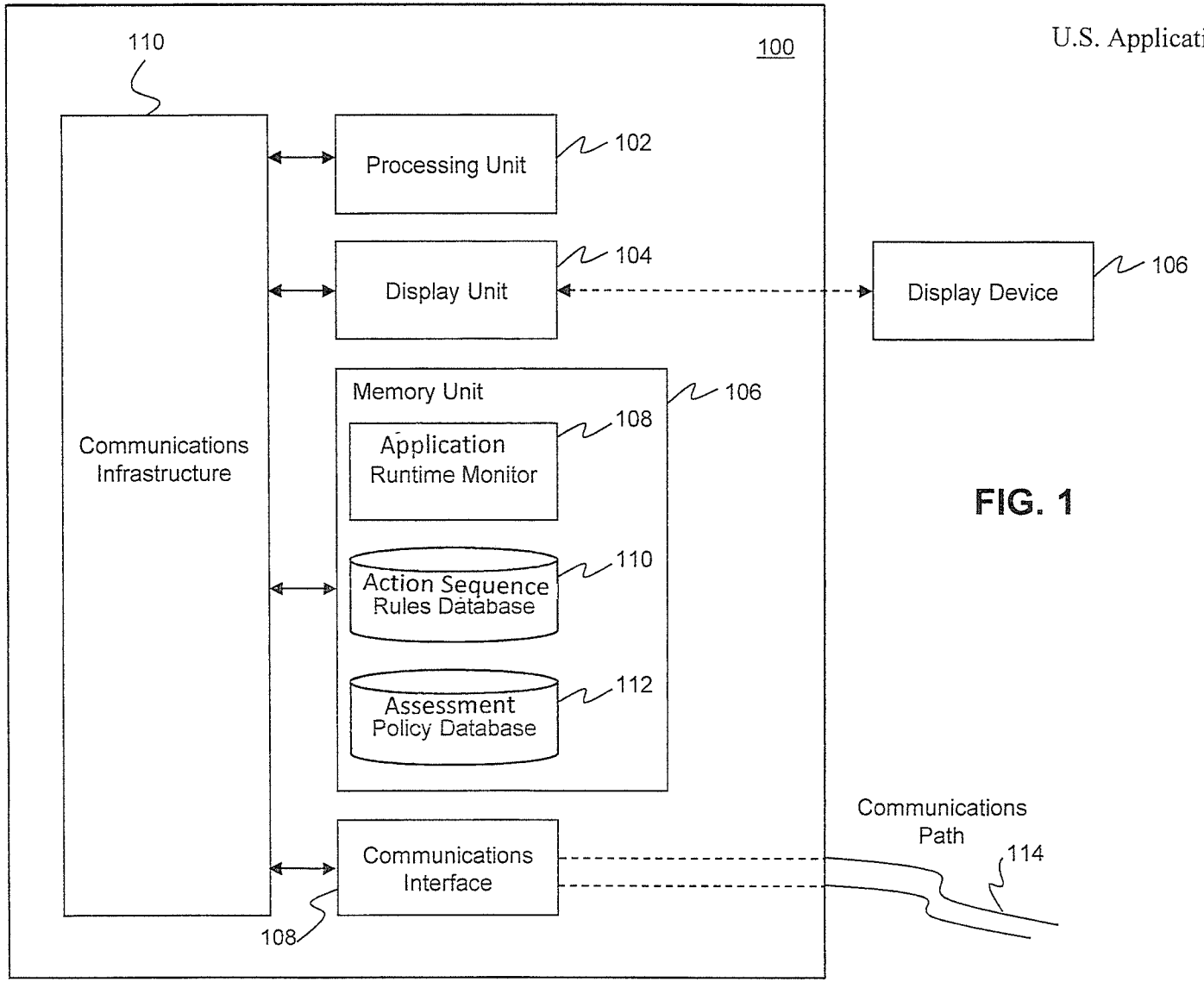


FIG. 1

Electronic Acknowledgement Receipt

EFS ID:	17373632
Application Number:	13741878
International Application Number:	
Confirmation Number:	4039
Title of Invention:	Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation
First Named Inventor/Applicant Name:	Srinivas KUMAR
Customer Number:	21839
Filer:	Derek P. Benke/Shaunna Lloyd
Filer Authorized By:	Derek P. Benke
Attorney Docket Number:	0079152-000017
Receipt Date:	12-NOV-2013
Filing Date:	15-JAN-2013
Time Stamp:	11:37:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		AAFR.pdf	742925 ea974846c9316ad1810368535bacdc7864a1854a	yes	14

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Claims	2	8
	Drawings-only black and white line drawings	9	9
	Applicant Arguments/Remarks Made in an Amendment	10	14

Warnings:

Information:

2	Drawings-only black and white line drawings	figs.pdf	14294 811219f0e87a38fe6a40952ca862442ba07b2aa3	no	1

Warnings:

Information:

Total Files Size (in bytes):	757219

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	
13/741,878	01/15/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	x $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	x $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT

11/12/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 24	Minus	** 24	= 0	x $40 =	0
Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	x $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/DONNA 1. SMALLS LOGAN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	01/15/2013	Srinivas KUMAR	0079152-000017	4039

21839 7590 08/15/2013
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER
PATEL, HARESH N

ART UNIT	PAPER NUMBER
2493	

NOTIFICATION DATE	DELIVERY MODE
08/15/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPDOC1@BIPC.com

Trend Micro, Inc.
EX1002-110

Office Action Summary	Application No. 13/741,878	Applicant(s) KUMAR, SRINIVAS	
	Examiner HARESH N. PATEL	Art Unit 2493	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7 June 2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-24* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-24* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *15 January 2013* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

Trend Micro, Inc.
EX1002-111

DETAILED ACTION

1. Claims 1-24 are subject to examination.

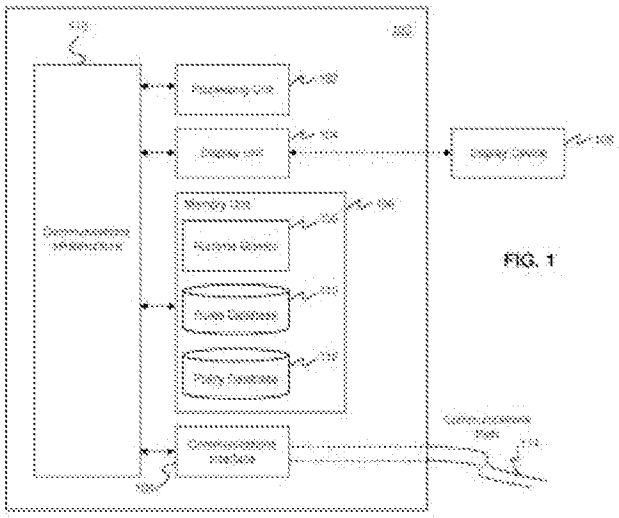
Specification

2. Applicant's amendment to the title paper dated 6/7/13 is acknowledged.

Drawings

3. The figures submitted on 1/15/13 and 6/7/13 are noted.

4. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).



The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Applicant's remarks dated 6/7/13, … Applicant respectfully submits that Figure 1 does not illustrate prior art, but instead illustrates a high level architecture

of a system configured to assess the runtime risk of an application or device and identify a behavior scored based on the assessed runtime risk in accordance with the present disclosure. See paragraph [0014] of the originally… are noted. As per the prosecution history, the figure 1 merely recites system that is well-known in the art, and the figure 1 does not "assess the runtime risk of an application or device and identify a behavior scored based on the assessed runtime risk in accordance with the present disclosure" as mentioned in the remarks. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. The amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled --Replacement Sheet-- in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action.

Claim Objections

Applicant's remarks dated 6/7/13, Applicant respectfully submits that the recitation "configured to" recited in claims 13 and 24 recites required functionality of the corresponding devices suitable for enabling the system to assess runtime risk for an application or device, as claimed., are acknowledged.

Claim Limitation Interpreted under 35 USC § 112, Sixth Paragraph

Claim 13 limitations "rules database configured to", "policy database configured to", "processing device configured to" have been interpreted under 35 U.S.C. 112, sixth paragraph, because it uses a non-structural term "rules database", "policy database", "processing device", coupled with functional language "configured to" without reciting sufficient structure to achieve the function. Furthermore, the non-structural term is not preceded by a structural modifier.

Since this claim limitation invokes 35 U.S.C. 112, sixth paragraph, claim 13 is interpreted to cover the corresponding structure described in the specification that achieves the claimed function, and equivalents thereof.

A review of the specification shows that the following appears to be the corresponding structure described in the specification for the 35 U.S.C. 112, sixth paragraph limitation: figure 1 and figure 1 description containing structural elements for "rules database configured to", "policy database configured to", and "processing device configured to".

As per prosecution history, the remarks dated 6/7/13 does not provide further explanation or dispute the examiner's interpretation of the corresponding structure, and applicant did not identify the corresponding structure with reference to the specification by page and line number, and to the drawing, if any, by reference characters in response to previous office action.

Regarding, applicants remarks, … Applicant further notes that claim elements that do not include "means for" or "step for" is presumed to not invoke § 112, sixth paragraph … for more information, see *Supplementary Examination Guidelines for Determining Compliance with 35 U.S.C. § 112 and for Treatment of Related Issues in Patent Applications*, 76 FR 7162, 7167 (Feb.

9, 2011). Also, the type of language that invokes 112, 6th is not limited to the words "means for" as explained in MPEP 2181, ed.8, rev. 9, 2012.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(a):
(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), first paragraph:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-24 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as based on a disclosure which is not enabling. **"of what"** runtime risk is assessed, "of what" identified runtime risk is identified, "of what" specific type of threat is predicted, and "of what" behavior score is identified, in claims 1 and 13, is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). "runtime risk" etc., are respectively incomplete fragments. Claims 2-12 and 14-24 are dependent claims and subject to same rejections.

As per prosecution history, applicant amended ""of" performed actions of the device" in claim 10 regarding similar rejection. However amended claim 1 is merely amended, "program that executes on a device", which fails to enable **"of what"** runtime risk is assessed, "of what"

identified runtime risk is identified, “of what" specific type of threat is predicted, and “of what" behavior score is identified.

The following is a quotation of 35 U.S.C. 112(b):

(B) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-24 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. **“of what"** runtime risk is assessed, “of what" identified runtime risk is identified, “of what" specific type of threat is predicted, and “of what" behavior score is identified, in claims 1 and 13, is being indefinite for failing to particularly point out and distinctly claim the subject matter in the claims. Claims 2-12 and 14-24 are dependent claims and subject to same rejections.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5, 10-17, 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Basavapatna et al. 2013/0096980 (Hereinafter Basavapatna).

7. Referring to claims 1, 13, Basavapatna-McAfee discloses a system for assessing runtime risk for an application program that executes on a device (e.g., abstract), comprising: a rules database configured to store a plurality of rules, wherein each rule identifies an action sequence (e.g., paragraphs 65, 66); a policy database configured to store a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules (e.g., paragraphs 44, 45, 54); and a processing device configured to identify, using at least one assessment policy, a runtime risk for an application program that executes on a device, wherein the identified runtime risk identifies and predicts a specific type of threat (e.g., paragraphs 52-54), and identify a behavior score for the an application program that executes on a device based on the identified runtime risk, wherein the action sequence is a sequence of at least two performed actions (e.g., paragraphs 52-54), and each performed action is at least one of: a user action, an application action, and a system action (e.g., paragraphs 63, 64, figures 2, 4B).

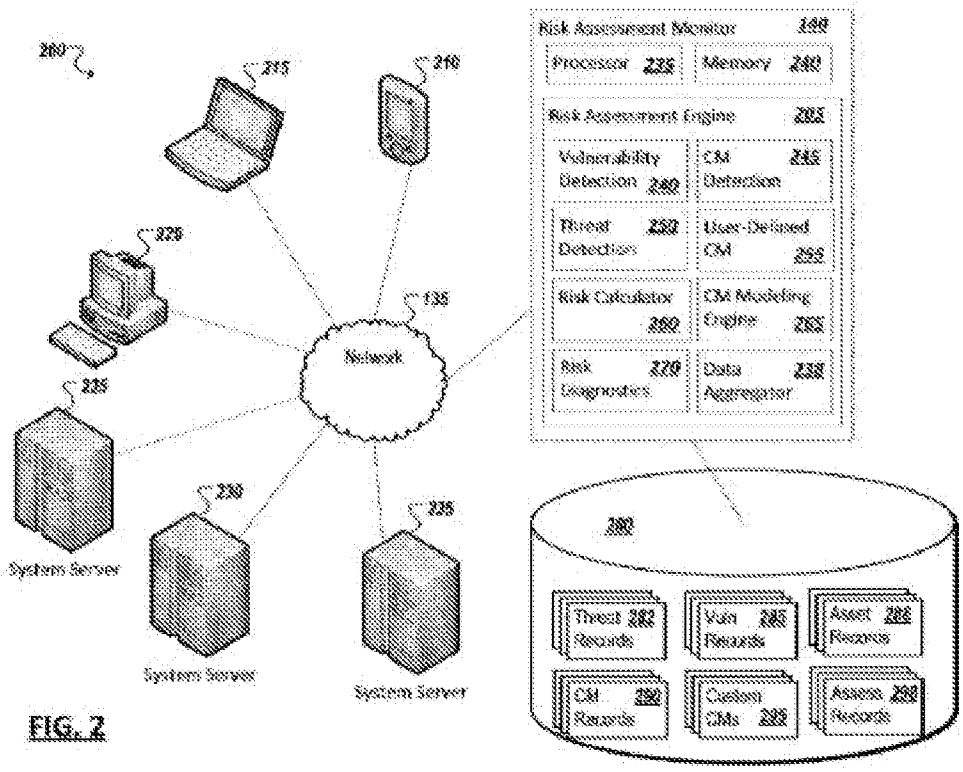

Risk Assessment Monitor
Processor
Memory
Risk Assessment Engine
Vulnerability Detection
CM Detection
Threat Detection
User-Defined CM
Risk Calculator
CM Modeling Engine
Risk Diagnostics
Data Aggregator
Network
System Server
System Server
System Server
Threat Records
Vuln Records
Asset Records
CM Records
Custom CMs
Assess Records

FIG. 2

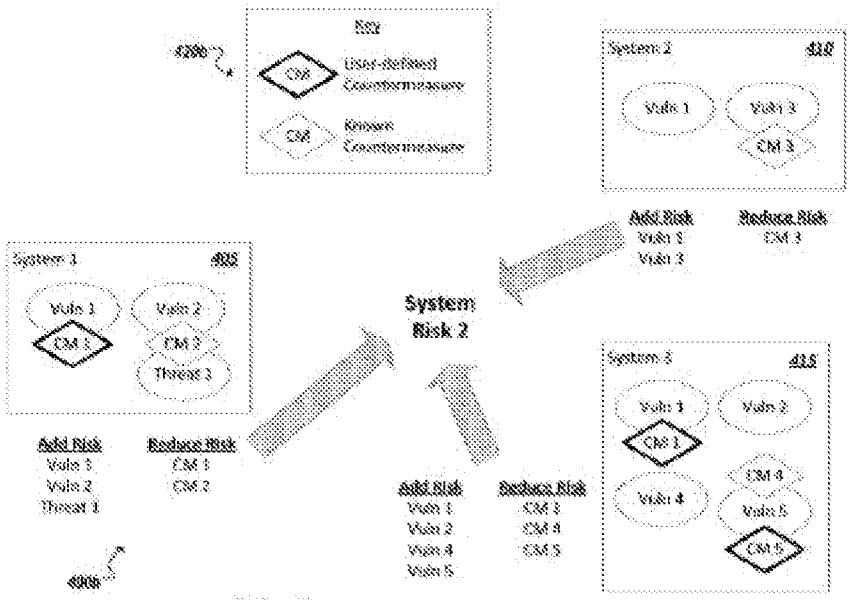

Key
User-defined Countermeasure
Known Countermeasure
System 2
Vuln 1
Vuln 3
CM 3
Add Risk
Vuln 1
Vuln 3
Reduce Risk
CM 3
System 1
Vuln 1
Vuln 2
CM 1
CM 2
Threat 1
Add Risk
Vuln 1
Vuln 2
Threat 1
Reduce Risk
CM 1
CM 2
System Risk 2
Add Risk
Vuln 1
Vuln 2
Vuln 4
Vuln 5
Reduce Risk
CM 3
CM 4
CM 5
System 3
Vuln 1
Vuln 2
CM 1
CM 4
Vuln 4
Vuln 5
CM 5

FIG. 4B

8. Referring to claims 2, 14, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the user action is any form of explicit input from a user of a computing system (e.g., paragraphs 63, 64).

9. Referring to claims 3, 15, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the application action is any activity performed by the application initiated programmatically by a task in execution of a computing system (e.g., paragraphs 69, 70).

10. Referring to claims 4, 16, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the system action is any operation performed by a computing system on behalf of, or as a consequence of, a user action or application action that changes the state of the computing system (e.g., paragraphs 63, 64).

11. Referring to claims 5, 17, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein a first action of the at least two performed actions is performed at a first time, and the second action of the at least two performed actions is performed at a second time (e.g., paragraphs 63, 64).

12. Referring to claims 10, 22, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the runtime risk is identified based

on matching rules and probabilistic weights and scores of performed actions on the device (e.g., paragraphs 53, 54).

13. Referring to claims 11, 23, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions (e.g., paragraphs 63, 64).

14. Referring to claims 12, 24, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses assessing, by the processing device, that the at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors, wherein the plurality of factors includes at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency (e.g., paragraphs 63, 64).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 6-9, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basavapatna-McAfee.

17. Referring to claims 6-9, 18-21, Basavapatna-McAfee do not specifically mention about wherein the first action is a user action, the second action is a system action, and the second time occurs after the first time; wherein the first action is a user action, the second action is an application action, and the second time occurs after the first time; the first action is an application action, the second action is a system action, and the second time occurs after the first time; wherein the action sequence includes three performed actions, a first action of the three performed actions is a user action, a second action of the three performed actions is an application action, a third action of the three performed actions is a system action, the second action is performed temporally after the first action, and the third action is performed temporally after the second action. However, since Basavapatna-McAfee does not limit to certain number of actions or certain sequence of actions, it is obvious to one of ordinary skill in the art that Basavapatna-McAfee's system/method is open for different number of actions and different sequence of actions, and because the ability to be adaptive to different number of actions and different sequence of actions enables Basavapatna-McAfee's system/method to be implemented in a wider variety of operating environments. "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If the leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense". Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention disclosed by Basavapatna-McAfee to implement actions and sequence of actions as claimed in claims 6-9, 18-21 and also one of ordinary skill in the art would have been motivated to do so because it could enhance handling runtime risk of an application and/or device with necessary sequence of actions provided by the user, the application and the system.

All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. See KSR International Co. v. Teleflex Inc., 550 U.S. 398, 82 USPQ2d 1385 (2007).

Response to Arguments

18. Applicant's arguments filed 6/7/13, pages 11-19 have been fully considered but they are not persuasive. Therefore, rejection of claims 1-24 is maintained.

Regarding the applicant's concern, Basavapatna does not disclose limitations of claims 1, 13; the examiner respectfully disagrees. As per the cited evidence of the prosecution history, i.e., the relied upon disclosure and the teachings of T Basavapatna BD are not limited as concluded in the remarks. As per the claimed invention of prosecution history, please see claims 1, 13, the claimed rules is **not limited to** any particular rule. The claimed action sequence is **not limited to** any particular action. The claimed action sequence is **not limited to** different actions. The claimed policies is **not limited to** any particular policy. The claimed assessment policy is **not limited to** any particular format. The claimed assessment policy is **not limited to** any particular size. The claimed application program is **not limited to** any particular size, type, format, etc. The claimed device is **not limited to** any particular size, type, etc. The claimed threat is **not limited to** any particular type, etc. The claimed score is **not limited to** any particular value, zero, 100, etc. The claimed performed actions is **not limited to** any particular type, format, etc. Accordingly, Basavapatna discloses the broadly claimed limitations, i.e., please see the cited

portions among other portions of the cited art that not only contain the applicant concerned content of the art but also the relied upon limitations. Basavapatna-McAfee discloses a system for assessing runtime risk for an application program that executes on a device (e.g., abstract), comprising: a rules database configured to store a plurality of rules, wherein each rule identifies an action sequence (e.g., paragraphs 65, 66); a policy database configured to store a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules (e.g., paragraphs 44, 45, 54); and a processing device configured to identify, using at least one assessment policy, a runtime risk for an application program that executes on a device, wherein the identified runtime risk identifies and predicts a specific type of threat (e.g., paragraphs 52-54), and identify a behavior score for the an application program that executes on a device based on the identified runtime risk, wherein the action sequence is a sequence of at least two performed actions (e.g., paragraphs 52-54), and each performed action is at least one of: a user action, an application action, and a system action (e.g., paragraphs 63, 64, figures 2, 4B).

[0052] As an example, a risk score can be calculated, for instance, using risk calculator 260 for a particular asset, subsystem, or system that makes use of one or more user-defined countermeasures. Further, administrators can use user-defined countermeasures to model the effect of hypothetical countermeasures within a system, for instance, in connection with countermeasure modeling engine 265. Further, risk diagnostics engine 270 can perform additional analyses of system assets and subsystems characterizing how risk affect a particular system and how countermeasures affect or could potentially affect risk within the system. Assessments, including risk scores, countermeasure modeling, and risk diagnostics, generated using risk assessment engine 205 can be recorded in assessment records stored in data store 280. Assessment records 298 can, in turn, be accessed by other tools, including risk calculator 260, countermeasure modeling engine 265, and risk diagnostics engine 270, and used in subsequent modeling and diagnostic assessments.

[0053] Turning to FIG. 3, example risk score assessments are illustrated in the representation of block diagram 300. Three assets 305, 310, 315 are shown, each with identified, associated vulnerabilities, threats, and/or countermeasures. For instance, it can be identified, for instance, in connection with scanning of asset 305 (e.g., by one or more sensors or security tools)

that vulnerabilities "Vuln 1" and "Vuln 2" are present on the asset 305 and that the asset 305 is exposed to a threat "Threat 1." Further, a countermeasure "CM 1" can be identified on the asset 305. Generally, vulnerabilities (e.g., "Vuln 1" and "Vuln 2") and threats (e.g., "Threat 1") can add to a risk score (e.g., "Score 1") generated for a particular asset 305 (i.e., evidencing higher risk associated with the asset 305), while countermeasures tend to reduce the risk score of the asset. A variety of formulas and algorithms can be employed to determine a risk score, risk profile, or otherwise assess risk of an individual system asset. In some implementations, calculation of a risk score (e.g., "Score 1," "Score 2," "Score 3") can receive as inputs and consider such data as a severity score of an identified threat and/or vulnerability, a likelihood of damage due to an identified vulnerability or threat, a degree to which a countermeasure mitigates against vulnerabilities or threats, a predicted effectiveness of a countermeasure, how configuration data for asset enhances the risk from identified vulnerabilities and threat, how configuration data for the asset enhances the effectiveness of a particular countermeasure, among other examples.

[0054] In some implementations, an aggregate or composite risk score or assessment can be performed by aggregating risk assessment results for assets comprising a particular subsystem or the system itself. For instance, as shown in the simplified illustrative example of FIG. 3, risk scores (e.g., "Score 1," "Score 2," and "Score 3") can be generated for a plurality of assets 305, 310, 315 based on the respective assets' associated configuration data, vulnerabilities, threats, and countermeasures. Further, one of a variety of formulas or algorithms can be applied to aggregate or otherwise consider the composite risk associated with assets 305, 310, 315 operating in a single system or subsystem. For instance, in some examples, a system or aggregate risk score can be aggregated, normalized, or averaged from the component risk scores of the involved assets (e.g., 305, 310, 315), without considering interdependencies of the various assets and corresponding risk profiles. In other instances, an aggregate risk assessment can also consider the extent, if any, to which interactions between and inclusion of a particular set of assets within a particular system or subsystem enhances or diminishes the risk of the individual assets.

[0065] Turning to FIG. 5B, user interface 505 is shown presenting declaration rules window 525. Declaration rules window 525 can present declaration rules that have been created in connection with the definition of user-defined countermeasures in a system. Declaration rules can identify assets that are protected by a countermeasure, vulnerabilities and/or threats that are mitigated by a countermeasure, as well as rules that identify what aspects of a vulnerability or threat are counteracted using the countermeasure, together with the conditions under which the countermeasure is effective or declared. The declaration rules (e.g., 555a-c) presented in declaration rules window 525 can include a subset of rules defined using a user-defined countermeasure engine, including declaration rules of a particular countermeasure or category of countermeasures, or a subset of declaration rules returned in response to a search or filtering of the entire of set of declaration rules within a system (e.g., using search tool 560). Declaration rules within a system can be pre-generated declaration rules, including declaration rules relating to known countermeasures detectable by a risk assessment tool. Declaration rules can further include custom, user-generated declaration rules. For instance, user can define new declaration rules, for instance, by selecting New Rule button 565, as well as edit pre-existing declaration

rules (and create new declaration rules by editing pre-existing declaration rules), for instance by selecting Edit button 570.

[0066] Declaration rules can be enabled (e.g., using button 580), disabled (e.g., using button 575), or invalidated. Enabled rules can be considered live rules that a live deployment of a user-defined countermeasure is employing as the basis of the user-defined countermeasure's operation within the system. Disabled declaration rules are rules that indicate additional functionality of a deployed user-defined countermeasure that are not currently employed by or relevant to the user-defined countermeasure's current deployment within the system. Further, in some implementations, while a system or risk assessment tool may defer to the representations of a user-defined countermeasure's capabilities as defined by a particular user, the system, a risk assessment system, or user-defined countermeasure engine can perform some quality control functions on user-defined countermeasures. For instance, quality control scans can be completed on defined declaration rules for user-defined countermeasures to identify errors in the declaration rules, such as invalid references to assets in the system, vulnerabilities, and threats as well as erroneous attributes of measures that user-defined countermeasures could take to address a particular vulnerability or threat (such as a countermeasure action that claims to protect against a network-element-based vulnerability by performing unrelated tasks on, for instance, an end-user device). Detection of errors or inconsistencies in a declaration rule can result in the declaration rule being declared "invalid."

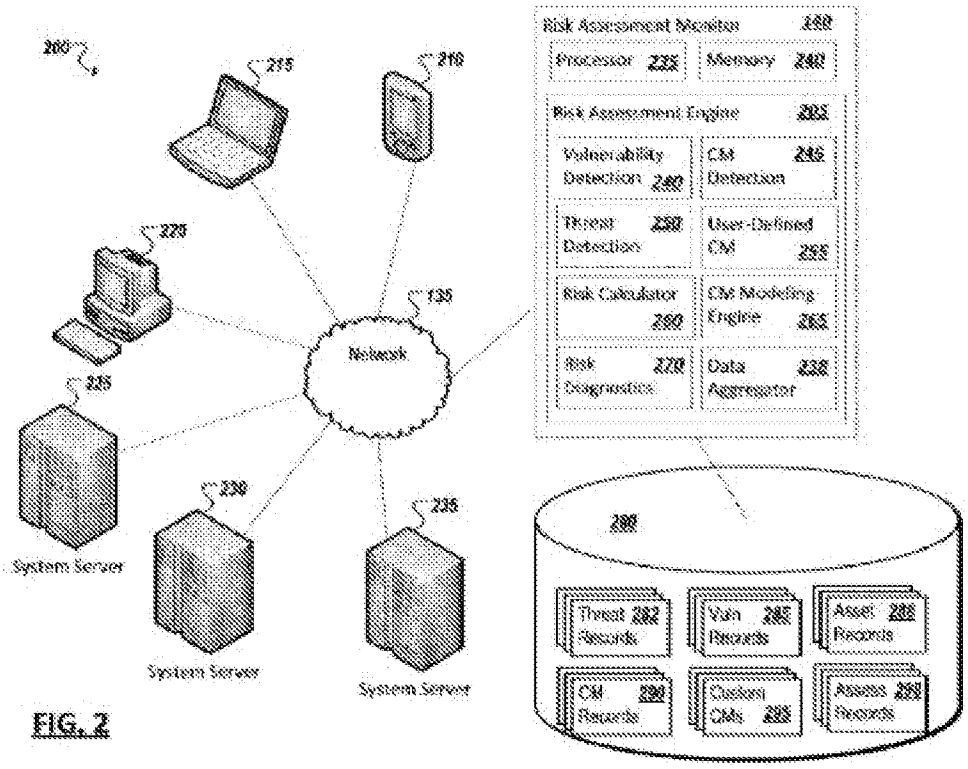

200
215
210
220
135
Network
225
230
235
System Server
System Server
System Server
Risk Assessment Monitor 240
Processor 235
Memory 240
Risk Assessment Engine 205
Vulnerability Detection 240
CM Detection 245
Threat Detection 250
User-Defined CM 255
Risk Calculator 260
CM Modeling Engine 265
Risk Diagnostics 270
Data Aggregator 238
280
Threat Records 282
Vuln Records 285
Asset Records 288
CM Records 290
Custom CMs 295
Assess Records 298

FIG. 2

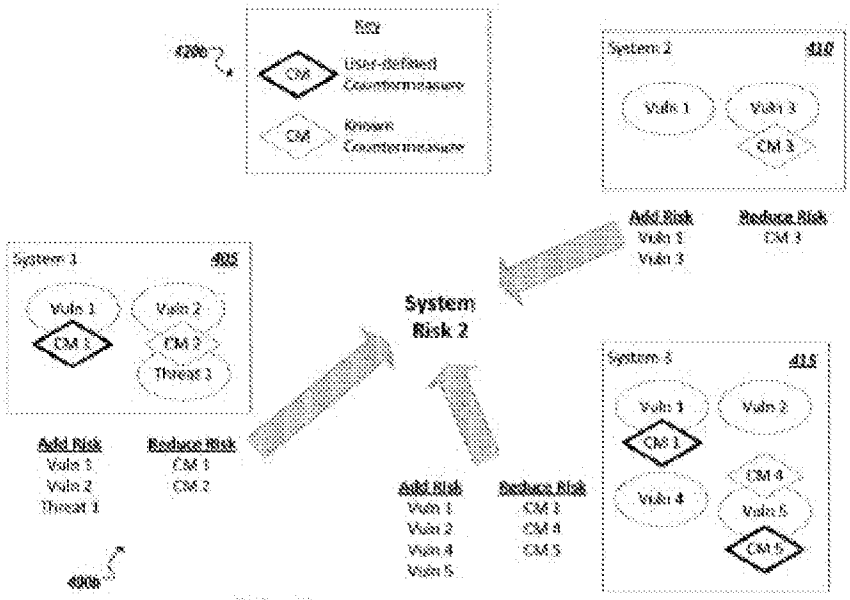

Key
CM
User-defined Countermeasure
CM
Known Countermeasure
System 2
410
Vuln 1
Vuln 3
CM 3
Add Risk
Vuln 1
Vuln 3
Reduce Risk
CM 3
System 1
405
Vuln 1
Vuln 2
CM 1
CM 2
Threat 1
System Risk 2
System 3
415
Vuln 1
Vuln 2
CM 1
CM 4
Vuln 4
Vuln 5
CM 5
Add Risk
Vuln 1
Vuln 2
Threat 1
Reduce Risk
CM 1
CM 2
Add Risk
Vuln 1
Vuln 2
Vuln 4
Vuln 5
Reduce Risk
CM 1
CM 4
CM 5

FIG. 4B

Claims are to be given their broadest reasonable interpretation during prosecution, and the scope of a claim cannot be narrowed by reading disclosed limitations into the claim. **In re Morris, 127 F.3d 1048, 1054, 44 USPQ2D 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2D 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541,550 (CCPA 1969).** "In addition, the law of anticipation does not require that a reference "teach" what an appellant's disclosure teaches. Assuming that reference is properly "prior art,'" it is only necessary that the claims "read on" something disclosed in the reference, i.e., all limitations of the claim are found in the reference, or "fully met" by it." **Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781,789 (Fed. Cir. 1983).**

Please see **specification of this application under prosecution** at page 19, which clearly states, [0048]Techniques consistent with the present disclosure provide, among other features, a system and method for the assessment of the runtime risk of an application or device. While various exemplary embodiments of the disclosed system and method have been described above it should be understood that they have been presented for purposes of example only, not limitations. It is not exhaustive and does not limit the disclosure to the precise form disclosed. Modifications and variations are possible in light of the above teachings or may be acquired from practicing of the disclosure, without departing from the breadth or scope. Further, when reviewing a reference the applicants should remember that not only the specific teachings of a reference but also reasonable inferences which the artisan would have logically drawn therefrom may be properly evaluated in formulating a rejection. **In re Preda, 401 F. 2d 825, 159 USPQ 342 (CCPA 1968) and In re Shepard, 319 F. 2d 194, 138 USPQ 148 (CCPA 1963).** Skill in the art is presumed. **In re Sovish, 769 F. 2d 738, 226 USPQ 771 (Fed. Cir. 1985).** Every

reference relies to some extent on knowledge of persons skilled in the art to complement that which is disclosed therein. **In re Bode, 550 F. 2d 656, 193 USPQ 12 (CCPA 1977).**

Also, the Applicant is reminded that MPEP 2164.05(a) states: "35 U.S.C. 112 requires the specification to be enabling only to a person "skilled in the art to which it pertains, or with which it is most nearly connected." In general, the pertinent art should be defined in terms of the problem to be solved rather than in terms of the technology area, industry, trade, etc. for which the invention is used. The specification need not disclose what is well-known to those skilled in the art and preferably omits that which is well-known to those skilled and already available to the public**. In re Buchner, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991); Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1384, 231 USPQ 81,94 (Fed. Cir. 1986), cert. denied, 480 U.S. 947 (1987); and Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1452, 1463, 221 USPQ 481,489 (Fed. Cir. 1984)." See also Spectra-Physics, Inc. v. Coherent, Inc., 827 F.2d 1524, 3 USPQ2d 1737 (Fed. Cir. 1987) ("A patent need not teach, and preferably omits, what is well known in the art.") and Verve LLC v. Crane Cams, Inc, 65 USPQ 2d 1051, 1053-1054 (Fed. Cir. 2002)** ("While reference to intrinsic evidence is primary in interpreting claims, the criterion is the meaning of words as they would be understood by persons in the field of the invention. Patent documents are written for persons familiar with the relevant field; the patentee is not required to include in the specification information readily understood by practitioners, lest every patent be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field.").

Conclusion

19. The prior art made of record (forms PTO-892 and applicant provided IDS cited arts) and not relied upon is considered pertinent to applicant's disclosure.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The cited particular columns and/or paragraphs and/or sections and/or page numbers in the reference(s) as applied to the claims above is for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety, as potentially teaching, all or part of the claimed invention, as well as the context of the passage, as taught by the prior art or disclosed in the examination.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haresh Patel whose telephone number is (571) 272-3973. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Colin, can be reached at (571) 272-3862. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Haresh N. Patel/

Primary Examiner, Art Unit 2493

August 11, 2013

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 4039

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/741,878	01/15/2013 RULE	726	2493	0079152-000017

APPLICANTS
Srinivas KUMAR, Cupertino, CA;
TAASERA, INC., Erie, PA

**** CONTINUING DATA ***************************

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
02/25/2013

Foreign Priority claimed	☐ Yes ☑ No	☐ Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
35 USC 119(a-d) conditions met	☐ Yes ☑ No		CA	4	24	2
Verified and Acknowledged	/HARESH N PATEL/ Examiner's Signature	Initials				

ADDRESS
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404
UNITED STATES

TITLE
Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation

FILING FEE RECEIVED		
957	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR ET AL.
	Examiner	**Art Unit**
	HARESH N PATEL	2493

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/01/2013	08/11/2013							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	✓							
	20	✓	✓							
	21	✓	✓							
	22	✓	✓							
	23	✓	✓							
	24	✓	✓							

Trend Micro, Inc.
EX1002-132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	**MAIL STOP AMENDMENT**
Kumar, Srinivas	Group Art Unit: 2493
Application No.: 13/741,878	Examiner: Patel, Haresh N
Filed: January 15, 2013	Confirmation No.: 4039
For: Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation (*as amended*)	

AMENDMENT AND REPLY

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated May 7, 2013, please amend the above-identified patent application as follows:

AMENDMENTS TO THE SPECIFICATION:

Please replace the title with the following title:

"Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation"

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for assessing runtime risk for an application program that executes on a [[or]] device, comprising:

storing, in a rules database, a plurality of rules, wherein each rule identifies an action sequence;

storing, in a policy database, a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules;

identifying, using at least one assessment policy, a runtime risk for an application program that executes on a [[or]] device, wherein the identified runtime risk identifies and predicts a specific type of threat; and

identifying, by a processing device, a behavior score for the application program that executes on the [[or]] device based on the identified runtime risk, wherein

the action sequence is a sequence of at least two performed actions, and

each performed action is at least one of: a user action, an application action, and a system action.

2. (Original) The method of claim 1, wherein the user action is any form of explicit input from a user of a computing system.

3. (Original) The method of claim 1, wherein the application action is any activity performed by the application initiated programmatically by a task in execution of a computing system.

4. (Original) The method of claim 1, wherein the system action is any operation performed by a computing system on behalf of, or as a consequence of, a user action or application action that changes the state of the computing system.

5. (Original) The method of claim 1, wherein a first action of the at least two performed actions is performed at a first time, and the second action of the at least two performed actions is performed at a second time.

6. (Original) The method of claim 5, wherein
the first action is a user action,
the second action is a system action, and
the second time occurs after the first time.

7. (Original) The method of claim 5, wherein
the first action is a user action,
the second action is an application action, and
the second time occurs after the first time.

8. (Original) The method of claim 5, wherein

the first action is an application action,

the second action is a system action, and

the second time occurs after the first time.

9. (Original) The method of claim 1, wherein

the action sequence includes three performed actions,

a first action of the three performed actions is a user action,

a second action of the three performed actions is an application action,

a third action of the three performed actions is a system action,

the second action is performed temporally after the first action, and

the third action is performed temporally after the second action.

10. (Currently Amended) The method of claim 1, wherein the runtime risk is identified based on matching rules and probabilistic weights and scores of performed actions on the device.

11. (Currently Amended) The method of claim 1, wherein the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence [[308]] and natural affinity inferred between the at least two performed actions.

12. (Original) The method of claim 1, further comprising:

assessing, by the processing device, that the at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors,

wherein the plurality of factors includes at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency.

13. (Currently Amended) A system for assessing runtime risk for an application program that executes on a [[or]] device, comprising:

a rules database configured to store a plurality of rules, wherein each rule identifies an action sequence;

a policy database configured to store a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules; and

a processing device configured to

identify, using at least one assessment policy, a runtime risk for an application program that executes on a [[or]] device, wherein the identified runtime risk identifies and predicts a specific type of threat, and

identify a behavior score for the application program that executes on the [[or]] device based on the identified runtime risk, wherein

the action sequence is a sequence of at least two performed actions, and

each performed action is at least one of: a user action, an application action, and a system action.

14. (Original) The system of claim 13, wherein the user action is any form of explicit input from a user of a computing system.

15. (Original) The system of claim 13, wherein the application action is any activity performed by the application initiated programmatically by a task in execution of a computing system.

16. (Original) The system of claim 13, wherein the system action is any operation performed by a computing system on behalf of, or as a consequence of, a user action or application action that changes the state of the computing system.

17. (Original) The system of claim 13, wherein a first action of the at least two performed actions is performed at a first time, and the second action of the at least two performed actions is performed at a second time.

18. (Original) The system of claim 17, wherein

the first action is a user action,

the second action is a system action, and

the second time occurs after the first time.

19. (Original) The system of claim 17, wherein

the first action is a user action,

the second action is an application action, and

the second time occurs after the first time.

20. (Original) The system of claim 17, wherein

the first action is an application action,

the second action is a system action, and

the second time occurs after the first time.

21. (Original) The system of claim 13, wherein

the action sequence includes three performed actions,

a first action of the three performed actions is a user action,

a second action of the three performed actions is an application action,

a third action of the three performed actions is a system action,

the second action is performed temporally after the first action, and

the third action is performed temporally after the second action.

22. (Currently Amended) The system of claim 13, wherein the runtime risk is identified based on matching rules and probabilistic weights and scores of performed actions on the device.

23. (Original) The system of claim 13, wherein the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions.

24. (Original) The system of claim 13, wherein

the processing device is further configured to assess that the at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors, and

the plurality of factors includes at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency.

AMENDMENTS TO THE DRAWINGS:

Please replace Figure 2 with the Figure 2 included in the attached Replacement Sheet.

REMARKS

Claims 1-24 are pending in the present application, with claims 1 and 13 being independent claims.

Claim 11 is amended to remove a superfluous reference number. Claims 1, 10, 13, and 22 are also amended as indicated below.

Applicant gratefully acknowledges the Examiner's consideration of the Information Disclosure Statement submitted January 15, 2013.

Specification

The title of the application is objected to because of allegedly not being sufficiently descriptive. Applicant has amended the title to "Runtime Risk Detection Based on User, Application, and System Action Sequence Correlation," in accordance with the Examiner's implicit suggestion. Applicant respectfully submits that the amended title is sufficiently descriptive and respectfully request withdrawal of the objection in light thereof.

Drawing

Figure 1 is objected to as failing to indicate the drawing as illustrating prior art. Applicant respectfully submits that Figure 1 does not illustrate prior art, but instead illustrates a high level architecture of a system configured to assess the runtime risk of an application or device and identify a behavior scored based on the assessed runtime risk in accordance with the present disclosure. *See* paragraph [0014] of the originally filed specification. Accordingly, Applicant respectfully submits that Figure 1 does not require amendment or replacement as it properly illustrates new information as

described in the original specification at paragraphs [0014] to [0024], and not solely that which is old.

The drawings are also objected to under 37 C.F.R. § 1.83(a) as allegedly failing to illustrate every feature specified in the claims. Specifically, the Office alleges that components of claims 10 and 11 are not illustrated in the drawings.

Claim 10 recites "wherein the runtime risk is identified based on matching rules and probabilistic weight scores." Claim 11 recites "wherein the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions." The identification of runtime risk is illustrated as step 218 of Figure 2, and step 406 of Figure 4 of the present application. Step 218 of Figure 2 further specifies that the identified runtime risk is of the action sequence. Applicant respectfully submits that Figures 2 and 4 sufficiently illustrate the recitations of claims 10 and 11. However, in order to expedite prosecution, Applicant has replaced Figure 2 as indicated in the attached Replacement Sheet, to illustrate that the runtime risk may be identified based on either matching rules and probabilistic weight scores, as recited in claim 10, or may also be identified based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions, as recited in claim 11.

Accordingly, withdrawal of the objection to the drawings is respectfully requested.

Claim Objections

Claims 13-24 are objected to because of informalities. Specifically, claims 13 and 24 are objected to for the recitation "configured to store," which the Office alleges

should be recited as "storing." The Office further alleges that the use of the recitation "configured to" may render parts of the claim optional, specifically any limitation recited after "configured to," citing to MPEP 2111.04. However, Applicant notes that, under MPEP 2111.04, language such as "adapted to" merely raise a question as to the limiting effect of the language in a claim, and that the determination of whether a clause is a limitation depends on the specific facts of the case. Applicant respectfully submits that "configured to" refers to the configuring of components of the claimed system, and that, in the context of such a system, "configured" means "arranged or ordered so as to fit it for a designated task" according to Merriam-Webster. This is consistent with the present application, which discloses that the components of the system, such as the processing device, may be a general processing device programmed for a specific purpose, such as recited in claims 13 and 24. *See* paragraph [0015]. Accordingly, Applicant respectfully submits that the recitation "configured to" recited in claims 13 and 24 recites required functionality of the corresponding devices suitable for enabling the system to assess runtime risk for an application or device, as claimed. Accordingly, withdrawal of the objection is respectfully requested.

Interpretation of Claim 13 under 35 U.S.C. § 112, Sixth Paragraph

The Office interprets claim 13 as invoking 35 U.S.C. § 112, sixth paragraph, due to the recitations of "rules database configured to," "policy database configured to," and "processing device configured to." Specifically, the Office alleges that "database" and "device" are non-structural terms that are coupled with functional language "configured to" without reciting sufficient structure to achieve the function. However, Applicant respectfully submits that a "*processing* device" and a "*policy* database" or "*rules*

database" as claimed and described in the specification are names for structures that perform the recited functions as understood by persons of ordinary skill in the art. *See* MPEP 2181(I)(A). As such, claim 13 recites several structural terms that are modified by functional language, and thus do not invoke § 112, sixth paragraph. Applicant further notes that claim elements that do not include "means for" or "step for" is presumed to *not* invoke § 112, sixth paragraph, and that the claims recite specific structural terms, such as a *processing* device described in detail in paragraph [0015] of the originally filed specification, as opposed to a generic, non-structural "device" as alleged by the Office. Accordingly, Applicant respectfully submits that claim 13 does not invoke 35 U.S.C. § 112, sixth paragraph for at least these reasons.

35 U.S.C. § 112

Claims 1-24 are rejected under 35 U.S.C. §112, first and second paragraphs. Specifically, the claims are rejected for claims 1 and 13 failing to identify "of what" runtime risk is assessed, "of what" identified runtime risk is identified, "of what" specific type of threat is predicted, and "of what" behavior score is identified, and claims 10 and 22 failing to identify "of what" probabilistic weights and scores is identified. Claims 1 and 13 have been amended to recite identifying a runtime risk for "an application program that executes on a device" and identifying a behavior score "for the application program that executes on the device." Claims 10 and 22 have been amended to recite identifying the runtime risk based on probabilistic weights and scores of "performed actions on the device." Accordingly, Applicant respectfully submits that, based on the amendments to claims 1, 10, 13, and 22, the claims of the present application are both

enabled by the disclosure and are sufficiently clearly claimed, and respectfully request withdrawal of these rejections.

35 U.S.C. §§ 102 & 103

Claims 1-5, 10-17 and 22-24 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Basavapatna et al. (U.S. Patent Publication No. 2013/0096980, hereinafter "Basavapatna"). Claims 6-9 and 18-21 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Basavapatna. Applicant respectfully traverses these rejections.

The claims of the present application are directed towards a method and system for assessing the runtime risk of an application program that executes on a device. To achieve this assessment, rules that identify *action sequences* of actions performed by users, applications, or systems are used in assessment policies, which *identify and predict* specific types of threats as part of the risk assessment. Basavapatna, on the other hand, is directed towards testing potential countermeasures against known vulnerabilities of systems (Abstract and paras. [0003] and [0011]). Basavapatna does not identify action sequences as part of the risk assessment, but instead uses countermeasures that have been deployed. Basavapatna also does not identify or predict specific types of threats, but instead assesses risk associated with known vulnerabilities. Accordingly, Basavapatna fails to disclose or suggest the claims of the present application for several reasons as discussed below.

Claim 1 of the present application recites, *inter alia*, "storing, in a rules database, a plurality of rules, wherein each rule identifies an *action sequence*" and wherein "the action sequence is a *sequence* of at least *two performed actions*" with each performed

action being at least one of "a user action, an application action, and a system action" (emphasis added). Claim 13 includes similar recitations, but as directed towards a system rather than a method. The Office alleges that Basavapatna teaches the claimed rules database at paragraphs [0065] and [0066], and teaches the claimed action sequence at paragraphs [0052-0054], [0063], and [0064]. However, at paragraphs [0063-0066], Basavapatna merely discloses that users may create and select countermeasures used to protect the system against vulnerabilities. The creation and selection of the countermeasures is part of the setup of the system as a test environment to assess the risk of the system against specific known vulnerabilities using the selected countermeasures. Paragraphs [0052-0054] similarly disclose the calculation of a risk score based on the assessment of the countermeasures against the vulnerability. Nowhere does Basavapatna disclose a rules database including a plurality of rules that identifies an *action sequence*, as recited in the claims. Instead, the rules in Basavapatna merely define a countermeasure, which are security tools and safeguards designed to protect against known vulnerabilities (para. [0003]).

Furthermore, not only does Basavapatna fail to disclose or suggest the rules identifying action sequences, Basavapatna also fails to disclose or suggest action sequences generally. Basavapatna does not disclose or suggest any *sequence of performed actions*, let alone a sequence of performed actions where the performed actions are at least one of a user action, an application action, and a system action, as recited in the claims. Thus, Basavapatna only assesses risk for systems based on countermeasures put into place as selected and defined by the user. The presently claimed invention, on the other hand, assesses risk of action sequences performed by

the user, applications, or the system, and thus can act as a runtime monitor that, in real-time, correlates action sequences to detect threats. As the presently recited systems and methods do not rely on known vulnerabilities, they may offer stronger protection against threats and more accurate risk assessments. Accordingly, for at least this reason, Basavapatna fails to disclose, suggest, or anticipate the claims of the present application.

Claim 1 also recites "identifying, using at least one assessment policy, a runtime risk for an application program executed on a device, wherein the identified runtime risk *identifies and predicts a specific type of threat*" (emphasis added). Claim 13 includes a similar recitation as directed towards a system. The Office alleges that Basavapatna teaches the above recitation at paragraphs [0052-0054]. However, as discussed above, paragraphs [0052-0054] of Basavapatna merely disclose calculating a risk score based on the application of countermeasures against *known vulnerabilities*. In Basavapatna, the vulnerabilities already exist, and are specifically tested against. Thus, the system in Basavapatna may not be aware of the risk posed by unknown vulnerabilities, and must also rely on data received by the system indicating the vulnerabilities for testing. The present claims, on the other hand, recites methods and systems that do not rely on any outside information, and in certain embodiments can *identify* and *predict* a specific type of threat, as opposed to assessing the risk of an already known vulnerability. Accordingly, for this additional reason, Applicant respectfully submits that the claims of the present application are patentable over Basavapatna.

Claims 2-12 and 14-24 are dependent from claims 1 and 13, respectively, and thus incorporate the recitations of their respective independent claims. Accordingly,

each of claims 2-12 and 14-24 are patentable over Basavapatna for at least this reasons discussed above. Applicant also notes that claims 2-12 and 14-24 recite additional limitations that are also patentable over Basavapatna. For example, claims 10 and 22 recite the identification of the runtime risk being based matching rules and probabilistic weights and scores. Basavapatna does not disclose or suggest matching rules or probabilistic weights and scores entirely, let alone using them as the basis for identifying the runtime risk. Other claims draw out details of the distinctions emphasized above, and are similarly not found in the prior art, but a detailed discussion will be belabored.

Conclusion

In light of the foregoing, Applicant respectfully submits that the above-captioned application is in condition for allowance and request withdrawal of the rejection. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Should any residual issues exist or arise, or should the Examiner wish to allow the application, he is respectfully requested to contact the undersigned at the number listed below.

If additional fees are required for any reason, please charge Deposit Account No. 02-4800 the necessary amount.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: June 7, 2013

By: /Thomas A. Froats/
Thomas A. Froats
Registration No. 66,609

Customer No. 21839
703 836 6620

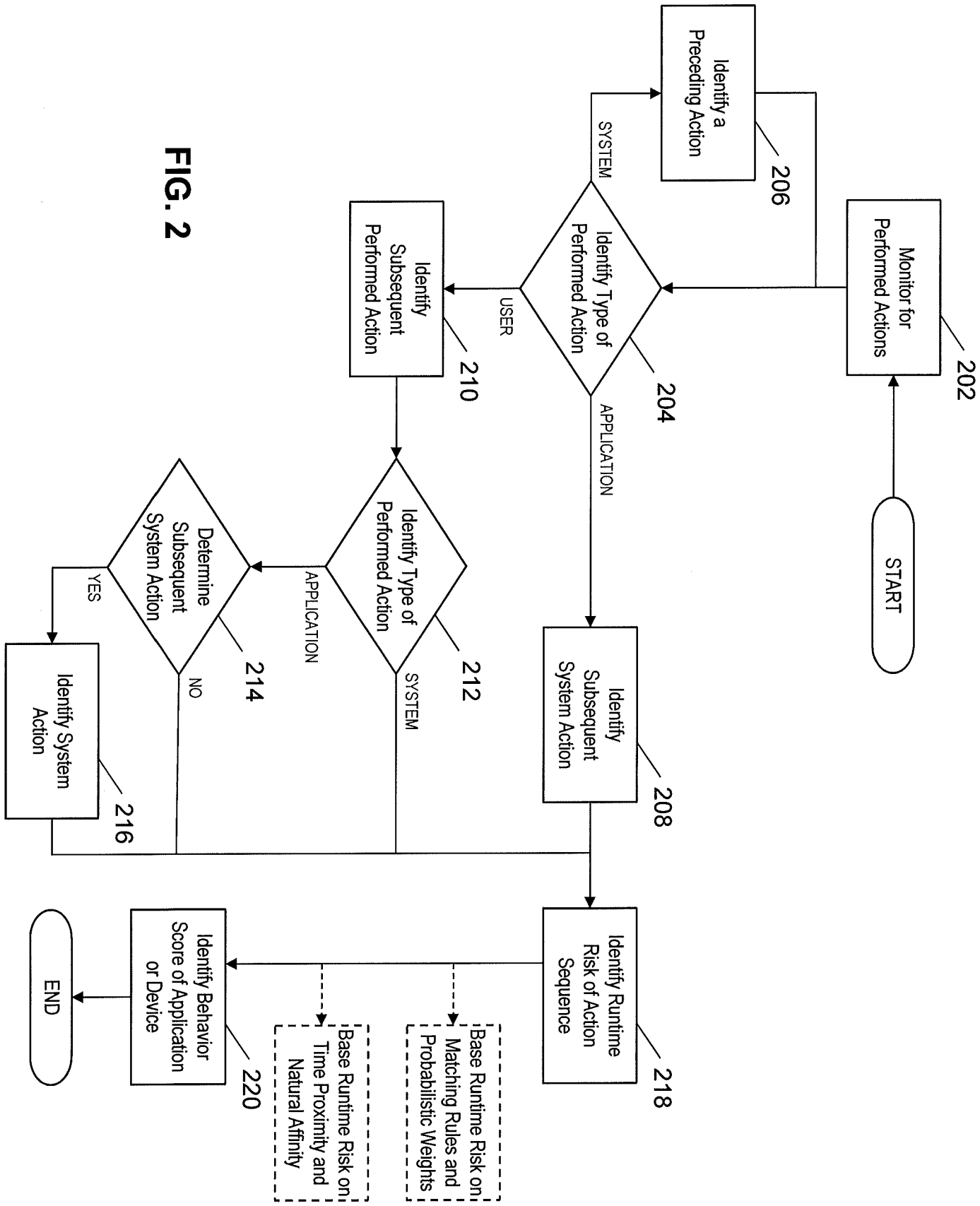

START
Monitor for Performed Actions
202
Identify a Preceding Action
206
Identify Type of Performed Action
204
SYSTEM
USER
APPLICATION
Identify Subsequent Performed Action
210
Identify Subsequent System Action
208
Identify Type of Performed Action
212
APPLICATION
SYSTEM
Determine Subsequent System Action
214
YES
NO
Identify System Action
216
Identify Runtime Risk of Action Sequence
218
Base Runtime Risk on Matching Rules and Probabilistic Weights
Base Runtime Risk on Time Proximity and Natural Affinity
Identify Behavior Score of Application or Device
220
END

FIG. 2

Electronic Acknowledgement Receipt

EFS ID:	15978121
Application Number:	13741878
International Application Number:	
Confirmation Number:	4039
Title of Invention:	SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION
First Named Inventor/Applicant Name:	Srinivas KUMAR
Customer Number:	21839
Filer:	Thomas Andrew Froats/Ritsuko Dale
Filer Authorized By:	Thomas Andrew Froats
Attorney Docket Number:	0079152-000017
Receipt Date:	07-JUN-2013
Filing Date:	15-JAN-2013
Time Stamp:	12:33:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		13741878_AMDT_05-07-13-OA.pdf	643725 bb94e540271a8fc9e7d8be806fa169551d5ea250	yes	20

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Specification	2	2
	Claims	3	9
	Drawings-only black and white line drawings	10	10
	Applicant Arguments/Remarks Made in an Amendment	11	19
	Drawings-only black and white line drawings	20	20

Warnings:

Information:

Total Files Size (in bytes):	643725

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	
13/741,878	01/15/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	x $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	x $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT

06/07/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 24	Minus	** 24	= 0	x $40 =	0
Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	x $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/STELLA LITTLE/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Notice of References Cited	Application/Control No. 13/741,878	Applicant(s)/Patent Under Reexamination KUMAR ET AL.	
	Examiner HARESH N. PATEL	Art Unit 2493	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2011/0179477 A1	07-2011	Starnes et al.	726/9
*	B	US-8,091,065 B2	01-2012	Mir et al.	717/104
*	C	US-2012/0216244 A1	08-2012	KUMAR et al.	726/1
*	D	US-8,327,441 B2	12-2012	Kumar et al.	726/22
*	E	US-2013/0096980 A1	04-2013	Basavapatna et al.	705/7.28
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Trend Micro, Inc.
EX1002-156

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/741,878	01/15/2013	Srinivas KUMAR	0079152-000017	4039

21839 7590 05/07/2013
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER
PATEL, HARESH N

ART UNIT	PAPER NUMBER
2493	

NOTIFICATION DATE	DELIVERY MODE
05/07/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPDOC1@BIPC.com

Trend Micro, Inc.
EX1002-157

Office Action Summary	Application No. 13/741,878	Applicant(s) KUMAR ET AL.	
	Examiner HARESH N. PATEL	Art Unit 2493	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-24* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-24* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☒ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *15 January 2013* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Interim copies:

a)☐ All b)☐ Some c)☐ None of the: Interim copies of the priority documents have been received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

Trend Micro, Inc.
EX1002-158

DETAILED ACTION

Status of Claims

1. Claims 1-24 are subject to examination.

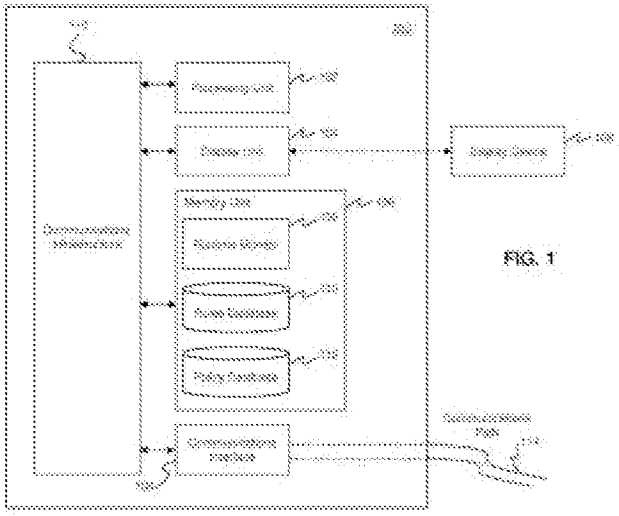
Specification

2. The title is objected to because the title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The present title is well-known in the art and too broad and not sufficient for proper classification of the claimed subject matter. The title should also reflect claimed invention, the runtime risk is identified based on matching rules and probabilistic weights and scores, rather system for and a method of.

Drawings

3. The figures submitted on the filing date of this application are noted.

4. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).



The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, components of the claims 10, 11, (the runtime risk is identified based on matching rules and probabilistic weights and scores) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. The amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled --Replacement Sheet-- in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action.

Information Disclosure Statement

5. The information disclosure statement filed on 1/15/13 is in compliance with the provisions of 37 CFR 1.97, and has been considered and a copy is enclosed with this Office Action.

Claim Objections

6. Claims 13-24 are objected to because of the following informalities:

a. Claims 13 and 24 contain "configured to store", which should be --storing-- in order to positively recite limitations in the claim. Regarding several intended use clauses, such as "configured to." Such recitations may render parts of the claims optional (see MPEP 2111.04). Notably, limitations recited after the intended use clause will be considered optional to the functionality of the claimed system. Similar applies to "configured to identify", etc.

Appropriate correction is required.

Claim Limitation Interpreted under 35 USC § 112, Sixth Paragraph

Claim 13 limitations "rules database configured to", "policy database configured to", "processing device configured to" have been interpreted under 35 U.S.C. 112, sixth paragraph, because it uses a non-structural term "database" "device", coupled with functional language "configured to" without reciting sufficient structure to achieve the function. Furthermore, the non-structural term is not preceded by a structural modifier.

Since this claim limitation invokes 35 U.S.C. 112, sixth paragraph, claim 13 is interpreted to cover the corresponding structure described in the specification that achieves the claimed function, and equivalents thereof.

A review of the specification shows that the following appears to be the corresponding structure described in the specification for the 35 U.S.C. 112, sixth paragraph limitation: figure 1 and figure 1 description containing structural elements for "rules database configured to", "policy database configured to", and "processing device configured to".

If applicant wishes to provide further explanation or dispute the examiner's interpretation of the corresponding structure, applicant must identify the corresponding structure with reference to the specification by page and line number, and to the drawing, if any, by reference characters in response to this Office action.

If applicant does **not** wish to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant may amend the claim so that it will clearly not invoke 35 U.S.C. 112, sixth paragraph, or present a sufficient showing that the claim recites sufficient structure, material, or acts for performing the claimed function to preclude application of 35 U.S.C. 112, sixth paragraph.

For more information, see *Supplementary Examination Guidelines for Determining Compliance with 35 U.S.C. § 112 and for Treatment of Related Issues in Patent Applications*, 76 FR 7162, 7167 (Feb. 9, 2011). Also, the type of language that invokes 112, 6th is not limited to the words "means for" as explained in MPEP 2181, ed.8, rev. 9, 2012.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(a):
(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), first paragraph:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-24 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as based on a disclosure which is not enabling. **"of what"** runtime risk is assessed, "of what" identified runtime risk is identified, "of what" specific type of threat is predicted, and "of what" behavior score is identified, in claims 1 and 13; "of what" matching rules is identified, and "of what" probabilistic weights and scores is identified, in claims 10 and 22, is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). "runtime risk" etc., are respectively incomplete fragments. Claims 2-12 and 14-24 are dependent claims and subject to same rejections.

The following is a quotation of 35 U.S.C. 112(b):

(B) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-24 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. **"of what"** runtime risk is assessed, "of what" identified runtime risk is identified, "of what" specific type of threat is predicted, and "of what" behavior score is identified, in claims 1 and 13; "of what" matching rules is identified, and "of what" probabilistic weights and scores is identified, in claims 10 and 22 is being indefinite for failing to particularly point out and distinctly claim the subject matter in the claims. Claims 2-12 and 14-24 are dependent claims and subject to same rejections.

Claim 11 recites the limitation "the action sequence 308". There is insufficient antecedent basis for this limitation in the claim (Please see MPEP 706.03(d)).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-5, 10-17, 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Basavapatna et al. 2013/0096980 (Hereinafter Basavapatna).

9. Referring to claims 1, 13, Basavapatna-McAfee discloses a system for assessing runtime risk for an application or device (e.g., abstract), comprising: a rules database configured to store a plurality of rules, wherein each rule identifies an action sequence (e.g., paragraphs 65, 66); a policy database configured to store a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules (e.g., paragraphs 44, 45, 54); and a processing device configured to identify, using at least one assessment policy, a runtime risk for an application or device, wherein the identified runtime risk identifies and predicts a specific type of threat (e.g., paragraphs 52-54), and identify a behavior score for the application or device based on the identified runtime risk, wherein the action sequence is a sequence of at least two performed actions (e.g., paragraphs 52-54), and each performed action is at least one of: a user action, an application action, and a system action (e.g., paragraphs 63, 64, figures 2, 4B).

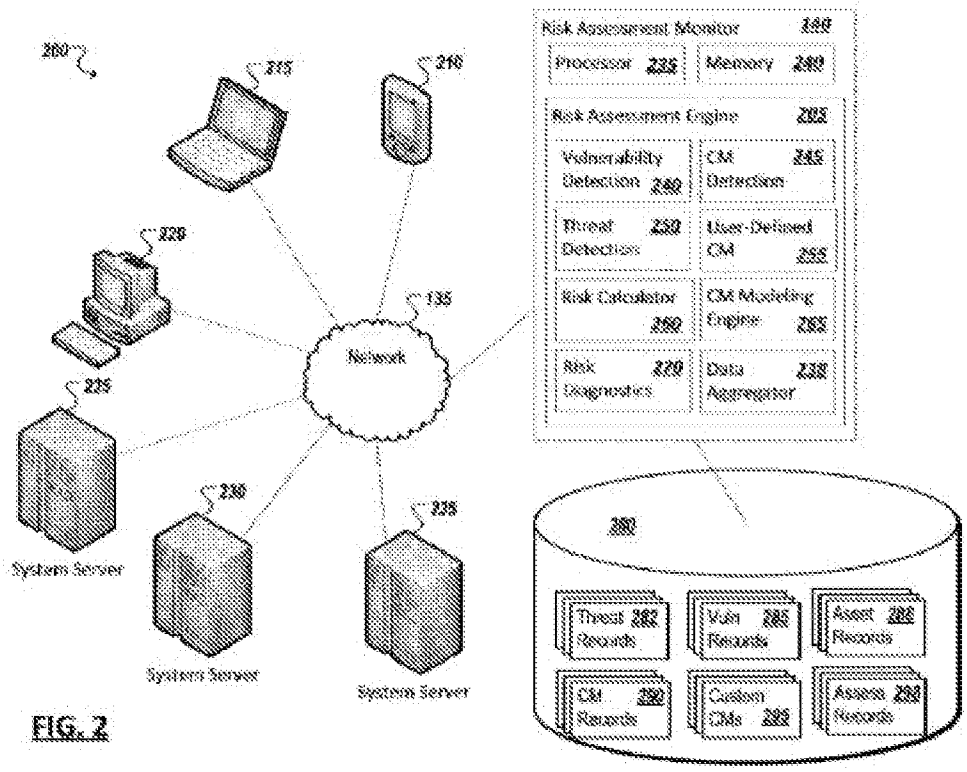

Risk Assessment Monitor
Processor
Memory
Risk Assessment Engine
Vulnerability Detection
CM Detection
Threat Detection
User-Defined CM
Risk Calculator
CM Modeling Engine
Risk Diagnostics
Data Aggregator
Network
System Server
System Server
System Server
Threat Records
Vuln Records
Asset Records
CM Records
Custom CMs
Assets Records

FIG. 2

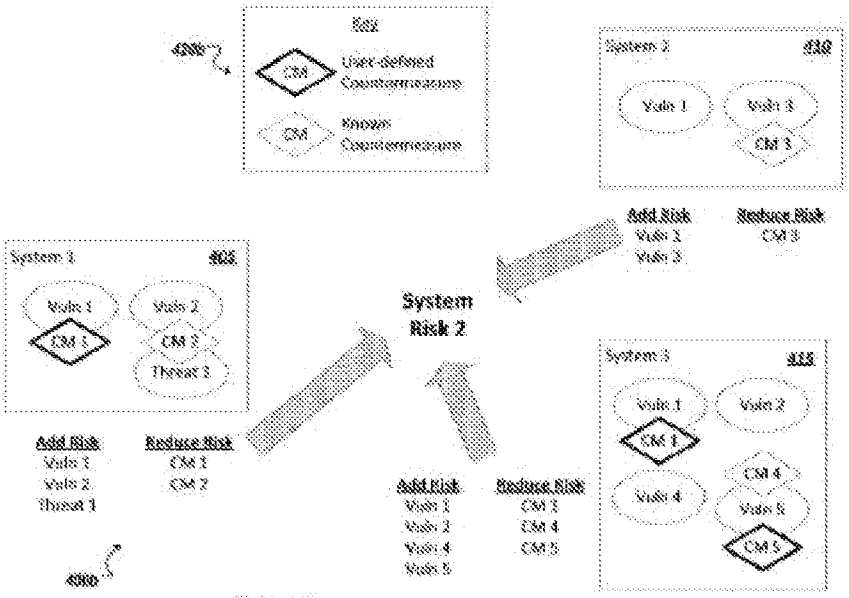

Key
User-defined Countermeasures
Known Countermeasures
System 2
Vuln 1
Vuln 3
CM 3
Add Risk
Vuln 2
Vuln 3
Reduce Risk
CM 3
System 1
Vuln 1
Vuln 2
CM 1
CM 2
Threat 3
System Risk 2
Add Risk
Vuln 1
Vuln 2
Threat 3
Reduce Risk
CM 1
CM 2
Add Risk
Vuln 1
Vuln 2
Vuln 4
Vuln 5
Reduce Risk
CM 3
CM 4
CM 5
System 3
Vuln 1
Vuln 2
CM 1
CM 4
Vuln 4
Vuln 5
CM 5

FIG. 4B

10. Referring to claims 2, 14, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the user action is any form of explicit input from a user of a computing system (e.g., paragraphs 63, 64).

11. Referring to claims 3, 15, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the application action is any activity performed by the application initiated programmatically by a task in execution of a computing system (e.g., paragraphs 69, 70).

12. Referring to claims 4, 16, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the system action is any operation performed by a computing system on behalf of, or as a consequence of, a user action or application action that changes the state of the computing system (e.g., paragraphs 63, 64).

13. Referring to claims 5, 17, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein a first action of the at least two performed actions is performed at a first time, and the second action of the at least two performed actions is performed at a second time (e.g., paragraphs 63, 64).

14. Referring to claims 10, 22, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the runtime risk is identified based on matching rules and probabilistic weights and scores (e.g., paragraphs 53, 54).

15. Referring to claims 11, 23, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses wherein the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence 308 and natural affinity inferred between the at least two performed actions (e.g., paragraphs 63, 64).

16. Referring to claims 12, 24, Basavapatna-McAfee discloses the claimed limitations as rejected above. Basavapatna-McAfee also discloses assessing, by the processing device, that the at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors, wherein the plurality of factors includes at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency (e.g., paragraphs 63, 64).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 6-9, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basavapatna-McAfee.

19. Referring to claims 6-9, 18-21, Basavapatna-McAfee do not specifically mention about wherein the first action is a user action, the second action is a system action, and the second time

occurs after the first time; wherein the first action is a user action, the second action is an application action, and the second time occurs after the first time; the first action is an application action, the second action is a system action, and the second time occurs after the first time; wherein the action sequence includes three performed actions, a first action of the three performed actions is a user action, a second action of the three performed actions is an application action, a third action of the three performed actions is a system action, the second action is performed temporally after the first action, and the third action is performed temporally after the second action. However, since Basavapatna-McAfee does not limit to certain number of actions or certain sequence of actions, it is obvious to one of ordinary skill in the art that Basavapatna-McAfee's system/method is open for different number of actions and different sequence of actions, and because the ability to be adaptive to different number of actions and different sequence of actions enables Basavapatna-McAfee's system/method to be implemented in a wider variety of operating environments. "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If the leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense". Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention disclosed by Basavapatna-McAfee to implement actions and sequence of actions as claimed in claims 6-9, 18-21 and also one of ordinary skill in the art would have been motivated to do so because it could enhance handling runtime risk of an application and/or device with necessary sequence of actions provided by the user, the application and the system. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective

functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. See KSR International Co. v. Teleflex Inc., 550 U.S. 398, 82 USPQ2d 1385 (2007).

Conclusion

The cited particular columns and/or paragraphs and/or sections and/or page numbers in the reference(s) as applied to the claims above is for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety, as potentially teaching, all or part of the claimed invention, as well as the context of the passage, as taught by the prior art or disclosed in the examination.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haresh Patel whose telephone number is (571) 272-3973. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Colin, can be reached at (571) 272-3862. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Haresh N. Patel/

Primary Examiner, Art Unit 2493

May 1, 2013

Notice of References Cited	Application/Control No. 13/741,878	Applicant(s)/Patent Under Reexamination KUMAR ET AL.	
	Examiner HARESH N. PATEL	Art Unit 2493	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-			
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Trend Micro, Inc.
EX1002-172

+You Search Images Maps Play YouTube News Gmail Drive Calendar More

runtime risk pedict threat action sequence

Web Images Maps Shopping More Search tools

About 330,000 results (0.46 seconds)

Showing results for runtime risk ***predict*** threat action sequence
Search instead for runtime risk pedict threat action sequence

[PDF] A **Risk** Management Approach to the "Insider **Threat**"
www.cs.ucdavis.edu/~peisert/.../insiderthreat-chapter-final-prepress.pdf
by M Bishop - Cited by 7 - Related articles
are excluded from. Therefore, people should regard their words or **actions** as less .... The "**Run-Time** instantiation" is, strictly speaking, not a policy, but instead .... **threats**. So, we first determine who poses **risks** by establishing the sets of users about whom we must ..... trumps the organization's desire to **predict** insider attacks.

Designing for Securability - MSDN - Microsoft
msdn.microsoft.com/en-us/library/aa291875(v=vs.71).aspx
An attack on the application is an **action** taken by a malicious intruder to exploit certain ... This can happen when an attacker has hacked or can replay a user's authentication **sequence**. Using a valid ... As such, DoS attacks can be difficult to repel or even to **predict**. ... To assign a rank to **threat risks**, use the following formula: ...

[PDF] Design Time Reliability **Predictions** for Supporting **Runtime** Sec...
www.thinkmind.org/download.php?articleid=emerging_2011_5_20...
by A Evesti - 2011 - Cited by 3 - Related articles
predictions at **runtime** for security measuring and adaptation. Hence ... approach that uses ontologies and **risk**-based measures for security ... UML diagrams, i.e., state, component, and **sequence** ... connected to security **threats** and/or supporting mechanisms, ... performs security-related **actions** can ruin the security of the ...

[PDF] Automated **Risk** Mitigation in Business Processes ... - BPM Center
bpmcenter.org/wp-content/uploads/reports/2012/BPM-12-08.pdf
by R Conforti - Cited by 1 - Related articles
ing a **sequence** of mitigation **actions**. In order to reduce the **risks**' probability down to .... To detect the **risk** at **run-time**, we need to check if: i) the Update task is currently ..... ROPE is concerned with **threats** to the resources required for process ... example, the approach for cycle time **prediction** in [2] could be, with the ...

Tropic Thunder - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/Tropic_Thunder
Tropic Thunder is a 2008 American **action** comedy film written, produced, and ... Les Grossman (Tom Cruise) to get filming back on track, or **risk** its cancellation. ... Despite the **threats**, Grossman expresses no interest in rescuing Speedman and ..... to make the CG crashing helicopter in the hot landing **sequence** look real.

[PDF] An Architecture for Insider Misuse **Threat Prediction** in IT Syste...
folk.uio.no/georgios/papers/magklarasmphdthesis.pdf
by GV Magklaras - 2005 - Cited by 2 - Related articles
production-level utility, it constitutes a novel Insider **Threat Prediction** Model, ... defines an intrusion as "a **sequence** of related **actions** by a malicious adversary that results in the ... order to minimise the **risk** of the automated response being used as a vehicle for attack. A ..... ITPM Command **Sequence** Comparison **Runtime** ...

[PDF] PhD thesis
folk.uio.no/georgios/MagklarasPhDThesisv3.pdf
by GV Magklaras - 2012 - Cited by 1 - Related articles
the Insider **Threat Prediction** and Specification Language (ITPSL) are two utilities that ..... "On the 24th of February 2005, three **actions** took place in **sequence** in the host ..... **Risk** Integrated Process (TRIP) is the most important contribution. ..... scripting languages [113] where **runtime** evaluation is not an option, but they ...

[PDF] RMAS (**Run-Time** Malware Analysis System). A Framework
www.kaspersky.com/images/sponchioni_roberto-10-95007.pdf
Apr 15, 2011 -- RMAS (**Run-Time** Malware Analysis System) ... A **threat** to the security of our computers... ... Malware is a severe **risk** for confidential data ... **Prediction** .... Allow analysis of **sequences** of **actions** rather than of a single **action** ...

Trend Micro, Inc.
EX1002-173

[PDF] Trustworthiness Monitoring and **Prediction** of Composite ... - Ani...
www.aniketos.eu/.../Trustworthiness%20Monitoring%20and%20Predicti...
by H Elshaafi - Cited by 4 - Related articles
predicting the trustworthiness of services that are assembled from component services. ... or **threat** environments or due to changes in service qualities ... **risks** and adaptation costs into account. ... (TWM) which is responsible for **runtime** monitoring of com- .... in a **sequence** construct with n components. 0 ≤ βi ≤ 1 and . ∑1 ...

[PDF] Games for a New Climate - Boston University
www.bu.edu/pardee/files/.../Games-for-a-New-Climate-TF-Nov2012.pdf
by JM de Suarez - Related articles
Problem/Context, **Risks**, Options, Decisions, **Actions**, Evaluation ... Figure A-3: Paying for **Predictions**: Game-Infused Experiential Learning. Figure A-4: Climate ..... increasing the **threats** posed by floods, droughts, tropical cyclones and other ... istactory format: "Death by PowerPoint" (Winn 2003), the dreaded **sequence** of ...

1 2 3 4 5 6 7 8 9 10 Next

Help Send feedback Privacy & Terms

ACM DIGITAL LIBRARY US Patent & Trademark Office

SIGN IN SIGN UP

runtime risk pedict threat action s

Searching for: runtime risk pedict threat action sequence (start a new search)

Found **190** within *The ACM Guide to Computing Literature* (Bibliographic citations from major publishers in computing)

Limit your search to Publications from ACM and Affiliated Organizations (Full-Text collection: **376,898** items)

REFINE YOUR SEARCH

Refine by Keywords
runtime risk pedict thre

Refine by People
Names
Institutions
Authors
Editors
Reviewers

Refine by Publications
Publication Year
Publication Names
ACM Publications
All Publications
Content Formats
Publishers

Refine by Conferences
Sponsors
Events
Proceeding Series

ADVANCED SEARCH
Advanced Search

FEEDBACK
Please provide us with feedback

Found **190** of **2,121,947**

Search Results Related Journals Related Magazines Related SIGs Related Conferences

Results 1 - 20 of 190 Sort by relevance in expanded f

Result page: **1** 2 3 4 5 6 7 8 9 10 ne

1 Information Assurance: Dependability and Security in Networked Systems
Yi Qian, David Tipper, Prashant Krishnamurthy, James Joshi
November 2007 Information Assurance: Dependability and Security in Networked Systems
Publisher: Morgan Kaufmann Publishers Inc.
Full text available: The ACM Learning Center , PDF (4.15 MB)
Bibliometrics: Downloads (6 Weeks): 8, Downloads (12 Months): 163, Downloads (Overall): 169, Citation Count:

In today's fast paced, infocentric environment, professionals increasingly rely on networked information technolog business. Unfortunately, with the advent of such technology came new and complex problems that continue to thr the availability, ...
Keywords: Networking

2 Communications of the ACM: Volume 55 Issue 3
March 2012 Communications of the ACM
Publisher: ACM
Full text available: Digital Edition , PDF (10.61 MB)
Bibliometrics: Downloads (6 Weeks): 1544, Downloads (12 Months): 21932, Downloads (Overall): 59470, Citation Cc

3 The Best Damn IT Security Management Book Period
Susan Snedaker, Robert McCrie
December 2007 The Best Damn IT Security Management Book Period
Publisher: Syngress Publishing
Full text available: The ACM Learning Center , PDF (18.35 MB)
Bibliometrics: Downloads (6 Weeks): 19, Downloads (12 Months): 195, Downloads (Overall): 204, Citation Count:

The Best Damn Security Manager's Handbook Periodhas comprehensive coverage of all management isuses facing and security professionals. Compiled from the best of the Syngress and Butterworth Heinemann libraries and auth by business continuity ...
Keywords: Security

4 Reconfigurable Computing: The Theory and Practice of FPGA-Based Computation
Scott Hauck, Andre DeHon
November 2007 Reconfigurable Computing: The Theory and Practice of FPGA-Based Computation
Publisher: Morgan Kaufmann Publishers Inc.
Full text available: The ACM Learning Center , PDF (8.85 MB)
Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 225, Downloads (Overall): 234, Citation Count: 29

The main characteristic of Reconfigurable Computing is the presence of hardware that can be reconfigured to impl specific functionality more suitable for specially tailored hardware than on a simple uniprocessor. Reconfigurable computing systems ...
Keywords: Applied, Computer Science, Electricity

5 Practical Model-Based Testing: A Tools Approach
Mark Utting, Bruno Legeard
November 2006 Practical Model-Based Testing: A Tools Approach
Publisher: Morgan Kaufmann Publishers Inc.
Full text available: The ACM Learning Center , PDF (5.91 MB)
Bibliometrics: Downloads (6 Weeks): 16, Downloads (12 Months): 168, Downloads (Overall): 182, Citation Count: 11

This book gives a practical introduction to model-based testing, showing how to write models for testing purposes how to use model-based testing tools to generate test suites. It is aimed at testers and software developers who use model-based ...
Keywords: Programming, Software Development

Trend Micro, Inc.
EX1002-175

ACM DIGITAL LIBRARY US Patent & Trademark Office

SIGN IN SIGN UP

runtime risk pedict threat action s

Searching for: runtime risk pedict threat action sequence (start a new search)

Found **190** within *The ACM Guide to Computing Literature* (Bibliographic citations from major publishers in computing)

Limit your search to Publications from ACM and Affiliated Organizations (Full-Text collection: **376,898** items)

REFINE YOUR SEARCH

Refine by Keywords
runtime risk pedict thre

Refine by People
Names
Institutions
Authors
Editors
Reviewers

Refine by Publications
Publication Year
Publication Names
ACM Publications
All Publications
Content Formats
Publishers

Refine by Conferences
Sponsors
Events
Proceeding Series

ADVANCED SEARCH
Advanced Search

FEEDBACK
Please provide us with feedback

Found **190** of **2,121,947**

Search Results Related Journals Related Magazines Related SIGs Related Conferences

Results 1 - 20 of 190 Sort by relevance in expanded f

Result page: **1** 2 3 4 5 6 7 8 9 10 ne

1 Information Assurance: Dependability and Security in Networked Systems
Yi Qian, David Tipper, Prashant Krishnamurthy, James Joshi
November 2007 Information Assurance: Dependability and Security in Networked Systems
Publisher: Morgan Kaufmann Publishers Inc.
Full text available: The ACM Learning Center , PDF (4.15 MB)
Bibliometrics: Downloads (6 Weeks): 8, Downloads (12 Months): 163, Downloads (Overall): 169, Citation Count:

In today's fast paced, infocentric environment, professionals increasingly rely on networked information technolog business. Unfortunately, with the advent of such technology came new and complex problems that continue to thr the availability, ...
Keywords: Networking

2 Communications of the ACM: Volume 55 Issue 3
March 2012 Communications of the ACM
Publisher: ACM
Full text available: Digital Edition , PDF (10.61 MB)
Bibliometrics: Downloads (6 Weeks): 1544, Downloads (12 Months): 21932, Downloads (Overall): 59470, Citation Cc

3 The Best Damn IT Security Management Book Period
Susan Snedaker, Robert McCrie
December 2007 The Best Damn IT Security Management Book Period
Publisher: Syngress Publishing
Full text available: The ACM Learning Center , PDF (18.35 MB)
Bibliometrics: Downloads (6 Weeks): 19, Downloads (12 Months): 195, Downloads (Overall): 204, Citation Count:

The Best Damn Security Manager's Handbook Periodhas comprehensive coverage of all management isuses facing and security professionals. Compiled from the best of the Syngress and Butterworth Heinemann libraries and auth by business continuity ...
Keywords: Security

4 Reconfigurable Computing: The Theory and Practice of FPGA-Based Computation
Scott Hauck, Andre DeHon
November 2007 Reconfigurable Computing: The Theory and Practice of FPGA-Based Computation
Publisher: Morgan Kaufmann Publishers Inc.
Full text available: The ACM Learning Center , PDF (8.85 MB)
Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 225, Downloads (Overall): 234, Citation Count: 29

The main characteristic of Reconfigurable Computing is the presence of hardware that can be reconfigured to impl specific functionality more suitable for specially tailored hardware than on a simple uniprocessor. Reconfigurable computing systems ...
Keywords: Applied, Computer Science, Electricity

5 Practical Model-Based Testing: A Tools Approach
Mark Utting, Bruno Legeard
November 2006 Practical Model-Based Testing: A Tools Approach
Publisher: Morgan Kaufmann Publishers Inc.
Full text available: The ACM Learning Center , PDF (5.91 MB)
Bibliometrics: Downloads (6 Weeks): 16, Downloads (12 Months): 168, Downloads (Overall): 182, Citation Count: 11

This book gives a practical introduction to model-based testing, showing how to write models for testing purposes how to use model-based testing tools to generate test suites. It is aimed at testers and software developers who use model-based ...
Keywords: Programming, Software Development

Trend Micro, Inc.
EX1002-176

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 4039

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/741,878	01/15/2013 RULE	726	2493	0079152-000017

APPLICANTS
Srinivas KUMAR, Cupertino, CA;
Taasera, Inc., Erie, PA

** **CONTINUING DATA** **********

** **FOREIGN APPLICATIONS** **********

** **IF REQUIRED, FOREIGN FILING LICENSE GRANTED** ** SMALL ENTITY **
02/25/2013

Foreign Priority claimed	☐ Yes ☑ No	☐ Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
35 USC 119(a-d) conditions met	☐ Yes ☑ No		CA	4	24	2
Verified and Acknowledged	/HARESH N PATEL/ Examiner's Signature	Initials				

ADDRESS
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404
UNITED STATES

TITLE
SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION

FILING FEE RECEIVED		
957	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

Trend Micro, Inc.
EX1002-177

PTO/SB/08a&b (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO				*Complete if Known*	
FIRST INFORMATION DISCLOSURE STATEMENT BY APPLICANT				*Application Number*	
				Filing Date	
				First Named Inventor	**Srinivas KUMAR**
(Use as many sheets as necessary)				*Art Unit*	
				Examiner Name	
Sheet	1	of	1	*Attorney Docket Number*	**0079152-000017**

clarify the scope of the subject matter for which protection is sought

U.S. PATENT DOCUMENTS

Examiner Initials'	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-8,327,441 B2	12-04-2012	Kumar et al.	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials'	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code [5]*(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

/Haresh Patel/ (05/01/2013)

Examiner Signature		Date Considered	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH.

ACM DIGITAL LIBRARY US Patent & Trademark Office

SIGN IN SIGN UP

runtime risk pedict threat action s

Searching for: runtime risk pedict threat action sequence (start a new search)

Found **190** within *The ACM Guide to Computing Literature* (Bibliographic citations from major publishers in computing)

Limit your search to Publications from ACM and Affiliated Organizations (Full-Text collection: **376,898** items)

REFINE YOUR SEARCH

Refine by Keywords
runtime risk pedict thre

Refine by People
Names
Institutions
Authors
Editors
Reviewers

Refine by Publications
Publication Year
Publication Names
ACM Publications
All Publications
Content Formats
Publishers

Refine by Conferences
Sponsors
Events
Proceeding Series

ADVANCED SEARCH
Advanced Search

FEEDBACK
Please provide us with feedback

Found **190** of **2,121,947**

Search Results Related Journals Related Magazines Related SIGs Related Conferences

Results 1 - 20 of 190 Sort by relevance in expanded f

Result page: **1** 2 3 4 5 6 7 8 9 10 ne

1 Information Assurance: Dependability and Security in Networked Systems
Yi Qian, David Tipper, Prashant Krishnamurthy, James Joshi
November 2007 Information Assurance: Dependability and Security in Networked Systems
Publisher: Morgan Kaufmann Publishers Inc.
Full text available: The ACM Learning Center , PDF (4.15 MB)
Bibliometrics: Downloads (6 Weeks): 8, Downloads (12 Months): 163, Downloads (Overall): 169, Citation Count:

In today's fast paced, infocentric environment, professionals increasingly rely on networked information technolog business. Unfortunately, with the advent of such technology came new and complex problems that continue to thr the availability, ...
Keywords: Networking

2 Communications of the ACM: Volume 55 Issue 3
March 2012 Communications of the ACM
Publisher: ACM
Full text available: Digital Edition , PDF (10.61 MB)
Bibliometrics: Downloads (6 Weeks): 1544, Downloads (12 Months): 21932, Downloads (Overall): 59470, Citation Cc

3 The Best Damn IT Security Management Book Period
Susan Snedaker, Robert McCrie
December 2007 The Best Damn IT Security Management Book Period
Publisher: Syngress Publishing
Full text available: The ACM Learning Center , PDF (18.35 MB)
Bibliometrics: Downloads (6 Weeks): 19, Downloads (12 Months): 195, Downloads (Overall): 204, Citation Count:

The Best Damn Security Manager's Handbook Periodhas comprehensive coverage of all management isuses facing and security professionals. Compiled from the best of the Syngress and Butterworth Heinemann libraries and auth by business continuity ...
Keywords: Security

4 Reconfigurable Computing: The Theory and Practice of FPGA-Based Computation
Scott Hauck, Andre DeHon
November 2007 Reconfigurable Computing: The Theory and Practice of FPGA-Based Computation
Publisher: Morgan Kaufmann Publishers Inc.
Full text available: The ACM Learning Center , PDF (8.85 MB)
Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 225, Downloads (Overall): 234, Citation Count: 29

The main characteristic of Reconfigurable Computing is the presence of hardware that can be reconfigured to impl specific functionality more suitable for specially tailored hardware than on a simple uniprocessor. Reconfigurable computing systems ...
Keywords: Applied, Computer Science, Electricity

5 Practical Model-Based Testing: A Tools Approach
Mark Utting, Bruno Legeard
November 2006 Practical Model-Based Testing: A Tools Approach
Publisher: Morgan Kaufmann Publishers Inc.
Full text available: The ACM Learning Center , PDF (5.91 MB)
Bibliometrics: Downloads (6 Weeks): 16, Downloads (12 Months): 168, Downloads (Overall): 182, Citation Count: 11

This book gives a practical introduction to model-based testing, showing how to write models for testing purposes how to use model-based testing tools to generate test suites. It is aimed at testers and software developers who use model-based ...
Keywords: Programming, Software Development

Trend Micro, Inc.
EX1002-179

IEEE.org | IEEE Xplore Digital Library | IEEE Standards | IEEE Spectrum | More Sites

IEEE Xplore DIGITAL LIBRARY

Access provided by:
United States Patent and Trademark Office
Sign Out

IEEE

SEARCH RESULTS

You searched for: runtime risk predict threat action sequence

14 Results returned

A Threat Model Driven Approach for Security Testing

Linzhang Wang ; Wong, E. ; Dianxiang Xu
Software Engineering for Secure Systems, 2007. SESS '07: ICSE Workshops 2007. Third International Workshop on
Digital Object Identifier: 10.1109/SESS.2007.2
Publication Year: 2007 , Page(s): 10
Cited by 3
IEEE CONFERENCE PUBLICATIONS

Security Goals Assurance Based on Software Active Monitoring

Changzhi Zhao ; Wei Dong ; Leucker, M. ; Zhichang Qi
Secure Software Integration and Reliability Improvement (SSIRI), 2011 Fifth International Conference on
Digital Object Identifier: 10.1109/SSIRI.2011.34
Publication Year: 2011 , Page(s): 70 - 79
IEEE CONFERENCE PUBLICATIONS

An analysis of eating activities for automatic food type recognition

Hyun-Jun Kim , Kim, M. ; Sun-Jae Lee ; Young Sang Choi
Signal & Information Processing Association Annual Summit and Conference (APSIPA ASC), 2012 Asia-Pacific
Publication Year: 2012 , Page(s): 1 - 5
IEEE CONFERENCE PUBLICATIONS

Application of Complex Event Processing Paradigm in Situation Awareness and Management

Vranes, S. ; Stanojevic, M. ; Janev, V. ; Mijovic, V. ; Tomasevic, N. ; Kraus, L. ; Ilic, Z.
Database and Expert Systems Applications (DEXA), 2011 22nd International Workshop on
Digital Object Identifier: 10.1109/DEXA.2011.15
Publication Year: 2011 , Page(s): 289 - 293
IEEE CONFERENCE PUBLICATIONS

Video-based pedestrian head pose estimation for risk assessment

Schulz, A. , Stiefelhagen, R
Intelligent Transportation Systems (ITSC), 2012 15th International IEEE Conference on
Digital Object Identifier: 10.1109/ITSC.2012.6338829
Publication Year: 2012 , Page(s): 1771 - 1776
IEEE CONFERENCE PUBLICATIONS

Proactive decision fusion for site security

Blasch, E. ; Plano, S.
Information Fusion, 2005 8th International Conference on
Volume: 2
Digital Object Identifier: 10.1109/ICIF.2005.1592044
Publication Year: 2005
Cited by 5
IEEE CONFERENCE PUBLICATIONS

Trend Micro, Inc.
EX1002-180

Application stress testing Achieving cyber security by testing cyber attacks

Underbrink, A. ; Potter, A. ; Jaenisch, H. ; Reifer, D.J.
Homeland Security (HST), 2012 IEEE Conference on Technologies for
Digital Object Identifier: 10.1109/THS.2012.6459909
Publication Year: 2012 , Page(s): 556 - 561
IEEE CONFERENCE PUBLICATIONS

Detecting, tracking, and counteracting terrorist networks via hidden Markov models

Allanach, J. ; Haiying Tu ; Singh, Satnam ; Willett, P. ; Pattipati, K.
Aerospace Conference, 2004. Proceedings. 2004 IEEE
Volume: 6
Digital Object Identifier: 10.1109/AERO.2004.1368130
Publication Year: 2004
Cited by 8
IEEE CONFERENCE PUBLICATIONS

Novel Mathematics-Inspired Algorithms for Self-Adaptive Peer-to-Peer Computing

Ko, S.Y. ; Gupta, I. ; Yookyung Jo
Self-Adaptive and Self-Organizing Systems, 2007. SASO '07. First International Conference on
Digital Object Identifier: 10.1109/SASO.2007.40
Publication Year: 2007 , Page(s): 3 - 12
IEEE CONFERENCE PUBLICATIONS

Revisiting enforceable security policies

Nagatou, N.
Risks and Security of Internet and Systems, 2008. CRISIS '08. Third International Conference on
Digital Object Identifier: 10.1109/CRISIS.2008.4757483
Publication Year: 2008 , Page(s): 227 - 234
IEEE CONFERENCE PUBLICATIONS

IEEE Guide--Adoption of the Project Management Institute (PMI(R)) Standard A Guide to the Project Management Body of Knowledge (PMBOK(R) Guide) --Fourth Edition

IEEE Std 1490-2011
Digital Object Identifier: 10.1109/IEEESTD.2011.6086685
Publication Year: 2011 , Page(s): 1 - 508
IEEE STANDARDS

The prediction of human performance safety with event trees

Heslinga, G. ; Stassen, H.G.
Systems, Man and Cybernetics, IEEE Transactions on
Volume: 22 , Issue: 5
Digital Object Identifier: 10.1109/21.179856
Publication Year: 1992 , Page(s): 1178 - 1182
IEEE JOURNALS & MAGAZINES

Adaptive multiple target attack planning in dynamically changing hostile environments

Secarea, V.V., Jr. ; Krikorian, H.F.
Aerospace and Electronics Conference, 1990. NAECON 1990., Proceedings of the IEEE 1990 National
Digital Object Identifier: 10.1109/NAECON.1990.112925
Publication Year: 1990 , Page(s): 1117 - 1123 vol 3
Cited by 1
IEEE CONFERENCE PUBLICATIONS

Walking atop the cliffs: avoiding failure and reducing risk in large scale e-government projects

Pardo, T.A. ; Scholl, H.J.
System Sciences, 2002. HICSS. Proceedings of the 35th

Trend Micro, Inc.
EX1002-181

Annual Hawaii International Conference on
Digital Object Identifier: 10.1109/HICSS.2002.994075
Publication Year: 2002 , Page(s): 1656 - 1665
Cited by 3
IEEE CONFERENCE PUBLICATIONS

Sign In | Create Account

IEEE Account
Change Username/Password
Update Address

Purchase Details
Payment Options
Order History
Access Purchased Documents

Profile Information
Communications Preferences
Profession and Education
Technical Interests

Need Help?
US & Canada: +1 800 678 4333
Worldwide: +1 732 981 0060
Contact & Support

About IEEE *Xplore* | Contact | Help | Terms of Use | Nondiscrimination Policy | Site Map | Privacy & Opting Out of Cookies

A non-profit organization, IEEE is the world's largest professional association for the advancement of technology.
© Copyright 2013 IEEE - All rights reserved. Use of this web site signifies your agreement to the terms and conditions.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR ET AL.
	Examiner	**Art Unit**
	HARESH N PATEL	2493

CPC- SEARCHED

Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner
726	1	5/1/2013	h.p.

SEARCH NOTES

Search Notes	Date	Examiner
EAST; UPAD (US-PAT), USPGPUB (US-PUB), EPO, JPO, USOCR, DERWENT, IBM_TDB; IEEE Xplore, ACM Digital Library, Google.	5/1/2013	h.p.
INVENTOR NAME SEARCH. Application Continuity Search. Assignee Search.	5/1/2013	h.p.

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/HARESH N PATEL/ Primary Examiner.Art Unit 2493

Trend Micro, Inc.
EX1002-183

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13741878	KUMAR ET AL.
	Examiner	**Art Unit**
	HARESH N PATEL	2493

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/01/2013								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	✓								
	16	✓								
	17	✓								
	18	✓								
	19	✓								
	20	✓								
	21	✓								
	22	✓								
	23	✓								
	24	✓								

Trend Micro, Inc.
EX1002-184

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

MAILED
MAR 05 2013
OFFICE OF PETITIONS

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA VA 22313-1404

Doc Code: TRACK1.GRANT

Decision Granting Request for Prioritized Examination (Track I or After RCE)	Application No.: 13/741,878

1. THE REQUEST FILED January 15, 2013 IS **GRANTED.**

The above-identified application has met the requirements for prioritized examination

A. ☒ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination.** The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;
B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims**, or a multiple dependent claim;
C. filing a **request for continued examination**;
D. filing a notice of appeal;
E. filing a request for suspension of action;
F. mailing of a notice of allowance;
G. mailing of a final Office action;
H. completion of examination as defined in 37 CFR 41.102; or
I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to Brian W. Brown at 571-272-5338.

/Brian W. Brown/
[*Signature*]

Petitions Examiner, Office of Petitions
(Title)

U.S. Patent and Trademark Office
PTO-2298 (Rev. 02-2012)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/741,878	01/15/2013	2172	957	0079152-000017	24	2

CONFIRMATION NO. 4039

21839
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

FILING RECEIPT

OC000000059498498

Date Mailed: 02/28/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)
Srinivas KUMAR, Cupertino, CA;

Applicant(s)
Taasera, Inc., Erie, PA

Assignment For Published Patent Application
Taasera, Inc., Erie, PA

Power of Attorney: None

Domestic Applications for which benefit is claimed - None.
A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 02/25/2013
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/741,878**
Projected Publication Date: 07/17/2014
Non-Publication Request: No

Trend Micro, Inc.
EX1002-186

Early Publication Request: No
**** SMALL ENTITY ****
Title

SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION

Preliminary Class

715

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

Trend Micro, Inc.
EX1002-187

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

Trend Micro, Inc.
EX1002-188

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
13/741,878

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	98		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	310		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	125		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	24 minus 20 =	* 4	x 31 =	124	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*	x 125 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	657		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
AMENDMENT A	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
AMENDMENT A	Application Size Fee (37 CFR 1.16(s))									
AMENDMENT A	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
AMENDMENT B	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
AMENDMENT B	Application Size Fee (37 CFR 1.16(s))									
AMENDMENT B	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

Patent
Attorney Docket No. 0079152-000017

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

UTILITY PATENT APPLICATION TRANSMITTAL LETTER FOR ELECTRONICALLY FILED UTILITY APPLICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Customer Number **2 1 8 3 9**

Sir:

Enclosed for filing is the utility patent application entitled:

System For and a Method of Cognitive Behavior Recognition

by the following named inventor:

Srinivas KUMAR

☐ Applicant(s) suggests Figure ___ for inclusion on the front page of the patent application publication and patent.

☒ Applicant(s) requests that the published application include the following assignment information: TAASERA, INC., Erie, PA, USA.

☒ Small entity status is claimed.

Also enclosed are:

DRAWINGS: 4 sheets of drawings

DECLARATION: ☐ will follow ☒ executed, is enclosed ☐ unexecuted, is enclosed

ASSIGNMENT: ☒ is being filed electronically concurrent with the electronic filing of the application. ☐ will follow

CLAIM FOR PRIORITY UNDER 35 USC § 119 and/or 365: ☐ is hereby made as follows:

Country	Appl. No.	Filing Date MM-DD-YYYY

☐ Certified copy will follow.
☐ Certified copy being paper filed concurrent with eFiling of this application.
☐ Priority document exchange requested.

OTHER PAPERS:

- ☒ A General Authorization for Petitions for Extensions of Time and Payment of Fees
- ☒ An Information Disclosure Statement
- ☒ An Application Data Sheet
- ☒ Other: CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION with $2,400.00 fee.

☒ The filing fee has been calculated as follows:

					FEES
Basic Patent Application Filing Fee (1011)					**$98.00**
Examination Fee (1311)					**$125.00**
Search Fee (1111)					**$310.00**
	No. of Claims		**Extra Claims**	**Rate**	
Total Claims	24	Minus 20=	4	x $ 31.00 (1202)	124.00
Independent Claims	2	Minus 3=	0	x $ 125.00 (1201)	
If multiple dependent claims are presented, add $450.00 (1203)					
App. Size Fee (app + dwgs. exceeding 100 sheets) - $310.00 / each add'l. 50 sheets (1081)					
TOTAL APPLICATION FEE DUE					**$657.00**

☐ This application is being filed without a filing fee. Issuance of a Notice to File Missing Parts of Application is respectfully requested.

☒ Charge $ 3,057.00 to credit card. Filing fee is being paid electronically concurrent with filing of application.

☒ The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Please address all correspondence concerning this application to:

Buchanan Ingersoll & Rooney PC
Customer Number **2 1 8 3 9**

Respectfully submitted,
BUCHANAN INGERSOLL & ROONEY PC

Date: January 15, 2013

By: _____
Charles F. Wieland III
Registration No. 33,096

Customer Number 21839
703.836.6620

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	)	
	)	
Srinivas KUMAR	)	Group Art Unit: Unassigned
	)	
Application No.: Unassigned	)	Confirmation No.: Unassigned
	)	
Filed: January 15, 2013	)	
	)	
For: System For and a Method of Cognitive Behavior Recognition	)	
	)	
	)	
	)	

GENERAL AUTHORIZATION FOR PETITIONS FOR EXTENSIONS OF TIME AND PAYMENT OF FEES

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with 37 C.F.R. § 1.136(a)(3), the U.S. Patent and Trademark Office is hereby provided with a general authorization to treat any concurrent or future reply requiring a petition for an extension of time for its timely submission as containing a request therefor for the appropriate length of time.

The Commissioner is hereby authorized to charge any appropriate fees that may be required by this paper, or any other submissions in this application, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: January 15, 2013

By: _____
Charles F. Wieland III
Registration No. 33,096

Customer Number 21839
703.836.6620

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Kumar, Srinivas	Nonprovisional Application Number (if known):	
Title of Invention:	System for and a Method of Cognitive Behavior Recognition		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i), the prioritized examination fee set forth in 37 CFR 1.17(c), and if not already paid, the publication fee set forth in 37 CFR 1.18(d) have been filed with the request. The basic filing fee, search fee, examination fee, and any required excess claims and application size fees are filed with the request or have been already been paid.
2. The application contains or is amended to contain no more than four independent claims and no more than thirty total claims, and no multiple dependent claims.
3. The applicable box is checked below:

I. ☒ **Original Application (Track One) - Prioritized Examination under $ 1.102(e)(1)**

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed oath or declaration under 37 CFR 1.63 is filed with the application.

II. ☐ **Request for Continued Examination - Prioritized Examination under $ 1.102(e)(2)**

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature	Date January 15, 2013
Name (Print/Typed) Charles F. Wieland III	Practitioner Registration 33,096

***Note**: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certification. Submit multiple forms if more than one signature is required. See below*.*

☐ *Total of ___ forms are submitted.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	0079152-000017
	Application Number	Unassigned
Title of Invention	SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION	

Secrecy Order 37 CFR 5.2:

Secrecy Order in Parent Appl.?:: No

Inventor Information:

Inventor 1 – Legal Name

Given Name:: Srinivas

Middle Name::

Family Name:: KUMAR

Suffix::

Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service

City:: Cupertino

State/Province:: California

Country:: USA

Mailing Address of Inventor

Street:: 19930 Olivewood Street, Unit #C

City:: Cupertino

State/Province:: California

Country:: USA

Postal/Zip Code:: 95014

Trend Micro, Inc.
EX1002-194

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	0079152-000017
	Application Number	Unassigned
Title of Invention	SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION	

Correspondence Information:

Correspondence Customer Number:: 21839

Application Information:

Title::	System For and a Method of Cognitive Behavior Recognition
Attorney Docket Number::	0079152-000017
Small Entity?::	Yes
Application Type::	Nonprovisional
Subject Matter::	Utility
Suggested Class (if any)::	
Sub Class (if any)::	
Suggested Technology Center (if any)::	
Total Number of Drawing Sheets (if any)::	4
Suggested Figure for Publication (if any)::	Fig. 1

Publication Information:

Request for Early Publication?::	No
Request for Non-Publication?::	No

Representative Information:

Representative Customer Number:: 21839

Trend Micro, Inc.
EX1002-195

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	0079152-000017
	Application Number	Unassigned
Title of Invention	SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION	

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

☒ Assignee
☐ Legal Representative under 35 U.S.C. 117
☐ Person to whom the inventor is obligated to assign
☐ Person who shows sufficient proprietary interest

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated inventor:

If the assignee is an Organization check here ☒

Mailing Address Information:

Assignee Name:: Taasera, Inc.

Trend Micro, Inc.
EX1002-196

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	0079152-000017
	Application Number	Unassigned
Title of Invention	SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION	

Street::	1030 State Street
City::	Erie
State/Province::	PA
Country::	USA
Postal/Zip Code::	16501

Signature:

Signature		Date (YYYY-MM-DD)	2013-01-15
Printed Name	Charles F. Wieland III	Registration No.	33,096

Trend Micro, Inc.
EX1002-197

APPLICATION FOR
UNITED STATES LETTERS PATENT

FOR

SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION

by

Srinivas Kumar

Attorney Docket No. 0079152-000017
BUCHANAN INGERSOLL & ROONEY PC
CUSTOMER NO. 21839
P.O. Box 1404
Alexandria, VA 22313-1404

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION

FIELD

[0001] The present disclosure relates to cognitive behavior recognition, specifically assessing the runtime risk of an application or device in a computer system using cognitive behavior recognition.

BACKGROUND

[0002] With the prevalence of computers and other computing systems in the daily lives of both companies and individuals, computer and cyber security has become increasingly important. A variety of programs and approaches have been developed to provide security and protect end users from harmful threats. Such programs that have been developed include antivirus programs, firewalls, and intrusion detection/prevention systems (IDSs/IPSs). These programs can be beneficial in protecting a computing system and its end user from a number of threats.

[0003] However, as technology in the computing devices themselves is developing, so is the technology behind the threats against those same computing device. Emerging cyber threats, commonly referred to as advanced persistent threats (APT), often remain undetected using traditional security programs and approaches. As a result, many harmful threats and infections can attack a system that includes these security programs unbeknownst to the user and system operator, which could have devastating results. For example, it can place companies at risk for the theft of

proprietary information, such as confidential information, trade secrets, etc., and individuals at risk for identify theft.

[0004] Thus, there is a need for a technical solution to properly detect and prevent attacks by advanced persistent threats undetected using traditional security programs and approaches.

SUMMARY

[0005] The present disclosure provides a description of a system and method for the assessing of a runtime risk of an application or device.

[0006] A method for assessing runtime risk for an application or device includes: storing, in a rules database, a plurality of rules, wherein each rule identifies an action sequence; storing, in a policy database, a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules; identifying, using at least one assessment policy, a runtime risk for an application or device, wherein the identified runtime risk identifies and predicts a specific type of threat; and identifying, by a processing device, a behavior score for the application or device based on the identified runtime risk, wherein the action sequence is a sequence of at least two performed actions, and each performed action is at least one of: a user action, an application action, and a system action.

[0007] A system for assessing runtime risk for an application or device includes a rules database, a policy database, and a processing device. The rules database is configured to store a plurality of rules, wherein each rule identifies an action sequence. The policy database is configured to store a plurality of assessment policies, wherein

each assessment policy includes at least one rule of the plurality of rules. The processing device is configured to identify, using at least one assessment policy, a runtime risk for an application or device, wherein the identified runtime risk identifies and predicts a specific type of threat, and identify a behavior score for the application or device based on the identified runtime risk, wherein the action sequence is a sequence of at least two performed actions, and each performed action is at least one of: a user action, an application action, and a system action.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

[0008] The scope of the present disclosure is best understood from the following detailed description of exemplary embodiments when read in conjunction with the accompanying drawings. Included in the drawings are the following figures:

[0009] FIG. 1 is a high level architecture illustrating a system for assessing the runtime risk for an application or device in accordance with exemplary embodiments.

[0010] FIG. 2 is a flow diagram illustrating a method for identifying an action sequence and assessing a runtime risk and subsequent behavior score based on the identified action sequence in accordance with exemplary embodiments.

[0011] FIGS. 3A and 3B are a diagram illustrating performed actions and action sequences identified using the method of FIG. 2 in accordance with exemplary embodiments.

[0012] FIG. 4 is a flow diagram illustrating a method for creating a transaction record in accordance with exemplary embodiments.

[0013] Further areas of applicability of the present disclosure will become apparent from the detailed description provided hereinafter. It should be understood that the detailed description of exemplary embodiments are intended for illustration purposes only and are, therefore, not intended to necessarily limit the scope of the disclosure.

DETAILED DESCRIPTION

System for Assessing Runtime Risk for an Application or Device

[0014] FIG. 1 is a high level architecture illustrating a computing system 100 configured to assess the runtime risk of an application or device and identify a behavior score based on the assessed runtime risk. It will be apparent to persons having skill in the relevant art that methods and processes disclosed herein may be implemented in the computing system 100 using hardware, software, firmware, non-transitory computer readable media having instructions stored therein, or a combination thereof, and may be implemented in more than one computing systems or other processing systems. It will be further apparent to persons having skill in the relevant art that the configuration of the computing system 100 as illustrated in FIG. 1 is provided as an illustration, and other configurations and systems for performing the functions disclosed may be suitable.

[0015] The computing system 100 may include a processing unit 102. The processing unit 102 may include a single processor or a plurality of processor, each of which may include one or more processor cores. The processing unit 102 may be a general purpose processing unit or a special purpose processing unit, such as a general purpose processing unit programmed for performing a specific purpose, such as the

identification of the runtime risk of an application or program. The processing unit 102 may be configured to connect to a communications infrastructure 110 for communication with additional components of the computing system 100.

[0016] The communications infrastructure 110 may be a bus, message queue, network, multi-core message-passing scheme, a combination thereof, or any other suitable type or configuration of communications infrastructure as will be apparent to persons having skill in the relevant art. The computing system 100 may further include a display unit 104. The display unit 104 may be configured to control a display device 106, which may be connected to the computing system 100 physically (e.g., via a cable, such as a VGA, DVI, or HDMI cable) or wirelessly (e.g., via Bluetooth, etc.). The display unit 104 may be a video card, video adapter, graphics card, display card, graphics board, display adapter, graphics adapter, video controller, graphics controller, etc. and may be integrated into the computing system 100 or may be removable.

[0017] The display device 106 may be configured to display information (e.g., data, graphics, output from an application program, etc.) transmitted to the display device 106 via the display unit 104. Suitable types of display devices for use as the display device 106 will be apparent to persons having skill in the relevant art and may include a liquid crystal display (LCD), light-emitting diode (LED) display, thin film transistor (TFT) LCD, capacitive touch display, etc.

[0018] The computing system 100 may further include a memory unit 106. The memory unit 106 may be any type of memory suitable for the storage of data and performing of the functions disclosed herein, such as a hard disk drive, floppy disk drive, magnetic tape drive, optical disk drive, solid state drive, or other non-transitory

computer readable medium. In some embodiments, the memory unit 106 may be removable storage (e.g., flash memory, a compact disc, digital versatile disc, Blu-ray disc, etc.) or a combination of non-removable and removable storage. In one embodiment, the memory unit 106 may be external to the computing system 100 and accessed via a network by a communications interface 108, discussed in more detail below, such as cloud storage. The memory unit 106 may include random access memory (RAM), read-only memory (ROM), or a combination thereof. Suitable types and configurations of the memory unit 106 will be apparent to persons having skill in the relevant art.

[0019] The memory unit 106 may include at least a runtime monitor 108, a rules database 110, and a policy database 112. The memory unit 106 may include additional data, applications, programs, etc. as will be apparent to persons having skill in the relevant art, such as an operating system, drivers for components of the system 100, etc. The runtime monitor 108 may be an application program stored on the memory unit 106 including program code executable by the processing unit 102, configured to assess the runtime risk of an application (e.g., stored in the memory unit 106 and executed by the processing unit 102) or device (e.g., connected to the computing system 100 externally (e.g., via the communications interface 108) or internally (e.g., via the communications infrastructure 110), as discussed in more detail below. In some embodiments, the runtime monitor 108 may be further configured to identify a behavior score for an action sequence of at least two performed actions executed by (e.g., by components or programs included in) the computing system 100.

[0020] The runtime monitor 108 may be configured to perform additional functions in the computing system 100, such as those described in U.S. Patent No. 8,372,441, filed as U.S. Application No. 13/399,065, entitled "System and Method for Application Attestation," filed on February 17, 2012; U.S. Application No. 13/559,707, entitled "Systems and Methods for Orchestrating Runtime Operational Integrity" and filed on July 27, 2012; U.S. Application No. 13/559,766, entitled "Systems and Methods for Threat Identification and Remediation" and filed on July 27, 2012; U.S. Application No. 13/559,665, entitled "Systems and Methods for Providing Mobile Security Based on Dynamic Attestation" and filed on July 27, 2012; U.S. Application No. 13/559,692, entitled "Systems and Methods for Using Reputation Scores in Network Services and Transactions to Calculate Security Risks to Computer Systems and Platforms" and filed on July 27, 2012; and U.S. Application No. 13/559,732, entitled "Systems and Methods for Network Flow Remediation Based on Risk Correlation" and filed on July 27, 2012, which are herein incorporated by reference in their entirety. Additional functions that may be performed by the runtime monitor 108 will be apparent to persons having skill in the relevant art.

[0021] The rules database 110 may be configured to store a plurality of rules, wherein each rule identifies an action sequence. An action sequence, discussed in more detail below, may include a sequence of at least two performed actions, wherein the performed actions may be one of a user action, an application action, and a system action. The policy database 112 may be configured to store a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules stored in the rules database 112. The runtime monitor 108 may be configured to

identify the runtime risk of the application or device using at least one of the assessment policies stored in the policy database 112 based on, for example, matching rules and probabilistic weights and scores. Methods for identifying runtime risk using an assessment policy comprised of one or more rules is discussed in more detail below.

[0022] The rules database 110 and the policy database 112 may be configured in any type of suitable database configuration, such as a relational database, a structured query language (SQL) database, a distributed database, an object database, etc. Suitable configurations and database storage types will be apparent to persons having skill in the relevant art. The databases may each be a single database, or may comprise multiple databases which may be interfaced together, such as physically (e.g., internally via the communications infrastructure 110 or externally via the communications interface 108) or wirelessly (e.g., via Bluetooth), and may include one or more databases included within the computing system 100 and one or more databases external to the computing system 100, such as an external hard disk drive or storage accessed via a network (e.g., in the cloud).

[0023] The communications interface 108 may be configured to allow software and data to be transmitted between the computing system 100 and external networks and devices. The communications interface 108 may be a modem, network interface card (e.g., an Ethernet card), a communications port, a Personal Computer Memory Card International Association (PCMCIA) card, or other type of communications interface suitable for performing the functions disclosed herein as will be apparent to persons having skill in the relevant art. Software and data transmitted to or from the computing

system 100 may be in the form of signals, which may be electronic, electromagnetic, optical, etc. The signals may travel via a communications path 114, which may be configured to carry the signals physically or wirelessly via a network. For example, the communications path 114 may carry signals from the communications interface 108 to a network such as a local area network (LAN), a wide area network (WAN), a wireless network (e.g., WiFi), a mobile communication network, a satellite network, the Internet, fiber optic, coaxial cable, infrared, radio frequency (RF), or any combination thereof. Other suitable network types and configurations will be apparent to persons having skill in the relevant art.

[0024] The communications interface 108 may be further configured to connect the computing system 100 with a plurality of input devices, which may enable a user of the computing system 100 to control the system. In some instances, the communications interface 108 may include multiple interfaces or connections, for connecting to a variety of external devices or networks. For example, the communications interface 108 may include a plurality of universal serial bus (USB) connectors, an Ethernet connector, audio connectors, video connectors, etc. Suitable types of input devices that may be used with the computing system 100 for providing input will be apparent to persons having skill in the relevant art and may include a keyboard, mouse, touch screen, tablet, click wheel, trackball, microphone, camera, etc.

Method for Identifying Runtime Risk and Behavior Score for an Application or Device

[0025] FIG. 2 is a flow diagram illustrating a method for identifying an action sequence of actions performed in the computing system 100 and identifying the corresponding runtime risk and a behavior score for an application or device involved in the action

sequence. It will be apparent to persons having skill in the relevant art that the action sequences identified using the method illustrated in FIG. 2 are provided as means of illustration only and are not exhaustive as to action sequences that may be suitable for use in identifying the runtime risk of an application or device by the runtime monitor 108 of the computing system 100.

[0026] In step 202, the runtime monitor 108 may monitor the computing system 100 for performed actions, which may include user actions, application actions, and system actions, each of which are discussed in more detail below with respect to FIG. 3. Once an action is detected by the runtime monitor 108, in step 204 the runtime monitor may (e.g., via the processing unit 102) identify the type of action performed. If the type of action performed is a system action, then, in step 206, the runtime monitor 108 may attempt to identify an action preceding the system action. Then, the process may return to step 204 to identify the type of action of the preceding action, such that an action sequence including only system actions may not be used to identify a runtime risk of an application or device, as no action involving the application or device may be performed.

[0027] If the identified action is an application action, then, in step 208, the runtime monitor 108 may monitor for a subsequent system action, which may be identified by the processing unit 102. The application action followed by the system action may be an action sequence, as discussed in more detail below, which may be used to identify the runtime risk of an application or device (e.g., whose application action caused the system action to occur) at step 218, also discussed in more detail below. If the action identified at step 204 is a user action, then the runtime monitor 108 may monitor for

any type of subsequent action, which may be identified by the processing unit 102 in step 210. At step 212, the processing unit 102 may identify if the subsequent performed action is a system action or an application action.

[0028] If the action is identified in step 212 as being a system action, then the user action followed by the system action may be identified as an action sequence suitable for identifying the runtime risk of an application or device (e.g., which, when triggered by the user action, caused the system action to occur). If the action identified in step 212 is an application action, then, at step 213, the runtime monitor 108 may monitor for, and the processing unit 102 may identify, a subsequent system action. If no subsequent system action is identified, then the user action followed by the application action may be identified as a suitable action sequence. If, on the other hand, a subsequent system action occurs, then, in step 216, the processing unit 102 may identify the system action that occurred, which may identify a user action followed by an application action and a subsequent system action as a suitable action sequence.

[0029] In step 218, the processing unit 102 (e.g., executing the application program of the runtime monitor 108), may identify the runtime risk of the application or device based on the identified action sequence. The runtime risk may identify and/or predict a specific type of threat caused by the application or device. For example, a runtime risk may identify a physical damage threat, accidental threat, deliberate threat, a threat of technical failure, a compromise of function or information, a combination thereof, etc. In some instances, multiple runtime risks may be identified corresponding to multiple types of threats. The runtime risk may be identified using at least one assessment policy stored in the policy database 112. Each assessment policy may

comprise one or more rules stored in the rules database 110 and may identify the runtime risk based on matching rules and probabilistic weights and scores. Types and values of probabilistic weights and scores that may be used by an assessment policy for identifying the runtime risk of an application or device will be apparent to persons having skill in the relevant art.

[0030] The rules stored in the rules database 110 may each identify an action sequence. For example, one or more rules in the rules database 110 may identify an action sequence including a user action followed by a system action. Additional types of action sequences that may be identified by a corresponding rule in the rules database 110 will be apparent to persons having skill in the relevant art and are discussed in more detail below with respect to FIG. 3. The identification of the runtime risk of an action sequence is also discussed in more detail below with respect to FIG. 3.

[0031] In step 220, the runtime monitor 108 may identify a behavior score of the application or device, which may be based on the identified runtime risk of the application or device. The behavior score may be a number or other value (e.g., a rating) that may indicate the risk or threat of the application or device to the computing system 100 or other device (e.g., a network connected to the computing system 100 via the communications interface 108, etc.). In some embodiments, the behavior score may indicate the risk or threat of the specific identified action sequence involving the application or device. In other embodiments, the behavior score may indicate the risk or threat of the application or device as a whole to the computing system 100 or other device.

Action Sequences

[0032] FIG. 3 is an illustration of the performed actions and exemplary action sequences that may be used by the computing system 100 and in the method illustrated in FIG. 2 for assessing the runtime risk of an application or device.

[0033] The runtime monitor 108 of the computing system 100 may monitor for actions performed in/by the computing system 100. The performed actions monitored by the runtime monitor 108 and identified by the processing unit 102 may include a user action 302, an application action 304, and a system action 306. The user action 302 may be any form of explicit input from a user of the computing system 100. For example, the user action may include a program launch, keyboard input, click of a mouse, touch input on a touch screen, moving of a mouse, scrolling or clicking on a click wheel, voice command into a microphone, gestures into a device configured to read human gestures, etc.

[0034] The application action 304 may be any activity performed by the application (e.g., stored in the memory unit 106 and executed by the processing unit 102) initiated programmatically by a task in execution of the computing system 100. In an exemplary embodiment, the application performing the application action 304 may be the application for which the runtime risk is identified or an application controlled by or configured to control the device for which the runtime risk is identified. The application action 304 may include, for example, a start type (e.g., console, service, parent process, script), first time execution, fork process (e.g., child process creation), code injection methods, keyboard capture methods, screen capture methods, dynamic code blocks, open data documents, automatic or self-termination, abnormal terminations

(e.g., exception conditions), multiple restarts, opening of device(s) (e.g., the device for which the runtime risk is identified), process enumeration, cryptography, communication protocols, performance metrics, etc. as will be apparent to persons having skill in the relevant art.

[0035] The system action 306 may be any operation performed by the computing system 100 (e.g., by one or more components included in the computing system 100) on behalf or, or as a consequence of, an application or user action that changes the state of the computing system. The system action 306 may include, for example, system file creation, system folder modification, registry modifications or additions, application setting modifications, driver install or uninstall (e.g., system files), network activity, execution from temporary system folders, alternate data streams (ADS), environmental aspects (e.g., debugger presence, virtual environments, system boot times/sequences), etc.

[0036] The runtime monitor 108 may be configured to identify (e.g., using the method illustrated in FIG. 2 and discussed above), an action sequence 308 used to identify the runtime risk of an application or device. The action sequence 308 may include at least two performed actions, and may indicate a set of actions performed in the computing system 100. For example, the action sequence 308a may include a user action 302 followed by a system action 306. In some embodiments, the runtime monitor 108 may identify the time at which each performed action occurs. For example, for the action sequence 308a, the runtime monitor 108 may identify the user action 302 occurring at a time T_u and the system action 306 occurring at time T_s where $T_s > T_u$ such that the user action 302 was performed first and the system action 306 performed second.

[0037] Additional action sequences 308 that may be identified by the runtime monitor 108 and used to identify the runtime risk of an application or device may include action sequences 308b, 308c, and 308d. Action sequence 308b may include a user action 302 followed by an application action 304. Action sequence 308c may include an application action 304 followed by a system action 306. Action sequence 308d may include three preformed actions, such as a user action 302 followed by an application 304, which is further followed by the system action 306. In such an action sequence, the runtime monitor 108 may identify that the user action 302 occurred at time T_u, the application action 304 at time T_a, and the system action 306 at time T_s, where $T_s > T_a > T_u$. Additional action sequences that may be identified by the runtime monitor will be apparent to persons having skill in the relevant art.

[0038] The runtime monitor 108 may be further configured to identify the authenticity of the action sequence 308, such that an authentic action sequence may indicate that there is a forensic chain of events or a natural progression between the performed actions. In such an instance, authenticating action sequences may enable the runtime monitor 108 to not consider action sequences that are purely circumstantial (e.g., where an application action 304 or system action 306 is not a result of the user action 302). This may result in more accurate scoring of behaviors and runtime risk, and also result in more efficient identification of runtime risks and behavior scores due to less processing required. The runtime monitor 108 may authenticate an action sequence based on a plurality of factors, which may include at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency detected at

runtime or based on a static and/or dynamic analysis of associated binaries, and any other suitable factors that will be apparent by persons having skill in the relevant art.

[0039] The runtime monitor 108 may authenticate an action sequence 308 and determine the runtime risk using at least one assessment policy, which in turn includes at least one rule of the plurality of rules, based on the time proximity (e.g., as included in the action sequence) and natural affinity that may be logically inferred between the performed actions in the action sequence 308. For example, the modification of a file or a registry key value for the computing system 100 upon the opening of a document (e.g., PDF, Excel, PowerPoint, Word, etc.) attached to an e-mail without any user intervention may not be a natural progression for an action sequence, and may therefore indicate a significant runtime risk.

[0040] Action sequences of actions performed in the computing system 100 may include, for example, a process chain (e.g., a launch sequence), an execution profile (e.g., performance metrics), an explicit user action (e.g., opening of a web link, opening of an e-mail attachment, insertion of a device), inactivity of a user, creation of a system file, modification of a system file, system application program interface (API) invocations, device access or operations (e.g., camera, microphone, card readers, universal serial bus drives, etc.), information access (e.g., contact list, global positioning system location, security settings, etc.), network activity, etc. The runtime monitor 108 may identify an action sequence 308 as normal, abnormal, or an outlier, based on the factors, policies, and rules as discussed above.

[0041] For example, a user may install an application (e.g., the user action 302), which may, as part of its installation, cause the processing unit 102 (e.g., the application

action 304) to modify the registry (e.g., the system action 306). In such an instance, the runtime monitor 108 may identify the action sequence as being a normal sequence, and may identify the action sequence and/or the application as having a minimal runtime risk and assign a corresponding behavior score. In another example, a user may insert a removable media into the computing system 100 (e.g., the user action 302), which may, automatically and transparent to the user, cause the processing unit 102 (e.g., the application action 304) to delete system files and registry keys (e.g., the system action 306). The runtime monitor 108 may identify such an action sequence as abnormal and may identify the device (e.g., the removable media) as having a significant runtime risk. Action sequences that may be considered normal, abnormal, or an outlier may vary from computing system to computing system and situation to situation as will be apparent to persons having skill in the relevant art.

Exemplary Method for Assessing Runtime Risk for an Application or Device

[0042] FIG. 4 illustrates an exemplary method 400 for the assessing of the runtime risk for an application or device in the computing system 100.

[0043] In step 402, a plurality of rules may be stored in a rules database (e.g., the rules database 110), wherein each rule identifies an action sequence. The action sequence may be a sequence of at least two performed actions, wherein each performed action is at least one of: a user action (e.g., the user action 302), an application action (e.g., the application action 304), and a system action (e.g., the system action 306). In step 404, a plurality of assessment policies may be stored in a policy database (e.g., the policy database 112), wherein each assessment policy includes at least one rule of the plurality of rules.

[0044] In step 406, a runtime risk for an application or device may be identified using at least one assessment policy, wherein the identified runtime risk identifies and predicts a specific type of threat. In one embodiment, the runtime risk may be identified based on matching rules and probabilistic weights and scores. In some embodiments, the runtime risk may be identified based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions. In step 408, a behavior score for the application or device may be identified, by a processing device (e.g., the processing unit 102) based on the identified runtime risk.

[0045] The user action 302 may be any form of explicit input from a user of the computing system 100. The application action 304 may be any activity performed by the application initiated programmatically by a task in execution of the computing system 100. The system action 306 may be any operation performed by the computing system 100 on behalf or, or as a consequence of, a user action 302 or application action 304 that changes the state of the computing system 100.

[0046] In one embodiment, the method 400 may further include assessing, by the processing device 102, that the at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors, wherein the plurality of factors include at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency.

[0047] In some embodiments, the at least two performed actions may include a first action performed at a first time and a second action performed at a second time. In a

further embodiment, the second time may occur after the first time (e.g., such that the first action is performed prior to the second action). In an even further embodiment, the first action may be a user action 302 and the second action may be a system action 306. In an alternative further embodiment, the first action may be a user action 302 and the second action may be an application action 304. In yet another alternative embodiment, the first action may be an application action 304 and the second action may be a system action 306. In one embodiment, the action sequence may include three performed actions including a user action 302, an application action 304, and a system action 306, where the application action 304 is performed temporally after the user action 302 and the system action 306 is performed temporally after the application action 304.

[0048] Techniques consistent with the present disclosure provide, among other features, a system and method for the assessment of the runtime risk of an application or device. While various exemplary embodiments of the disclosed system and method have been described above it should be understood that they have been presented for purposes of example only, not limitations. It is not exhaustive and does not limit the disclosure to the precise form disclosed. Modifications and variations are possible in light of the above teachings or may be acquired from practicing of the disclosure, without departing from the breadth or scope.

WHAT IS CLAIMED IS:

1. A method for assessing runtime risk for an application or device, comprising:

storing, in a rules database, a plurality of rules, wherein each rule identifies an action sequence;

storing, in a policy database, a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules;

identifying, using at least one assessment policy, a runtime risk for an application or device, wherein the identified runtime risk identifies and predicts a specific type of threat; and

identifying, by a processing device, a behavior score for the application or device based on the identified runtime risk, wherein

the action sequence is a sequence of at least two performed actions, and

each performed action is at least one of: a user action, an application action, and a system action.

2. The method of claim 1, wherein the user action is any form of explicit input from a user of a computing system.

3. The method of claim 1, wherein the application action is any activity performed by the application initiated programmatically by a task in execution of a computing system.

4. The method of claim 1, wherein the system action is any operation performed by a computing system on behalf of, or as a consequence of, a user action or application action that changes the state of the computing system.

5. The method of claim 1, wherein a first action of the at least two performed actions is performed at a first time, and the second action of the at least two performed actions is performed at a second time.

6. The method of claim 5, wherein
the first action is a user action,
the second action is a system action, and
the second time occurs after the first time.

7. The method of claim 5, wherein
the first action is a user action,
the second action is an application action, and
the second time occurs after the first time.

8. The method of claim 5, wherein
the first action is an application action,
the second action is a system action, and
the second time occurs after the first time.

9. The method of claim 1, wherein

the action sequence includes three performed actions,

a first action of the three performed actions is a user action,

a second action of the three performed actions is an application action,

a third action of the three performed actions is a system action,

the second action is performed temporally after the first action, and

the third action is performed temporally after the second action.

10. The method of claim 1, wherein the runtime risk is identified based on matching rules and probabilistic weights and scores.

11. The method of claim 1, wherein the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence 308 and natural affinity inferred between the at least two performed actions.

12. The method of claim 1, further comprising:

assessing, by the processing device, that the at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors,

wherein the plurality of factors includes at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency.

13. A system for assessing runtime risk for an application or device, comprising:

a rules database configured to store a plurality of rules, wherein each rule identifies an action sequence;

a policy database configured to store a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules; and

a processing device configured to

identify, using at least one assessment policy, a runtime risk for an application or device, wherein the identified runtime risk identifies and predicts a specific type of threat, and

identify a behavior score for the application or device based on the identified runtime risk, wherein

the action sequence is a sequence of at least two performed actions, and

each performed action is at least one of: a user action, an application action, and a system action.

14. The system of claim 13, wherein the user action is any form of explicit input from a user of a computing system.

15. The system of claim 13, wherein the application action is any activity performed by the application initiated programmatically by a task in execution of a computing system.

16. The system of claim 13, wherein the system action is any operation performed by a computing system on behalf of, or as a consequence of, a user action or application action that changes the state of the computing system.

17. The system of claim 13, wherein a first action of the at least two performed actions is performed at a first time, and the second action of the at least two performed actions is performed at a second time.

18. The system of claim 17, wherein
the first action is a user action,
the second action is a system action, and
the second time occurs after the first time.

19. The system of claim 17, wherein
the first action is a user action,
the second action is an application action, and
the second time occurs after the first time.

20. The system of claim 17, wherein
the first action is an application action,
the second action is a system action, and
the second time occurs after the first time.

21. The system of claim 13, wherein

the action sequence includes three performed actions,

a first action of the three performed actions is a user action,

a second action of the three performed actions is an application action,

a third action of the three performed actions is a system action,

the second action is performed temporally after the first action, and

the third action is performed temporally after the second action.

22. The system of claim 13, wherein the runtime risk is identified based on matching rules and probabilistic weights and scores.

23. The system of claim 13, wherein the runtime risk is identified based on time proximity of the at least two performed actions of the action sequence and natural affinity inferred between the at least two performed actions.

24. The system of claim 13, wherein

the processing device is further configured to assess that the at least two performed actions of the action sequence describe a forensic chain of events based on a plurality of factors, and

the plurality of factors includes at least one of: ordered sequences, unordered sequences, proximity analysis, outliers, probabilistic weights and scores, and probable action inferences based on an application's competency.

ABSTRACT OF THE DISCLOSURE

A method for assessing runtime risk for an application or device includes: storing, in a rules database, a plurality of rules, wherein each rule identifies an action sequence; storing, in a policy database, a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules; identifying, using at least one assessment policy, a runtime risk for an application or device, wherein the identified runtime risk identifies and predicts a specific type of threat; and identifying, by a processing device, a behavior score for the application or device based on the identified runtime risk, wherein the action sequence is a sequence of at least two performed actions, and each performed action is at least one of: a user action, an application action, and a system action.

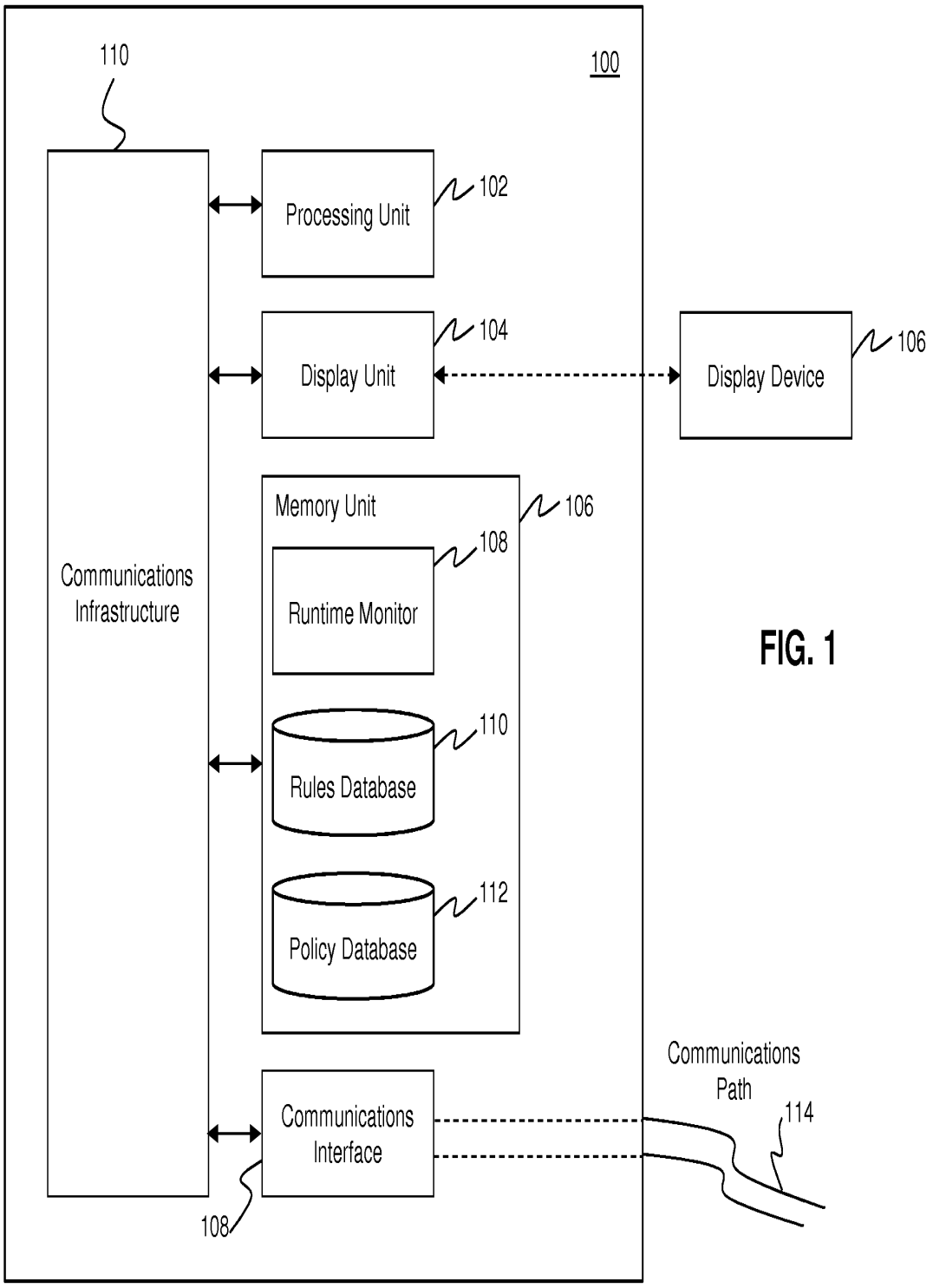

110
100
Processing Unit
102
Display Unit
104
Display Device
106
Memory Unit
106
108
Runtime Monitor
Communications Infrastructure
110
Rules Database
112
Policy Database
Communications Path
114
Communications Interface
108

FIG. 1

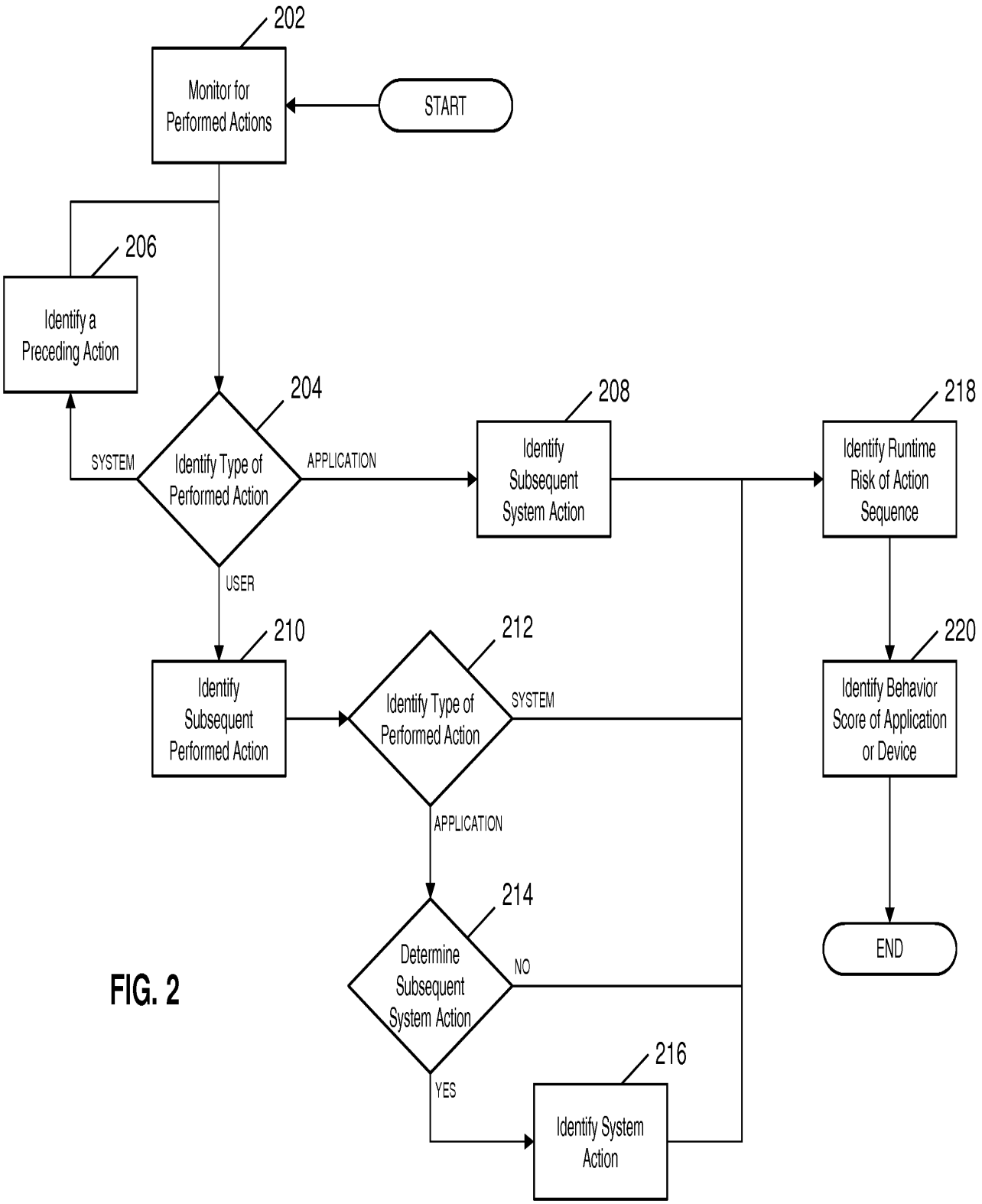

202
Monitor for Performed Actions
START
206
Identify a Preceding Action
204
Identify Type of Performed Action
SYSTEM
APPLICATION
USER
208
Identify Subsequent System Action
218
Identify Runtime Risk of Action Sequence
210
Identify Subsequent Performed Action
212
Identify Type of Performed Action
SYSTEM
APPLICATION
220
Identify Behavior Score of Application or Device
214
Determine Subsequent System Action
NO
YES
END
216
Identify System Action

FIG. 2

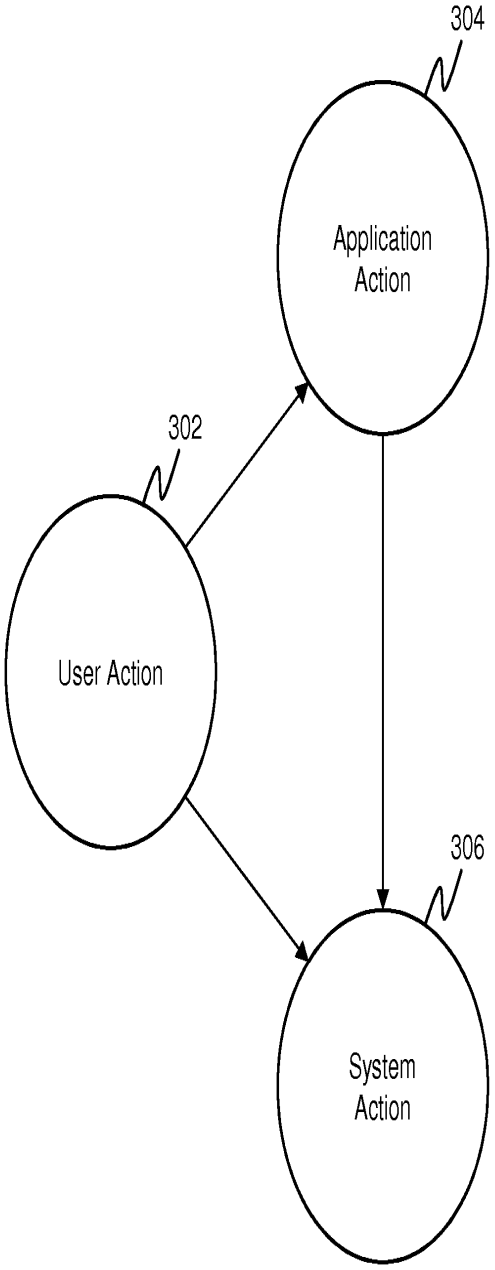

304
Application Action
302
User Action
306
System Action

FIG. 3A

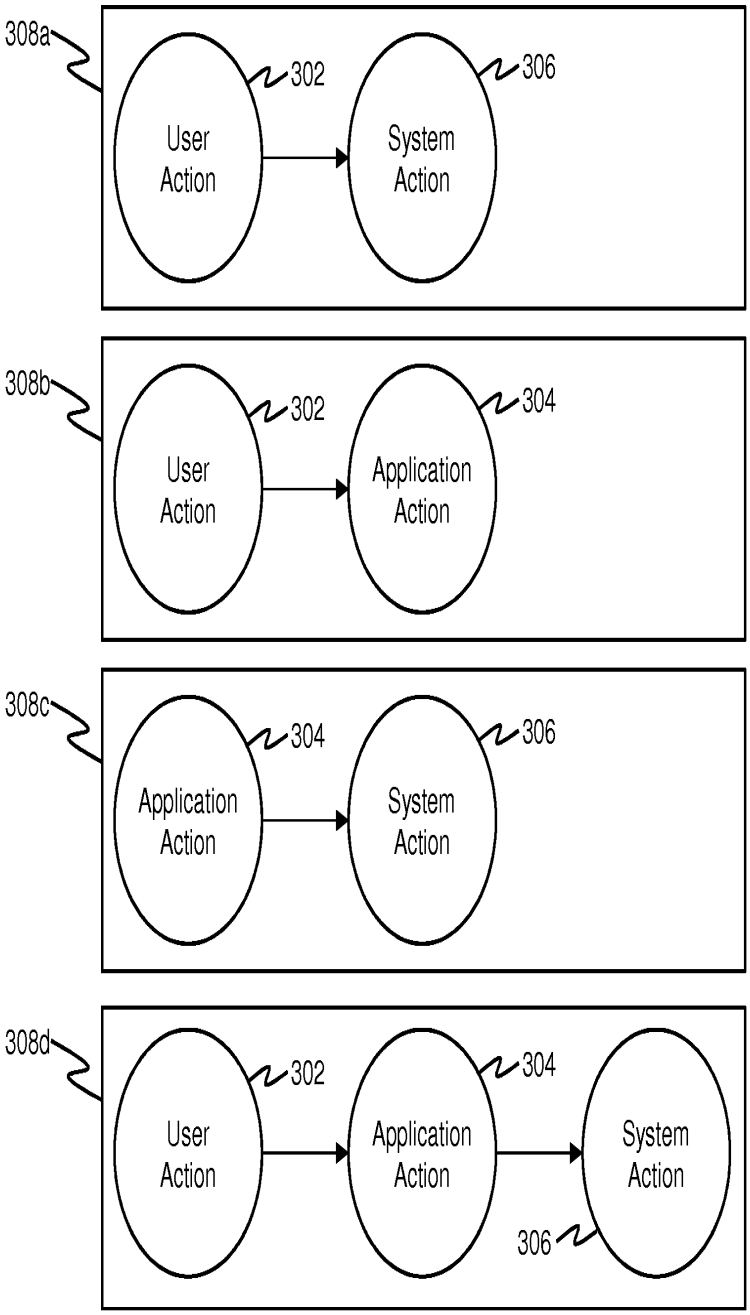

308a
302
306
User Action
System Action
308b
302
304
User Action
Application Action
308c
304
306
Application Action
System Action
308d
302
304
User Action
Application Action
System Action
306

FIG. 3B

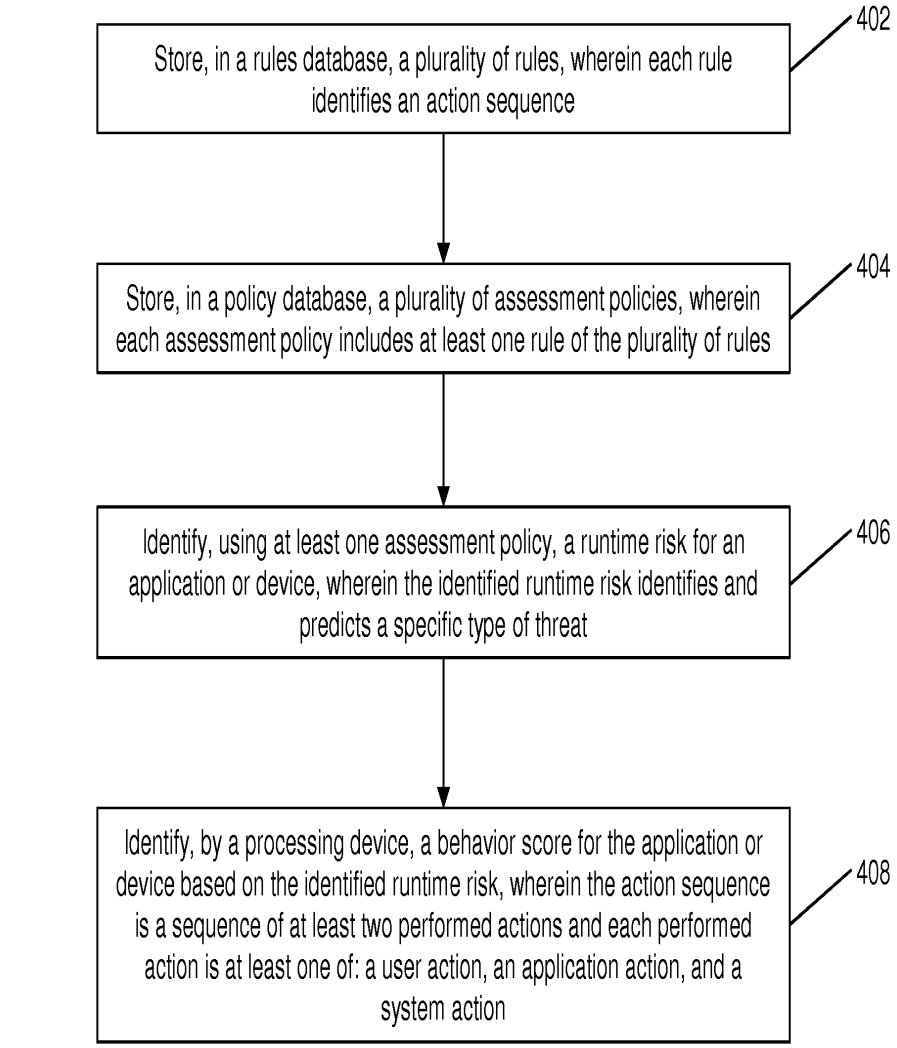

400
Store, in a rules database, a plurality of rules, wherein each rule identifies an action sequence
402
Store, in a policy database, a plurality of assessment policies, wherein each assessment policy includes at least one rule of the plurality of rules
404
Identify, using at least one assessment policy, a runtime risk for an application or device, wherein the identified runtime risk identifies and predicts a specific type of threat
406
Identify, by a processing device, a behavior score for the application or device based on the identified runtime risk, wherein the action sequence is a sequence of at least two performed actions and each performed action is at least one of: a user action, an application action, and a system action
408

FIG. 4

Doc Code: OATH

Document Description: Oath or declaration filed

Substitute for PTO/AIA/08 & PTO/AIA/10(06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted With Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (f)) required)

Attorney Docket Number	0079152-000017
First Named Inventor	*Srinivas KUMAR*
COMPLETE IF KNOWN	
Application Number	*Unassigned*
Filing Date	
Art Unit	Unassigned
Examiner Name	Unassigned

SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION

(Title of the Invention)

As a below named inventor, I hereby declare that:

This declaration is directed to:

☒ The attached application,

OR

☐ United States Application Number or PCT International application number _____ filed on _____.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Authorization To Permit Access To Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application. In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application. In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION – Utility or Design Patent Application

Direct all correspondence to: ☒ The address associated with Customer Number: **21839** OR ☐ Correspondence address below

Name		
Address		
City	State	ZIP
Country	Telephone	Email

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. Petitioner/applicant is advised that documents which form the record of a patent application (such as the PTO/SB/01) are placed into the Privacy Act system of records DEPARTMENT OF COMMERCE, COMMERCE-PAT-7, System name: *Patent Application Files* . Documents not retained in an application file (such as the PTO-2038) are placed into the Privacy Act system of COMMERCE/PAT-TM-10, System name: *Deposit Accounts and Electronic Funds Transfer Profiles* .

LEGAL NAME OF SOLE OR FIRST INVENTOR:

(*E.g.*, Given Name (first and middle (if any) and Family Name or Surname)

Srinivas KUMAR

Inventor's Signature: Skumar			Date (Optional): 1/14/2013
Residence: City: Cupertino	State: California	Country: USA	
Mailing Address: 19930 Olivewood Street, Unit #C			
City: Cupertino	State: California	ZIP: 95014	Country: USA

Attorney Docket No. 0079152-000017

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	)	
	)	
Srinivas KUMAR	)	Group Art Unit: Unassigned
	)	
Application No.: Unassigned	)	Confirmation No.: Unassigned
	)	
Filed: January 15, 2013	)	
	)	
For: System For and a Method of Cognitive Behavior Recognition	)	
	)	
	)	
	)	

FIRST INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, the accompanying information is being submitted in accordance with 37 C.F.R. §§ 1.97 and 1.98.

To assist the Examiner, the document is listed on the attached citation form. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date January 15, 2013

By: _____
Charles F. Wieland III
Registration No. 33,096

Customer Number 21839
703 836 6620

PTO/SB/08a&b (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO				Complete if Known	
FIRST INFORMATION DISCLOSURE STATEMENT BY APPLICANT				*Application Number*	
				Filing Date	
				First Named Inventor	**Srinivas KUMAR**
(Use as many sheets as necessary)				*Art Unit*	
				Examiner Name	
Sheet	1	of	1	*Attorney Docket Number*	**0079152-000017**

clarify the scope of the subject matter for which protection is sought

U.S. PATENT DOCUMENTS

Examiner Initials'	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-8,327,441 B2	12-04-2012	Kumar et al.	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials'	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code [5](*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]

Examiner Signature		Date Considered	

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION
First Named Inventor/Applicant Name:	Srinivas KUMAR
Filer:	Charles F. Wieland III/Ashley Fernandez
Attorney Docket Number:	0079152-000017

Filed as Small Entity

Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	98	98
Utility Search Fee	2111	1	310	310
Utility Examination Fee	2311	1	125	125
Request for Prioritized Examination	2817	1	2400	2400
Pages:				
Claims:				
Claims in excess of 20	2202	4	31	124
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Publ. Fee- early, voluntary, or normal	1504	1	300	300
Processing Fee, except for Provis. apps	1808	1	130	130
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**3487**

Electronic Acknowledgement Receipt

EFS ID:	14705325
Application Number:	13741878
International Application Number:	
Confirmation Number:	4039
Title of Invention:	SYSTEM FOR AND A METHOD OF COGNITIVE BEHAVIOR RECOGNITION
First Named Inventor/Applicant Name:	Srinivas KUMAR
Customer Number:	21839
Filer:	Charles F. Wieland III/Ashley Fernandez
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	0079152-000017
Receipt Date:	15-JAN-2013
Filing Date:	
Time Stamp:	15:55:03
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$3487
RAM confirmation Number	2612
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

Trend Micro, Inc.
EX1002-235

1	Transmittal of New Application	Utility_TL.pdf	91113 a3a1180127a0f9c4b30c34b827a96da41dbbefa9	no	2
Warnings:					
Information:					
2	Authorization for Extension of Time all replies	Auth.pdf	35799 e1a23c5a76913612ac92ec5e8bcb96a9911e6cb4	no	1
Warnings:					
Information:					
3	TrackOne Request	Track_I_Request_TL.pdf	68113 a11ecb338835b9eba9fe1194fdce74ce01d34a68	no	1
Warnings:					
Information:					
4	Application Data Sheet	ADS.pdf	137029 2c30b8231b39c5615bc0fb5beecd585bef5167ae	no	4
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
5		Specification.pdf	123232 798ed5b1807d81dd044e3e31321be3e41e0bb6a9	yes	27

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	20
Claims	21	26
Abstract	27	27

Warnings:					
Information:					
6	Drawings-only black and white line drawings	Drawings.pdf	48123 ba85e96a7c5709cbc482857a6feb81250e0e81c1	no	4
Warnings:					
Information:					
7	Oath or Declaration filed	Declaration.pdf	2156187 455a148d9db9a0e773206f33685c347ddbb9a381	no	2
Warnings:					
Information:					

8	Transmittal Letter	IDS_TL.pdf	30945 ee92cb41bb5b0e5407e9219ad90b3d9afffb6b1a	no	1
Warnings:					
Information:					
9	Information Disclosure Statement (IDS) Form (SB08)	IDS_PTO1449.pdf	72213 20a644c9ab93a4e2e4b6352bbdb6952c7461dc25	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
10	Fee Worksheet (SB06)	fee-info.pdf	41945 1e012d486955fa9b8a40b8dbdb42e0c64c9c0636	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2804699		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.