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In re Application of

Moshe DGANI et al.

Serial No.: HEREWITH

Filed: HEREWITH

For: System and Method for Running Mobile Devices
in the Cloud

Examiner: Not Yet Assigned

Group Art: Not Yet Assigned

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Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

S I R:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56 and in accordance with the practice under 37 C.F.R. §§ 1.97 and 1.98, the Examiner's attention is directed to the documents listed on the enclosed Form PTO/SB/08a. Copies of the listed non U.S. documents are enclosed.

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Respectfully submitted,
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Dated: September 7, 2012

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	Filed Concurrently
		Filing Date	August 29, 2012
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		Art Unit	Not Yet Assigned
		Examiner Name	Not Yet Assigned
Sheet 1 of 1	Attorney Docket	5900-4 - 323207.000	

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind-Code ² (if known)			
		US-2011/0161404	06-30-2011	Ekstrom et al.	
		US-8,165,558	04-24-2012	Cook et al.	
		US-2011/0252071	10-13-2011	Cidon	
		US-2010/0146504	06-10-2010	Tang	
		US-2010/0333088	12-30-2010	Rogel et al.	
		US-7,127,705	10-24-2006	Christfort et al.	
		US-2011/0302302	12-08-2011	Min et al.	
		US-2011/0093567	04-21-2011	Jeon et al.	
		US-2010/0131966	05-27-2010	Coleman et al.	
		US-8,060,074	11-15-2011	Danford et al.	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	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
		Country Code ³ - Number ⁴ - Kind-Code ⁵ (if known)				
		CN 10 2404395	04-04-2012	Meng et al.		Abstract
		CN 20 2205234	04-25-2012	Yiming et al.		Abstract

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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 2 hours 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, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

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**Espacenet****Bibliographic data: CN102404395 (A) — 2012-04-04**

Method for switching multiple operation systems for mobile terminal based on cloud compute

Inventor(s): MENG ZHAO; CHANGXIN JIN; QIANG LIU $\pm$
Applicant(s): LANGCHAO ELECTRONIC INF IND $\pm$
Classification: - international: **H04L29/08**
 - European:
Application number: CN20111354338 20111110
Priority number(s): CN20111354338 20111110

Abstract of CN102404395 (A)

The invention provides a method for switching multiple operation systems for a mobile terminal based on cloud compute, which comprises: a mobile terminal client software installed on a mobile terminal of a user and used for logging in a remote cloud server, and further comprises server side virtual machine software installed on the cloud server and used for simulating various types of operation systems. The method realizes the switch among multiple operation systems for the mobile terminal by simulating various popular operation-systems on the cloud server side and sharing the mobile terminals with access authority.

Last updated: 14.03.2012 Worldwide Database 5.7.38; 93p



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(51) Int. Cl.

H04L 29/08 (2006.01)

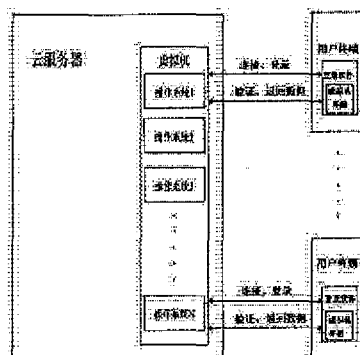
权利要求书 1 页 说明书 2 页 附图 1 页

(54) 发明名称

一种基于云计算的移动终端多操作系统切换方法

(57) 摘要

本发明提供一种基于云计算的移动终端多操作系统切换方法,该方法包括一个移动终端客户端软件,安装在用户的移动终端上,用于登录远端的云服务器;还包括一个安装在云服务器的服务端虚拟机软件,用于模拟多种操作系统。本发明通过在云服务器端虚拟多种主流操作系统,对有访问权限的移动终端共享,来完成移动终端的多操作系统切换。



1. 一种基于云计算的移动终端多操作系统切换方法，其特征在于切换步骤如下：

1) 使用安装在手机客户端的软件，访问云服务器，登陆服务器上的虚拟机，然后选择一套操作系统，在虚拟机里运行，软件由 Java 编写，在由不同硬件组成的手机上编译运行；

2) 在云服务器安装有服务端软件，由连接模块和虚拟机组成，客户端和服务端软件功能分别是：由客户端软件连接到服务端软件，服务端负责响应并验证用户权限，验证后，客户端软件窗口显示服务端虚拟机的界面，用户选择一种操作系统之后，虚拟机即运行此系统；

3) 虚拟机对各系统进行重启、挂机、关机操作，用户登出后，运行于云服务器的虚拟机保存上次使用的虚拟系统的状态和用户数据，允许用户下次使用时继续上次的应用程序。

一种基于云计算的移动终端多操作系统切换方法

技术领域

[0001] 本发明涉及微电子和移动通信技术领域,具体提供一种基于云计算的移动终端多操作系统切换方法。

背景技术

[0002] 随着手机 3G 网络的迅速发展,3G 移动终端渐渐普及,用户对 3G 移动终端的需求日益增大,特别是 3G 智能手机。目前,各厂商的智能手机有多种操作系统,这些操作系统各有千秋,能提供不同的用户体验。例如:苹果公司的 iPhone OS、Google 的 Android 系统、诺基亚的 Symbian、RIM 的黑莓系统、三星的 Bada 系统、微软的 Windows Mobile 手机系统等等,这些系统之间不能兼容。同时,虽然有些热点的应用会支持多版本操作系统,但是目前的应用绝大多数在不同操作系统下不能兼容,让用户很难取舍,有时需要配备多个移动终端,这样就大大浪费了资源和日常开销,携带起来也不方便。

[0003] 本发明通过让使用不同操作系统的手机用户访问云端服务器的虚拟机,任意选择虚拟机中的各种移动操作系统,可以使用不同系统下的应用,实现了移动终端多操作系统切换,从而很好的解决了上述问题。

发明内容

[0004] 本发明的目的是提供一种基于云计算的移动终端多操作系统切换方法。

[0005] 本发明的目的是按以下方式实现的,针对现有技术和资源的不足,在云服务器端使用虚拟机模拟出多种移动操作系统,让可以接入并有使用权限的用户使用,可以在多种不同的移动操作系统之间切换,即可以为用户提供各种不同的应用体验。

[0006] 切换步骤如下:

1) 使用安装在手机客户端的软件,访问云服务器,登陆服务器上的虚拟机,然后选择一套操作系统,在虚拟机里运行,软件由 Java 编写,在由不同硬件组成的手机上编译运行;

2) 在云服务器安装有服务端软件,由连接模块和虚拟机组成,客户端和服务端软件功能分别是:由客户端软件连接到服务端软件,服务端负责响应并验证用户权限,验证后,客户端软件窗口显示服务端虚拟机的界面,用户选择一种操作系统之后,虚拟机即运行此系统;

3) 虚拟机对各系统进行重启、挂机、关机操作,用户登出后,运行于云服务器的虚拟机保存上次使用的虚拟系统的状态和用户数据,允许用户下次使用时继续上次的应用程序。

[0007] 本发明的方法具有以下突出的有益效果:

(1) 节省了用户成本,让用户使用一个移动终端就可以在不同系统上体验各种应用和完成不同的工作;

(2) 对于服务提供商,是一种简单、低成本和低实施难度的方案;

(3) 多元化了用户体验;

(4) 用户不需要因为移动终端操作系统而去选择买一种手机。

附图说明

[0008] 附图 1 是基于云计算的移动终端多操作系统切换示意图。

具体实施方式

[0009] 参照说明书附图对本发明的方法作以下详细地说明。

[0010] 本发明的基于云计算的移动终端多操作系统切换方法，切换步骤如下：

使用安装在手机客户端的软件，访问云服务器，登陆服务器上的虚拟机，然后选择一套操作系统，在虚拟机里运行，本软件由 Java 编写，可以在由不同硬件组成的手机上编译运行。在云服务器安装有服务端软件，由连接模块和虚拟机组成。客户端和服务端软件功能分别是：由客户端软件连接到服务端软件，服务端负责响应并验证用户权限。验证后，客户端软件窗口显示服务端虚拟机的界面，用户选择一种操作系统之后，虚拟机即运行此系统，另外虚拟机还可以对各系统进行重启、挂机、关机操作。用户登出后，运行于云服务器的虚拟机保存上次使用的虚拟系统的状态和用户数据，当用户下次使用时可以继续上次的应用程序。

[0011] 本发明解决其技术问题所采用的技术方案是：在云服务器端用虚拟机虚拟出多种不同的手机硬件环境，并安装上对应的操作系统，为可以接入并有使用权限的用户提高多操作系统服务，同时还能保存应用状态和用户数据，是一种集云存储、云应该的解决方案。

实施例

[0012] 下面结合附图和具体实施例对本发明的方法作进一步说明，但不作为对本发明的限定。

[0013] Android 手机用户想使用 iPhone OS 的某个应用程序，安装本发明的客户端软件后，登陆安装了服务端的云服务器，在虚拟机上选择运行 iPhone OS，打开想用的应用程序就可以使用了。任务完毕，虚拟机保存 iPhone OS 的运行状态和用户数据，退出虚拟机，返回到本手机的 Android 操作系统。

[0014] 以上所述的实施例，只是本发明较优选的具体实施方式的一种，本领域的技术人员在本发明技术方案范围内进行的通常变化和替换都应包含在本发明的保护范围内。

[0015] 除说明书所述的技术特征外，均为本专业技术人员的已知技术。

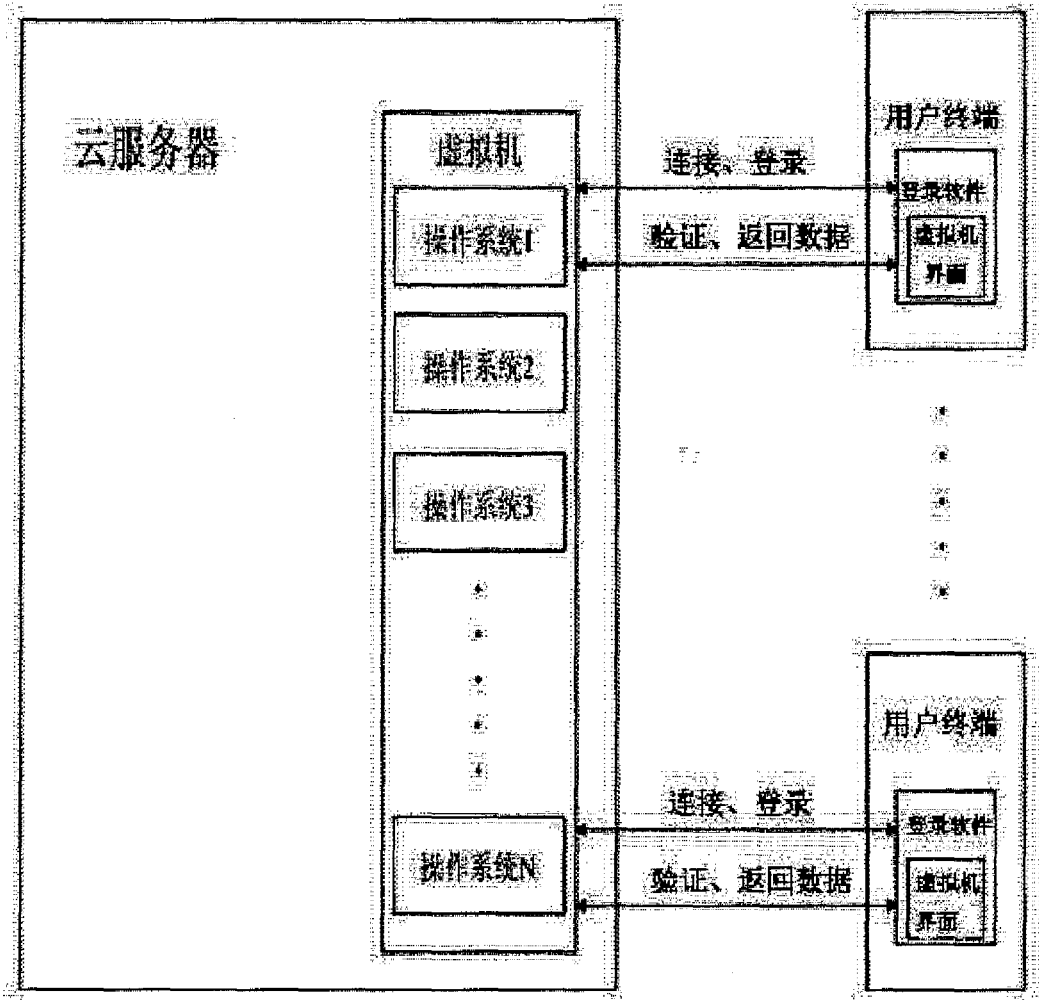


图 1

**Espacenet****Bibliographic data: CN202205234 (U) — 2012-04-25**

Cloud computing SaaS system

Inventor(s): YIMING HU; JIE ZHENG ±
Applicant(s): SHANGHAI DMT INFORMATION NETWORK CO LTD ±
Classification: - **international:** **G06Q30/00**
 - **European:**
Application number: CN20112221990U 20110628
Priority number(s): CN20112221990U 20110628

Abstract of CN202205234 (U)

The utility model relates to a cloud computing SaaS (Software-as-a-Service) system which comprises a software provider client, a cloud computing server, an enterprise client and a cell phone client. The software provider client is connected with the cloud computing server via a four-net interconnection and intercommunication service platform independently researched and developed by a company. The cloud computing server is connected with the enterprise client and the cell phone client, respectively. The cell phone client includes an android cell phone client and an iOS cell phone client. Compared with the prior art, the cloud computing SaaS system is stable and safe in operation, reliable, enables operation processes to be greatly simplified, allows the cost of software purchase for an enterprise to be substantially reduced, etc.

Last updated: 14.03.2012 Worldwide Database 5.7.38; 93p



(12) 实用新型专利

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(51) Int. Cl.

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(ESM) 同样的发明创造已同日申请发明专利

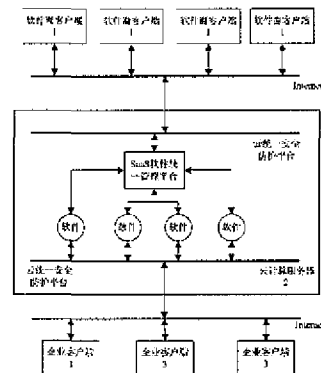
权利要求书 1 页 说明书 2 页 附图 1 页

(54) 实用新型名称

一种云计算 SaaS 软件运营服务系统

(57) 摘要

本实用新型涉及一种云计算 SaaS 软件运营服务系统, 该软件运营服务系统包括软件商客户端、云计算服务器、企业客户端、手机客户端, 所述的软件商客户端通过公司自主研发的“四网互联互通服务平台”与云计算服务器连接, 所述的云计算服务器分别与企业客户端和手机客户端连接, 所述的手持手机客户端包括 android 手机客户端和 iOS 手机客户端。与现有技术相比, 本实用新型具有运行稳定、安全, 可靠, 而且使用流程大为简化, 可大大降低企业购买软件的成本等优点。



1. 一种云计算 SaaS 软件运营服务系统,其特征在于,该软件服务系统包括软件商客户端、云计算服务器、企业客户端、手机客户端,所述的软件商客户端与云计算服务器连接,所述的云计算服务器分别与企业客户端和手机客户端连接。

2. 根据权利要求 1 所述的一种云计算 SaaS 软件运营服务系统,其特征在于,所述的云计算服务器内设有软件存储器。

3. 根据权利要求 1 所述的一种云计算 SaaS 软件运营服务系统,其特征在于,所述的手动客户端包括 andriod 手机客户端和 iOS 手机客户端。

一种云计算 SaaS 软件运营服务系统

技术领域

[0001] 本实用新型涉及一种软件服务系统,尤其是涉及一种云计算 SaaS 软件运营服务系统。

背景技术

[0002] 传统软件服务模式一般采用盒装销售模式,即企业用户一次性购买软件后,自行配置硬件设备和运维团队进行部署实施,这样对企业成本较高。目前一部分软件商已经开始有意识的开发出来了具备 SaaS(SaaS 即 Software-as-a-service,意思是软件即服务,SaaS 的中文名称为软营或软件运营。SaaS 是基于互联网提供软件服务的软件应用模式。)模式的软件版本,但是传统软件商在运营服务上没有优势,而且单一的软件产品也不能够完全满足企业用户的基本需求,因此需要有一个统一的 SaaS 平台进行整合,并且提供专业的软件运营服务。

实用新型内容

[0003] 本实用新型的目的就是为了克服上述现有技术存在的缺陷而提供一种运行稳定、安全,使用简单,可大大降低企业成本的云计算 SaaS 软件运营服务系统。

[0004] 本实用新型的目的可以通过以下技术方案来实现:一种云计算 SaaS 软件运营服务系统,其特征在于,该软件服务系统包括软件商客户端、云计算服务器、企业客户端、手机客户端,所述的软件商客户端与云计算服务器连接,所述的云计算服务器分别与企业客户端和手机客户端连接。

[0005] 所述的云计算服务器内设有软件存储器。

[0006] 所述的云计算服务器内还设有云防火墙。

[0007] 所述的手机客户端包括 andriod 手机客户端和 iOS 手机客户端。

[0008] 与现有技术相比,本实用新型具有以下优点:

[0009] 1、软件商和企业用户统一登录认证入口,只需要一个界面登录就可以实现整个软件服务系统的访问操作,可大大降低企业成本。

[0010] 2、系统搭建于云计算数据中心内,通过云计算服务器和云统一安全防护平台保证了系统的稳定和安全。

[0011] 3、应用软件部署于本系统中,用户直接在企业客户端完成体验、试用和正常使用操作,简单方便。

[0012] 4、软件商提供成熟软件系统、部署方案及技术支持,运营商负责产品的整体运营,包括产品部署、运维、市场推广、销售、客服。

附图说明

[0013] 图 1 为本实用新型的结构示意图。

具体实施方式

[0014] 下面结合附图和具体实施例对本实用新型进行详细说明。

[0015] 如图 1 所示,一种云计算 SaaS 软件运营服务系统,该软件服务系统包括软件商客户端 1、云计算服务器 2、企业客户端 3、手机客户端。云计算服务器 1 内设有软件存储器和云防火墙。软件商客户端 1 与云计算服务器 2 连接,云计算服务器 2 分别与企业客户端 3 和手机客户端连接。软件商将支持 B/S 模式的应用软件存储在云计算服务器上,企业客户端通过对应应用软件的访问来实现应用服务,软件商客户端可对应用软件的日常运行进行监控。手机客户端包括 andriod 手机客户端和 iOS 手机客户端。软件商客户端为 PC 机,企业客户端为 PC 机,手机客户端为手机。云计算服务器为巨型计算机。

[0016] 基于云计算模式的 SaaS 软件服务系统,该服务系统基于具备云计算架构的虚拟机系统,集成了多家软件服务商成熟的应用软件,而且应用软件必须不同于传统 C/S 结构,能够支持 B/S 模式,并且能够支持多重租赁架构。软件商将自己成熟的 SaaS 模式软件部署于云计算服务器内,由平台运营商进行运营,对广大中小企业提供软件在线服务。云计算 SaaS 软件运营服务系统,主要特点在于软件商和运营商各自独立但又有机结合,各司其职,基于本软件服务系统,软件商负责软件产品研发升级,运营商负责软件产品的运营,包括部署、运维、市场推广、销售、客服、售前售后技术支持等。云计算服务器架设于云计算数据中心内,整个软件服务系统处于云统一安全防护平台的保护之中。平台运营商管理注册用户、合作软件商在系统上的操作行为和各应用软件的运营状况,注册用户通过对各应用软件的访问来实现应用服务,合作软件商通过各对应应用软件的接口进行对该应用软件的日常运行监控。

[0017] 以 OA 办公应用软件系统为例:

[0018] 1) 同 OA 软件商协商商务事宜,达成合作运营意向。

[0019] 2) 在云计算机房内的云计算服务器上划分虚机,部署 SaaS 版的 OA 应用子系统。

[0020] 3) 通过安装在云计算服务器上的 SaaS 软件统一管理平台上进行设置,将 OA 应用子系统纳入,保证软件商能够对 OA 应用子系统的运营监控。

[0021] 4) 企业用户可以注册购买 OA 应用子系统,享受在线软件服务。

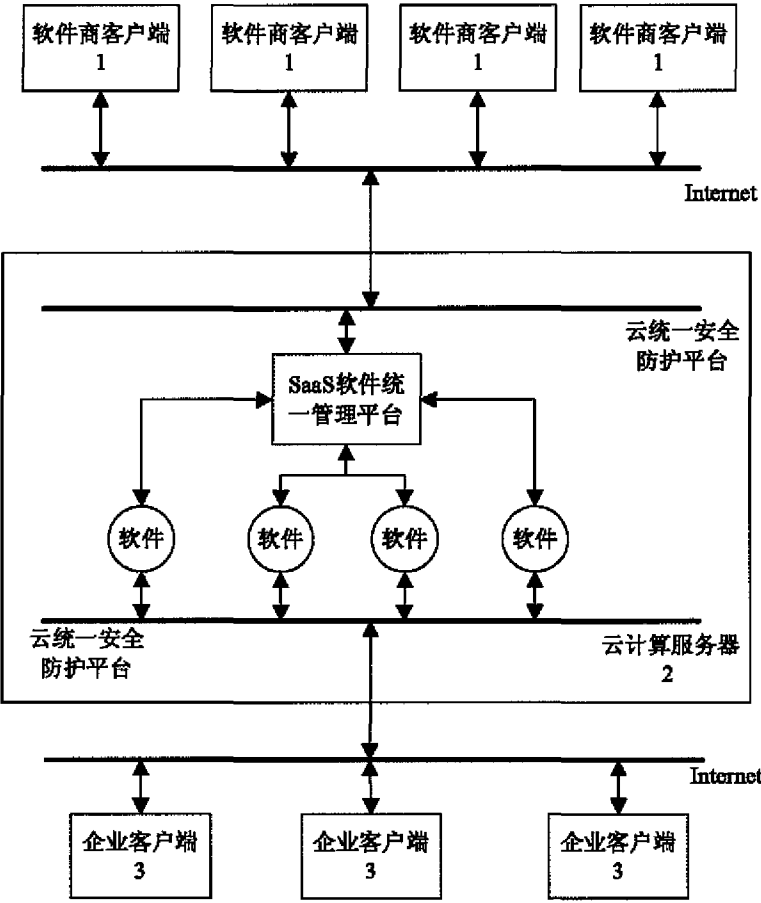


图 1

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		System and Method for Running Mobile Devices in the Cloud		
First Named Inventor/Applicant Name:		Moshe DGANI		
Filer:		Thomas Langer/Lisa soto/ Aaron		
Attorney Docket Number:		5900-4 - 323207.000		
Filed as Small Entity				
Utility 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	95	95
Utility Search Fee	2111	1	310	310
Utility Examination Fee	2311	1	125	125
Pages:				
Claims:				
Claims in excess of 20	2202	27	30	810
Independent claims in excess of 3	2201	5	125	625
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1965

Electronic Acknowledgement Receipt

EFS ID:	13686612
Application Number:	13606675
International Application Number:	
Confirmation Number:	6675
Title of Invention:	System and Method for Running Mobile Devices in the Cloud
First Named Inventor/Applicant Name:	Moshe DGANI
Customer Number:	27799
Filer:	Thomas Langer/Lisa soto/ Aaron
Filer Authorized By:	Thomas Langer
Attorney Docket Number:	5900-4 - 323207.000
Receipt Date:	07-SEP-2012
Filing Date:	
Time Stamp:	15:15:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 1965
RAM confirmation Number	1983
Deposit Account	503111
Authorized User	

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 1.21 (Miscellaneous fees and charges)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	5900-4-transmittal.PDF	16756 217b1680fb3041c14977c80a739a73b8331db701	no	2
Warnings:					
Information:					
2		5900-4-Application.pdf	140513 0d4b999d5c0bd5122cc52b95de9dd37dea3d5948	yes	38
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	24	
	Claims		25	37	
	Abstract		38	38	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	5900-4-drawings.pdf	90555 7c4f90008ce127aa3274a9e3e61d363a8119fa50	no	8
Warnings:					
Information:					
4	Application Data Sheet	5900-4-ads.PDF	24170 2637cd240b18f8b43191090c885b5319aa1620d0	no	4
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
5	Oath or Declaration filed	5900-4-dec.PDF	56510 3a314c9075d8148dc96202d391aff9ad05cab72d	no	3
Warnings:					
Information:					
6	Information Disclosure Statement (IDS) Form (SB08)	5900-4-ids.PDF	49307 24c81c95ce659ff68a1a2d87fd7820d9e4973fa4	no	3
Warnings:					
Information:					
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7	Foreign Reference	5900-4-ref-1.pdf	182918	no	6
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Warnings:					
Information:					
8	Non Patent Literature	5900-4-ref-2.pdf	148757	no	6
			951bcb447cdf5bb729ac518ec574e62e4f1e488a		
Warnings:					
Information:					
9	Fee Worksheet (SB06)	fee-info.pdf	37999	no	2
			f1d48cde0716a58d754a124cd3be9f05e389e1bd		
Warnings:					
Information:					
Total Files Size (in bytes):			747485		
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.					

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Dated: September 7, 2012

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

Sir:

Transmitted herewith for filing is the utility patent application of:

Inventors: Moshe DGANI, Moshe LEVY, Zvi SHMILOVICI

For: System and Method for Running Mobile Devices in the Cloud

Enclosed are:

- Transmittal letter
- Specification, Claims 1 to 47 & Abstract (38 pages)
- Application Data Sheet
- Executed Declaration and Power of Attorney (3 p.)
- 8 sheets of drawings (Figs. 1 to 12)
- Small Entity Status is claimed
- Information Disclosure Statement
- PTO Form SB/08A with copies (2 docs.) of cited references

This application is to be assigned to: **Emblaze Ltd.**

- [x] Please charge my Deposit Account No. 503111 for the requisite fee of \$2060.
- [x] The Commissioner is hereby authorized to charge payment of the following fees associated with this application or credit any overpayment to Deposit Acct. No. 503111.
- [x] Any additional filing fees required under 37 CFR 1.16.
 - [x] Any patent application processing fees under 37 CFR 1.17
 - [x] Any filing fees under 37 CFR 1.16 for presentation of extra claims.

[x] Priority is claimed for this invention and application, a corresponding application having been filed in **United States** on **May 31, 2012**, No. **61/653,819**.

Respectfully submitted,
COZEN O'CONNOR

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SYSTEMS AND METHODS FOR RUNNING MOBILE DEVICES IN THE CLOUD

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application No. 61/653,819, filed May 31, 2012.

BACKGROUND

1. Field of Disclosure

[0002] Example embodiments are related to systems and methods for running mobile device hardware and software in the cloud and, in particular, to systems and methods in which a mobile device acts as an input/output interface for a user, and actual processing, storage and network interfaces are performed by a remote server.

2. Description of Related Art

[0003] Operating systems (OS's) and applications, i.e., software (SW), for mobile devices continue to develop to provide richer functionality and user interface experiences, and are thus becoming larger, more complex and more performance hungry. Mobile device hardware (HW) requirements for OS's and applications are becoming more demanding in terms of central processing unit (CPU) and graphic processing unit (GPU) capabilities, memory sizes and power dissipation. The current generation of mobile devices (e.g., smartphones, tablets and laptops) is based on high performance HW, namely a high speed multi-core CPU and GPU, a large run time memory (e.g., dynamic random-access memory (DRAM)) and a large storage size (e.g., Flash memory storage). As the HW requirements for executing or running OS's and applications become more demanding, HW costs for mobile

devices increase. Moreover, changes in mobile device performance may lead users to frequently change their mobile device.

[0004] Another trend in mobile device technology is the frequent change in OS versions (e.g., Google's Android OS has versions 2.x, 3.x, 4.x....) and the different types of OS's (e.g., Google's Android, Microsoft's Windows Mobile, Nokia's Symbian and Apple's iOS) on the market that require effectively different HW. When a new OS version is released, mobile device vendors cannot always upgrade each of the different mobile devices in their product line with the new OS version due to the large amount of time and effort needed to develop and test an upgrade path for each different device type. Mobile device manufacturers address different market segments by designing and manufacturing many mobile device variants, each with different HW capabilities and accompanying OS and applications tailored to the HW capabilities. This wide variety of devices often confuses customers and results in a large burden on the manufacturers for maintaining multiple SW versions.

[0005] Fig. 1 shows a conventional SW stack on a conventional mobile device. A conventional mobile device is a stand-alone entity in which the entire SW stack executes on the HW of the mobile device itself. A conventional SW Stack includes a HW abstraction layer (e.g., Kernel, drivers etc.) executing directly on the mobile device HW, an OS and applications executing on top of the OS. The performance of a conventional mobile device is related to the HW capabilities of the mobile device. A network provides voice calls and a data connection, for example, a data connection for web surfing, e-mails, application downloads etc., to a conventional mobile device.

[0006] U.S. Pub. No. 2011/0161404 discloses a server implemented method for communicating data between a server and a first device. The method, however, does not

communicate different data in different streams or provide for multiple versions, types or instances of a mobile OS at the server.

[0007] U.S. Pat. No. 8,165,558 discloses a “trans” client which does not contain its own user interface (UI) and operating system (OS) has no capability to run user programs as a standalone apparatus. The trans client, however, is for operation with a smart cellular telephone as its server.

[0008] U.S. Pub. No. 2011/0252071 discloses a method for managing a virtual distributed file system, but is unrelated to emulation of a mobile device OS at a server.

[0009] U.S. Pub. No. 2010/0146504 discloses discloses a virtual mobile infrastructure (VMI) and its base platform. The host OS, however, requires a QEMU process and a VM switch to virtualize at least one guest cell phone operating system.

SUMMARY

[00010] Example embodiments provide systems and methods for decoupling mobile device HW capabilities from actual mobile device performance and a user experience, which enables upgrading mobile device functionality, performance, OS and applications without the need to change the HW or the local SW of the mobile device itself.

[00011] According to an example embodiment, a method for operating a mobile device comprises executing, by a mobile device, a basic software (SW) protocol or operating system (OS) to receive input information from one or more hardware (HW) components of the mobile device, establish a network connection to a server, and send the input information to the server over the network connection without performing more detailed processing of the input information by the mobile device. The mobile device receives at least one data stream from the server. The mobile device produces at least one of a display, audio and a HW action by a HW component of the mobile device from the at least one data stream.

[00012] According to another example embodiment, a method for operating a mobile device comprises receiving, by a mobile device, a plurality of different types of data from one or more hardware (HW) components of the mobile device. The mobile device sends each different type of data to a server in a separate data stream. The mobile device receives user interface information from the server. The mobile device produces at least one of a display, audio and a HW action of a HW component of the mobile device based on the user interface information.

[00013] According to still another example embodiment, a method for operating a mobile device comprises receiving, by a mobile device, input information from one or more hardware (HW) components of the mobile device. The mobile device sends the input information to a server. The mobile device receives a plurality of separate data streams from the server, each of said plurality of separate data streams comprising a different type of data. The mobile device integrates the data from each the separate streams together. The mobile device produces a display, audio and a HW action by a HW component of the mobile device from the integrated data.

[00014] According to an example embodiment, a method for operating a mobile device comprises operating a mobile device in a first mode by and operating a mobile device in a second mode separate from the first mode. In the first mode, the mobile device executes a basic software (SW) protocol or operating system (OS) to receive input information from one or more hardware (HW) components of the mobile device, establish a network connection to a server, and send the input information to the server over the network connection, receives at least one data stream from the server, and produces at least one of a display, audio and a HW action of a HW component of the mobile device based on the at least one data stream. In the second mode, the mobile device receives the input information from the one or more HW components of the mobile device, processes, by the basic SW protocol or OS of the mobile

device, the input information to produce user interface information for reproducing at least one of a display, audio and a HW action by a HW component of the mobile device, and produces the at least one of the display, the audio and the HW action of the HW component of the mobile device based on the user interface information.

[00015] According to another example embodiment, a method for emulating a mobile device at a server comprises receiving, by a server, input information from at least one mobile device, wherein the input information has not been processed to produce a display, audio and a hardware (HW) action by a HW component of a mobile device. The server processes, by a mobile device operating system (OS) executed by the server, the input information to produce user interface information for reproducing at least one of the display, the audio and the hardware (HW) action by the HW component of the mobile device. The server sends the user interface information to the mobile device.

[00016] According to still another example embodiment, a method for emulating a mobile device at a server comprises receiving, by a server, input information from at least one mobile device, wherein the input information has not been processed to produce a display, audio and a hardware (HW) action by a HW component of a mobile device. The server processes, by a mobile device operating system (OS) executed by the server, the input information to produce user interface information for reproducing at least one of the display, the audio and the hardware (HW) action by the HW component of the mobile device. The server sends the user interface information to the mobile device.

[00017] According to an example embodiment, a method for emulating a mobile device at a server comprises receiving, by a server, input information from a plurality of different mobile devices. The server processes, by a same instance of a mobile device operating system (OS) executed by the server, the input information from each of the plurality of different mobile devices to produce user interface information for reproducing at

least one of a display, audio and a HW action by a HW component of the mobile device. The server sends the user interface information to at least one of the plurality of different mobile devices.

[00018] According to another example embodiment, a method for emulating a mobile device at a server comprises receiving, by a server, first input information from a mobile device. The server processes, by a first mobile device operating system (OS) executed by the server, the first input information to produce first user interface information for reproducing at least one of a display, audio and a hardware (HW) action by a HW component of the mobile device. The server sends the first user interface information to the mobile device. The server receives second input information from the mobile device. The server processes, by a second mobile device operating system (OS) executed by the server, the second input information to produce second user interface information for reproducing at least one of a display, audio and a HW action by a HW component of the mobile device, wherein the second mobile device OS has at least one of a different OS type, a different OS version and a different OS instance than the first mobile device OS. The server sends the second user interface information to the mobile device.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

[00019] These and other objects, features and advantages will be apparent from a consideration of the following Detailed Description of Example Embodiments considered in conjunction with the drawing Figures, in which:

[00020] Fig. 1 shows a conventional software (SW) stack on a conventional mobile device;

[00021] Fig. 2 shows an end-to-end network system according to an example embodiment;

[00022] Fig. 3 shows an example system solution SW stack separated between a mobile device and a server according to an example embodiment;

[00023] Fig. 4 is a block diagram of mobile device components and functionality according to an example embodiment;

[00024] Fig. 5 is a block diagram of server components and functionality according to an example embodiment;

[00025] Fig. 6 is a block diagram of system components and functionality for a system comprising a server and a plurality of mobile devices according to an example embodiment;

[00026] Fig. 7 is a flow diagram illustrating a system and method according to an example embodiment;

[00027] Fig. 8 is a flow diagram illustrating a system and method according to another example embodiment;

[00028] Fig. 9 is a flow diagram illustrating a system and method according to still another example embodiment;

[00029] Fig. 10 is a flow diagram illustrating a system and method according to an example embodiment;

[00030] Fig. 11 is a flow diagram illustrating a system and method according to another example embodiment; and

[00031] Fig. 12 is a flow diagram illustrating a system and method according to still another example embodiment.

DETAILED DESCRIPTION OF EXAMPLE EMBODIMENTS

[00032] Systems and methods according to example embodiments comprise a network in which a mobile device acts as an input/output interface for a user such that actual processing, storage and network interfaces are performed or provided by a remote server.

[00033] Fig. 2 shows an end-to-end network system according to an example embodiment. A mobile device 10 is connected through a wireless network, e.g., WiFi or 3G/4G cellular, and/or the Internet to a server 12. The mobile device 10 comprises a processor, a memory, input components (e.g., a touch screen, buttons, sensors, a camera, Bluetooth, etc.), a display, a speaker and at least one wireless transmitter/receiver. Components and functionality of the mobile device 10 are described in more detail below. The server may be an x86 Linux based server.

[00034] The mobile device 10 is configured to mirror to the server 12 all or a portion of information input to the mobile device 10. That is, the mobile device 10 receives input information from the input components and sends the input information to the server 12 for processing by the server 12. The mobile device 10 (i.e., the hardware (HW) and local software (SW) of the mobile device 10) thus does not perform the processing locally at the mobile device 10 itself. For example, the mobile device 10 may mirror input information including touch screen gestures, pressed buttons, sensor data, audio data and video data to the server 12 over a packet based network, and the server 12 processes the input information to produce a display and/or audio output based on the input information. That is, the server 12 executes a mobile device operating system (OS) (e.g., Google Android 4.1 or Windows phone 8) and one or more applications (e.g., a Game or GPS navigation SW) on emulated mobile device HW based on the input information received from the mobile device 10. The server streams all animations and/or graphics changes, e.g., changes in games, web browsing and scrolling screens that occur on the virtual mobile device of the mobile OS and emulated HW, to the mobile device 10 as a stream of user interface information. The user interface information is data that can be used to recreate or produce a display and/or audio without any processing thereof other than the decoding and playback or reproduction of the user interface information itself by the mobile device 10. For example, the user interface information may

be information representing a touch screen gesture to zoom in on a web page, and the information representing the gesture is sent from mobile device 10 toward server 12. The server 12 zooms in locally on the web page, i.e., by execution of the mobile device OS, and sends back toward mobile device 10 a stream of data including all of the web page zooming display information changing over time. For example, the stream of data is similar to a video stream which when reproduced by the mobile device 10 enables the mobile device 10 to display the zooming in on the web page without the mobile device 10 itself performing any of the processing associated with the zooming function. A display and/or audio output of the virtual mobile device is thus constantly streamed to the mobile device 10 and reproduced thereon without the mobile device 10 being required to perform any of the processing for changes to the display and audio output.

[00035] The server 12 emulates mobile device HW and executes or runs a mobile device OS and applications on the emulated HW to processes the input information received from the mobile device 10 (i.e., the mirrored input). That is, the server 12 executes an OS and one or more applications on emulated mobile device HW based on the input information received from the mobile device 10. For example, the server 12 processes the input information received from the mobile device 10 and produces user interface information including information for producing a display, audio and other feedback. The server 12 encapsulates the user interface information into data packets and sends the encapsulated user interface information to the mobile device 10, and the mobile device 10 produces a display and/or audio output based on the data sent by the server 12. The server 12 may be further configured to act as a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN) 14 and one or more PSTN telephones 16.

[00036] Fig. 3 shows an example system solution SW stack separated between a mobile device and a server. Main SW (i.e., a mobile OS and applications) is executed on the server 12 on a server side. The mobile device 10 on a mobile device side executes only basic SW (e.g., a more basic OS or a simple SW protocol without an OS) which is required for basic functionality of the mobile device 10 before a network connection of the mobile device 10 to the server 12 executing the mobile OS and applications is achieved. Accordingly, the basic OS/simple SW executing on the mobile device 10 may be a different (and much simpler) OS or software protocol than the mobile OS executing on the server 12. The basic SW on the mobile device 10 is connected to the mobile SW on the server 12 by a wireless/fixed network.

[00037] The basic SW executing on the mobile device 10 may be a server-to-client protocol which implements all of the basic functionality of the mobile device 10, e.g., battery monitoring, wireless network connectivity, power on/off and SW upgrade functionality. The basic SW may not be capable locally, i.e., without network connectivity to the mobile device OS executing on the server 12, of running applications and local user storage. Conventional methods for virtualizing PC desktops over the Cloud are not suitable for a modern mobile devices which typically have many more capabilities than a conventional PC desktop. An end-to-end network system according to example embodiments provides for virtualized support of touch, multi-touch and gesture based interfaces, various sensors, GPS and Glonass type systems, seamless virtualized support of camera and camcorder functions, the ability for the mobile device 10 to user different virtualized OS's at the server 12, the ability for multiple different mobile devices 10 to use the same instance of a virtual machine, an optimized client-to-server protocol that functions on wireless networks having relatively low bandwidth and high bit error rate, the ability to pass in real time and high quality display graphics motions, e.g., menu scrolling, game action and videos ,and the ability to perform

voice calling or send a SMS seamlessly without the need to operate dedicated SW such as Skype which requires a logon procedure for its members.

[00038] Fig. 4 is a block diagram of mobile device components and functionality according to an example embodiment. The mobile device 10 comprises HW and SW including an input/output interface toward the user including a display and video(e.g., H.264 and VP8 Video encoding/decoding may be used), image and text decoding (e.g., JPEG image encoding/decoding may be used), an integrating unit for integrating video, image and text data into display data for producing a display/user interface, a speaker and audio/voice decoding (e.g., the OPUS codec may be used for audio/voice encoding/decoding), a notification output unit, a microphone and audio/voice encoding, a camera and/or a camcorder and video and/or picture encoding, a touch screen, one or more physical “hard-key” and/or “soft-key” buttons, a keyboard, various sensors including one or more motion sensors, e.g., accelerometers, gravity sensors, gyroscopes and rotational vector sensors, one or more environmental sensors, e.g., ambient temperature, pressure, illumination and humidity sensors, and one or more position sensors, e.g., orientation sensors, magnetometers, Bluetooth and GPS, a change identification unit for identifying changes to the input components and sensors to produce the input information, external hardware interfaces including USB, Headphone, Bluetooth and Near Field Communication (NFC) interfaces, wireless network connectivity including WiFi and cellular network transmitters/receivers and processing associated therewith. Decoding, encoding, integrating and identification processes may be hardware or software based implementations

[00039] The basic OS or SW protocol executing on the mobile device 10 is configured to activate the above-described HW/input components of the mobile device 10 and receive information (or detect changes) input thereto, as well as to establish a network connection to the server 12. However, the basic OS or SW protocol executing on the mobile device is not

required to perform more detailed processing of the information or detected changes received from the HW of the mobile device 10. That is, the mobile device 10 does not process the input information or detected changes to produce changes in a display or audio output of the mobile device 10. The mobile device 10 instead mirrors the information or changes input to the HW components of the mobile device 10 to the server 12 over the network connection. The server 12 processes the mirrored information and mirrors the emulated user interface information (e.g., display and speaker audio) back to the mobile device 10. The mobile device 10 produces the display, speaker audio and/or a HW action of a hardware component (e.g., activates and/or controls a GPS and/or one or more sensors) based on the mirrored emulated user interface information.

[00040] The input information from the user interface received by the mobile device 10 is sent from the mobile device 10 to the server 12 without any manipulation/processing thereof, except for optional data compression. For example, if a user touches the touch screen of the mobile device 10 in a specific area, the change identification unit identifies the change in input to the touch screen, e.g., coordinates of the specific area touched by the user, and the mobile device 10 sends the coordinates of the specific area to the server 12. If the area touched by the user changes, new coordinates for the new area now touched by the user are identified by the change identification unit and are sent to the server 12 by the mobile device 10. If the user releases his touch from the touch screen, the change identification unit identifies the change in input to the touch screen and the mobile device 10 sends a touch screen release message to the server 12. The user interface input components of the mobile device 10, e.g., the microphone and camera, sample audio and/or video input thereto, and the corresponding audio/video/picture encoding encodes the sampled input for transmission. The mobile device 10 sends the encoded/sampled audio and/or video data encapsulated into packets toward server 12.

[00041] The mobile device 10 implements basic functionality through the basic OS or SW protocol executing on the mobile device HW. The basic functionality of the mobile device 10 comprises powering up of the mobile device 10, monitoring battery power of the mobile device 10, upgrading the SW (e.g., the basic OS) of the mobile device 10, connecting the mobile device 10 to a WiFi network or a cellular network (which may be user configurable), unique identification of the mobile device 10 to the network and/or a local operator, and setting and negotiating HW capabilities (e.g., display resolution and size, sensor capabilities etc...) of the mobile device 10.

[00042] The basic functionality of the mobile device 10 further comprises receiving, identifying and encapsulating information input or changes made to a user interface (touch screen, physical keys, etc.) into messages/data streams for transmittal to the server 12, receiving, identifying and encapsulating HW sensor data and/or changes thereto into messages/data streams for transmittal to the server 12 (sensors include motion, environmental and position sensors), receiving, encoding (e.g., compression) and encapsulating camera and/or camcorder (e.g., picture and/or video data) and/or microphone (audio data) information and sending the encoded and encapsulated information to the server 12 (encoding may include compression performed to save network bandwidth). The basic functionality of the mobile device 10 further comprises intensive processing tasks, e.g., encoding/decoding of video, which may be accelerated by HW of the mobile device 10, notifications (receiving at the mobile device 10 from the server 12 notifications of new events and reporting them to the user (e.g., a telephone call, a new E-mail, a new SMS, etc...)) and server-to-client protocol for decoding video, audio, image and text data (user interface information) separately streamed from the server 12 to the mobile device 10, integration of the video, image and/or text data into display data for producing a display and reproduction thereof by the display screen with reproduction of audio data by the speaker.

[00043] The mobile device 10 sends each type of data (e.g., voice, audio, image, video, notification, sensor, etc.) to the server 12 in a separate stream. Similarly, the mobile device 10 receives from the server 12 a separate stream for each type of data and, as shown in Fig. 4, a server-to-client protocol of the mobile device 10 sends the data from the individual streams to the appropriate decoding component ,which can be implemented by either HW or SW), of the mobile device 10.

[00044] Fig. 5 is a block diagram of server components and functionality according to an example embodiment. The server 12 may comprise a logical node located on a single physical node or on a plurality of different physical nodes. The server 12 executes the mobile OS (e.g., Google's Android or Microsoft's Windows Phone Mobile) and the applications (e.g., a game, web-browsing or GPS navigation program) for the mobile device 10 in a virtual machine (e.g., the virtual machine may be implemented using Oracle Virtual Box or VMware Player over Linux OS) and emulates mobile device HW to the mobile OS based on the input information received from the mobile device 10. For example, the server 12 receives the input information (e.g., sensor changes, key and touch screen input, audio data, video data, etc.) from the mobile device 10, decodes the input information (decoding audio, picture and video data and messages containing the sensor changes and screen input), and processes the input information by the emulated HW and the mobile OS and/or applications executing on the emulated HW. The server 12 thus emulates a user experience including the user interface and changes thereto.

[00045] The OS on a conventional mobile device configures the HW using SW drivers of the mobile device. If there is feedback from the HW, processing of the feedback is performed through the SW drivers on the conventional mobile device. In contrast, the server 12 according to example embodiments emulates mobile device HW on the server side. The HW drivers are rewritten for server 12 to enable interaction with the mobile OS on the server

12 based on the input information mirrored from the mobile device 10. For example, if the mobile OS on the server 12 attempts to send a packet over the internet using WiFi, an emulated WiFi driver at the server 12 accesses the server's Ethernet card HW and sends the packet through the HW Ethernet card. If the mobile OS on the server 12 receives input information to draw a circle on a display using GPU drivers, an emulated GPU driver at the server 12 processes the input information to draw the circle, stores the results in server memory, emulates the resulting display and sends user interface information for reproducing the resulting display toward mobile device 10. If the mobile OS on the server attempts to send audio data to audio speaker drivers, an emulated audio speaker driver at the server 12 packages the audio data and sends the audio data to the mobile device 10 for reproduction. An emulated touch screen driver on the server 12 receives input information (e.g., coordinates) from the mobile device 10, converts the input information and emulates the touch screen driver toward the mobile OS. The mobile OS uses the input information to run the application and change the display accordingly, and the emulated display information is sent toward the mobile device 10.

[00046] A server-to-client protocol at the server 12 separates the emulated user experience, i.e., the user interface data resulting from processing of the input information by the mobile OS and/or applications at the server 12, into different data streams including video, image, audio, notifications and text data streams. The video, image and text data may be separated into individual streams by an identification unit configured to identify the video, image and text data in one or more streams of display data output from a hardware emulation of the display. The server 12 sends, e.g., streams, each type of data independently to the mobile device 10 in a separate stream. Each individual data stream has its own characteristics, for example, an encoding method for efficient bandwidth (BW) utilization (e.g., Lossy vs. Lossless encoding), a quality of service (QoS), a bandwidth etc., which may

be different from stream to stream. Intensive processing tasks, for example, encoding/decoding of video, may be accelerated by HW at the server 12.

[00047] VoIP protocols (e.g., session initiation protocol (SIP) and real-time transport protocol (RTP)) at the server 12 provide internal network telephone calls. The server 12 further comprises a gateway to a public switched telephone network (PSTN) for telephone calls external to the network. The server 12 comprises a gateway to the Internet for data related functionality (e.g., web surfing, e-mails, network gaming, network storage, etc.). The server 12 comprises local storage for relevant user data (applications, movies, pictures, files, etc.) and emulates storage HW for the mobile OS. The server is configured to send notifications of new events (e.g., a telephone call, a new E-mail, a new SMS etc...) to mobile device 10.

[00048] Fig. 6 is a block diagram of system components and functionality of a system comprising a server and a plurality of mobile devices according to an example embodiment. The server 12 communicates with the mobile devices 10 in a stateless manner such that if there is a connection failure between the server 12 and one or more of the mobile devices 10, functionality/communication is halted and, when a connection is reestablished, functionality/communication continues from the same point. Each different type of data (e.g., voice, audio, image, video, notification, sensor, etc.) is sent between the server 12 and the mobile devices 10 in a separate stream. For example, audio data is sent from the server 12 to the mobile devices 10 (and vice-versa) in a first stream separate and different from a second stream in which video data is sent. Each stream comprises its own individual characteristics, which may be different from stream to stream. For example, each stream has an encoding/decoding type, a quality of service (QoS) and a bandwidth which may be different for each stream. For example, a maximum bandwidth is set low enough that use of the mobile device 10 and server 12 according to example embodiments is practical, and if

there is no need for a high bandwidth, bandwidth is not unnecessarily consumed by the mobile device 10 and server 12. Each individual stream of data may have a different QoS so that a quality of experience (QoE) is optimal even if BW is lacking. For example, voice and sensor data streams may typically have a higher QoS level than video data streams so that a user receives high quality calls and senses minimal lag of the user interface.

[00049] The mobile device 10 and server 12 may be configured to achieve minimal latency for user interface related messages and data stream encoding. For example, a user should not feel that the mobile device 10 behaves differently from a conventional mobile device in which functionality is executed locally. Furthermore, the mobile device 10 selects streaming characteristics to maintain power dissipation efficiency similar to that of a conventional mobile device. QoS (e.g., QoS may be implemented using Layer 2 Vlan .1P bits or Layer3 DSCP bits) and an encoding type may be set based on a type of the stream. For example, a video stream may receive H.264 encoding/decoding and a lowest level QoS. A voice stream may receive lossless encoding and a higher level of QoS. Bandwidth (BW) may be automatically calculated based on a bandwidth required for the type of stream. For example, a high-definition (HD) video stream may receive a higher BW, e.g., 10 Mb/s, a lower quality video stream may receive a lower BW, e.g., 1Mb/s, and a voice stream may receive an even lower BW, e.g., 64Kb/s. The server-to-client protocol at the mobile device 10 and the server 12 determines the streaming characteristics.

[00050] The server 12 is configured to support multiple mobile devices 10 using the same user instance. That is, a plurality of different mobile devices 10 may send input information to and receive user interface information from the same instance of an OS executed by the server 12. For example, a user may use a plurality of different mobile devices, e.g., a smartphone, a tablet, and a streamer, simultaneously on the same user instance.

[00051] The server 12 is configured to support a plurality of different mobile device users with each user using a different mobile OS or OS version. For example, the server 12 may emulate mobile device hardware for a first device manufactured by Samsung and executing Google's Android OS, and emulate mobile device hardware for a second device manufactured by Nokia and executing Google's Android OS. The server is configured to handle a high scale of users, i.e., mobile devices 10, simultaneously without suffering degradation in performance.

[00052] Each data stream sent between the server 12 and a mobile device 10 may be encrypted end-to-end using transport layer security/secure sockets layer (TLS/SSL) or other encryption protocols.

[00053] Cloud based servers and/or content delivery networks connect the mobile device 10 to the closest server 12 (or to the server 12 providing the best connection or bandwidth for the mobile device 10) so that there is minimal latency and maximum BW when the mobile device is roaming. A "cloud network" manages data synchronization between servers.

[00054] The server 12 continuously analyzes display data/user interface information that is to be sent from server 12 to the mobile device 10. The display may be separated into different areas by the server 12, each with different characteristics. The server 12 identifies changing picture areas in the display data as video, applies Lossy encoding to the video and streams the encoded video to the mobile device 10. The server 12 identifies static picture areas in the display data as images, applies Lossy encoding to the images and streams the encoded images to the mobile device 10. The server 12 identifies static bi-color areas in the display data as text, applies Lossless image compression to the text and streams the compressed text to the mobile device 10. The server 12 processes and sends compressed audio to the mobile device 10 as a separate stream. Because audio and voice streams receive

higher QoS than video streams, and assuming there is enough network BW, a sufficiently low latency for audio and voice data is maintained so that insignificant skew between video and audio playback occurs. For example, a video latency of 100ms and an audio latency of 50ms should not result in a skew between video and audio playback that is noticeable by the user.

[00055] Server-to-client BW is used adaptively, and the sever-to-client protocol **at** the mobile device 10 and the server 12 continuously measures the available BW. When more BW is available a higher quality display (typically video) is transferred.

[00056] The mobile device 10 decodes and assembles the separate video, image and text data streams of the display data/user interface data into a display. The mobile device 10 enables different HW operations or actions according to requests from the sever 12. For example, the mobile device 10 enables the camera and/or microphone in response to a request from the server 12. The mobile device 10 decodes the compressed audio of the user interface data and reproduces the audio at the speaker in coordination with the assembled display.

[00057] The mobile device 10 sends user interface operations, e.g., touch screen, keyboard, button operations, etc., to the server 12 as the input information. The mobile device 10 may send only changes to the user interface to the server 12 so that bandwidth is used efficiently. For example, if the user presses a button on the mobile device 10, the mobile device 10 sends a single button pressed message, even if the user continues to press the button. When the user releases the button, the mobile device 10 sends a button released message to the server 12.

[00058] The mobile device 10 compresses camcorder video, camera pictures and audio detected by the microphone and sends the compressed data to the server 12. The server-to-client protocol at the mobile device 10 and the server 12 is executed over encrypted transport layers.

[00059] Fig. 7 is a flow diagram illustrating a system and method according to an example embodiment. For example, an example embodiment provides for taking video. A mobile device 10 receives and/or creates audio and/or video data (e.g., by taking a video), encodes the audio/video data and sends the encoded audio/video data (each type of data being sent in a different data stream) to the server 12 at S71. For example, the camera/camcorder of the mobile device may record video data and the microphone may record corresponding audio data for the video. The server 12 decodes the audio/video data, processes and stores the audio/video data by the emulated HW and OS at the server 12 and sends (and encodes) the result of the processing to the mobile device 10 at S72 (each type of data being sent in a different data stream). For example, the server 12 processes the audio/video data to edit the video, e.g., to cut and swap video portions, add titles, etc. As another example, game applications may process the audio/video data to add it to graphics in real time. The mobile device 10 decodes the processed audio/video data from each stream, integrates the data from the separate streams together to produce a display and displays the result and reproduces the audio to the user at S73.

[00060] Fig. 8 is a flow diagram illustrating a system and method according to another example embodiment. For example, an example embodiment provides for a video or VoIP call. A first mobile device 10 receives and/or creates audio and/or video data, encodes the audio/video data and sends the encoded audio/video (each type of data being sent in a different data stream) to a server 12 at S81. A second mobile device 10 receives and/or creates audio and/or video data, encodes the audio/video data and sends the encoded/audio/video (each type of data being sent in a different data stream) to the server 12 at S82. Steps S81 and S82 may occur in the order described, in an opposite order or simultaneously. For example, the audio/video data sent from each of the mobile devices 10 may be data for a video or VoIP call between the first and second mobile devices 10, and the

server 12 may receive audio/video data from each device simultaneously as the call is ongoing. The server 12 processes the audio/video data from the first mobile device 10 and the audio/video data from the second mobile device 10 and sends (and encodes) the processed data to the first and second mobile devices 10 at S83. For example, the server 12 merges the video from the first mobile device 10 with the video from the second mobile device 10 so that each user can see their own picture and the picture of the other user. The first and second mobile devices 10 receive the processed audio/video streams, decode the processed audio/video data from each stream, integrate the data from the separate streams to produce a display and display the results and reproduce the audio to the user at steps S84 and S85.

[00061] Fig. 9 is a flow diagram illustrating a system and method according to still another example embodiment. For example, an example embodiment provides for a telephone call to a telephone on a PSTN. A mobile device 10 receives and/or creates audio data, e.g., from a microphone, encodes the audio data and sends the encoded audio data to a server 12 at S91. The server 12 creates a voice call connection with a PSTN gateway 14 and is configured to pass voice streams including audio data between the mobile device 10 and the gateway 14 at S92. The PSTN gateway 14 creates a connection between the server 12 and a PSTN at S93, and the PSTN gateway 14 connects at least one PSTN telephone 16 in the PSTN for the voice call connection. The mobile device 10 decodes audio data sent from the server 12 in the voice streams and sends the result to a speaker of the mobile device 10 at S94.

[00062] Fig. 10 is a flow diagram illustrating a system and method according to an example embodiment. For example, an example embodiment provides for web surfing. A mobile device 10 receives touchscreen inputs (or other input data) and sends the input information to a server 12 at S101. For example, the input information may comprise information requesting a web page, e.g., a URL. The server 12 requests a web page from a

web server 18 at S102 in response to the input information from the mobile device 10. The web server 18 sends the web page to the server 12 at S103 in response to the request from the server 12. The server 12 receives the web page from the web server 18 (and caches the web page if needed or desired), separates the web page display into video, image, text and audio streams and sends the web page to the mobile device. For example, the server 12 executes a browser application that produces display data for the web page and sends the display data to the mobile device 10 as user interface data. The mobile device decodes the user interface data including video, image, text and/or audio data from the respective streams and assembles the decoded video, image, text and audio data together to produce a user display with audio (i.e., the web page) at S104.

[00063] Fig. 11 is a flow diagram illustrating a system and method according to another example embodiment. For example, an example embodiment provides for running a game application. A mobile device 10 receives touchscreen inputs (or other inputs) and sends the input information to a server at S111. The server 12 executes an application, e.g., a game, on a mobile OS running on mobile device HW emulated on the server 12 based on the input information received and sent by the mobile device 10, and sends user interface information including display data and audio data to the mobile device 10 at S112. The mobile OS and emulated mobile device HW run on top of a normal OS of the server 12. The mobile device 10 receives the display and audio data and decodes video, image, text and audio data from the respective streams and assembles the data together into a user display with audio at S113.

[00064] Fig. 12 is a flow diagram illustrating a system and method according to still another example embodiment. For example, an example embodiment provides for navigation with a GPS. A mobile device 10 takes local GPS readings and sends the GPS readings to a server 12 at S121. The server 12 executes a navigation application on a main OS running on

mobile device HW emulated on the server 12 according to the GPS readings sent by the mobile device 10 and sends user interface information including display data and/or audio data corresponding to an display or output of the navigation application to the mobile device 10 at S122 . The mobile device 10 decodes the display data and the audio data from the respective streams and assembles the display data together into a user display with audio at S123.

[00065] Systems and methods according to example embodiments allow for more widespread manufacture and implementation of lower cost and simpler mobile devices (e.g., mobile devices with lower CPU power and memory sizes) because mobile device performance and capabilities are not dependent on the HW of the mobile device itself but, rather, on server capabilities. Accordingly, a mobile device having a lower HW cost can provide a user with the experience of a high performance mobile device that costs significantly more to manufacture. Furthermore, mobile device HW and functionality is agnostic to the OS used and, therefore, OS upgrades and changes may be more easily performed. User data and history is stored and backed-up centrally on the server side so that if the mobile device fails or is lost, user data and history can be easily recovered. A user (or multiple users) may use a plurality of different mobile devices (e.g., a smartphone, a tablet, etc.) with the same OS instance, thereby avoiding any need to pass data between different user mobile devices, reinstall applications, etc. For example, a user may own several different device, e.g., a cellular phone, a tablet, etc., and the user may use the same OS instance on the server 12 for each device. Accordingly, all of the user's applications, pictures, data, contacts, etc. are synched to each of the devices automatically by the shared OS instance. The user thus does not need to install the same application separately on each device, or move pictures taken by the cellular phone to the tablet. The number of mobile device variants (e.g., different phone models) may be reduced because only physical

interfaces (e.g., display, sensors, camera, and camcorder) are required to be permanently configured for the end user. A large number of mobile device variants based on different memory size, CPU power, etc. are therefore no longer required. Moreover, the simplicity of the SW on the mobile device allows for mobile device vendors to reduce design efforts and cost, as well as perform less future maintenance.

[00066] Although example embodiments have been shown and described in this specification and figures, those skilled in the art will appreciate that various changes may be made to the illustrated and/or described example embodiments without departing from the principles, spirit, and scope of the invention defined by the following claims.

What is claimed is:

1. A method for operating a mobile device, the method comprising:

executing, by a mobile device, a basic software (SW) protocol or operating system (OS) to receive input information from one or more hardware (HW) components of the mobile device, establish a network connection to a server, and send the input information to the server over the network connection without performing more detailed processing of the input information by the mobile device;

receiving, by the mobile device, at least one data stream from the server; and

producing, by the mobile device, at least one of a display, audio and a HW action by a HW component of the mobile device from the at least one data stream.

2. The method of claim 1, wherein the input information comprises a plurality of different types of data and the mobile device sends each different type of data to the server in a separate data stream.

3. The method of claim 2, wherein the input information comprises audio data, video data, image data, sensor data input to one or more sensors of the mobile device, and user input data input to a user interface of the mobile device.

4. The method of claim 2, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams.

5. The method of claim 2, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

6. The method of claim 1, wherein the at least one data stream received by the mobile device from the server comprises a plurality of separate data streams, each of said plurality of separate data streams comprising a different type of data.

7. The method of claim 1, wherein the input information sent to the server comprises only changes in information input to the mobile device.

8. The method of claim 1, wherein the one or more HW components comprise at least one of a camera, a microphone, a touch screen, a keyboard, a GPS, a Bluetooth device, and one or more sensors.

9. A method for operating a mobile device, the method comprising:

receiving, by a mobile device, a plurality of different types of data from one or more hardware (HW) components of the mobile device;

sending, by the mobile device, each different type of data to a server in a separate data stream;

receiving, by the mobile device, user interface information from the server; and

producing, by the mobile device, at least one of a display, audio and a HW action of a HW component of the mobile device based on the user interface information.

10. The method of claim 9, wherein the plurality of different types of data comprise audio data, video data, image data, sensor data input to one or more sensors of the mobile device, and user input data input to a user interface of the mobile device.

11. The method of claim 9, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams.

12. The method of claim 9, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

13. The method of claim 9, wherein the user interface information is received as a plurality of separate data streams, each of said plurality of separate data streams of the user interface information comprising a different type of data.

14. A method for operating a mobile device, the method comprising:

receiving, by a mobile device, input information from one or more hardware (HW) components of the mobile device;

sending, by the mobile device, the input information to a server;

receiving, by the mobile device, a plurality of separate data streams from the server, each of said plurality of separate data streams comprising a different type of data;

integrating, by the mobile device, the data from each the separate streams together;

producing, by the mobile device, a display, audio and a HW action by a HW component of the mobile device from the integrated data.

15. The method of claim 14, wherein the input information comprises at least one of audio data, video data, image data, sensor data input to one or more sensors of the mobile device, and user input data input to a user interface of the mobile device.

16. The method of claim 14, wherein the input information comprises a plurality of different types of data and the mobile device sends each different type of data of the input information to the server in a separate data stream.

17. The method of claim 14, wherein at least one of said separate data streams received from the server comprises a quality of service different from a quality of service of another of said separate data streams.

18. The method of claim 14, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

19. A method for operating a mobile device, the method comprising:

operating a mobile device in a first mode by:

executing, by the mobile device, a basic software (SW) protocol or operating system (OS) to receive input information from one or more hardware (HW) components of the mobile device, establish a network connection to a server, and send the input information to the server over the network connection,

receiving, by the mobile device, at least one data stream from the server, and

producing, by the mobile device, at least one of a display, audio and a HW action of a HW component of the mobile device based on the at least one data stream; and

operating the mobile device in a second mode separate from the first mode by:

receiving, by the mobile device, the input information from the one or more HW components of the mobile device;

processing, by the basic SW protocol or OS of the mobile device, the input information to produce user interface information for reproducing at least one of a display, audio and a HW action by a HW component of the mobile device; and

producing, by the mobile device, the at least one of the display, the audio and the HW action of the HW component of the mobile device based on the user interface information.

20. A method for emulating a mobile device at a server, the method comprising:

receiving, by a server, input information from at least one mobile device, wherein the input information has not been processed to produce a display, audio and a hardware (HW) action by a HW component of a mobile device;

processing, by a mobile device operating system (OS) executed by the server, the input information to produce user interface information for reproducing at least one of the display, the audio and the hardware (HW) action by the HW component of the mobile device; and

sending, by the server, the user interface information to the mobile device.

21. The method of claim 20, further comprising:

emulating, by the server, mobile device HW and executing the mobile device OS on the emulated mobile device HW.

22. The method of claim 20, further comprising:

executing, by the server, at least one application on the mobile OS,

wherein the at least one application processes the input information to produce the user interface information.

23. The method of claim 20, further comprising:

providing, by the server, a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN).

24. The method of claim 20, further comprising:

receiving, by the server, the input information from a plurality of different mobile devices, wherein a same instance of the mobile device OS processes the input information from each of the plurality of different mobile devices to produce the user interface information.

25. The method of claim 20, wherein the user interface information comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream.

26. The method of claim 25, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams.

27. The method of claim 25, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

28. The method of claim 25, wherein the input information is processed to produce user interface information for reproducing the display, the processing separating the display into a plurality of different areas, the processing identifying changing picture areas in display data of the user interface information as video data, the processing identifying static picture areas in the display data of the user interface information as image data and the processing identifying static bi-color areas in the display data of the user interface information as text data.

29. The method of claim 20, wherein the input information is received by the server as a plurality of separate data streams, each of said plurality of separate data streams of the input information comprising a different type of data.

30. A method for emulating a mobile device at a server, the method comprising:

receiving, by a server, input information from at least one mobile device;

processing, by a mobile device operating system (OS) executed by the server, the input information to produce user interface information for reproducing at least one of a display, audio and a hardware (HW) action by a HW component of the mobile device; and

sending, by the server, the user interface information to the mobile device, wherein the user interface information comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream.

31. The method of claim 30, further comprising:

emulating, by the server, mobile device HW and executing the mobile device OS on the emulated mobile device HW.

32. The method of claim 30, further comprising:

executing, by the server, at least one application on the mobile device OS,

wherein the at least one application processes the input information to produce the user interface information.

33. The method of claim 30, further comprising:

providing, by the server, a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN).

34. The method of claim 30, further comprising:

receiving the input information from a plurality of different mobile devices, wherein a same instance of the mobile device OS processes the input information from the plurality of different mobile devices to produce the user interface information.

35. The method of claim 30, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams.

36. The method of claim 30, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

37. The method of claim 35, wherein the input information is processed to produce user interface information for reproducing the display, the processing separating the display into different a plurality of different areas, the processing identifying changing picture areas in display data of the user interface information as video data, the processing identifying static picture areas in the display data of the user interface information as image data and the processing identifying static bi-color areas in the display data of the user interface information as text data.

38. The method of claim 30, wherein the input information is received by the server as a plurality of separate data streams, each of said plurality of separate data streams of the input information comprising a different type of data.

39. A method for emulating a mobile device at a server, the method comprising:

receiving, by a server, input information from a plurality of different mobile devices;

processing, by a same instance of a mobile device operating system (OS) executed by the server, the input information from each of the plurality of different mobile devices to produce user interface information for reproducing at least one of a display, audio and a HW action by a HW component of the mobile device; and

sending, by the server, the user interface information to at least one of the plurality of different mobile devices.

40. The method of claim 39, further comprising:

executing, by the server, at least one application on the mobile device OS,

wherein the at least one application processes the input information to produce the user interface information.

41. The method of claim 39, further comprising:

providing, by the server, a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN).

42. The method of claim 39, wherein the user interface information comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream.

43. The method of claim 42, wherein at least one of said separate data streams comprises a quality of service different a quality of service of another of said separate data streams.

44. The method of claim 42, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

45. The method of claim 42, wherein the input information is processed to produce user interface information for reproducing the display, the processing separating the display into a plurality of different areas, the processing identifying changing picture areas in display data of the user interface information as video data, the processing identifying static picture areas in the display data of the user interface information as image data and the processing identifying static bi-color areas in the display data of the user interface information as text data.

46. The method of claim 39, wherein the input information is received by the server as a plurality of separate data streams, each of said plurality of separate data streams comprising a different type of data.

47. A method for emulating a mobile device at a server, the method comprising:

receiving, by a server, first input information from a mobile device;

processing, by a first mobile device operating system (OS) executed by the server, the first input information to produce first user interface information for reproducing at least one of a display, audio and a hardware (HW) action by a HW component of the mobile device; and

sending, by the server, the first user interface information to the mobile device;

receiving, by the server, second input information from the mobile device;

processing, by a second mobile device operating system (OS) executed by the server, the second input information to produce second user interface information for reproducing at least one of a display, audio and a HW action by a HW component of the mobile device, wherein the second mobile device OS has at least one of a different OS type, a different OS version and a different OS instance than the first mobile device OS; and

sending, by the server, the second user interface information to the mobile device.

Abstract of the Disclosure

Systems and methods comprise a network in which a mobile device is configured as an input/output interface for a user such that actual processing, storage and network interfaces are performed or provided by a remote server.

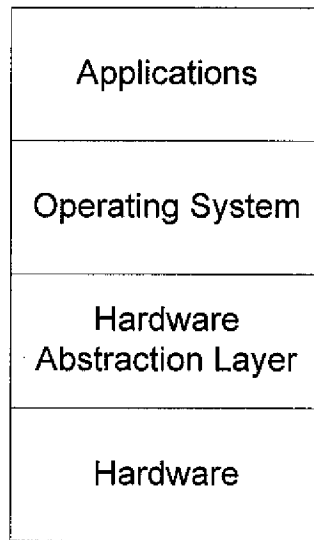


Fig. 1

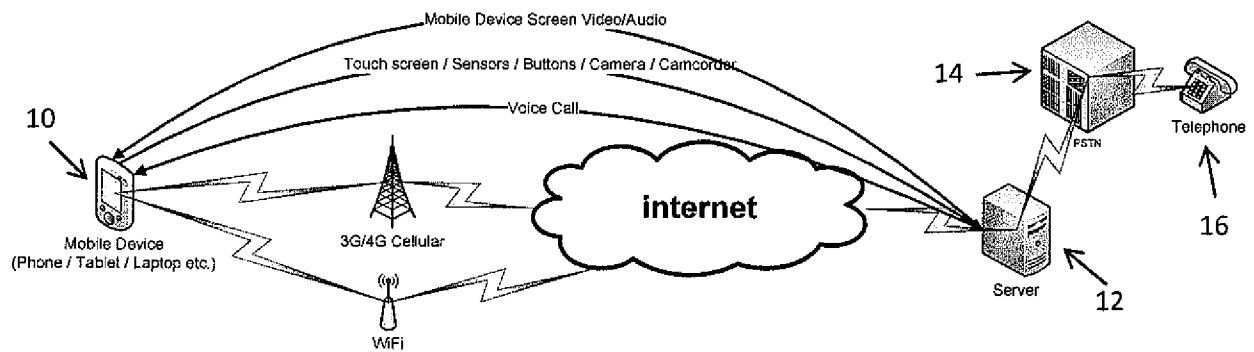


Fig. 2

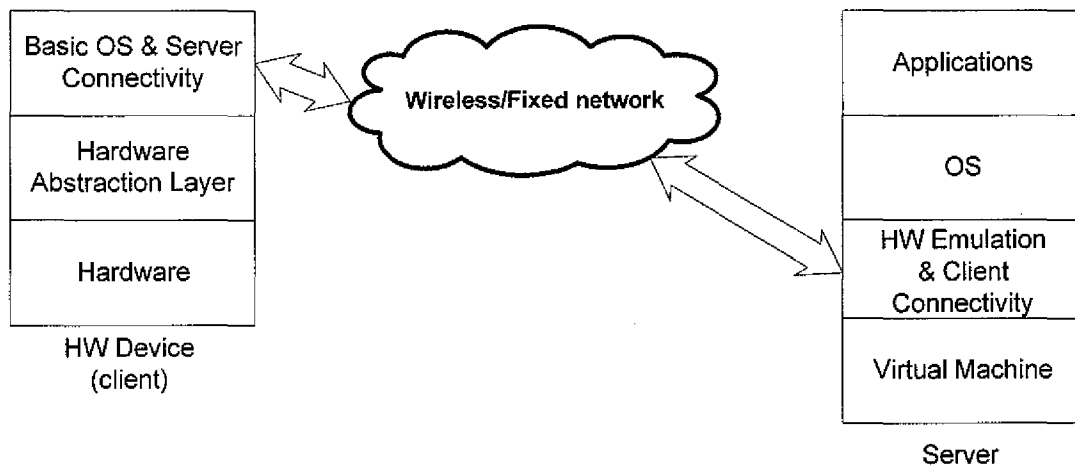


Fig. 3

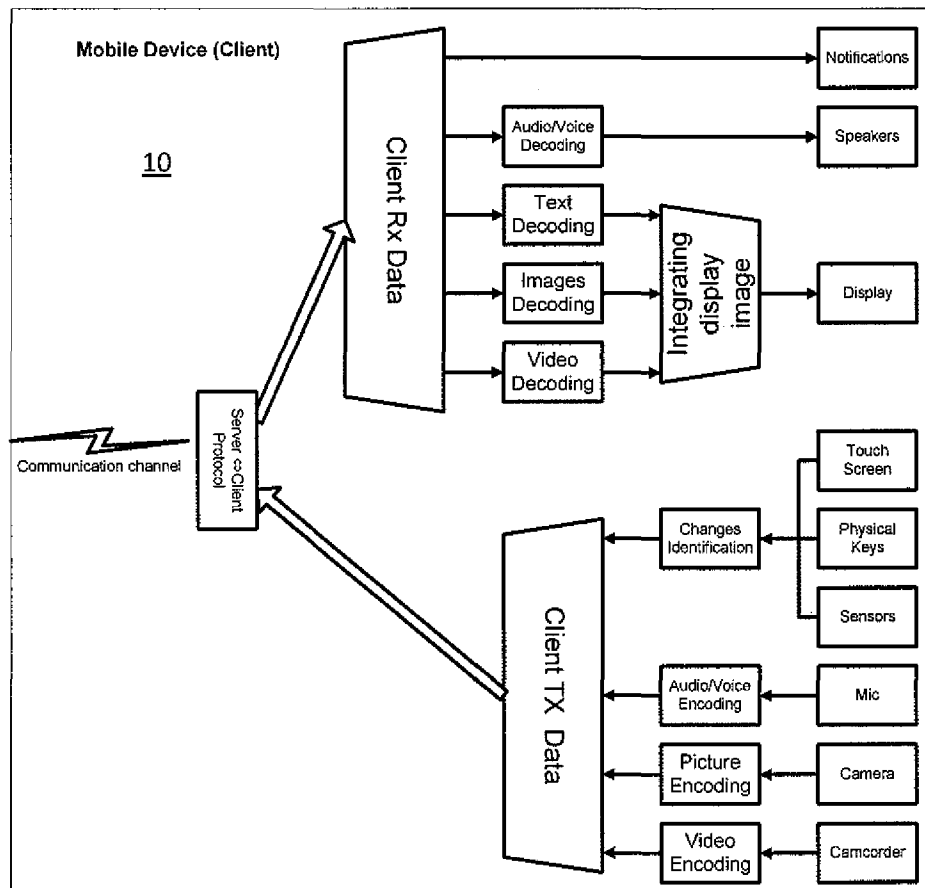


Fig. 4

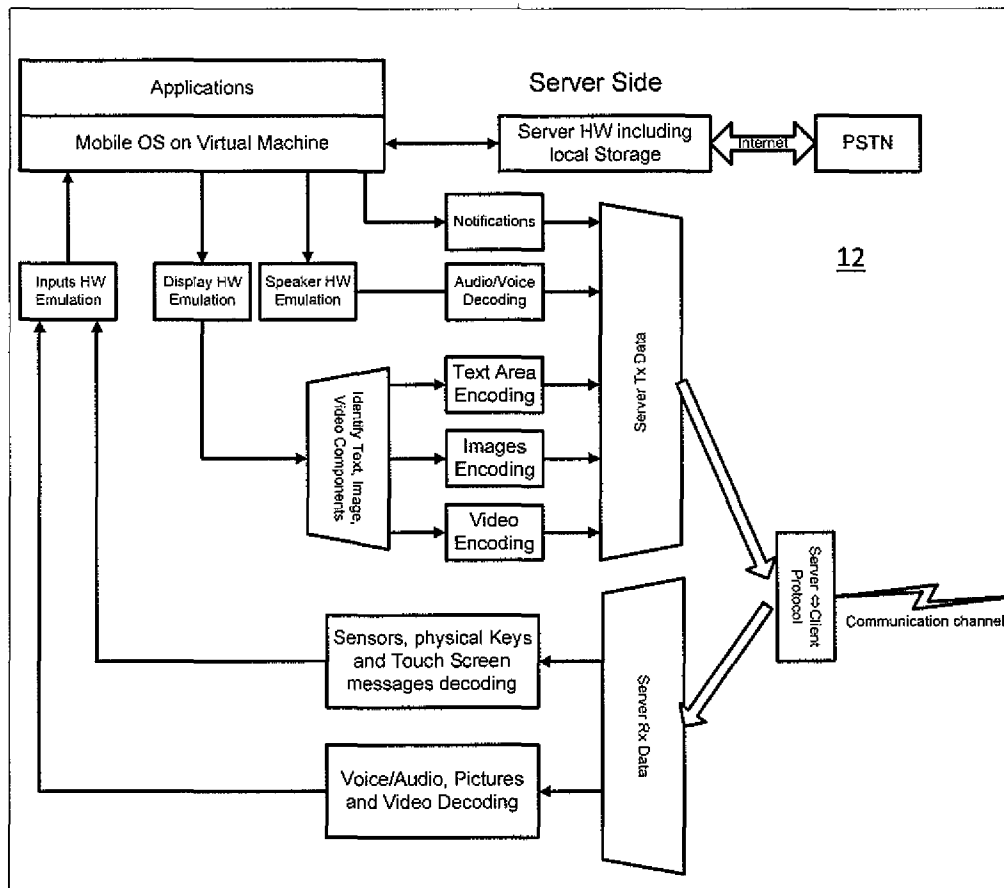


Fig. 5

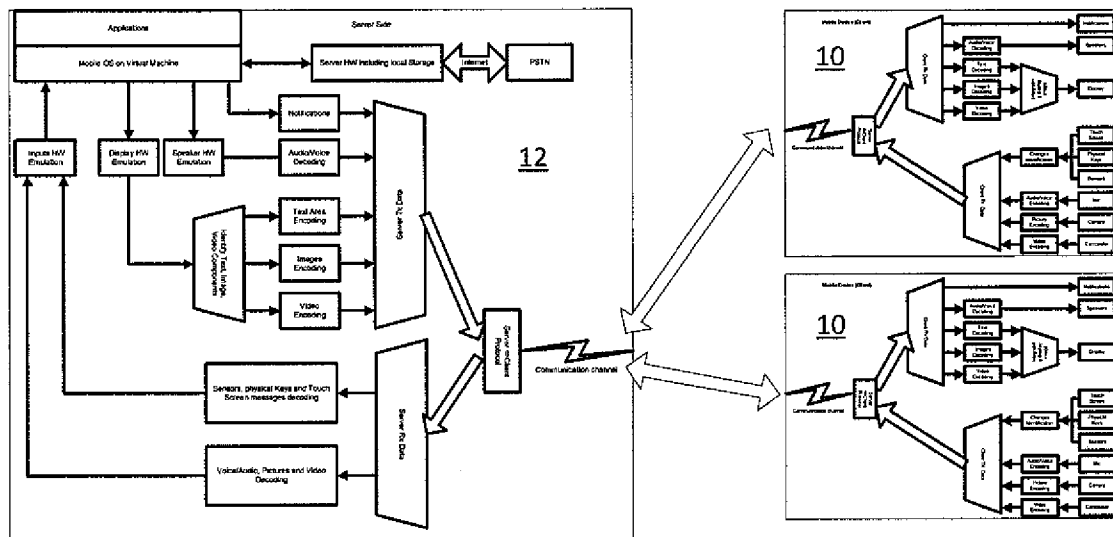


Fig. 6

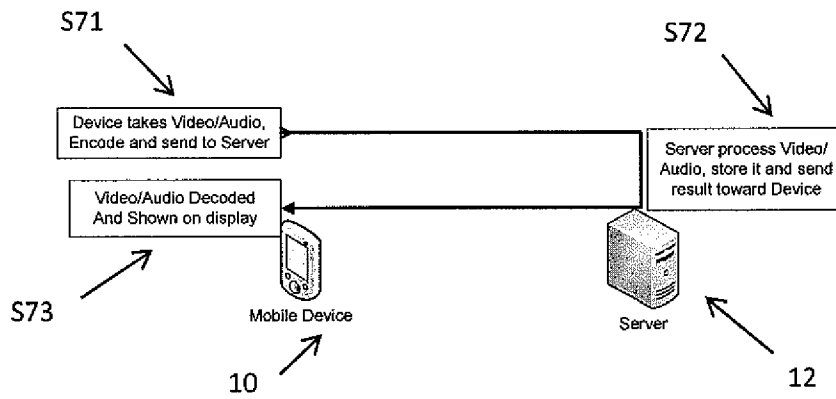


Fig. 7

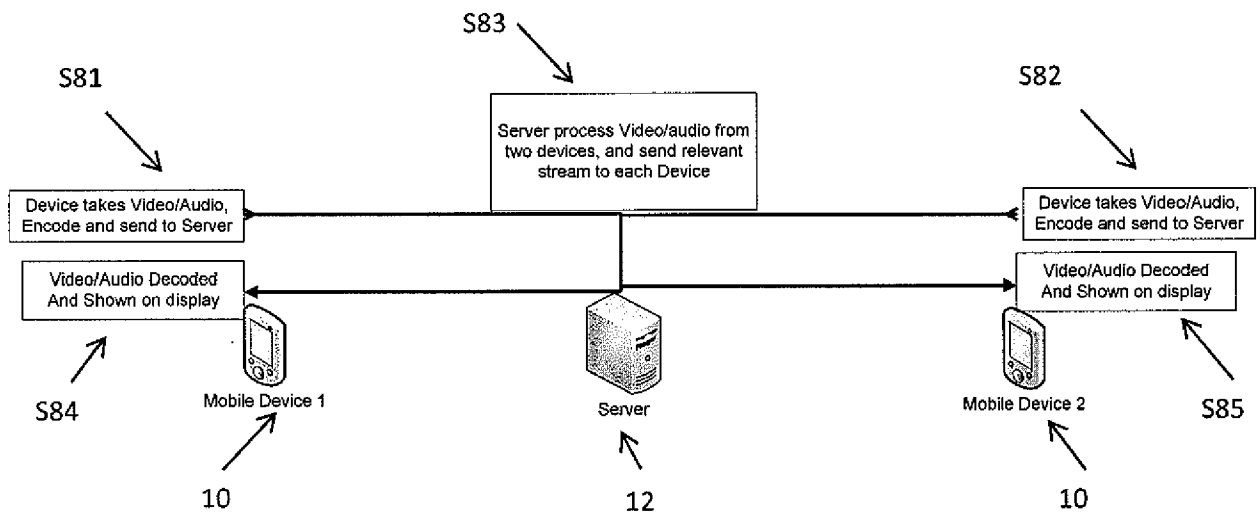


Fig. 8

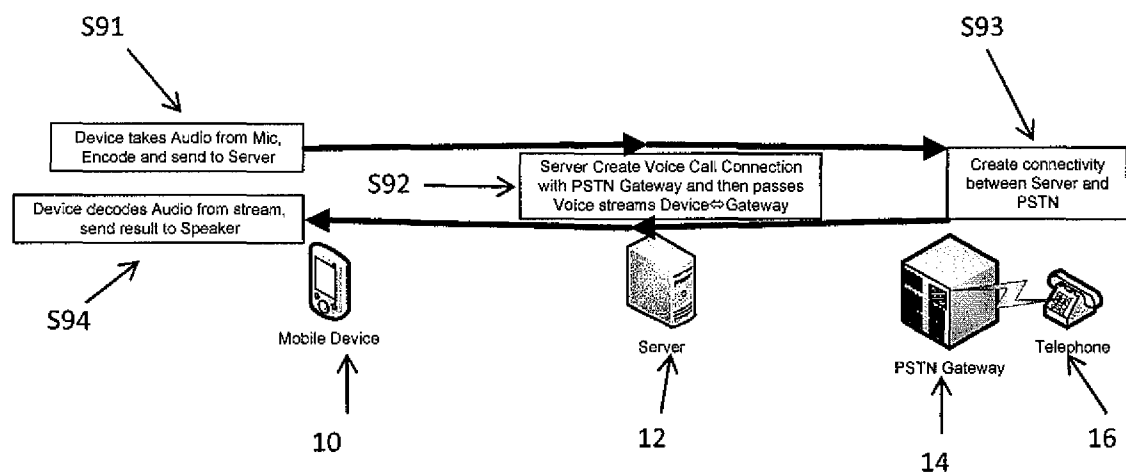


Fig. 9

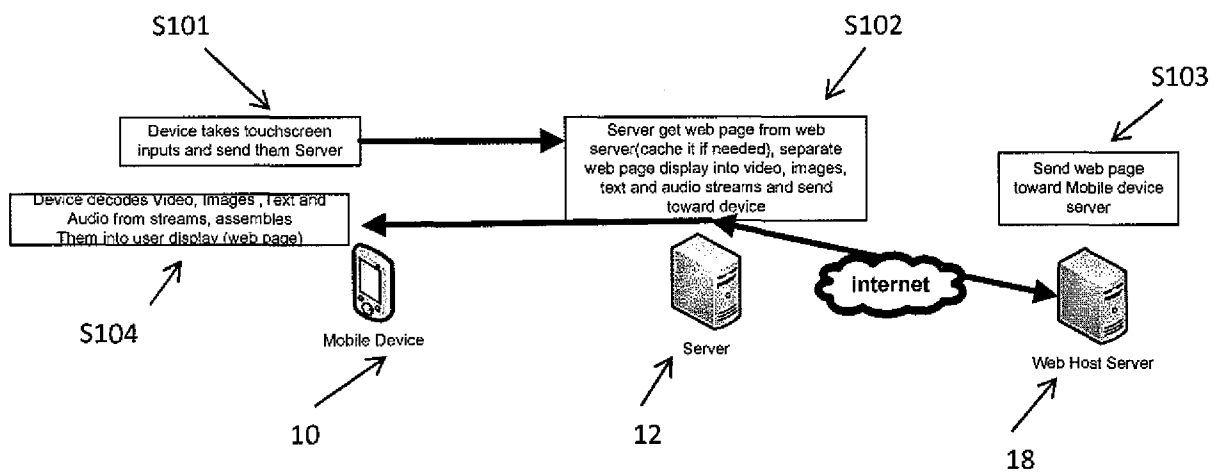


Fig. 10

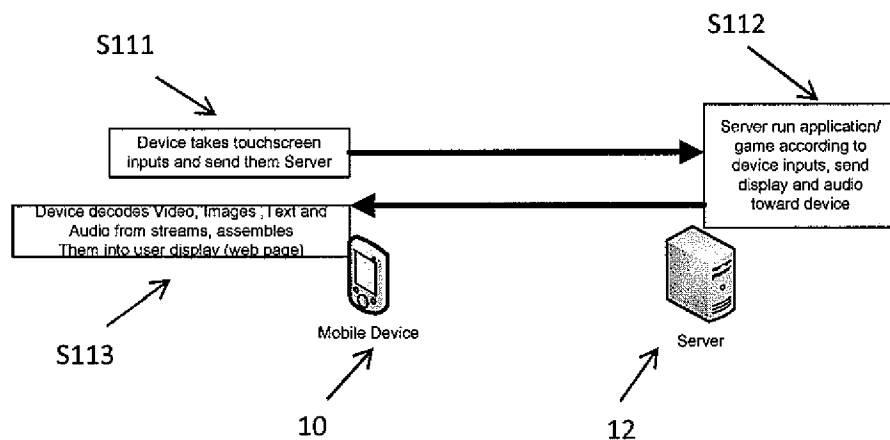


Fig. 11

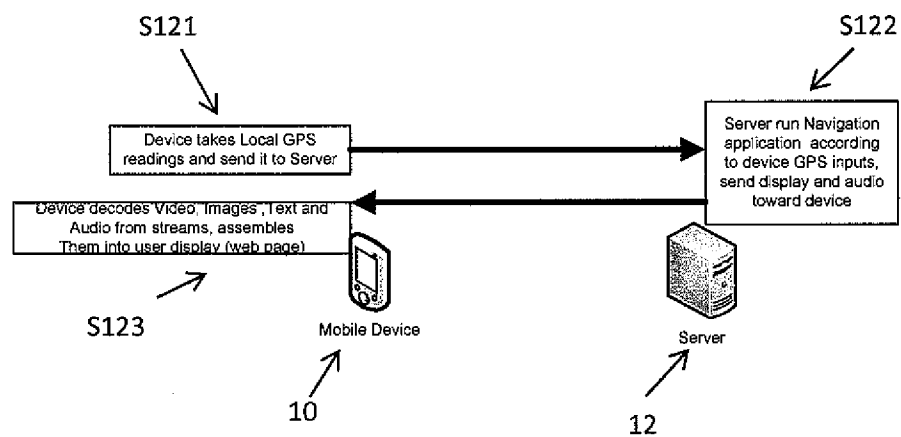


Fig. 12

Application Information

Application Type::	<i>Regular</i>
Subject Matter::	<i>Utility</i>
CD-ROM or CD-R?::	<i>None</i>
Title ::	System and Method for Running Mobile Devices in the Cloud
Attorney Docket Number::	5900-4 - 323207.000
Request for Early Publication?::	<i>No</i>
Request for Non-Publication?::	<i>No</i>
Total Drawing Sheets::	8
Small Entity?::	<i>Yes</i>

Applicant Information

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Family Name:: LEVY
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Country of Residence:: Israel
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City of mailing address:: Hod Hasharon
Country of mailing address:: Israel
Postal or Zip Code of mailing address::

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Family Name:: SHMILOVICI
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Country of Residence:: Israel
Street of mailing address:: Dubnov 24
City of mailing address:: Tel-Aviv
Country of mailing address:: Israel
Postal or Zip Code of mailing address:: 64957

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Country of mailing address:: USA
Postal or Zip Code of mailing address:: 10172
Phone number:: 212-883-4900
Fax Number: 212-972-5487
E-Mail address:: ipdocket@cozen.com

Representative Information

Representative Customer Number:: 27799

Domestic Priority Information

Application ::	Continuity Type::	Parent Application:: <i>no more than 20 characters</i>	Parent Filing Date:: <i>8 characters, MM / DD / YY</i>
This is a	US Application of	61/653,819	05/31/12

Assignee Information

Assignee name::	Emblaze Ltd.
Street of mailing address::	Emblaze House, 1 Emblaze Square, P.O. Box 2220, Industrial Area
City of mailing address::	Ra'anana
State or Province of mailing address::	Israel
Country of mailing address::	Israel
Postal or Zip Code of mailing address::	43662

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
(Includes Reference to PCT International Applications)Attorney's Docket No.
5900-4

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

SYSTEM AND METHOD FOR RUNNING MOBILE DEVICES IN THE "CLOUD"

the specification of which (check only one item below)

☒ [x] is attached hereto☐ [] was filed as United States application

Serial No.

on

and was amended

on _ (if applicable).

☐ [] was filed as PCT international application

Number

on

and was amended under PCT Article 19

on _ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

PRIOR FOREIGN/PCT APPLICATIONS AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

Country (if PCT, indicate "PCT")	Application Number	Date of Filing (day, month, year)	Priority Claimed Under 35 U.S.C. 119	
United States	61/653,819	May 31, 2012	☒ [x] YES	☐ [] NO
			☐ [] YES	☐ [] NO
			☐ [] YES	☐ [] NO
			☐ [] YES	☐ [] NO
			☐ [] YES	☐ [] NO
			☐ [] YES	☐ [] NO
			☐ [] YES	☐ [] NO

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

(Provisional Application No.) 61/653,819

(Provisional Application Filing Date) May 31, 2012

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY (Includes Reference to PCT International Applications)		Attorney's Docket No. 5900-4
POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) at COZEN O'CONNOR to prosecute this application and transact all business in the Patent and Trademark Office connected therewith Customer # 27799		
Send correspondence to: COZEN O'CONNOR at the address for the following customer Number: 27799		Direct Telephone calls to:(name and telephone number) Aaron A. Mace (212) 883-4900
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.		
201	Primary Citizenship Country::	Israel
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	Middle Name::	
	Family Name::	DGANI
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	Country of Residence::	Israel
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	City of mailing address::	Holon
	Country of mailing address::	Israel
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202	Primary Citizenship Country::	Israel
	Given Name::	Moshe
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	Family Name::	LEVY
	City of Residence::	Hod Hasharon
	Country of Residence::	Israel
	Street of mailing address::	20A Hapardes
	City of mailing address::	Hod Hasharon
	Country of mailing address::	Israel
	Postal or Zip Code of mailing address::	4522520

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY (Includes Reference to PCT International Applications)		Attorney's Docket No. 5900-4
203	Primary Citizenship Country::	Israel
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	Middle Name::	
	Family Name::	SHMILOVICI
	City of Residence::	Tel-Aviv
	Country of Residence::	Israel
	Street of mailing address::	Dubnov 24
	City of mailing address::	Tel-Aviv
	Country of mailing address::	Israel
	Postal or Zip Code of mailing address::	64957

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY (Includes Reference to PCT International Applications)		Attorney's Docket No. 5900-4 - 000000.000
SIGNATURE OF INVENTOR 201 <i>[Signature]</i>	SIGNATURE OF INVENTOR 202 <i>[Signature]</i>	SIGNATURE OF INVENTOR 203 <i>Zvi Shmilorici</i>
DATE <i>26 Aug 2012</i>	DATE <i>28 Aug 2012</i>	DATE <i>26 Aug 2012</i>
SIGNATURE OF INVENTOR 204	SIGNATURE OF INVENTOR 205	SIGNATURE OF INVENTOR 206
DATE	DATE	DATE
Additional inventor(s) name(s) & address(es) attached? ☐ Yes ☒ No		

Declaration C/M#1~



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
13/606,675	09/07/2012	2472	1965	5900-4 - 323207.000	47	8

CONFIRMATION NO. 6675

27799

Cozen O'Connor
277 Park Avenue, 20th floor
NEW YORK, NY 10172

FILING RECEIPT



Date Mailed: 09/20/2012

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)

Moshe DGANI, Holon, ISRAEL;
Moshe Levy, Hod Hasharon, ISRAEL;
Zvi Shmilovici, Tel-Aviv, ISRAEL;

Applicant(s)

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Moshe Levy, Hod Hasharon, ISRAEL;
Zvi Shmilovici, Tel-Aviv, ISRAEL;

Assignment For Published Patent Application

Emblaze Ltd., Ra'anana, ISRAEL

Power of Attorney: The patent practitioners associated with Customer Number 27799

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/653,819 05/31/2012

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)

If Required, Foreign Filing License Granted: 09/18/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/606,675**

Projected Publication Date: To Be Determined - pending completion of Corrected Papers

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

System and Method for Running Mobile Devices in the Cloud

Preliminary Class

370

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).

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/606,675	09/07/2012	Moshe DGANI	5900-4 - 323207.000

CONFIRMATION NO. 6675

FORMALITIES LETTER



OC000000056617275

27799
Cozen O'Connor
277 Park Avenue, 20th floor
NEW YORK, NY 10172

Date Mailed: 09/20/2012

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
 - Numbers, letters, and reference characters on the drawings must measure at least 0.32 cm (1/8 inch) in height. See Figure(s) 2, 6-12.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.
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For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/mkibret/

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

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 13/606,675				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	95		N/A				
SEARCH FEE (37 CFR 1.16(k), (l), 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(j))	47	minus 20 = * 27	x 30 =	810	OR					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	8	minus 3 = * 5	x 125 =	625						
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						
				TOTAL		TOTAL				
				1965						
* If the difference in column 1 is less than zero, enter "0" in column 2.										
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	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.										

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Moshe DGANI et al.

Serial No.: 13/606,675

Filed: September 7, 2012

For: System and Method for Running Mobile Devices
in the Cloud

Examiner:

Group Art:

Mail Stop **Amendment**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS
FILING DATE GRANTED**

S I R:

Applicants hereby petition for a one-month extension of the original shortened statutory response period set in the Notice to File Corrected Application Papers of September 20, 2012. Please charge our Amex card ending in 1580 in the amount of \$75 in payment of the government fee for a one-month extension of time so that the period for response is extended to December 20, 2012. Any additional fees or charges required at this time in connection with the present application may be charged to our Patent and Trademark Office Deposit Account No. 503111.

This is in response to the Notice to File Corrected Application Papers dated September 20, 2012. Applicants submit eight replacement sheets (8) including Figs. 2 and Figs. 6-12 revised to address the issues raised the Notice.

It is believed no fees are due at this time. However, in the event that any additional fees or charges are deemed necessary in connection with the application at the present time, the same may be charged to our Patent and Trademark Office Deposit Account No. 503111.

Respectfully submitted,
COZEN O'CONNOR

By /Aaron A. Mace/
Aaron A. Mace
Reg. No. 61,812
277 Park Avenue
New York, New York 10172
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Dated: December 19, 2012

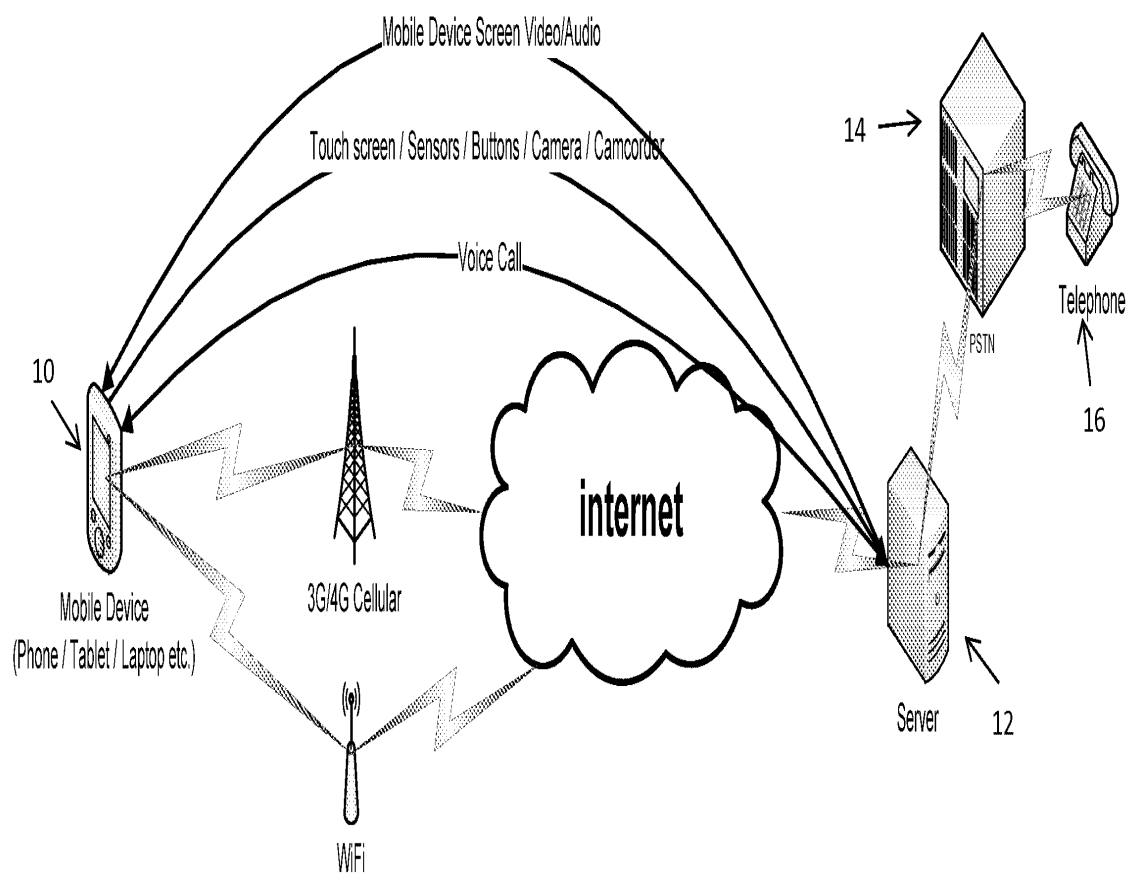


Fig. 2

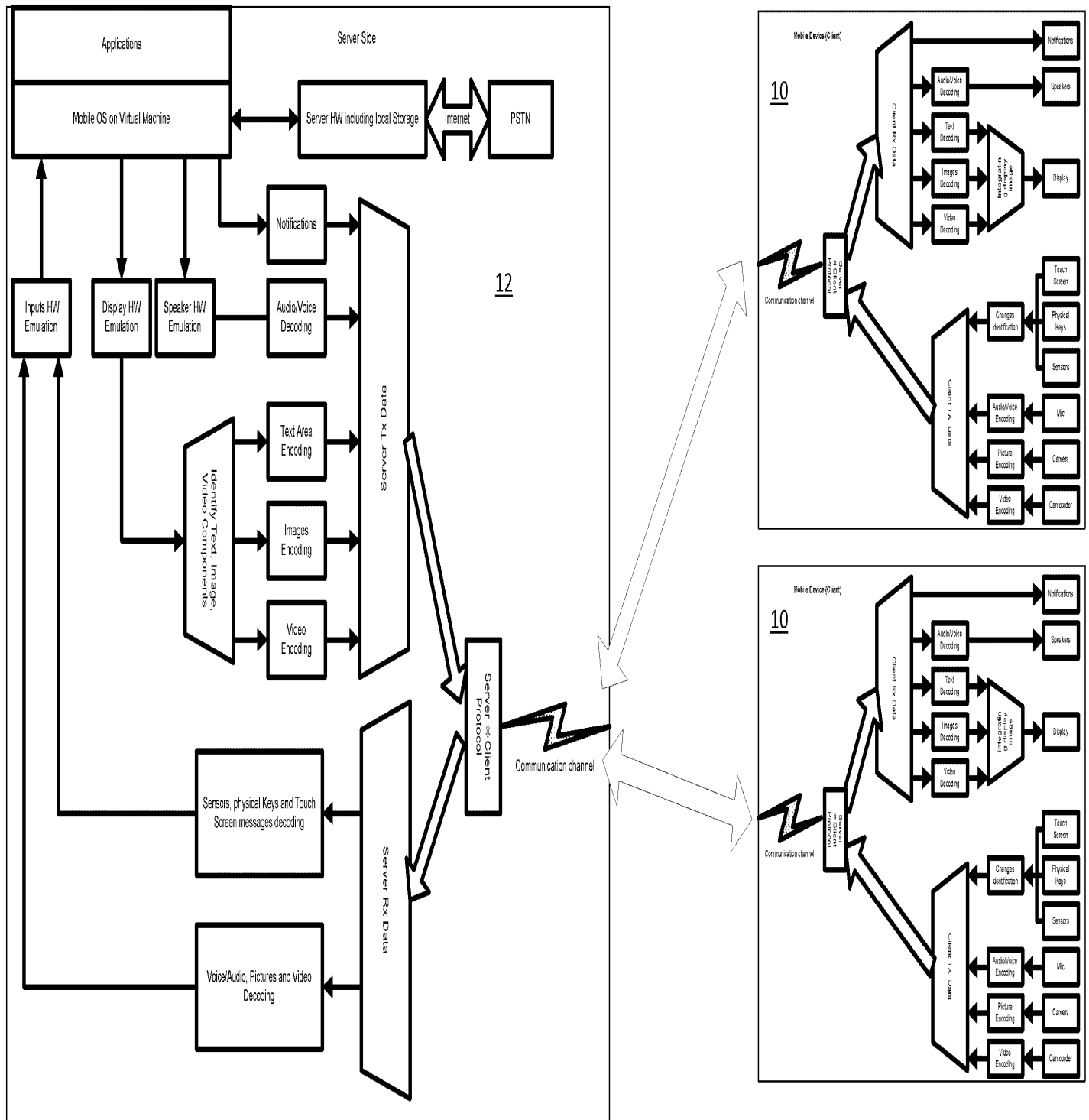


Fig. 6

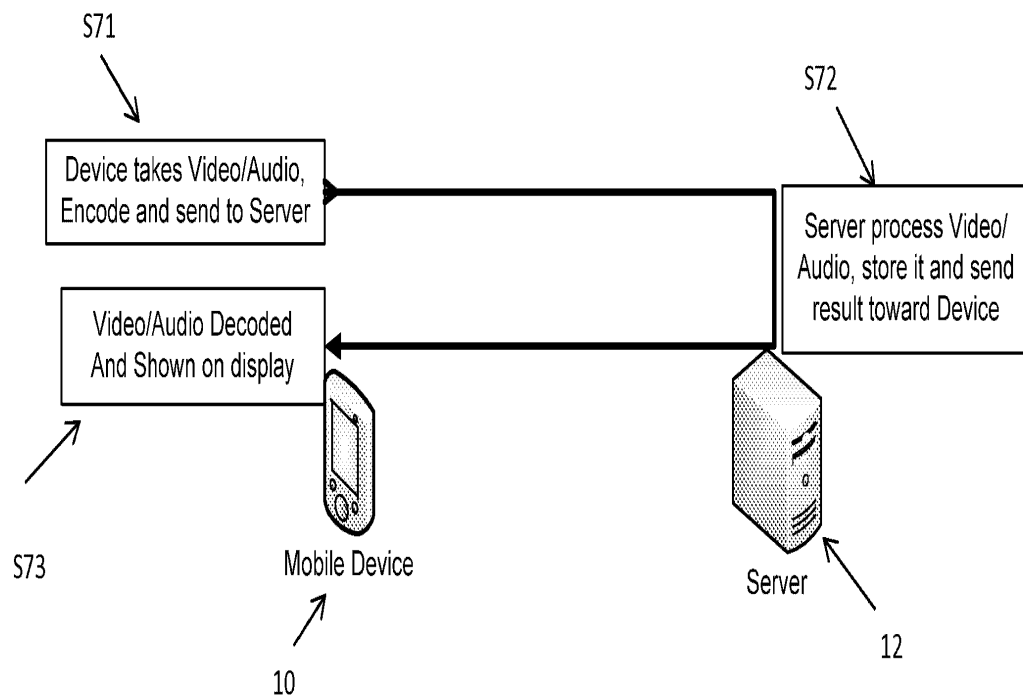


Fig. 7

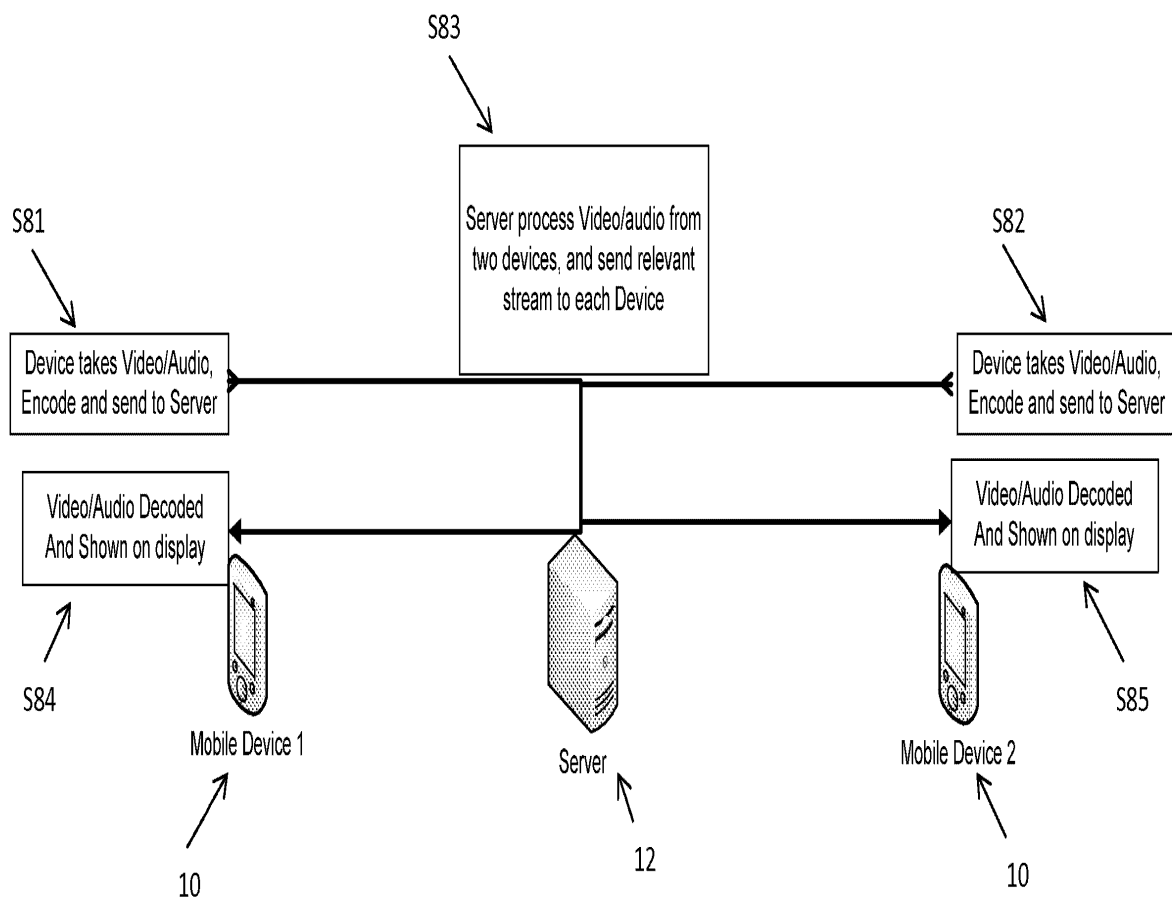


Fig. 8

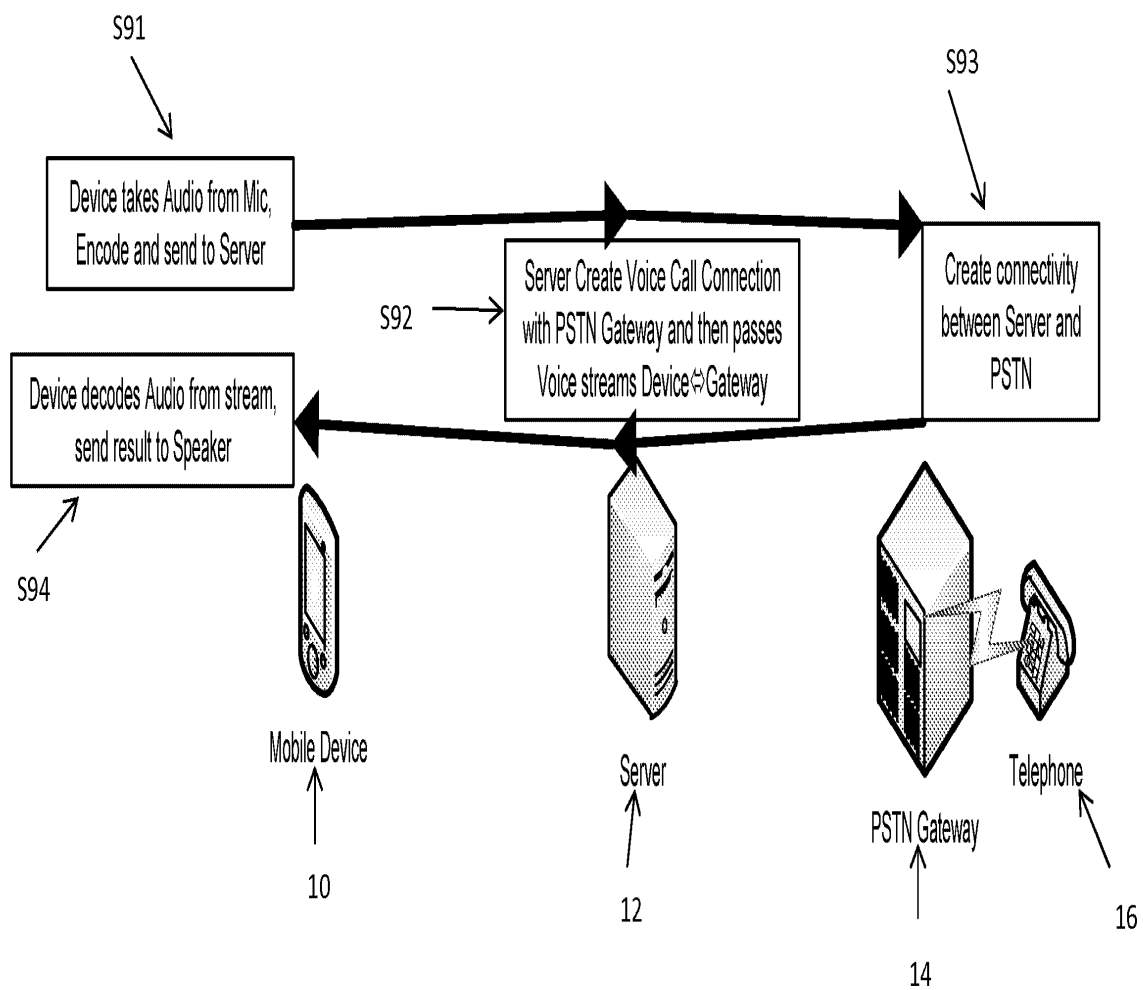


Fig. 9

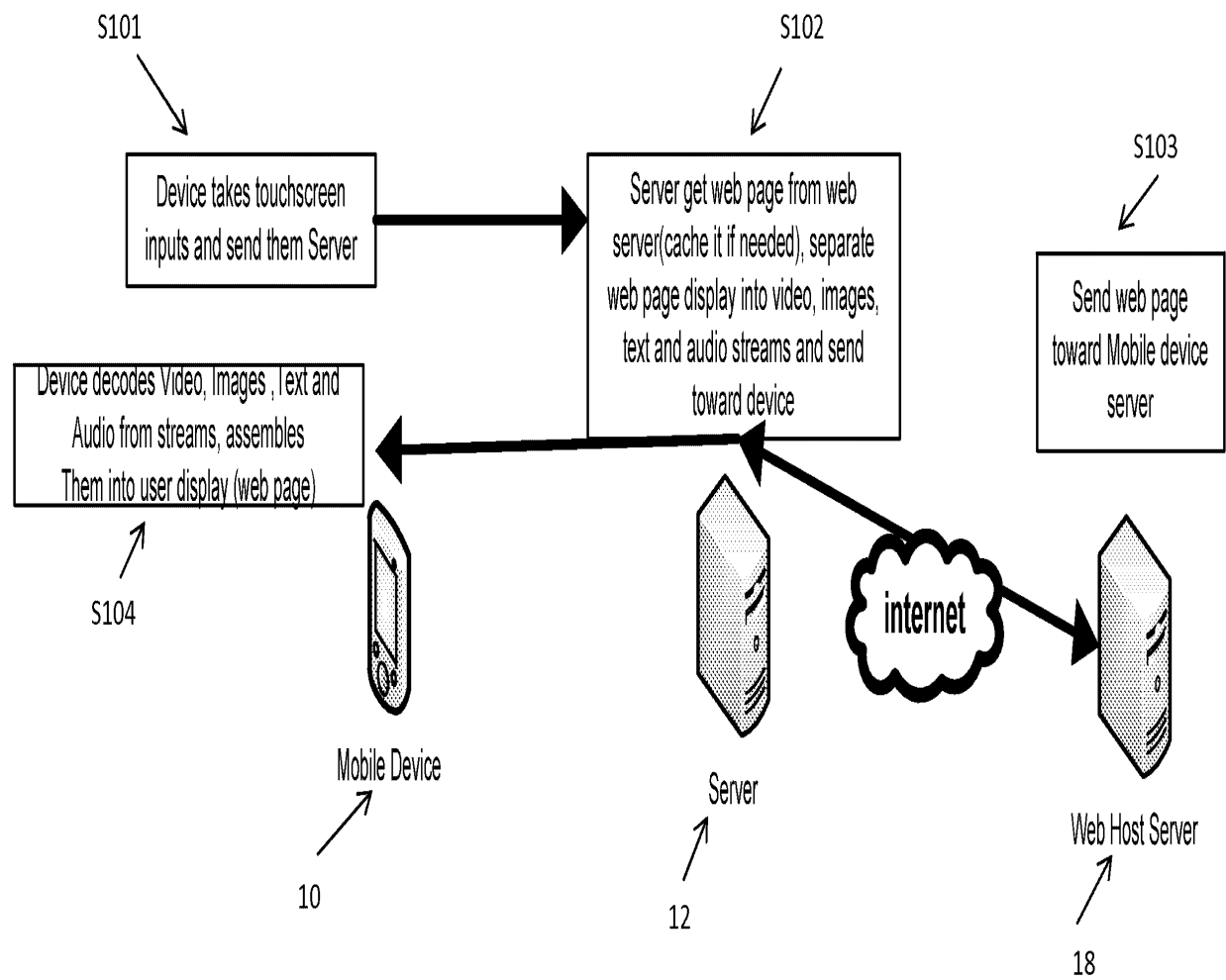


Fig. 10

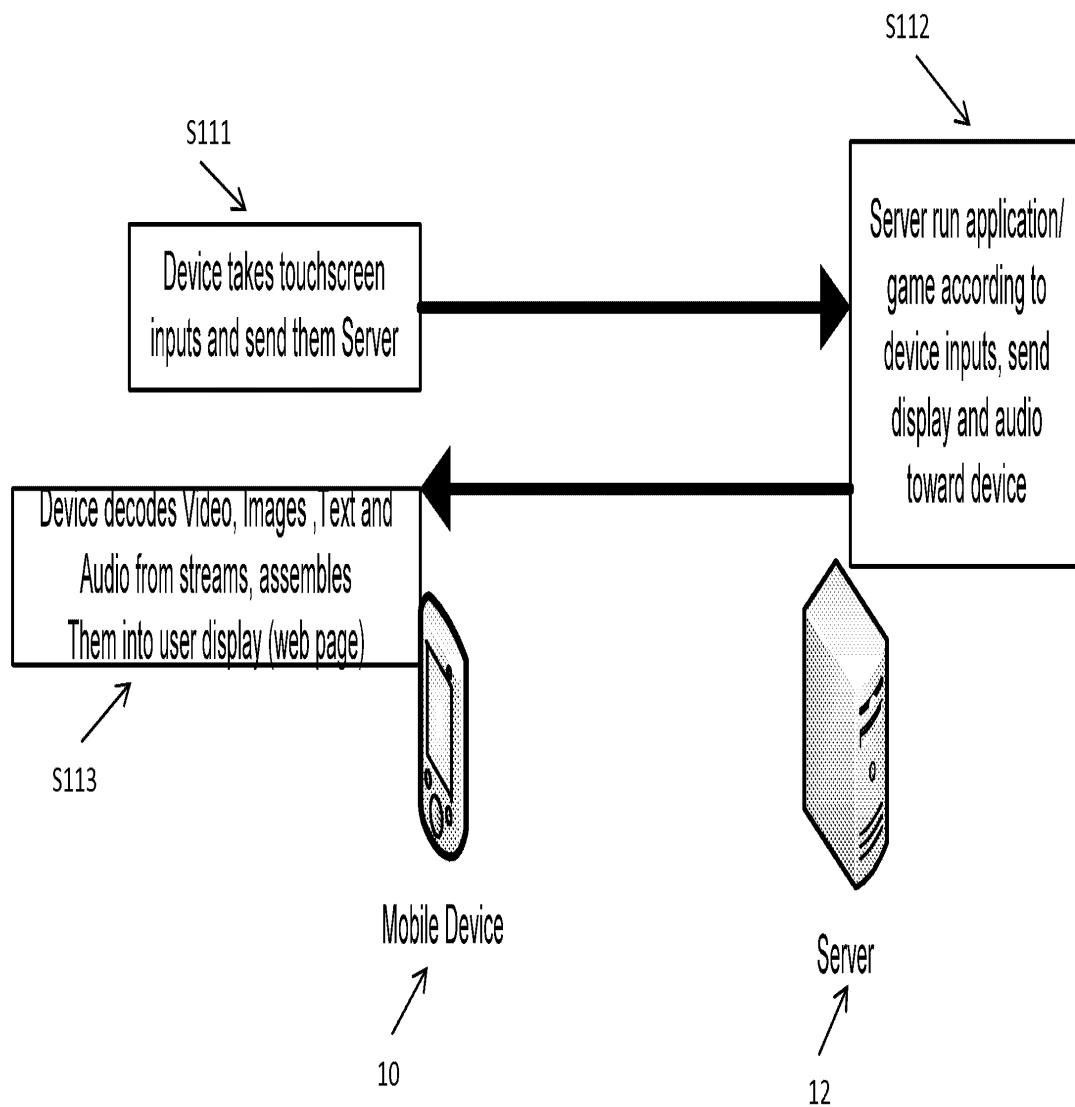


Fig. 11

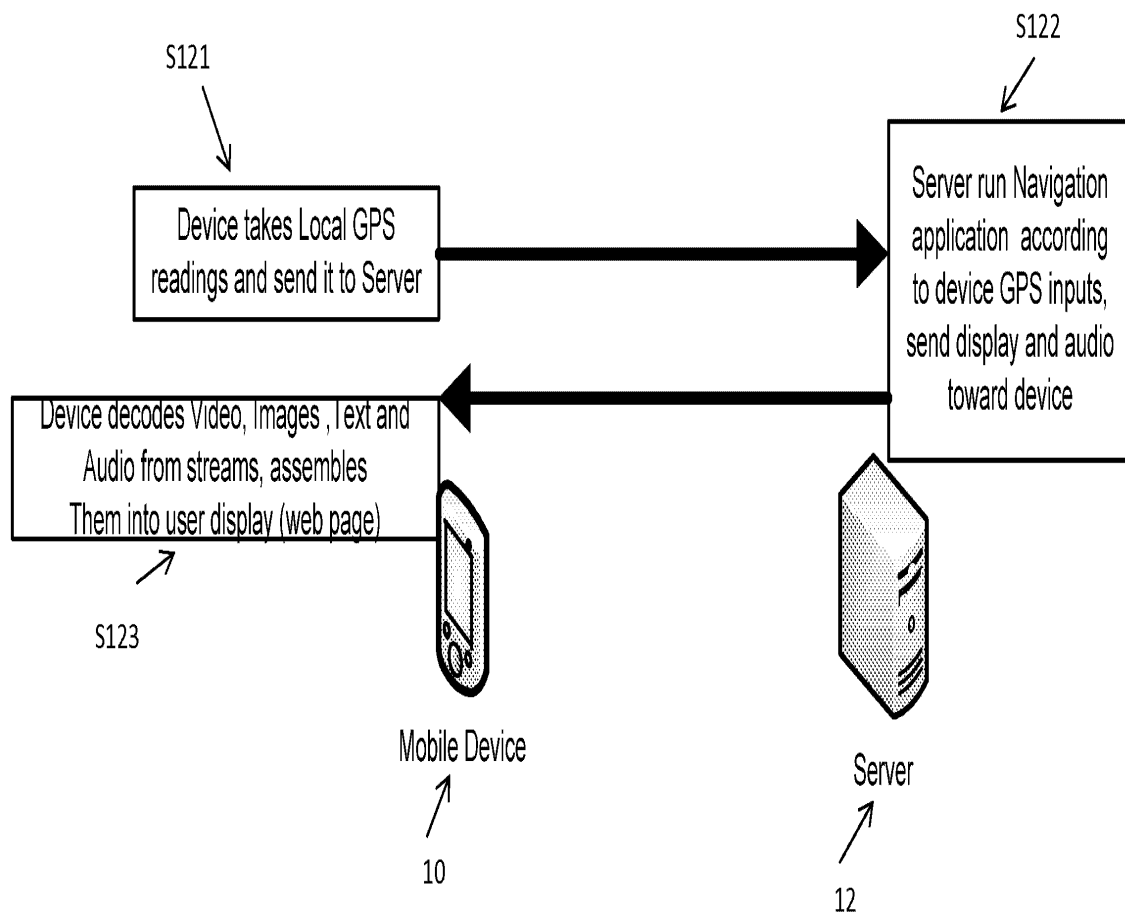


Fig. 12

Electronic Patent Application Fee Transmittal

Application Number:	13606675			
Filing Date:	07-Sep-2012			
Title of Invention:	System and Method for Running Mobile Devices in the Cloud			
First Named Inventor/Applicant Name:	Moshe DGANI			
Filer:	Thomas Langer/Lisa Soto/ Aaron			
Attorney Docket Number:	5900-4-326177.000			
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:				
Extension-of-Time:				
Extension - 1 month with \$0 paid	2251	1	75	75

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				75

Electronic Acknowledgement Receipt

EFS ID:	14510615
Application Number:	13606675
International Application Number:	
Confirmation Number:	6675
Title of Invention:	System and Method for Running Mobile Devices in the Cloud
First Named Inventor/Applicant Name:	Moshe DGANI
Customer Number:	27799
Filer:	Thomas Langer/Lisa Soto/ Aaron
Filer Authorized By:	Thomas Langer
Attorney Docket Number:	5900-4-326177.000
Receipt Date:	19-DEC-2012
Filing Date:	07-SEP-2012
Time Stamp:	12:00:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$75
RAM confirmation Number	11519
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Applicant Response to Pre-Exam Formalities Notice	5900-4-Response.PDF	47220 be8d41 cefa30b79e38af0030939761a053593051	no	2
Warnings:					
Information:					
2	Drawings-only black and white line drawings	5900-4-Corrected-drawings.pdf	406596 b6a85f6d587d12f641c52e394b7c983c0bdf7110	no	8
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30159 773d12eb38dc7f1e22f0a43d27f7386d2af01f88	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			483975		
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.					

SCORE Placeholder Sheet for IFW Content

Application Number: 13606675

Document Date: 12/19/2012

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

- Drawings – Other than Black and White Line Drawings

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

To access the documents in the SCORE database, refer to instructions developed by SIRA.

At the time of document entry (noted above):

- Examiners may access SCORE content via the eDAN interface.
- Other USPTO employees can bookmark the current SCORE URL (<http://es/ScoreAccessWeb/>).
- External customers may access SCORE content via the Public and Private PAIR interfaces.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 13/606,675				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	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), (l), 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(j))	47	minus 20 = * 27	x 31 =	837	OR					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	8	minus 3 = * 5	x 125 =	625						
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						
				TOTAL		TOTAL				
				1995						
* If the difference in column 1 is less than zero, enter "0" in column 2.										
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	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.										



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
13/606,675	09/07/2012	Moshe DGANI	5900-4 - 326177.000

CONFIRMATION NO. 6675

FORMALITIES LETTER



27799
Cozen O'Connor
277 Park Avenue, 20th floor
NEW YORK, NY 10172

Date Mailed: 01/04/2013

NOTICE OF INCOMPLETE REPLY (NONPROVISIONAL)

Filing Date Granted

The U.S. Patent and Trademark Office has received your reply on 12/19/2012 to the Notice to File Missing Parts (Notice) mailed 09/20/2012 and it has been entered into the nonprovisional application. The reply, however, does not include the following items required in the Notice. A complete reply must be timely filed to prevent ABANDONMENT of the above-identified application. Replies should be mailed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

Applicant is given **TWO MONTHS** from the date of the Notice to File Missing Parts (Notice) mailed 09/20/2012 within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

Items Required to Avoid Abandonment:

The required items noted below SHOULD be filed along with any items required above. The filing date of this nonprovisional application will be the date of receipt of the items required above.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
 - Numbers, letters, and reference characters on the drawings must measure at least 0.32 cm (1/8 inch) in height. See Figure(s) 6.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.

<https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/afessechaye/

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Moshe DGANI et al.

Serial No.: 13/606,675

Filed: September 7, 2012

For: System and Method for Running Mobile Devices
in the Cloud

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

RESPONSE TO NOTICE OF INCOMPLETE REPLY (NONPROVISIONAL)

S I R:

In Response to Notice of Incomplete Reply (Nonprovisional) dated January 4, 2013 and the Notice to File Missing Parts dated September 20, 2012, applicants submit herewith the following:

- ☒ Two (2) Replacement Drawing Sheets including Figs. 6A and 6B replacing the original Drawing Sheet including Fig. 6.

Please charge our Amex card ending in 1085 in the amount of \$285 in payment of the government fee for a two-month extension of time so that the period for response is extended to January 20, 2013.

It is believed that no additional fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 503111.

Respectfully submitted,
COZEN O'CONNOR

By /Aaron A. Mace/
Aaron A. Mace
Reg. No. 61,812
277 Park Avenue
New York, New York 10172
(212) 883-4900

Dated: January 22, 2013

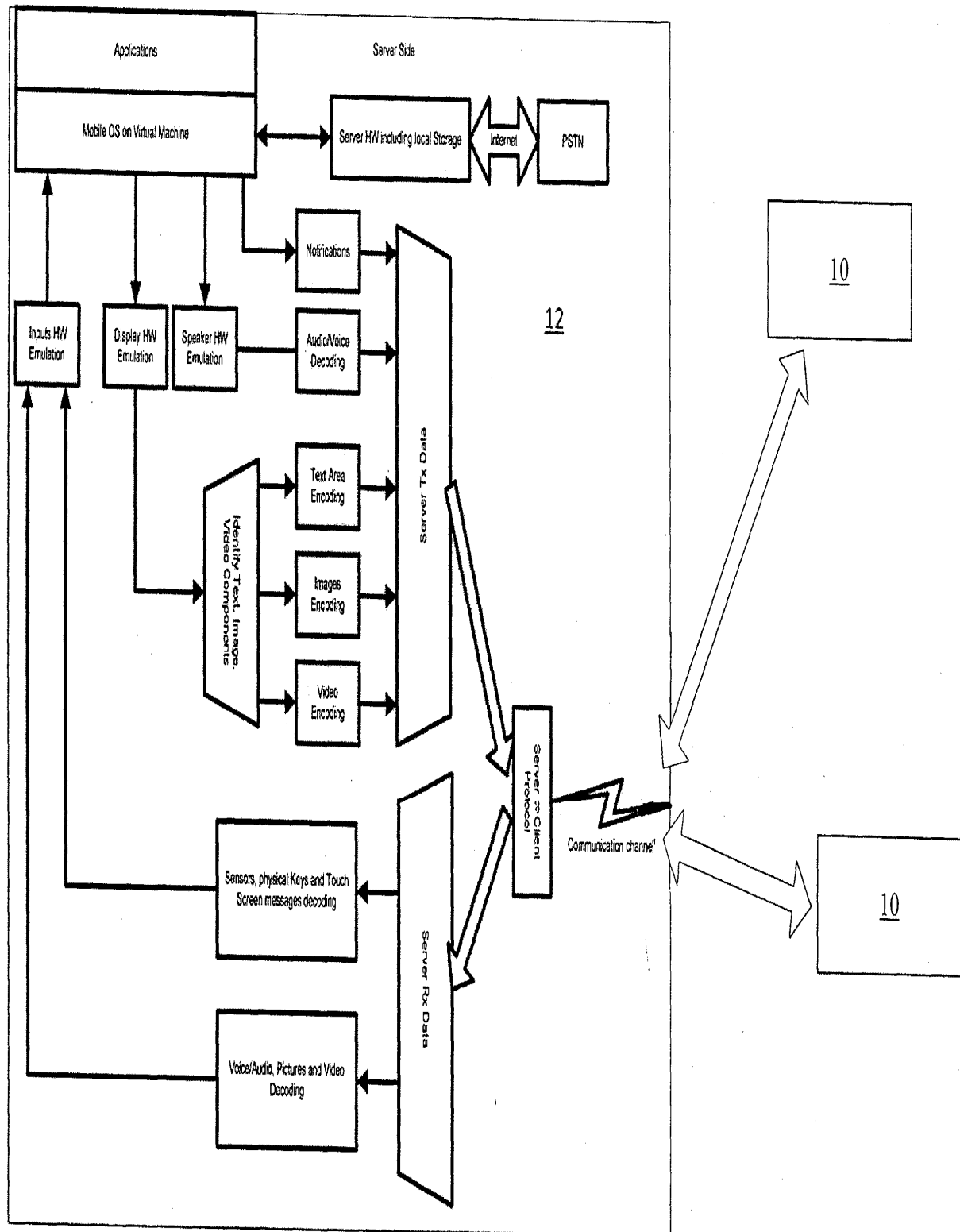


FIG. 6A

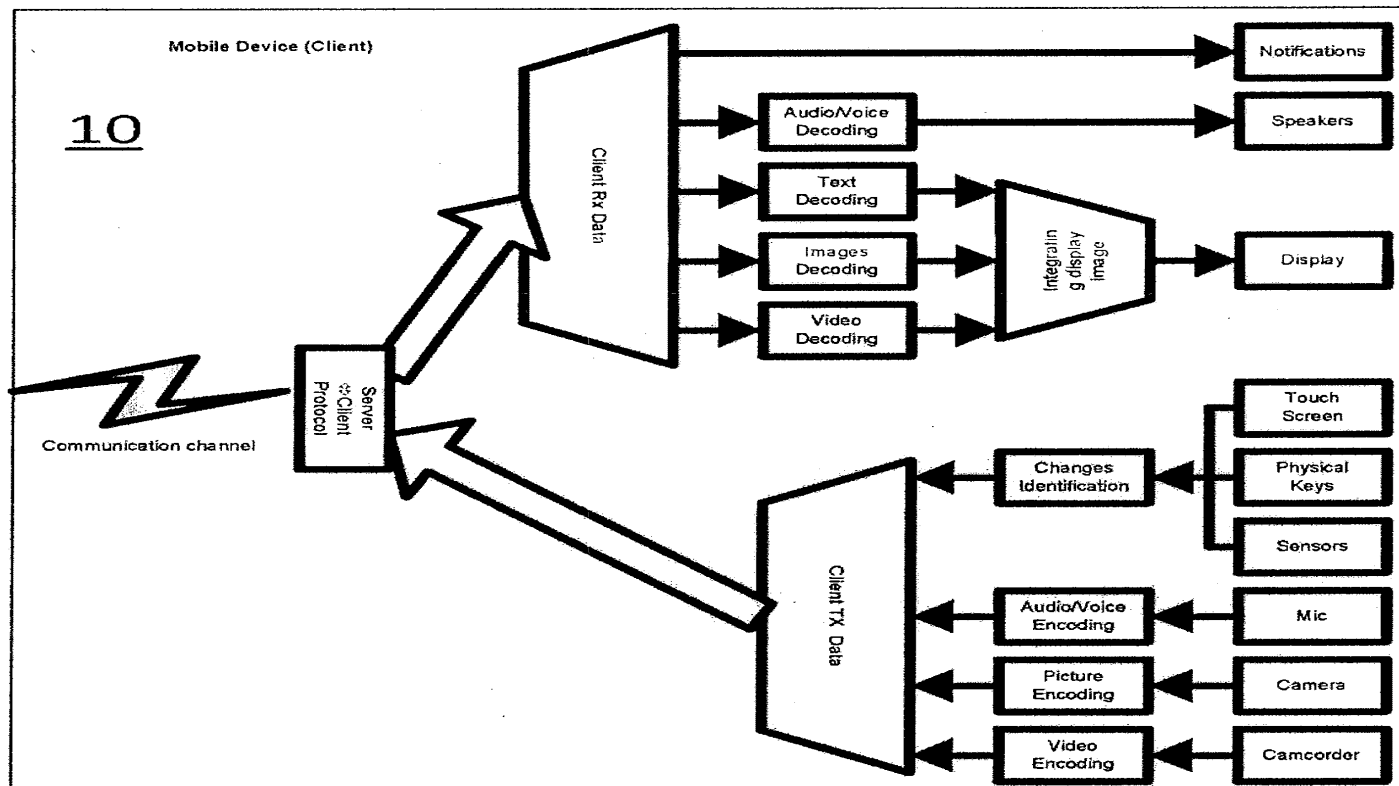


FIG . 6B

Electronic Patent Application Fee Transmittal

Application Number:	13606675			
Filing Date:	07-Sep-2012			
Title of Invention:	System and Method for Running Mobile Devices in the Cloud			
First Named Inventor/Applicant Name:	Moshe DGANI			
Filer:	Aaron Andrew Mace			
Attorney Docket Number:	5900-4 - 326177.000			
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:				
Extension-of-Time:				
Extension - 2 months with \$75 paid	2252	1	210	210

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				210

Electronic Acknowledgement Receipt

EFS ID:	14759347
Application Number:	13606675
International Application Number:	
Confirmation Number:	6675
Title of Invention:	System and Method for Running Mobile Devices in the Cloud
First Named Inventor/Applicant Name:	Moshe DGANI
Customer Number:	27799
Filer:	Aaron Andrew Mace
Filer Authorized By:	
Attorney Docket Number:	5900-4 - 326177.000
Receipt Date:	22-JAN-2013
Filing Date:	07-SEP-2012
Time Stamp:	16:16:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$210
RAM confirmation Number	3656
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Applicant Response to Pre-Exam Formalities Notice	4900letter.pdf	17878 e5e845cf534adccd77596fe19202dc0743f60fe4	no	2
Warnings:					
Information:					
2	Drawings-only black and white line drawings	5900Figs.PDF	38860 04b97e3eb497483cf56ae73b917295d520a05b0e	no	2
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30183 ec893f104b17195303e041eb067cff61d66de64f	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			86921		
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 NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
13/606,675	09/07/2012	2472	1965	5900-4 - 326177.000	47	8

CONFIRMATION NO. 6675

UPDATED FILING RECEIPT



27799
Cozen O'Connor
277 Park Avenue, 20th floor
NEW YORK, NY 10172

Date Mailed: 01/30/2013

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)

Moshe DGANI, Holon, ISRAEL;
Moshe Levy, Hod Hasharon, ISRAEL;
Zvi Shmilovici, Tel-Aviv, ISRAEL;

Applicant(s)

Moshe DGANI, Holon, ISRAEL;
Moshe Levy, Hod Hasharon, ISRAEL;
Zvi Shmilovici, Tel-Aviv, ISRAEL;

Assignment For Published Patent Application

Emblaze Ltd., Ra'anana, ISRAEL

Power of Attorney: The patent practitioners associated with Customer Number 27799

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/653,819 05/31/2012

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.

If Required, Foreign Filing License Granted: 09/18/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/606,675**

Projected Publication Date: 12/05/2013

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

System and Method for Running Mobile Devices in the Cloud

Preliminary Class

370

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).

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 Assets Control, 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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 13/606,675				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	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), (l), 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(j))	47	minus 20 = * 27	x 31 =	837	OR					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	8	minus 3 = * 5	x 125 =	625						
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						
				TOTAL		TOTAL				
				1995						
* If the difference in column 1 is less than zero, enter "0" in column 2.										
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	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.										



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/606,675	09/07/2012	Moshe DGANI	5900-4 - 326177.000	6675
27799	7590	10/10/2013	EXAMINER	
Cozen O'Connor 277 Park Avenue, 20th floor NEW YORK, NY 10172			ELHAG, MAGDI	
			ART UNIT	PAPER NUMBER
			2643	
			NOTIFICATION DATE	DELIVERY MODE
			10/10/2013	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):

patentsecretary@cozen.com
patentdocket@cozen.com
patentsorter@cozen.com

Office Action Summary	Application No. 13/606,675	Applicant(s) DGANI ET AL.	
	Examiner MAGDI ELHAG	Art Unit 2643	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 1 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 09/07/2012.
☐ 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) 1-47 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) ____ is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☒ Claim(s) 1-47 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 ____ 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) | 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 4) ☐ Other: ____. |

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

This Office action is in response to the application's communication filed on 09/07/2012.

Claims 1-47 are pending.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-8, drawn to data retrieval from a remote server based on user request, classified in 455/414.3.

II. Claims 91-13, drawn to remote programming control of a mobile device by a server, classified in 455/419.

III. Claims 14-18, drawn to receiving and integrating, by a mobile device, of a plurality of data streams comprising diverse data types from a remote server, classified in 370/265.

IV. Claim 19, drawn to programming a mobile device to operate in different modes, classified in 455/418.

V. claims 20-47, drawn to a method of emulating a mobile device at a remote server, classified in 455/420.

Inventions **I, II, III, IV and V** are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case,

1. subcombination **I** has separate utility such as data retrieval from a remote server and producing, via a user interface of a mobile device of the retrieved data;

2. subcombination **II** has separate utility such as receiving program control from a remote server, such as programing control related to controlling the user interface of a mobile device;

3. subcombination **III** has a separated utility such as combining data of diverse types at the mobile device;

4. subcombination **IV** has a separate utility such as operating the mobile device in different operation modes; and

5. subcombination **V** has a separate utility such as emulating and executing functions of a mobile device by a remote server. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to

Art Unit: 2643

provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and/or examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification;
- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;
- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic recourses, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first Paragraph.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of an invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103 or pre-AIA 35 U.S.C. 103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be corrected in compliance with 37 CFR 1.48(a) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. A request to correct inventorship under 37 CFR 1.48(a) must be accompanied by an application data sheet in accordance with 37 CFR 1.76 that identifies each inventor by his or her legal name and by the processing fee required under 37 CFR 1.17(i).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAGDI ELHAG whose telephone number is (571)270-3187. The examiner can normally be reached on Monday to Friday 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jinsong Hu can be reached on 572-272-3965. 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). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MAGDI ELHAG/
Examiner, Art Unit 2643

Index of Claims 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
	Examiner MAGDI ELHAG	Art Unit 2643

✓	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	09/30/2013							
	1	÷							
	2	÷							
	3	÷							
	4	÷							
	5	÷							
	6	÷							
	7	÷							
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	34	÷							
	35	÷							
	36	÷							

<i>Index of Claims</i> 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
	Examiner MAGDI ELHAG	Art Unit 2643

✓	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	09/30/2013							
	37	÷							
	38	÷							
	39	÷							
	40	÷							
	41	÷							
	42	÷							
	43	÷							
	44	÷							
	45	÷							
	46	÷							
	47	÷							

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Moshe Dgani et al. Serial No.: 13/606,675 Filed: September 7, 2012 For: SYSTEM AND METHOD FOR RUNNING MOBILE DEVICES IN THE "CLOUD"	Examiner: ELHAG, Magdi Group Art: 2472 Conf. No.: 6675
--	--

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

RESPONSE TO ELECTION/RESTRICTION REQUIREMENT

SIR:

In response to the Election/Restriction Requirement dated October 10, 2013, applicants submit as follows:

Applicants elect, WITH TRAVERSE, Group V, claims 20-47 for further prosecution in the above-captioned application.

Applicants reserve the right to pursue the non-elected claims in a divisional application prior to issuance of a patent on the instant application.

Any additional fees or charges required at this time in connection with the application may be charged to our Patent and Trademark Office Deposit Account No. 503111.

Respectfully submitted,
COZEN O'CONNOR

By /Alphonso A. Collins/
Alphonso A. Collins
Reg. No. 43,559
277 Park Avenue
New York, New York 10172
(212) 883-4900

Dated: November 12, 2013

Electronic Acknowledgement Receipt

EFS ID:	17380765
Application Number:	13606675
International Application Number:	
Confirmation Number:	6675
Title of Invention:	System and Method for Running Mobile Devices in the Cloud
First Named Inventor/Applicant Name:	Moshe DGANI
Customer Number:	27799
Filer:	Alphonso A. Collins/Rebecca Velez
Filer Authorized By:	Alphonso A. Collins
Attorney Docket Number:	5900-4 - 326177.000
Receipt Date:	12-NOV-2013
Filing Date:	07-SEP-2012
Time Stamp:	16:32:36
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	Response to Election / Restriction Filed	5900-4-326177-RespToRestReq.pdf	19751 9b6ff93ca2700b77cc7eff0dbba688b728b0fb36	no	2

Warnings:

Information:

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.



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United States Patent and Trademark Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/606,675	09/07/2012	Moshe DGANI	5900-4 - 326177.000

CONFIRMATION NO. 6675

PUBLICATION NOTICE



OC00000065382768

27799
Cozen O'Connor
277 Park Avenue, 20th floor
NEW YORK, NY 10172

Title:System and Method for Running Mobile Devices in the Cloud

Publication No.US-2013-0324099-A1

Publication Date:12/05/2013

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 Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/606,675	09/07/2012	Moshe DGANI	5900-4 - 326177.000	6675
27799	7590	12/30/2013	EXAMINER	
Cozen O'Connor 277 Park Avenue, 20th floor NEW YORK, NY 10172			ELHAG, MAGDI	
			ART UNIT	PAPER NUMBER
			2643	
			NOTIFICATION DATE	DELIVERY MODE
			12/30/2013	ELECTRONIC

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

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patentsecretary@cozen.com
patentdocket@cozen.com
patentsorter@cozen.com

Office Action Summary	Application No. 13/606,675	Applicant(s) DGANI ET AL.	
	Examiner MAGDI ELHAG	Art Unit 2643	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 MONTHS 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 11/12/2013.
☐ 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) 1-47 is/are pending in the application.
5a) Of the above claim(s) 1-19 is/are withdrawn from consideration.
- 6) ☐ Claim(s) _____ is/are allowed.
- 7) ☒ Claim(s) 20-47 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 09/07/2012 and 12/19/2012 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) | 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____ | 4) ☐ Other: _____ |

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

This Office action is in response to the application's communication filed on 11/12/2013.

Claims 1-19 are withdrawn from further consideration.

Claim 20-47 are pending.

Election/Restrictions

1. **Claim 1-19** are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/12/2013.

Claim Rejections - 35 USC § 112

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.

2. **Claim 28, 37 and 45** 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

Art Unit: 2643

distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claims 28, 37 and 45 recited the feature of “wherein the input information is processed to produce user interface information for reproducing the display, the processing **separating the display into a plurality of different areas**, the processing identifying changing picture areas in display data of the user interface information as video data, etc.” It is not clear whether a display associated with the server or the mobile device is separated into different display areas as suggested from the bolded and underlined text above. The claim is therefore rendered indefinite.

For examining purposes, the examiner interpreted the claims to mean: process the input information by the server to produce a user interface comprising **a display data**; separate the display data into different streams or categories, such as video, image or text; and separately process the identified streams or categories at the server. See paragraph 0056 of the application publication.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 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 negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under pre-AIA 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 20-23** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford, et al. (**US 2009/0036111 A1**), hereinafter ("**Danford**"), in view of Ekstrom, et al. (**US 2011/0161404 A1**), hereinafter ("**Ekstrom**"). The **Ekstrom** reference is provided in the IDS dated 09/07/2012.

Claim 20

Danford discloses a method of emulation functions of a mobile device at a server (abstract, pars. 0023-0025; par. 0043), comprising:

receiving, by a server, input information from at least one mobile device (par. 0023, **the control client logs man-machine interface (MMI) data, file system commands, and other data characterizing usage of, and/or the actions performed on, the mobile device, wherein some or all of the log data is provided to the remote device management application hosted on a device management server;**

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also see par. 0043, the device management server may be operative to proxy transactions, sessions and/or connections between the physical instance of the mobile device and other logical or physical nodes, such as enterprise application services, and the like, wherein the virtual instance of the mobile device may be used as a proxy, which accesses enterprise application, etc., *i.e. commands entered in the mobile device, such as commands to initiate sessions/access application stored remotely, are executed in the server and the result of the execution is rendered to the mobile device); access application);*

processing, by a mobile device operating system (OS) executed by the server, the input information to produce user interface information for reproducing at least one of the display, the audio and the hardware (HW) action by the HW component of the mobile device (par. 0024, a server may host a virtual machine that emulates the hardware (such as the microprocessor or controller) of the mobile device, allowing a copy of the mobile device operating system to be run, etc., **the logged usage data transmitted from the control client application can be used to replay, using the virtual instance of the mobile device, the actions taken by a user on a mobile device for a desired period of time**; par. 0025, the virtual instance of the mobile device includes **a hardware emulation layer and a software emulation layer**, wherein both the hardware and software emulation layers **are executable in a computer runtime environment, and generally, the software emulation layer is executable within the context of the hardware emulation layer to replicate the behavior,**

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operations, and/or characteristics of the same software being executed on the actual physical mobile device, etc.); and

sending, by the server, the user interface information to the mobile device (par. 0043, the virtual instance of the mobile device may be used as a proxy, which accesses enterprise application, wherein the resulting changes to device state, file system state and data that can be used to **simulate user-observed behaviors on the display screen of the physical device instance can be communicated back to the physical instance of the mobile device and rendered on the display and otherwise effected by the control client**).

Danford teaches the device management server may be operative to proxy transactions, sessions and/or connections between the physical instance of the mobile device and other logical or physical nodes, etc. (par. 0043), but does not clearly teach the input information has not been processed by the mobile device to produce a display, audio and a hardware (HW) action by a HW component of a mobile device.

However in the same field of endeavor, Ekstrom teaches a thin client device, comprising a display and input device, wherein the client device which is **free of processing units and associated operating systems and is configured to connect to a remote server that emulates the functions of a mobile device**, wherein the client device requests data from the server and data may be streamed to the first device across a WiFi network connection between the client device and the server, and wherein the data maybe a software application, *i.e. running basic operating system to*

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only support the display, input device and the connection to the wireless network (pars. 0004-0008; par. 0028).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the mobile device of Danford by freeing the mobile device of a processing units and associated operating system, as taught by Ekstrom, so as to provide cheap production and maintenance of the mobile device while allowing the user to enjoy the power and flexibility of a laptop computer and still retaining the mobility and security of a smartphone as suggested by Ekstrom (see par.0003 and pars 0020-0025).

Claim 21

Danford in view of Ekstrom teaches The method of claim 20, further comprising: emulating, by the server, mobile device HW and executing the mobile device OS on the emulated mobile device HW (Danford, par. 0025, The virtual instance of the mobile device **includes a hardware emulation layer** and a software emulation layer, wherein both the hardware and software emulation layers are executable in a computer runtime environment, etc.).

Claim 22

Danford in view of Ekstrom teaches The method of claim 20, further comprising: executing, by the server, at least one application on the mobile OS (Danford; par. 0024, one or more applications installed on the actual mobile device can also run on top of the

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mobile device operating system, etc.), wherein the at least one application processes the input information to produce the user interface information (Danford, par. 0025, the software emulation layer is executable within the context of the hardware emulation layer to replicate the behavior, operations, and/or characteristics of the same software being executed on the actual physical mobile device; Danford, par. 0043, resulting changes to device state, file system state and data that can be used to simulate user-observed behaviors on the display screen of the physical device instance can be communicated back to the physical instance of the mobile device and rendered on the display and otherwise effected by the control client).

Claim 23

Danford in view of Ekstrom teaches The method of claim 20, further comprising: providing, by the server, a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN) (Danford, par. 0043, **proxy sessions and/or connections between the physical instance of the mobile device and other logical or physical nodes**, etc.).

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4. **Claim 24** is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford in view of Ekstrom as applied to claim 20 above, and further in view of Perry, et al. (**US 2010/0306813 A1**), hereinafter ("**Perry**").

Claim 24

Danford in view of Ekstrom teaches device management server (104) may also **operate in connection with one or more virtual instances of respective mobile devices**, wherein **device management server (104) comprises one or more virtual machines (106), as required to emulate the hardware of different mobile device types**, and wherein **device management server (104) may also operate in connection with one or more virtual instances of respective mobile devices, e.g. device management server (104) comprises one or more virtual machines (106), as required to emulate the hardware of different mobile device** types (Danford, par. 0023; fig.1A and pars 0029-0031).

Danford in view of Ekstrom does not clearly teach inputs from each of the plurality of different mobile devices are executed by the same instance of a mobile device operating system executed by the sever.

However in the same field of endeavor, Perry teaches a video server configured to provide streaming video to players of computer games over a computing network (abstract; fig.1 and associated text), wherein Perry further teaches a game state of one or more of the video games may be maintained by one or more instances of Game Server (125) **each based on inputs received from multiple clients**, wherein the video

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games are executed using different instances of Game Logic 210 configured to use a game state to determine a game environment that can be rendered to a video stream configured to be presented to a game player (fig.2 and pars. 0054-0056), Perry further teaches each instance of Game Logic (210) can be disposed on a separate computing device or several instances of Game Logic (210) could be disposed on the same computing device or a single instance of Game Logic (210) could be disposed across multiple computing devices, etc., **wherein Game Logic (210) typically executes on top of an Operating System (OS) 215**, etc., and wherein **one or more of Game Logic 210 can be executed within a virtual machine. Multiple instances of Game Logic 210 may execute on the same instance of Operating System 210**, etc. (fig.1A and pars. 0057-0059).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the server of Danford in view Ekstrom by providing a virtual operating system that can use the same instance of a virtual operating system to execute multiple instances/inputs corresponding to multiple different client devices that are participating in a networked video game, as taught by Perry, so as to provide a video game environment that can support multi-player games in which the game state/instance is dependent on inputs received over the computing network from multiple players of the game as suggested by Perry (see par. 0015).

5. **Claims 25-27 and 29** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford in view of Ekstrom, as applied to claim 20 above, and further in view of Relan, et al. (**US 2013/0013671 A1**), hereinafter ("**Relan**").

Claim 25

Danford in view of Ekstrom teaches the requested data is streamed to a virtual desktop on the device mobile device from the server (Ekstrom, abstract).

Danford in view of Ekstrom does not expressly teach the data comprises a plurality of different types of data which are sent in different data streams.

However, streaming information comprising different types of data, such as audio and video, via separate streams is obvious because it is known in the art. Such streaming can be found in Relan. In particular, Relan teaches a method of content delivery to client devices from a server, wherein content output by an application is captured, encoded, and streamed to the client devices in a way that minimizes latency (abstract), wherein Relan specifically teaches separate video and audio ports on the server are used to stream the video and audio (par. 0105; also see pars. 0087-0088 and pars. 0098-0102).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the server of Danford in view of Ekstrom by separating audio and video data intended for a client device in different streams, as taught by Relan, so as to dynamically adjust the encoding, and/or streaming parameters of the video data in real-time to allow for quality, latency, and/or bandwidth trade-offs,

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depending on the particular application or game as suggested by Relan, see par. 0087-0088).

Claim 26

Danford as modified further teaches The method of claim 25, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams (Relan, par. 0091, Quality of service (**QoS**) adaptation algorithm dynamically adjusts the video capturing and encoding parameters based on the network condition, etc., *i.e. the QoS of the video stream is changed independent of the audio stream and therefore may assume different values at different times*).

Claim 27

Danford as modified further teaches The method of claim 25, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams (Relan, pars. 0081, 0088, Video capturing and encoding parameters are selected in a way that the system fully utilizes the network bandwidth designated to the video stream).

Claim 29

Danford in view of Ekstrom teaches the requested data is streamed to a virtual desktop on the device mobile device from the server (Ekstrom, abstract).

Danford in view of Ekstrom does not expressly The method of claim 20, wherein the input information is received by the server as a plurality of separate data streams, each of said plurality of separate data streams of the input information comprising a different type of data.

However, streaming information comprising different types of data, such as audio and video, via separate streams is obvious because it is known in the art. Such streaming can be found in Relan. In particular, Relan teaches a method of content delivery to client devices from a server, wherein content output by an application is capture, encoded, and streamed to the client devices in a way that minimizes latency (abstract), wherein Relan specifically teaches separate video and audio ports on the server are used to stream the video and audio (par. 0105; also see pars. 0087-0088 and pars. 0098-0102). Further, configuring the mobile device to transmit similar data to the server in separate data streams is considered an obvious use of a known technique to improve similar device ready for improvement in the same way in view of the teachings of Relan above.

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the mobile device of Danford in view of Ekstrom by separating audio and video data intended for the sever in different streams, as taught by Relan, so as to dynamically adjust the encoding, and/or streaming parameters of the

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video data in real-time to allow for quality, latency, and/or bandwidth trade-offs, depending on the particular application or game as suggested by Relan (see par. 0087-0088).

6. **Claim 28 is** rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford in view of Ekstrom and Relan, as applied to claim 25 above, and further in view of Hobbs, et al. (**US 8345768 B1**), hereinafter ("**Hobbs**").

Claim 28

For examining purposes, the examiner interpreted the claims to mean: the server processes the input information to produce a user interface comprising a display data, wherein the display data is processed by the server by separating the **display data** into different streams or categories, such as video, image or text.

Accordingly, Danford in view of Ekstrom and Relan does not expressly teach The method of claim 25, wherein the input information is processed to produce user interface information for reproducing the display, the processing separating the display into a plurality of different areas, the processing identifying changing picture areas in display data of the user interface information as video data, the processing identifying static picture areas in the display data of the user interface information as image data and the processing identifying static bi-color areas in the display data of the user interface information as text data.

However, separating display information into different types of display data and separately processing the different types of display data is obvious because it is known in the art. Such display processing can be found in Hobbs. In particular, Hobbs teaches a method of encoding and transmitting a block of visual data within a visual data stream, wherein a progressive encoding is applied to the block, and wherein **pixels are pre-classified as having an identified pixel type such as video, text, picture, or background type using standard image decomposition methods, and wherein all block in a region may be subject to the same progressive encoding sequence or blocks in a region may be subject to different progressive encoding sequences based on image type**. Hobbs further teaches a region may be classified as having two picture areas (e.g. JPEG pictures) changing at different times, a text area (e.g. Display of a word processing screen) and a video sequence (e.g. An MPEG clip), wherein blocks classified as text might be assigned a high priority rapid build sequence to lossless coding quality level, all blocks classified as pictures might be subjected to a slow progression to a high coding quality using a different sequence and blocks classified as video might be subjected to a rapid progression to a lower coding quality level to limit the bandwidth consumed by video (abstract; figs.1-2; col.5, lines 49 to col.6, lines 6).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the server of Danford in view of Ekstrom and Relan by including processes for classifying the display information produced from executing the input information, as taught by Hobbs, so as to separately encode the

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different types of display data identified by the classification process and thereby allow for applying different encoding qualities and priorities for the classified display data types as suggested by Hobbs (see col.5, lines 49 to col.6, lines 6)

7. **Claims 30-33, 35, 36 and 38** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford in view of Relan.

Claim 30

Danford discloses a method of emulation functions of a mobile device at a server (abstract, pars. 0023-0025; par. 0043), comprising:

receiving, by a server, input information from at least one mobile device (par. 0023, **the control client logs man-machine interface (MMI) data, file system commands, and other data characterizing usage of, and/or the actions performed on, the mobile device, wherein some or all of the log data is provided to the remote device management application hosted on a device management server;** also see par. 0043, the device management server may be operative to proxy transactions, sessions and/or connections between the physical instance of the mobile device and other logical or physical nodes, such as enterprise application services, and the like, wherein the virtual instance of the mobile device may be used as a proxy, which accesses enterprise application, etc., *i.e. commands entered in the mobile device, such as commands to initiate sessions/access application stored remotely, are*

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executed in the server and the result of the execution is rendered to the mobile device);
access application);

processing, by a mobile device operating system (OS) executed by the server, the input information to produce user interface information for reproducing at least one of the display, the audio and the hardware (HW) action by the HW component of the mobile device (par. 0024, a server may host a virtual machine that emulates the hardware (such as the microprocessor or controller) of the mobile device, allowing a copy of the mobile device operating system to be run, etc., **the logged usage data transmitted from the control client application can be used to replay, using the virtual instance of the mobile device, the actions taken by a user on a mobile device for a desired period of time**; par. 0025, the virtual instance of the mobile device includes **a hardware emulation layer and a software emulation layer**, wherein both the hardware and software emulation layers **are executable in a computer runtime environment, and generally, the software emulation layer is executable within the context of the hardware emulation layer to replicate the behavior, operations, and/or characteristics of the same software being executed on the actual physical mobile device**, etc.); and

sending, by the server, the user interface information to the mobile device (par. 0043, the virtual instance of the mobile device may be used as a proxy, which accesses enterprise application, wherein the resulting changes to device state, file system state and data that can be used to **simulate user-observed behaviors on the display screen of the physical device instance can be communicated back to the physical**

instance of the mobile device and rendered on the display and otherwise effected by the control client).

Danford does not expressly teach the user interface information comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream.

However, streaming information comprising different types of data, such as audio and video, via separate streams is obvious because it is known in the art. Such streaming can be found in Relan. In particular, Relan teaches a method of content delivery to client devices from a server, wherein content output by an application is capture, encoded, and streamed to the client devices in a way that minimizes latency (abstract), wherein Relan specifically teaches separate video and audio ports on the server are used to stream the video and audio (par. 0105; also see pars. 0087-008 and pars. 0098-0102).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the mobile device of Danford by separating audio and video data intended for the sever in different streams, as taught by Relan, so as to dynamically adjust the encoding, and/or streaming parameters of the video data in real-time to allow for quality, latency, and/or bandwidth trade-offs, depending on the particular application or game as suggested by Relan (see par. 0087-0088).

Claim 31

Danford in view of Relan teaches The method of claim 30, further comprising: emulating, by the server, mobile device HW and executing the mobile device OS on the emulated mobile device HW (Danford, par. 0025, The virtual instance of the mobile device **includes a hardware emulation layer** and a software emulation layer, wherein both the hardware and software emulation layers are executable in a computer runtime environment, etc.).

Claim 32

Danford in view of Relan teaches The method of claim 30, further comprising: executing, by the server, at least one application on the mobile device OS (Danford; par. 0024, one or more applications installed on the actual mobile device can also run on top of the mobile device operating system, etc.), wherein the at least one application processes the input information to produce the user interface information (Danford, par. 0025, the software emulation layer is executable within the context of the hardware emulation layer to replicate the behavior, operations, and/or characteristics of the same software being executed on the actual physical mobile device; Danford, par. 0043, resulting changes to device state, file system state and data that can be used to simulate user-observed behaviors on the display screen of the physical device instance can be communicated back to the physical instance of the mobile device and rendered on the display and otherwise effected by the control client).

Claim 33

Danford in view of Relan teaches The method of claim 30, further comprising: providing, by the server, a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN) (Danford, par. 0043, **proxy sessions and/or connections between the physical instance of the mobile device and other logical or physical nodes**, etc.).

Claim 35

Danford in view of Relan teaches The method of claim 30, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams (Relan, Quality of Service (QoS) adaptation algorithm dynamically adjusts the video capturing and encoding parameters based on the network condition, etc., *i.e. the QoS of the video stream is changed independent of the audio stream and therefore may assume different values at different times*).

Claim 36

Danford in view of Relan further teaches The method of claim 30, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams (Relan, pars. 0081, 0088, Video capturing and encoding

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parameters are selected in a way that the system fully utilizes the network bandwidth designated to the video stream).

Claim 38

Danford does not expressly teach The method of claim 30, wherein the input information is received by the server as a plurality of separate data streams, each of said plurality of separate data streams of the input information comprising a different type of data.

However, streaming information comprising different types of data, such as audio and video, via separate streams is obvious because it is known in the art. Such streaming can be found in Relan. In particular, Relan teaches a method of content delivery to client devices from a server, wherein content output by an application is capture, encoded, and streamed to the client devices in a way that minimizes latency (abstract), wherein Relan specifically teaches separate video and audio ports on the server are used to stream the video and audio (par. 0105; also see pars. 0087-008 and pars. 0098-0102). Further, configuring the mobile device to transmit similar data to the server in separate data streams is considered an obvious use of a known technique to improve similar device ready for improvement in the same way in view of the teachings of Relan above..

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the mobile device of Danford by separating audio and video data intended for the sever into different streams, as taught by Relan,

so as to dynamically adjust the encoding, and/or streaming parameters of the video data in real-time to allow for quality, latency, and/or bandwidth trade-offs, depending on the particular application or game as suggested by Relan, see par. 0087-0088).

8. **Claim 34** is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford in view of Relan as applied to claim 30 above, and further in view of Perry.

Claim 34

Danford in view of Relan teaches device management server (104) may also **operate in connection with one or more virtual instances of respective mobile devices**, wherein **device management server (104) comprises one or more virtual machines (106), as required to emulate the hardware of different mobile device types**, and wherein **device management server (104) may also operate in connection with one or more virtual instances of respective mobile devices, e.g. device management server (104) comprises one or more virtual machines (106), as required to emulate the hardware of different mobile device types** (Danford, par. 0023; fig.1A and pars 0029-0031).

Danford in view of Relan does not clearly teach inputs from each of the plurality of different mobile devices are executed by the same instance of a mobile device operating system executed by the sever.

However in the same field of endeavor, Perry teaches a video server configured to provide streaming video to players of computer games over a computing network

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(abstract; fig.1 and associated text), wherein Perry further teaches a game state of one or more of the video games may be maintained by one or more instances of Game Server (125) **each based on inputs received from multiple clients**, wherein the video games are executed using different instances of Game Logic 210 configured to use a game state to determine a game environment that can be rendered to a video stream configured to be presented to a game player (fig.2 and pars. 0054-0056), Perry further teaches each instance of Game Logic (210) can be disposed on a separate computing device or several instances of Game Logic (210) could be disposed on the same computing device or a single instance of Game Logic (210) could be disposed across multiple computing devices, etc., **wherein Game Logic (210) typically executes on top of an Operating System (OS) 215**, etc., and wherein **one or more of Game Logic 210 can be executed within a virtual machine. Multiple instances of Game Logic 210 may execute on the same instance of Operating System 210**, etc. (fig.1A and pars. 0057-0059).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the server of Danford in view of Relan by providing a virtual operating system that can use the same instance of a virtual operating system to execute multiple instances/inputs corresponding to multiple different client devices that are participating in a networked video game, as taught by Perry, so as to provide a video game environment that can support multi-player games in which the game state/instance is dependent on inputs received over the computing network from multiple players of the game as suggested by Perry (see par. 0015).

9. **Claim 37** is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford in view of Relan as applied to claim 35 above, and further in view of Hobbs.

Claim 37

For examining purposes, the examiner interpreted the claims to mean: the server processes the input information to produce a user interface comprising a display data, wherein the display data is processed by the server by separating the display data into different streams or categories, such as video, image or text.

Accordingly, Danford in view of Relan does not expressly teach The method of claim 35, wherein the input information is processed to produce user interface information for reproducing the display, the processing separating the display into a plurality of different areas, the processing identifying changing picture areas in display data of the user interface information as video data, the processing identifying static picture areas in the display data of the user interface information as image data and the processing identifying static bi-color areas in the display data of the user interface information as text data.

However, separating display information into different types of display data and separately processing the different types of display data is obvious because it is known in the art. Such display processing can be found in Hobbs. In particular, Hobbs teaches a method of encoding and transmitting a block of visual data within a visual data stream, wherein a progressive encoding is applied to the block, and wherein **pixels are pre-**

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classified as having an identified pixel type such as video, text, picture, or background type using standard image decomposition methods, and wherein all block in a region may be subject to the same progressive encoding sequence or blocks in a region may be subject to different progressive encoding sequences based on image type. Hobbs further teaches a region may be classified as having two picture areas (e.g. JPEG pictures) changing at different times, a text area (e.g. Display of a word processing screen) and a video sequence (e.g. An MPEG clip), wherein blocks classified as text might be assigned a high priority rapid build sequence to lossless coding quality level, all blocks classified as pictures might be subjected to a slow progression to a high coding quality using a different sequence and blocks classified as video might be subjected to a rapid progression to a lower coding quality level to limit the bandwidth consumed by video (abstract; figs.1-2; col.5, lines 49 to col.6, lines 6).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the server of Danford in view of Relan by including processes for classifying the display information produced from executing the input information, as taught by Hobbs, so as to separately encode the different types of display data identified by the classification process and thereby allow for applying different encoding qualities and priorities for the classified display data types as suggested by Hobbs (see col.5, lines 49 to col.6, lines 6).

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10. **Claims 39-41** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford in view of Perry.

Claim 39

Danford discloses a method of emulation functions of a mobile device at a server (abstract, pars. 0023-0025; par. 0043), comprising:

receiving, by a server, input information from a plurality of mobile devices (fig.1A and par. 0029, Device management server (104) may also operate in connection with **one or more virtual instances of respective mobile devices**. In one implementation, device management server (104) comprises one or more virtual machines 106, as required to emulate the hardware of different mobile device types; par. 0023, **the control client logs man-machine interface (MMI) data, file system commands, and other data characterizing usage of, and/or the actions performed on, the mobile device, wherein some or all of the log data is provided to the remote device management application hosted on a device management server**);

processing, by a mobile device operating system (OS) executed by the server, the input information from each of the plurality of different mobile devices to produce user interface information for reproducing at least one of the display, the audio and the hardware (HW) action by the HW component of the mobile device (par. 0024, a server may host a virtual machine that emulates the hardware (such as the microprocessor or controller) of the mobile device, allowing a copy of the mobile device operating system to be run, etc., **the logged usage data transmitted from the control client**

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application can be used to replay, using the virtual instance of the mobile device, the actions taken by a user on a mobile device for a desired period of time; par. 0025, the virtual instance of the mobile device includes **a hardware emulation layer and a software emulation layer**, wherein both the hardware and software emulation layers **are executable in a computer runtime environment, and generally, the software emulation layer is executable within the context of the hardware emulation layer to replicate the behavior, operations, and/or characteristics of the same software being executed on the actual physical mobile device, etc.;** fig.1A and pars. 0029-0030, Device management server (104) may also **operate in connection with one or more virtual instances of respective mobile devices**. In one implementation, **device management server (104) comprises one or more virtual machines (106), as required to emulate the hardware of different mobile device types;** par. 0031, Device management server (104) may also operate in connection with one or more virtual instances of respective mobile devices. In one implementation, device management server 104 comprises one or more virtual machines 106, as required to emulate the hardware of different mobile device types); and

sending, by the server, the user interface information to at least one of the plurality of different mobile devices (par. 0043, the virtual instance of the mobile device may be used as a proxy, which accesses enterprise application, wherein the resulting changes to device state, file system state and data that can be used to **simulate user-observed behaviors on the display screen of the physical device instance can be**

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communicated back to the physical instance of the mobile device and rendered on the display and otherwise effected by the control client).

Danford teaches the **device management server (104) may also operate in connection with one or more virtual instances of respective mobile devices. In one implementation, device management server (104) comprises one or more virtual machines (106), as required to emulate the hardware of different mobile device types** (fig.1A and par. 0031). Danford does not clearly teach the input from each of the plurality of different mobile devices are executed by the same instance of a mobile device operating system.

However in the same field of endeavor, Perry teaches a video server configured to provide streaming video to players of computer games over a computing network (abstract; fig.1 and associated text), wherein Perry further teaches a game state of one or more of the video games may be maintained by one or more instances of Game Server (125) **each based on inputs received from multiple clients**, wherein the video games are executed using different instances of Game Logic 210 configured to use a game state to determine a game environment that can be rendered to a video stream configured to be presented to a game player (fig.2 and pars. 0054-0056), Perry further teaches each instance of Game Logic (210) can be disposed on a separate computing device or several instances of Game Logic (210) could be disposed on the same computing device or a single instance of Game Logic (210) could be disposed across multiple computing devices, etc., **wherein Game Logic (210) typically executes on top of an Operating System (OS) 215**, etc., and wherein **one or more of Game Logic**

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210 can be executed within a virtual machine. Multiple instances of Game Logic 210 may execute on the same instance of Operating System 210, etc. (fig.1A and pars. 0057-0059).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the server of Danford by providing a virtual operating system that can use the same instance of a virtual operating system to execute multiple instances/inputs corresponding to multiple different client devices that are participating in a networked video game, as taught by Perry, so as to provide a video game environment that can support multi-player games in which the game state/instance is dependent on inputs received over the computing network from multiple players of the game as suggested by Perry (see par. 0015).

Claim 40

Danford in view of Perry teaches The method of claim 39, further comprising: executing, by the server, at least one application on the mobile device OS ((Danford; par. 0024, one or more applications installed on the actual mobile device can also run on top of the mobile device operating system, etc.), wherein the at least one application processes the input information to produce the user interface information (Danford, par. 0025, the software emulation layer is executable within the context of the hardware emulation layer to replicate the behavior, operations, and/or characteristics of the same software being executed on the actual physical mobile device; Danford, par. 0043, resulting changes to device state, file system state and data that can be used to

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simulate user-observed behaviors on the display screen of the physical device instance can be communicated back to the physical instance of the mobile device and rendered on the display and otherwise effected by the control client).

Claim 41

Danford in view of Perry teaches The method of claim 39, further comprising: providing, by the server, a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN) (Danford, par. 0043, **proxy sessions and/or connections between the physical instance of the mobile device and other logical or physical nodes**, etc.).

11. **Claim 42-44** are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford in view of Perry as applied to claim 39 above, and further in view of Relan.

Claim 42

Danford in view of Perry teaches a mobile device can receive one or more video stream and audio stream (Perry, par. 0038).

The server sends each different type of data to the mobile device in a separate data stream.

However, streaming information comprising different types of data, such as audio and video, via separate streams is obvious because it is known in the art. Such streaming can be found in Relan. In particular, Relan teaches a method of content

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delivery to client devices from a server, wherein content output by an application is capture, encoded, and streamed to the client devices in a way that minimizes latency (abstract), wherein Relan specifically teaches separate video and audio ports on the server are used to stream the video and audio (par. 0105; also see pars. 0087-0088 and pars. 0098-0102).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the mobile device of Danford in view of Ekstrom by separating audio and video data intended for the sever in different streams, as taught by Relan, so as to dynamically adjust the encoding, and/or streaming parameters of the video data in real-time to allow for quality, latency, and/or bandwidth trade-offs, depending on the particular application or game as suggested by Relan, see par. 0087-0088).

Claim 43

Danford as modified further teaches The method of claim 42, wherein at least one of said separate data streams comprises a quality of service different a quality of service of another of said separate data streams (Relan, Quality of Service (QoS) adaptation algorithm dynamically adjusts the video capturing and encoding parameters based on the network condition, etc., *i.e. the QoS of the video stream is changed independent of the audio stream and therefore may assume different value at different times*).

Claim 44

Danford as modified further teaches [T]he method of claim 42, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams (Relan, pars. 0081, 0088, video capturing and encoding parameters are selected in a way that the system fully utilizes the network bandwidth designated to the video stream).

12. **Claim 45** is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford in view of Perry and Relan as applied to claim 42 above, and further in view of Hobbs.

Claim 45

For examining purposes, the examiner interpreted the claims to mean: the sever processes the input information to produce a user interface comprising a display data, wherein the display data is processed by the server by separating the display data into different streams or categories, such as video, image or text.

Accordingly, Danford in view of Perry and Relan does not expressly teach The method of claim 35, wherein the input information is processed to produce user interface information for reproducing the display, the processing separating the display into a plurality of different areas, the processing identifying changing picture areas in display data of the user interface information as video data, the processing identifying

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static picture areas in the display data of the user interface information as image data and the processing identifying static bi-color areas in the display data of the user interface information as text data.

However, separating display information into different types of display data and separately processing the different types of display data is obvious because it is known in the art. Such display processing can be found in Hobbs. In particular, Hobbs teaches a method of encoding and transmitting a block of visual data within a visual data stream, wherein a progressive encoding is applied to the block, and wherein **pixels are pre-classified as having an identified pixel type such as video, text, picture, or background type using standard image decomposition methods, and wherein all block in a region may be subject to the same progressive encoding sequence or blocks in a region may be subject to different progressive encoding sequences based on image type**. Hobbs further teaches a region may be classified as having two picture areas (e.g. JPEG pictures) changing at different times, a text area (e.g. Display of a word processing screen) and a video sequence (e.g. An MPEG clip), wherein blocks classified as text might be assigned a high priority rapid build sequence to lossless coding quality level, all blocks classified as pictures might be subjected to a slow progression to a high coding quality using a different sequence and blocks classified as video might be subjected to a rapid progression to a lower coding quality level to limit the bandwidth consumed by video (abstract; figs.1-2; col.5, lines 49 to col.6, lines 6).

Therefore, it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the server of Danford in view of Perry and Relan by including processes for classifying the display information produced from executing the input information, as taught by Hobbs, so as to separately encode the different types of display data identified by the classification process and thereby allow for applying different encoding qualities and priorities for the classified display data types as suggested by Hobbs (see col.5, lines 49 to col.6, lines 6).

13. **Claim 47** is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Danford.

Claim 47

Danford discloses a method of emulation functions of a mobile device at a server (abstract, pars. 0023-0025; par. 0043), comprising:

receiving, by a server, first input information from at least one mobile device (par. 0023, **the control client logs man-machine interface (MMI) data, file system commands, and other data characterizing usage of, and/or the actions performed on, the mobile device, wherein some or all of the log data is provided to the remote device management application hosted on a device management server;** also see par. 0043, the device management server may be operative to proxy transactions, sessions and/or connections between the physical instance of the mobile device and other logical or physical nodes, such as enterprise application services, and

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the like, wherein the virtual instance of the mobile device may be used as a proxy, which accesses enterprise application, etc., *i.e. commands entered in the mobile device, such as commands to initiate sessions/access application stored remotely, are executed in the server and the result of the execution is rendered to the mobile device*); *access application*);

processing, by a mobile device operating system (OS) executed by the server, the first input information to produce user interface information for reproducing at least one of the display, the audio and the hardware (HW) action by the HW component of the mobile device (par. 0024, a **server may host a virtual machine that emulates the hardware (such as the microprocessor or controller) of the mobile device**, allowing a copy of the mobile device operating system to be run, etc., **the logged usage data transmitted from the control client application can be used to replay, using the virtual instance of the mobile device, the actions taken by a user on a mobile device for a desired period of time**; par. 0025, the virtual instance of the mobile device includes **a hardware emulation layer and a software emulation layer**, wherein both the hardware and software emulation layers **are executable in a computer runtime environment, and generally, the software emulation layer is executable within the context of the hardware emulation layer to replicate the behavior, operations, and/or characteristics of the same software being executed on the actual physical mobile device**, etc.); and

sending, by the server, the user interface information to the mobile device (par. 0043, the virtual instance of the mobile device may be used as a proxy, which accesses

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enterprise application, wherein the resulting changes to device state, file system state and data that can be used to **simulate user-observed behaviors on the display screen of the physical device instance can be communicated back to the physical instance of the mobile device and rendered on the display and otherwise effected by the control client**),

receiving, by the server, second input information from the mobile device (par. 0023, **the control client logs man-machine interface (MMI) data, file system commands, and other data characterizing usage of, and/or the actions performed on, the mobile device, wherein some or all of the log data is provided to the remote device management application hosted on a device management server;** par. 0029, **server may also operate in connection with one or more virtual instances of respective mobile devices**, etc. *i.e. another input data associated with the same or different virtual instances of the plurality of virtual instances can be received by the server at the same or different time*),

processing, by **the first** mobile device operating system (OS) executed by the server, the second input information to produce second user interface information for reproducing at least one of a display, audio and a HW action by a HW component of the mobile device (par. 0024, **a server may host a virtual machine that emulates the hardware (such as the microprocessor or controller) of the mobile device**, allowing a copy of the mobile device operating system to be run, etc.; also see pars 0025 and 0029 as quoted above); and

sending, by the server, the second user interface information to the mobile device (par. 0043, the virtual instance of the mobile device may be used as a proxy, which accesses enterprise application, wherein the resulting changes to device state, file system state and data that can be used to **simulate user-observed behaviors on the display screen of the physical device instance can be communicated back to the physical instance of the mobile device and rendered on the display and otherwise effected by the control client, i.e. new or updated display screen maybe received over time based on new set of commands**).

Danford further teaches device management server (104) may also operate in connection with **one or more virtual instances of respective mobile devices**. In one implementation, device management server (104) comprises **one or more virtual machines 106, as required to emulate the hardware of different mobile device types. Each virtual instance (102b) of a mobile device is a virtualized instance that is configured based on the configuration details and other attributes of the physical instance 102a of that mobile device.** For example, the operating system that runs on the virtual machine 106 is selected to be the **same version as that installed on the physical instance 102a of the mobile device**, etc. (fig.1 and par. 0029). Danford further teaches device management server (104) **can thus run two or more different "quest" virtual instances of respective mobile devices simultaneously, in separate "private" virtual computers**. In some implementations, **device management server 104 may operate in connection with multiple virtual machine types, as required for management of different mobile device platforms**

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(par. 0031). *Therefore, the server can maintain several virtual instances of the same mobile device and/or different mobile devices and further execute each instance using a corresponding virtual machine comprising a different operating system that complies with the executed instance/hardware of the mobile device.*

It would have been obvious to one of ordinary skills in the art at the time the invention was made to modify the server of Danford by creating and maintaining one or more different instances of a mobile device corresponding to respective one or more different hardware configurations comprised in the same mobile device and to maintain one or more virtual machines in the sever to respectively execute the different one or more instances, as taught by Danford, so as to as to enable management of different platforms, e.g. operating systems, comprised in the same device and/or in different mobile devices as suggested by Danford, see pars 0029, and 0031).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAGDI ELHAG whose telephone number is (571)270-3187. The examiner can normally be reached on Monday to Friday 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jinsong Hu can be reached on 572-272-3965. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/MAGDI ELHAG/
Examiner, Art Unit 2643

Notice of References Cited	Application/Control No. 13/606,675		Applicant(s)/Patent Under Reexamination DGANI ET AL.	
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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2009/0036111 A1	02-2009	Danford et al.	455/419
*	B	US-2010/0306813 A1	12-2010	Perry et al.	725/114
*	C	US-2010/0304860 A1	12-2010	Gault et al.	463/31
*	D	US-2013/0013671 A1	01-2013	Relan et al.	709/203
*	E	US-8,345,768 B1	01-2013	Hobbs et al.	375/240.24
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
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Substitute for Form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	Filed Concurrently 13/606675
		Filing Date	August 29, 2012
		First Named Inventor	Moshe DGANI
		Art Unit	Not Yet Assigned 2643
		Examiner Name	Not Yet Assigned Magdi Elhag
Sheet 1 of 1	Attorney Docket	5900-4 - 323207.000	

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Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind-Code ² (if known)			
/M.E./		US-2011/0161404	06-30-2011	Ekstrom et al.	
/M.E./		US-8,165,558	04-24-2012	Cook et al.	
/M.E./		US-2011/0252071	10-13-2011	Cidon	
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/M.E./		US-2011/0093567	04-21-2011	Jeon et al.	
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/M.E./		US-8,060,074	11-15-2011	Danford et al.	
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Examiner Initials*	Cite No. ¹	Foreign Patent Document	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
		Country Code ³ - Number ⁴ - Kind-Code ⁵ (if known)				
/M.E./		CN 10 2404395	04-04-2012	Meng et al.		Abstract
/M.E./		CN 20 2205234	04-25-2012	Yiming et al.		Abstract

Examiner Signature	/Magdi Elhag/	Date Considered	12/24/2013
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Search Notes 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
	Examiner MAGDI ELHAG	Art Unit 2643

CPC- SEARCHED		
Symbol	Date	Examiner
H04W8/245, please see attached	12/2/20134	ME

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
455	418-420,550.1,554.2,555,556.1,556.2,557,558,559, please see attached	12/242013/	ME

SEARCH NOTES		
Search Notes	Date	Examiner
Searched inventors in East, please see attached	12/23/2013	ME
Searched assignee in East, please see attached	12/23/2013	ME
Searched East using keywords, please see attached	12/2/20134	ME

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SERIAL NUMBER 13/606,675	FILING or 371(c) DATE 09/07/2012 RULE	CLASS 455	GROUP ART UNIT 2643	ATTORNEY DOCKET NO. 5900-4 - 326177.000		
APPLICANTS INVENTORS Moshe DGANI, Holon, ISRAEL; Moshe Levy, Hod Hasharon, ISRAEL; Zvi Shmilovici, Tel-Aviv, ISRAEL; ** CONTINUING DATA ***** This appln claims benefit of 61/653,819 05/31/2012 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY ** 09/18/2012						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and Acknowledged <u>/MAGDI ELHAG/</u> Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY ISRAEL	SHEETS DRAWINGS 8	TOTAL CLAIMS 47	INDEPENDENT CLAIMS 8
ADDRESS Cozen O'Connor 277 Park Avenue, 20th floor NEW YORK, NY 10172 UNITED STATES						
TITLE System and Method for Running Mobile Devices in the Cloud						
FILING FEE RECEIVED 1965	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			

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L10	1921	emulat\$3 same (mobile wireless cell\$4 user adj equipment) same server	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:16
L11	358	L10 same virtual\$7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:16
L13	25995	455/418- 420,550.1,554.2,555,556.1,556.2,557,558,559.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:17
L14	7680	H04W8/245.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:17
L15	17	11 and (13 or 14)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:17
L16	3	display\$3 near7 process\$3 near7 video near7 picture near7 text near7 (static chang\$3 bi adj color)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:18
L17	698	(multi\$3 plural\$\$3 different) same (mobile wireless handheld user adj equipment cell\$3 smart comput\$3) same "same" same instance same virtual adj machine	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:21
L18	356	L17 same operating adj system	US-PGPUB;	OR	ON	2013/12/24

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			11:21
L19	25995	455/418- 420,550.1,554.2,555,556.1,556.2,557,558,559.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:21
L20	5	L18 and L19	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:21
L21	5	L18 and (L19 or L14)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:21
L22	393	emulat\$3 same (mobile wireless cell\$4 user adj equipment pda smart) same (hardware HW) same server	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:22
L23	47109	remot\$3 same (manag\$5 process\$3 execut\$3) same server same (mobile wireless cell\$3 user adj equipment pda smart)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:22
L24	82	L22 and L23	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:22
L25	11	24 and (13 or 14)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:23
L26	100	server near7 stream\$3 near7 audio near7 video near7 separat\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2013/12/24 11:23

			IBM_TDB			
L27	25	L26 and (encod\$3 same bandwidth)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:23
L28	5	L27 and QoS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:23
L29	2523	(multi\$3 plural\$3 different) same (mobile wireless handheld user adj equipment cell\$3 smart comput\$3) same instance same virtual adj machine	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:24
L30	1206	L29 same operating adj system	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:24
L31	9	L30 same gam\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/24 11:24
S63	10	((MOSHE) near2 (DGANI)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2013/12/23 16:50
S64	4	((MOSHE) near2 (DGANI)).INV.	EPO; JPO; DERWENT	OR	ON	2013/12/23 16:51
S65	62	((MOSHE) near2 (LEVY)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2013/12/23 16:51
S66	15	((MOSHE) near2 (LEVY)).INV.	EPO; JPO; DERWENT	OR	ON	2013/12/23 16:52
S67	3	((ZVI) near2 (SHMI LOVICI)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2013/12/23 16:52
S68	0	((ZVI) near2 (SHMI LOVICI)).INV.	EPO; JPO; DERWENT	OR	ON	2013/12/23 16:52
S69	50	EMBLAZE.as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/12/23 16:52

12/ 24/ 2013 11:25:41 AM

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<i>Index of Claims</i> 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
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✓	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	09/30/2013	12/23/2013						
	1	÷	N						
	2	÷	N						
	3	÷	N						
	4	÷	N						
	5	÷	N						
	6	÷	N						
	7	÷	N						
	8	÷	N						
	9	÷	N						
	10	÷	N						
	11	÷	N						
	12	÷	N						
	13	÷	N						
	14	÷	N						
	15	÷	N						
	16	÷	N						
	17	÷	N						
	18	÷	N						
	19	÷	N						
	20	÷	✓						
	21	÷	✓						
	22	÷	✓						
	23	÷	✓						
	24	÷	✓						
	25	÷	✓						
	26	÷	✓						
	27	÷	✓						
	28	÷	✓						
	29	÷	✓						
	30	÷	✓						
	31	÷	✓						
	32	÷	✓						
	33	÷	✓						
	34	÷	✓						
	35	÷	✓						
	36	÷	✓						

<i>Index of Claims</i> 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
	Examiner MAGDI ELHAG	Art Unit 2643

✓	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	09/30/2013	12/23/2013						
	37	÷	✓						
	38	÷	✓						
	39	÷	✓						
	40	÷	✓						
	41	÷	✓						
	42	÷	✓						
	43	÷	✓						
	44	÷	✓						
	45	÷	✓						
	46	÷	✓						
	47	÷	✓						

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Moshe Dgani et al.

Serial No.: 13/606,675

Filed: September 7, 2012

For: SYSTEM AND METHOD FOR
RUNNING MOBILE DEVICES IN THE
"CLOUD"

Examiner: ELHAG, MAGDI

Group Art: 2472

Conf. No.: 6675

Mail Stop **Amendment**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

SIR:

In response to the Office Action dated December 30, 2013, please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 16 of this paper.

Listing of Claims:

1. (Withdrawn) A method for operating a mobile device, the method comprising:

executing, by a mobile device, a basic software (SW) protocol or operating system (OS) to receive input information from one or more hardware (HW) components of the mobile device, establish a network connection to a server, and send the input information to the server over the network connection without performing more detailed processing of the input information by the mobile device;

receiving, by the mobile device, at least one data stream from the server;

and

producing, by the mobile device, at least one of a display, audio and a HW action by a HW component of the mobile device from the at least one data stream.

2. (Withdrawn) The method of claim 1, wherein the input information comprises a plurality of different types of data and the mobile device sends each different type of data to the server in a separate data stream.

3. (Withdrawn) The method of claim 2, wherein the input information comprises audio data, video data, image data, sensor data input to one or more sensors of the mobile device, and user input data input to a user interface of the mobile device.

4. (Withdrawn) The method of claim 2, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams.

5. (Withdrawn) The method of claim 2, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

6. (Withdrawn) The method of claim 1, wherein the at least one data stream received by the mobile device from the server comprises a plurality of separate data streams, each of said plurality of separate data streams comprising a different type of data.

7. (Withdrawn) The method of claim 1, wherein the input information sent to the server comprises only changes in information input to the mobile device.

8. (Withdrawn) The method of claim 1, wherein the one or more HW components comprise at least one of a camera, a microphone, a touch screen, a keyboard, a GPS, a Bluetooth device, and one or more sensors.

9. (Withdrawn) A method for operating a mobile device, the method comprising:
receiving, by a mobile device, a plurality of different types of data from
one or more hardware (HW) components of the mobile device;

sending, by the mobile device, each different type of data to a server in a separate data stream;

receiving, by the mobile device, user interface information from the server; and

producing, by the mobile device, at least one of a display, audio and a HW action of a HW component of the mobile device based on the user interface information.

10. (Withdrawn) The method of claim 9, wherein the plurality of different types of data comprise audio data, video data, image data, sensor data input to one or more sensors of the mobile device, and user input data input to a user interface of the mobile device.

11. (Withdrawn) The method of claim 9, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams.

12. (Withdrawn) The method of claim 9, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

13. (Withdrawn) The method of claim 9, wherein the user interface information is received as a plurality of separate data streams, each of said plurality of separate data streams of the user interface information comprising a different type of data.

14. (Withdrawn) A method for operating a mobile device, the method comprising:

receiving, by a mobile device, input information from one or more hardware (HW) components of the mobile device;

sending, by the mobile device, the input information to a server;

receiving, by the mobile device, a plurality of separate data streams from the server, each of said plurality of separate data streams comprising a different type of data;

integrating, by the mobile device, the data from each the separate streams together;

producing, by the mobile device, a display, audio and a HW action by a HW component of the mobile device from the integrated data.

15. (Withdrawn) The method of claim 14, wherein the input information comprises at least one of audio data, video data, image data, sensor data input to one or more sensors of the mobile device, and user input data input to a user interface of the mobile device.

16. (Withdrawn) The method of claim 14, wherein the input information comprises a plurality of different types of data and the mobile device sends each different type of data of the input information to the server in a separate data stream.

17. (Withdrawn) The method of claim 14, wherein at least one of said separate data streams received from the server comprises a quality of service different from a quality of service of another of said separate data streams.

18. (Withdrawn) The method of claim 14, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

19. (Withdrawn) A method for operating a mobile device, the method comprising:

operating a mobile device in a first mode by:

executing, by the mobile device, a basic software (SW) protocol or operating system (OS) to receive input information from one or more hardware (HW) components of the mobile device, establish a network connection to a server, and send the input information to the server over the network connection,

receiving, by the mobile device, at least one data stream from the server, and

producing, by the mobile device, at least one of a display, audio and a HW action of a HW component of the mobile device based on the at least one data stream; and

operating the mobile device in a second mode separate from the first mode

by:

receiving, by the mobile device, the input information from the one or more HW components of the mobile device;

processing, by the basic SW protocol or OS of the mobile device, the input information to produce user interface information

for reproducing at least one of a display, audio and a HW action by a HW component of the mobile device; and

producing, by the mobile device, the at least one of the display, the audio and the HW action of the HW component of the mobile device based on the user interface information.

20. (Currently Amended) A method for emulating a mobile device at a server, the method comprising:

receiving, by [[a]] the server, input information from at least one mobile device, wherein the input information has not been processed to produce a display, audio and a hardware (HW) action by a HW component of [[a]] the mobile device;

processing, by a mobile device operating system (OS) executed [[by]] at the server, the input information to produce a stream of user interface information for use in reproducing at the mobile device at least one of the display, the audio and the hardware (HW) action by the HW component of the mobile device; and

sending, by the server, the stream of user interface information to the mobile device to reproduce at the mobile device at least one of the display, the audio and the HW action by the HW component of the mobile device.

21. (Original) The method of claim 20, further comprising:

emulating, by the server, mobile device HW and executing the mobile device OS on the emulated mobile device HW.

22. (Currently Amended) The method of claim 20, further comprising:

executing, by the server, at least one application on the mobile OS_i[[,]]

wherein the at least one application processes the input information to produce the stream of user interface information.

23. (Original) The method of claim 20, further comprising:

providing, by the server, a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN).

24. (Currently Amended) The method of claim 20, further comprising:

receiving, by the server, the input information from a plurality of different mobile devices, wherein a same instance of the mobile device OS processes the input information from each of the plurality of different mobile devices to produce the stream of user interface information.

25. (Currently Amended) The method of claim 20, wherein the stream of user interface information comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream.

26. (Original) The method of claim 25, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams.

27. (Original) The method of claim 25, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

28. (Currently Amended) The method of claim 25, wherein the input information is processed by the mobile device OS executed at the server to produce the stream of user interface information for reproducing the display, the processing separating the display into a plurality of different areas, the processing identifying changing picture areas in display data of the stream of user interface information as video data, the processing identifying static picture areas in the display data of the stream of user interface information as image data and the processing identifying static bi-color areas in the display data of the stream of user interface information as text data.

29. (Original) The method of claim 20, wherein the input information is received by the server as a plurality of separate data streams, each of said plurality of separate data streams of the input information comprising a different type of data.

30. (Currently Amended) A method for emulating a mobile device at a server, the method comprising:

receiving, by ~~[[a]]~~ the server, input information from at least one mobile device;

processing, by a mobile device operating system (OS) executed ~~[[by]]~~ at the server, the input information to produce a stream of user interface information

for use in reproducing at the mobile device at least one of a display, audio and a hardware (HW) action by a HW component of the mobile device based on a same instance of the mobile device OS; and

sending, by the server, the stream of user interface information to the mobile device, wherein the stream of user interface information from the same instance of the mobile device OS comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream for reproduction on the mobile device of at least one of the display, audio and the HW action by the HW component of the mobile device.

31. (Original) The method of claim 30, further comprising:

emulating, by the server, mobile device HW and executing the mobile device OS on the emulated mobile device HW.

32. (Currently Amended) The method of claim 30, further comprising:

executing, by the server, at least one application on the mobile device OS;[[,]]

wherein the at least one application processes the input information to produce the stream of user interface information.

33. (Original) The method of claim 30, further comprising:

providing, by the server, a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN).

34. (Currently Amended) The method of claim 30, further comprising:

receiving the input information from a plurality of different mobile devices, wherein a same instance of the mobile device OS processes the input information from the plurality of different mobile devices to produce the stream of user interface information.

35. (Original) The method of claim 30, wherein at least one of said separate data streams comprises a quality of service different from a quality of service of another of said separate data streams.

36. (Original) The method of claim 30, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

37. (Currently Amended) The method of claim 35, wherein the input information is processed to produce the stream of user interface information for reproducing the display, the processing separating the display into ~~different~~ a plurality of different display areas, the processing identifying changing picture areas in display data of the stream of user interface

information as video data, the processing identifying static picture areas in the display data of the stream of user interface information as image data and the processing identifying static bi-color areas in the display data of the stream of user interface information as text data.

38. (Original) The method of claim 30, wherein the input information is received by the server as a plurality of separate data streams, each of said plurality of separate data streams of the input information comprising a different type of data.

39. (Currently Amended) A method for emulating a mobile device at a server, the method comprising:

receiving, by [[a]] the server, input information from a plurality of different mobile devices;

processing, by a same instance of a mobile device operating system (OS) executed [[by]] at the server, the input information from each of the plurality of different mobile devices to produce user interface information for use in reproducing at the mobile device at least one of a display, audio and a HW action by a HW component of the mobile device based on the same instance of the mobile device OS; and

sending, by the server, the user interface information to at least one of the plurality of different mobile devices.

40. (Currently Amended) The method of claim 39, further comprising:

executing, by the server, at least one application on the mobile device

OS;[[,]]

wherein the at least one application processes the input information to produce the user interface information.

41. (Original) The method of claim 39, further comprising:

providing, by the server, a mobile device gateway for handling and providing internet access, voice calls and a gateway to a public switched telephone network (PSTN).

42. (Currently Amended) The method of claim 39, wherein the stream of user interface information comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream.

43. (Original) The method of claim 42, wherein at least one of said separate data streams comprises a quality of service different a quality of service of another of said separate data streams.

44. (Original) The method of claim 42, wherein at least one of said separate data streams comprises an encoding method and a bandwidth different from an encoding method and a bandwidth of another of said separate data streams.

45. (Currently Amended) The method of claim 42, wherein the input information is processed by the mobile device OS executed at the server to produce the stream of user interface information for reproducing the display, the processing separating the display into a plurality of different areas, the processing identifying changing picture areas in display data of the stream of user interface information as video data, the processing identifying static picture areas in the display data of the stream of user interface information as image data and the processing identifying static bi-color areas in the display data of the stream of user interface information as text data.

46. (Original) The method of claim 39, wherein the input information is received by the server as a plurality of separate data streams, each of said plurality of separate data streams comprising a different type of data.

47. (Currently Amended) A method for emulating a mobile device at a server, the method comprising:

receiving, by [[a]] server, first input information from a mobile device;

processing, by a first mobile device operating system (OS) executed [[by]]
at the server, the first input information to produce a first stream of user interface information for use in reproducing at the mobile device at least one of a display, audio and a hardware (HW) action by a HW component of the mobile device; and

sending, by the server, the first stream of user interface information to the mobile device to reproduce on the mobile device at least one of the display, audio and the HW action by the HW component of the mobile device;

receiving, by the server, second input information from the mobile device;

processing, by a second mobile device operating system (OS) executed by the server, the second input information to produce a second stream of user interface information for reproducing at least one of a display, audio and a HW action by a HW component of the mobile device, wherein the second mobile device OS has at least one of a different OS type, a different OS version and a different OS instance than the first mobile device OS; and

sending, by the server, the second stream of user interface information to the mobile device to reproduce on the mobile device at least one of the display, audio and the HW action by the HW component of the mobile device.

REMARKS

Claims 1-19 have been withdrawn from consideration. Claims 20-47 are currently pending, with claims 20, 30, 39 and 47 being in independent form. Claims 20, 22, 24, 25, 28, 30, 32, 34, 37, 39, 40, 42, 45 and 47 have been amended. The amendments to claims 20, 22, 24, 25, 30, 32, 34, 39, 40, 42 and 47 clarify the wording of the claims, and are cosmetic in nature. No new matter has been added. Reconsideration of the application, as herein amended, is respectfully requested.

Claims 28, 37 and 45 stand rejected under 35 U.S.C. §112(b) or 35 U.S.C. §112 (pre-AIA), second paragraph, as 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.

According to the Examiner, “[i]t is not clear whether a display associated with the server or the mobile device is separated into different display areas as suggested from the bolded and underlined text above. The claim is therefore rendered indefinite”.

In response to the foregoing, claims 28, 37 and 45 have been amended to now recite that “the input information is processed by the mobile device OS executed at the server to produce the stream of user interface information for reproducing the display”.

In view of the foregoing, claims 28, 37 and 45 are deemed to fully comply with the requirements of 35 U.S.C. §112, second paragraph. Reconsideration and withdrawal of the rejection is in order, and notice to that effect is requested.

Claims 20-23 stand rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Pub. No. 2009/0036111 (“*Danford*”) in view of U.S. Pub. No. 2011/016104 (“*Ekstrom*”).

Claim 24 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Danford* in view of *Ekstrom*, and further in view of U.S. Pub. No. 2010/0306813 (“*Perry*”). Claims 25-27 and 29 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Danford* in view of *Ekstrom*, and further in view of U.S. Pub. No. 2013/0013671 (“*Relan*”). Claim 28 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Danford* in view of *Ekstrom* and *Relan*, and further in view of U.S. Patent No. 8,345,768 (“*Hobbs*”). Claims 30-33, 35, 36 and 38 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Danford* in view of *Relan*. Claim 34 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Danford* in view of *Relan*, and further in view of *Perry*. Claim 37 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Danford* in view *Relan*, and further in view of *Hobbs*. Claims 39-41 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Danford* in view of *Perry*. Claims 42-44 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Danford* in view of *Perry*, and further in view of *Relan*. Claim 45 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Danford* in view of *Perry* and *Relan*, and further in view of *Hobbs*. Claim 47 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Danford*. For the following reasons, reconsideration and withdrawal of these rejections is requested.

The claimed invention generally relates to “a method for operating a mobile device [which] comprises executing, by a mobile device, a basic software (SW) protocol or operating system (OS) to receive input information from one or more hardware (HW) components of the mobile device, establish a network connection to a server, and send the input information to the server over the network connection without performing more detailed processing of the input

information by the mobile device” (see paragraph [0011] of the specification as originally filed). Thus, in accordance with the present invention, information which is input to the mobile device is, instead of being processed on the mobile device, transferred over a network connection to a remote server which processes the information on the server and then returns to the mobile device, for display on or other reporting via the mobile device, the results of such processing of the information.

Independent claim 20 recites, *inter alia*, the step of “receiving, by the server, input information from at least one mobile device, wherein the input information has not been processed to produce a display, audio and a hardware (HW) action by a HW component of the mobile device”. Independent claim 30 has been amended to now recite, *inter alia*, the step of “sending, by the server, the stream of user interface information to the mobile device, wherein the stream of user interface information from the same instance of the mobile device OS comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream for reproduction on the mobile device of at least one of the display, audio and the HW action by the HW component of the mobile device”. Independent claim 39 has been amended to now recite, *inter alia*, the step of “processing, by a same instance of a mobile device operating system (OS) executed at the server, the input information from each of the plurality of different mobile devices to produce user interface information for use in reproducing at the mobile device at least one of a display, audio and a HW action by a HW component of the mobile device based on the same instance of the mobile device OS”. Lastly, independent claim 47 has been amended to now recite, *inter alia*, the step of “sending, by the server, the second stream of user interface information to the mobile device to reproduce on the mobile device at least one of the display, audio and the HW action by the HW

component of the mobile device”, and additionally recites that “the second mobile device OS has at least one of a different OS type, a different OS version and a different OS instance than the first mobile device OS”. The Examiner-cited art fails to teach or suggest this expressly-recited subject matter.

Independent Claim 20

The Examiner (at pg. 6 of the Office Action) acknowledges that *Danford* fails to teach that “the input information has not been processed by the mobile device to produce a display, audio and a hardware (HW) action by a HW component of a mobile client device”, as recited in independent claim 20, and cites *Ekstrom* for this feature.

Applicants disagree, however, that the combination of *Danford* and *Ekstrom* achieves the expressly-recited subject matter of amended independent claim 20.

Danford relates to a mobile device management system having a mobile device that executes all functionality at the mobile device, and a server that executes a replica of the mobile device.

Ekstrom relates to a “server-implemented method for communicating data between a server and a first device” (see paragraph [0004]). According to *Ekstrom*, “[c]ommunications with the first device are established by emulating functions of a second device. A request to pass the data to the first device is received. A determination is made as to whether the data exist on the server. The data are streamed to a virtual desktop on the first device” (see paragraph [0004], lines 3-8). *Ekstrom* describes a system in which the server does not process information that is input to and obtained from the mobile device. While *Ekstrom* describes client devices, such as a mobile device or a thin client (a combination of a laptop device and smart phone), which

communicate with the server (102), *Ekstrom* fails to teach or suggest that the server emulates the mobile device based on inputs to and received from the mobile device. *Ekstrom* merely teaches that the server behaves or functions in the same manner as the mobile device (see, e.g., paragraph [0031]), and that the server may push or stream applications to one or more mobile devices for receipt or playback at the mobile devices.

As such, modifying the system of *Danford* to incorporate the thin client device of *Ekstrom* would entail replacing a mobile device that receives and forwards user input information to the server (i.e., the system of *Danford*) with a server that forwards information from a server to a device (i.e., the system of *Ekstrom*). That is, the flow of information in the system of *Danford* is from the mobile device to the server, while the flow of information in the system of the *Ekstrom* is from the server to the mobile device. Such a modification is counter to the requirements of *KSR*, i.e., the principle that the modified devices must maintain their intended operation. Moreover, nothing whatsoever – other than Applicants’ own disclosure – even remotely suggests modifying *Danford* with the teachings of *Ekstrom* to attain the functionality recited in Applicants’ claims, in which information input to a mobile device is sent, without processing on the mobile device, to a remote server which processes the information, generates a data stream the results from that processing, and sends the generated data stream to the mobile device for display on or other output via the mobile device.

In Applicants’ claimed method of independent claim 20, all input data processing functionality is executed at the server, and the local, mobile physical device itself does not execute any such functionality. In accordance with the claimed invention, the server is the only entity that executes this mobile device data processing functionality using the mobile device input that the server is sent from the mobile device. The skilled person finds no motivation or

reason in the prior art to combine the teachings of *Danford* and *Ekstrom* to achieve this functionality. The deficiency of *Danford* therefore remains, because *Danford* fails to teach or suggest the step of “receiving, by the server, input information from at least one mobile device, wherein the input information has not been processed to produce a display, audio and a hardware (HW) action by a HW component of the mobile device”, as expressly recited in independent claim 20. Independent claim 20 is therefore patentable over the cited combination of *Danford* and *Ekstrom* for at least this reason.

Independent Claims 30 and 39

Independent claim 30 has been amended to now recite, *inter alia*, the step of “sending, by the server, the stream of user interface information to the mobile device, wherein the stream of user interface information from the same instance of the mobile device OS comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream for reproduction on the mobile device of at least one of the display, audio and the HW action by the HW component of the mobile device”. Independent claim 30 has also been amended to now recite the step of “processing, by a mobile device operating system (OS) executed at the server, the input information to produce a stream of user interface information for use in reproducing at the mobile device at least one of a display, audio and a hardware (HW) action by a HW component of the mobile device based on a same instance of the mobile device OS”. Independent claim 39 has been amended to recite a feature corresponding to the processing step of independent claim 30. The Examiner-cited art fails to teach or suggest this expressly-recited subject matter.

The Examiner (at pg. 18 of the Office Action) acknowledges that *Danford* fails to teach that “the user interface information comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream”, as recited in independent claim 30, and cites *Relan* for this subject matter. The Examiner (at pg. 28 of the Office Action) also acknowledges that *Danford* fails to teach that “the input from each of the plurality of different mobile devices are executed by the same instance of a mobile device operating system”, as recited in independent claim 39, and cites *Perry* for this feature.

Applicants disagree, however, that any combination of *Danford*, *Relan* and/or *Perry* achieves the expressly-recited subject matter of independent claims 30 and 39.

Relan relates to “a system and method for delivering interactive content generated by software applications configured to run on a native application environment, to clients providing non-native application environments, over a data communications network. Such applications may be, for example, gaming applications, and the clients may be mobile phones” (see paragraph [0022]). *Relan* fails to teach that the same instance of a mobile OS is implemented on a mobile device and on a remote server.

Relan (paragraph [0078]; Fig. 2) explains that “the video capture and streamer 226 module is a module that captures video frames output by the virtual screen 224 module. After the frames are captured, the video capture and streamer 226 module subsequently encodes and streams the video to the mobile device 124”. *Relan* (paragraph [0098]) explains that “the audio capture and streamer 228 module is a module that captures audio produced by the application. After the audio is captured the audio capture and streamer 228 module subsequently encodes and streams audio to the client device 124”.

Relan thus teaches a system in which two different types of streams are provided and utilized via separate distinct applications, *i.e.*, an audio stream (228) and a video stream (226). In contrast, independent claims 30 and 39 require “processing, by a same instance of a mobile device operating system (OS) executed at the server, the input information from each of the plurality of different mobile devices to produce user interface information for use in reproducing at the mobile device at least one of a display, audio and a HW action by a HW component of the mobile device based on the same instance of the mobile device OS”. Put differently, applicants’ claimed invention provides multiple data streams (*e.g.*, audio, video, compressed text, voice and/or sensors) arriving from a single mobile device emulation. *Relan* fails to teach or suggest this limitation because *Relan* expressly describes the use of multiple streams arriving from multiple applications. It follows that *Relan* fails to teach or suggest the step of “sending, by the server, the stream of user interface information to the mobile device, wherein the stream of user interface information from the same instance of the mobile device OS comprises a plurality of different types of data and the server sends each different type of data to the mobile device in a separate data stream for reproduction on the mobile device of at least one of the display, audio and the hardware (HW) action by the HW component of the mobile device” as additionally recited in amended independent claim 30.

As for *Perry*, this publication relates to a video server that is “configured to provide video to players of computer games over a computing network” (see Abstract). *Perry* teaches a system in which multiple instances of Game Logic 210 are provided to multiple clients 110. For example, *Perry* (paragraph 0016]) explains that a “server is ... configured to serve multiple video games to multiple clients”. Each copy of the video game is not the same instance of that video game. In accordance with applicants’ claimed invention, the same instance of a virtual

mobile device serves multiple mobile devices. *Perry* fails to teach or suggest this claimed subject matter.

The combination of *Danford*, *Relan* and *Perry* thus fails to teach or suggest the subject matter of independent claims 30 and 39, because *Relan* and *Perry* fail to provide that which *Danford* lacks.

Independent Claim 47

Independent claim 47 now recites, *inter alia*, the steps of “sending, by the server, the first stream of user interface information to the mobile device to reproduce on the mobile device at least one of the display, audio and the hardware (HW) action by the HW component of the mobile device”, and “sending, by the server, the second stream of user interface information to the mobile device to reproduce on the mobile device at least one of the display, audio and the hardware (HW) action by the HW component of the mobile device”. That is, different kinds of mobile device OS’s are executed and not merely multiple instances of the same mobile device OS. *Danford* fails to teach or suggest this expressly-recited subject matter.

Danford explains that “for each of one or more mobile devices, a mobile device management application, maintains a virtual instance of a given mobile device, and interacts with a control client application hosted on the physical instance of the mobile device to synchronize the state of the physical instance of the mobile device with the virtual instance of that mobile device” (see paragraph [0023]). There is no teaching or suggestion whatsoever in *Danford* that any emulated instance is another (or different) emulated instance. *Danford* teaches that multiple emulated virtual instances are all the same as one another. Independent claim 47, on the other hand, expressly recites that “the second mobile device OS has at least one of a

different OS type, a different OS version and a different OS instance than the first mobile device OS”. *Danford* fails to teach or suggest this expressly-recited subject matter.

Perry was also cited to teach the subject matter of dependent claim 24, while *Hobbs* was also cited to teach the subject matter of dependent claim 28. *Perry* relates to a streaming server that provides streamed video over a computer network to players of video games. *Hobbs* relates to encoding and transmitting blocks of video data within a video data stream.

Danford, *Ekstrom*, *Perry* and/or *Hobbs*, individually or in combination, fail to teach or suggest the subject matter of independent claim 20 from which claims 24 and 28 depend, because there is nothing in *Perry* and *Hobbs* with respect to the receiving step of independent claim 20. Dependent claims 24 and 28 are therefore patentable based on their dependency from independent claim 20.

Thus, independent claims 20, 30, 39 and 47 are patentable over any combination of *Danford*, *Ekstrom*, *Perry* and/or *Hobbs*. Reconsideration and withdrawal of all of the rejections under 35 U.S.C. §103 are deemed to be in order.

Moreover, in view of the patentability of independent claims 20, 30 and 39 for the reasons presented above, each of dependent claims 21-29, 31-38 and 40-46 is deemed to be patentable therewith over the prior art. Each of these dependent claims additionally includes features which serve to still further distinguish the respectively claimed invention over the applied references.

Based on all of the above, applicants submit that the present application is now in full and proper condition for allowance. Prompt and favorable action to this effect, and early passage of the application to issue, are solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate an early resolution of any outstanding issues.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 503111.

Respectfully submitted,
COZEN O'CONNOR

By /Alphonso A. Collins/
Alphonso A. Collins
Reg. No. 43,559
277 Park Avenue
New York, New York 10172
(212) 883-4900

Dated: March 31, 2014

Electronic Acknowledgement Receipt

EFS ID:	18624084
Application Number:	13606675
International Application Number:	
Confirmation Number:	6675
Title of Invention:	System and Method for Running Mobile Devices in the Cloud
First Named Inventor/Applicant Name:	Moshe DGANI
Customer Number:	27799
Filer:	Alphonso A. Collins/Rebecca Velez
Filer Authorized By:	Alphonso A. Collins
Attorney Docket Number:	5900-4 - 326177.000
Receipt Date:	31-MAR-2014
Filing Date:	07-SEP-2012
Time Stamp:	12:20:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		5900-4-326177-Amendment. pdf	117115 0dc5587c5b4ad849f7eb3fad023cd1b347021175	yes	26

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	15
	Applicant Arguments/Remarks Made in an Amendment	16	26
Warnings:			
Information:			
Total Files Size (in bytes):		117115	
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.			

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 13/606,675	Filing Date 09/07/2012	☐ To be Mailed
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ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO**APPLICATION AS FILED – PART I**

(Column 1)

(Column 2)

FOR	NUMBER FILED	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), (l), 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

(Column 1)

(Column 2)

(Column 3)

AMENDMENT	03/31/2014	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 47	Minus	** 47	= 0	X \$40 =	0
	Independent (37 CFR 1.16(h))	* 8	Minus	***8	= 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

(Column 1)

(Column 2)

(Column 3)

AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	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
/KIMBERLY DUNCAN/

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

27799 7590 05/28/2014
Cozen O'Connor
277 Park Avenue, 20th floor
NEW YORK, NY 10172

EXAMINER

ELHAG, MAGDI

ART UNIT

PAPER NUMBER

2643

DATE MAILED: 05/28/2014

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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13/606,675

09/07/2012

Moshe DGANI

5900-4 - 326177.000

6675

TITLE OF INVENTION: SYSTEM AND METHOD FOR RUNNING MOBILE DEVICES IN THE CLOUD

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	08/28/2014

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.

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)

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.

27799 7590 05/28/2014
Cozen O'Connor
277 Park Avenue, 20th floor
NEW YORK, NY 10172

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.
13/606,675	09/07/2012	Moshe DGANI	5900-4 - 326177.000	6675

TITLE OF INVENTION: SYSTEM AND METHOD FOR RUNNING MOBILE DEVICES IN THE CLOUD

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	08/28/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
ELHAG, MAGDI	2643	455-419000

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.
---	--

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).
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5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

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.

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.

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. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/606,675	09/07/2012	Moshe DGANI	5900-4 - 326177.000	6675
27799	7590	05/28/2014	EXAMINER	
Cozen O'Connor 277 Park Avenue, 20th floor NEW YORK, NY 10172			ELHAG, MAGDI	
			ART UNIT	PAPER NUMBER
			2643	
DATE MAILED: 05/28/2014				

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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.

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. 13/606,675	Applicant(s) DGANI ET AL.	
	Examiner MAGDI ELHAG	Art Unit 2643	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 Amendments filed 03/31/2014.
☐ 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 20-47 (re-numbered claims 1-27). 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) | 5. ☒ Examiner's Amendment/Comment |
| 2. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 6. ☒ Examiner's Statement of Reasons for Allowance |
| 3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. ☐ Other _____. |
| 4. ☒ Interview Summary (PTO-413),
Paper No./Mail Date <u>05/07/2014</u> . | |

/MAGDI ELHAG/
Primary Examiner, Art Unit 2643

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Applicant's amendment and arguments filed 03/31/2014 have been entered.

Claims 1-19 are withdrawn from further consideration and cancelled by the following examiner's amendments.

Claim 20-47 are patentable.

Response to Amendments and Arguments

1. Applicant's amendments and arguments filed 03/31/2014 together with the following examiner's amendments are sufficient to overcome the prior art of the record.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Alphonso A. Collins (Reg. no. 43,559) on 05/12/2014.

The application has been amended as follows:

Claims 1-19 (Cancelled).

20. (Currently Amended) A method for emulating a mobile device at a server, the method comprising:

receiving, by the server, input information from at least one mobile device, wherein the input information has not been processed to produce a display, audio and a hardware (HW) action by a HW component of the mobile device;

processing, by a mobile device operating system (OS) executed at the server, the input information to produce a stream of user interface information for use in reproducing at the mobile device at least one of the display, the audio and the hardware (HW) action by the HW component of the mobile device based on a same instance of the mobile device operating system; and

sending, by the server, the stream of user interface information to the mobile device to reproduce at the mobile device at least one of the display, the audio and the HW action by the HW component of the mobile device.

39. (Currently Amended) A method for emulating a mobile device at a server, the method comprising:

receiving, by the server, input information from a plurality of different mobile devices, wherein the input information has not been processed to produce a display, audio and a hardware (HW) action by a corresponding HW component of the mobile devices;

processing, by a same instance of a mobile device operating system (OS) executed at the server, the input information from each of the plurality of different mobile devices to produce user interface information for use in reproducing at the different mobile devices at least one of the display, audio and the HW action by the HW components of the different mobile device based on the same instance of the mobile device OS; and

sending, by the server, the user interface information to at least one of the plurality of different mobile devices.

Allowable Subject Matter

3. Claims 20-47 are allowed.

4. The following is an examiner's statement of reasons for allowance: The closest prior art of the record is briefly described as flows: Danford, et al. (**US 2009/0036111 A1**) discloses a method and system for remotely managing mobile devices, wherein a

Art Unit: 2643

virtual instance mobile device is maintained at a remote server for each physical mobile device to be managed, and wherein each virtual instance mobile device is executable in a computer runtime environment and includes a hardware emulation component configured to emulate the hardware components of the corresponding physical mobile device and a software emulation component corresponding to the software components of the physical mobile device, which is executable within the context of the hardware emulation component; Ekstrom, et al. (**US 2011/0161404 A1**) teaches a thin client device, comprising a display and input device, wherein the client device which is free of processing units and associated operating systems and is configured to connect to a remote server that emulates the functions of a mobile device, wherein the client device requests data from the server and data may be streamed to the first device across a WiFi network connection between the client device and the server.

However, prior art of the record, inter alia, fails to teach the combination of the method steps recited in the independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAGDI ELHAG whose telephone number is (571)270-3187. The examiner can normally be reached on Monday to Friday 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jinsong Hu can be reached on 572-272-3965. 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). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MAGDI ELHAG/
Primary Examiner, Art Unit 2643

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	211	emulat\$3 same operat\$3 adj system same (mobile wireless cell\$4 user adj equipment handheld \$4phone pda smart adj \$4phone) same server	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/12 10:36
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L5	14	3 and 4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/12 11:09
L9	19542	(multi\$3 plural\$5 different) same (mobile wireless handheld user adj equipment cell\$3 smart comput\$3 \$4phone pda smart adj \$4phone) same virtual adj2 (instance machine)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/12 11:29
L10	31	3 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/12 11:30
L22	42127	455/418-420,550.1,554.2,555,556.1,556.2,557,558,559.ccls. or 703/13-28.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/12 14:22
L24	24	3 and 22	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/12 14:23
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5/ 12/ 2014 2:23:52 PM
C:\ Users\ melhag\ Documents\ EAST\ Workspaces\ 13606675.wsp

Search Notes 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
	Examiner MAGDI ELHAG	Art Unit 2643

CPC- SEARCHED		
Symbol	Date	Examiner
H04W8/245, please see attached	12/2/20134	ME

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
455	418-420,550.1,554.2,555,556.1,556.2,557,558,559, please see attached	12/242013/	ME
455	418-420,550.1,554.2,555,556.1,556.2,557,558,559, please see attached	05/12/2014	ME
703	13-28, please see attached	05/12/2014	ME

SEARCH NOTES		
Search Notes	Date	Examiner
Searched inventors in East, please see attached	12/23/2013	ME
Searched assignee in East, please see attached	12/23/2013	ME
Searched East using keywords, please see attached	12/2/20134	ME
Searched East using keywords, please see attached	05/12/2014	ME

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
455	418-420,550.1,554.2,555,556.1,556.2,557,558,559, please see attached	05/12/2014	ME
703	13-28, please see attached	05/12/2014	ME

	/M.E./ Primary Examiner.Art Unit 2643
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<i>Index of Claims</i> 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
	Examiner MAGDI ELHAG	Art Unit 2643

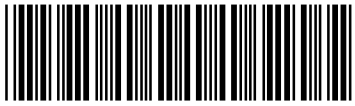
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CLAIM		DATE																	
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<i>Index of Claims</i> 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
	Examiner MAGDI ELHAG	Art Unit 2643

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

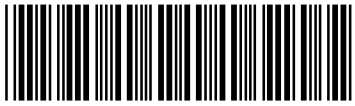
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Issue Classification 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.	
	Examiner MAGDI ELHAG	Art Unit 2643	

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Symbol				Type	Version
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C08L	97	02		I	2013-01-01
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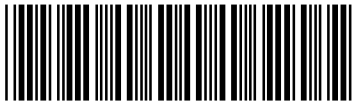
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(Primary Examiner)	(Date)	1	3

Issue Classification 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
	Examiner MAGDI ELHAG	Art Unit 2643

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION									
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED				
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CROSS REFERENCE(S)															
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)														
455	418	420													
703	13	21	23	24											

NONE		Total Claims Allowed:	
		28	
(Assistant Examiner)	(Date)		
/MAGDI ELHAG/ Primary Examiner.Art Unit 2643	05/12/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	3

Issue Classification 	Application/Control No. 13606675	Applicant(s)/Patent Under Reexamination DGANI ET AL.
	Examiner MAGDI ELHAG	Art Unit 2643

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
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	16	13	32												

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 28	
/MAGDI ELHAG/ Primary Examiner.Art Unit 2643 (Primary Examiner) _____ (Date) _____		O.G. Print Claim(s) 1	O.G. Print Figure 3

EAST Search History

EAST Search History (Interference)

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S103	3	S100 and S102	US-PGPUB; USPAT; UPAD	OR	ON	2014/05/12 14:11
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S106	1	S104 and S105	US-PGPUB; USPAT; UPAD	OR	ON	2014/05/12 14:22

5/ 13/ 2014 4:58:19 PM
C:\ Users\ melhag\ Documents\ EAST\ Workspaces\ 13606675.wsp

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)

27799 7590 05/28/2014
 Cozen O'Connor
 277 Park Avenue, 20th floor
 NEW YORK, NY 10172

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.
13/606,675	09/07/2012	Moshe DGANI	5900-4 - 326177.000	6675

TITLE OF INVENTION: SYSTEM AND METHOD FOR RUNNING MOBILE DEVICES IN THE CLOUD

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	08/28/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
ELHAG, MAGDI	2643	455-419000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.563).

- ☐ 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, 1 Cozen O'Connor
 (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. 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)

Emblaze Ltd.

Ra'anana, Israel

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 503111 (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
☐ Applicant asserting small entity status. See 37 CFR 1.27
☐ Applicant changing to regular undiscounted fee status.

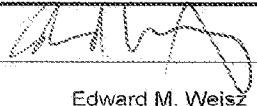
NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

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.

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


 Edward M. Weisz

Date

August 27, 2014

Typed or printed name

Registration No.

37,257

Electronic Patent Application Fee Transmittal				
Application Number:		13606675		
Filing Date:		07-Sep-2012		
Title of Invention:		SYSTEM AND METHOD FOR RUNNING MOBILE DEVICES IN THE CLOUD		
First Named Inventor/Applicant Name:		Moshe DGANI		
Filer:		Thomas Langer/Christina Constantino		
Attorney Docket Number:		5900-4 - 326177.000		
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
Publ. Fee- Early, Voluntary, or Normal	1504	1	0	0

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				480

Electronic Acknowledgement Receipt

EFS ID:	19975041
Application Number:	13606675
International Application Number:	
Confirmation Number:	6675
Title of Invention:	SYSTEM AND METHOD FOR RUNNING MOBILE DEVICES IN THE CLOUD
First Named Inventor/Applicant Name:	Moshe DGANI
Customer Number:	27799
Filer:	Thomas Langer/Christina Constantino
Filer Authorized By:	Thomas Langer
Attorney Docket Number:	5900-4 - 326177.000
Receipt Date:	27-AUG-2014
Filing Date:	07-SEP-2012
Time Stamp:	09:34:07
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	12021
Deposit Account	503111
Authorized User	WEISZ, EDWARD

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 1.20 (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)	5900-4-IssueFeePaid.pdf	1165389 3703e3dd3b50e9dcf61f02fbaf287339efe152ec	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32038 8aba24370eec0a592705eacb86346d7ff191234d	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			1197427		
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.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/606,675	01/13/2015	8934887	5900-4 - 326177.000	6675

27799 7590 12/23/2014
Cozen O'Connor
277 Park Avenue, 20th floor
NEW YORK, NY 10172

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 17 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.

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