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**UNITED STATES DISTRICT COURT**  
**DISTRICT OF ARIZONA**

SWARM TECHNOLOGY, LLC, an  
Arizona limited liability company,

Plaintiff,

v.

AMAZON.COM, INC., and AMAZON  
WEB SERVICES, INC.,

Defendants.

Case No.:

**COMPLAINT FOR  
PATENT INFRINGEMENT**

**Jury Trial Demanded**

1. Plaintiff Swarm Technology, an Arizona limited liability company, (“Swarm”), bring this patent infringement action under Title 35 of the United States Code against Defendants Amazon.com, Inc. (“Amazon”) and Amazon Web Services, Inc. (“AWS”) (collectively, the “Amazon Defendants”). Plaintiff allege as follows upon personal knowledge as to their own actions, and upon information and belief as to all other matters:

## INTRODUCTION

2. Alfonso Iñiguez is the sole inventor of three (3) United States Patents, a Japanese patent, and a number of additional patent applications currently pending in the United States, the European Union, India, China, and Hong Kong relating to a revolutionary new computer processing architecture. The United States Patent and Trademark Office has awarded, *inter alia*, the following Patents to Mr. Iñiguez, which are referred to herein as the Patents-in-Suit: i) U.S. Patent No. 9,852,004 issued December 26, 2017, and entitled “System and Method for Parallel Processing Using Dynamically Configurable Proactive Co-Processing Cells” (the ‘004 Patent); and ii) U.S. Patent No. 10,592,275 issued March 17, 2020, and entitled “System and Method for Swarm Collaborative Intelligence Using Dynamically Configurable Proactive Autonomous Agents” (the ‘275 Patent). True and correct copies of the ‘004 Patent and the ‘275 Patent are attached hereto as Exhibits A and B, respectively.

3. Alfonso and Alejandra Iñiguez founded Swarm Technology as an Arizona limited liability company on January 17, 2014. Pursuant to written assignments from Mr. Iñiguez, the Patents-in-Suit are now owned by Swarm Technology, LLC.

4. In recent years the cloud computing industry, led by AWS, has migrated away from the traditional “master/slave” model – in which a central controller directly controls a plurality of microprocessors – in favor of a distributed “co-processing” model. The new co-processing model does not require direct communication between the controller and the co-processors. Instead, coordination between the controller (typically a desk-top, lap-top, or hand-held computer) and the co-processors involves an intermediary data structure referred to as a “task pool.” A credentialed administrator uses the controller to populate the task pool with discrete tasks to be performed by the co-processors. Each co-processor proactively retrieves tasks directly from the task pool and notifies the task pool when each task is completed. This allows the controller to indirectly accomplish multiple tasks without having to expend unnecessary processing cycles directly supervising the co-processors.

1           5.     The systems and methods used in Amazon's cloud computing products and  
2 services are precisely the same as those claimed in Swarm's patents. Consequently, the  
3 Amazon Defendants are jointly and severally liable to Swarm for infringing Swarm's patents.

4                                   **THE PARTIES**

5           6.     Swarm Technology, LLC, is an Arizona limited liability company (Arizona  
6 Entity ID L18990310) with its principal place of business at 732 E Lehi Road, Mesa, Arizona  
7 85203.

8           7.     Alfonso Iñiguez is the inventor of the Patents-in-Suit, a Member of Swarm  
9 Technology, LLC, and a resident of Mesa, Arizona.

10          8.     Alejandra Iñiguez is a Member of Swarm Technology, LLC, and a resident of  
11 Mesa, Arizona.

12          9.     Alfonso and Alejandra Iñiguez are husband and wife and are the sole owners of  
13 Swarm Technology.

14          10.    Upon information and belief, Defendant Amazon.com, Inc. is a Delaware  
15 corporation with its headquarters located in the State of Washington at 410 Terry Ave. North,  
16 Seattle, WA 98109-5210.

17          11.    Upon information and belief, Defendant Amazon Web Services, Inc. is a  
18 Delaware corporation with its headquarters located in the State of Washington at 410 Terry  
19 Ave. North, Seattle, WA 98109-5210.

20                                   **SUBJECT MATTER JURISDICTION**

21          12.    This action arises under the Patent Act of the United States of America,  
22 35 U.S.C. §§ 1 *et seq.*

23          13.    This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and  
24 1338(a).

25                                   **PERSONAL JURISDICTION**

26          14.    35 U.S.C. 271 provides, in pertinent part:

27                   (a) Except as otherwise provided in this title, whoever without  
28 authority makes, uses, offers to sell, or sells any patented invention,

1 within the United States or imports into the United States any patented  
2 invention during the term of the patent therefor, infringes the patent.

3 (b) Whoever actively induces infringement of a patent shall be  
4 liable as an infringer.

5 (c) Whoever offers to sell or sells within the United States or  
6 imports into the United States a component of a patented machine,  
7 manufacture, combination or composition, or a material or apparatus  
8 for use in practicing a patented process, constituting a material part of  
9 the invention, knowing the same to be especially made or especially  
10 adapted for use in an infringement of such patent, and not a staple  
11 article or commodity of commerce suitable for substantial  
12 noninfringing use, shall be liable as a contributory infringer.

13 15. Both Amazon.com and Amazon Web Services have offered and continue to  
14 offer infringing products and services for sale to Arizona residents and others in this judicial  
15 District.

16 16. Both Amazon.com and Amazon Web Services maintain ongoing product  
17 development, sales teams and digital sales platforms, and customer support facilities for their  
18 infringing products and services in this judicial District.

19 17. Both Amazon.com and Amazon Web Services have committed and continue to  
20 commit acts of infringement of the Patents-in-Suit in this judicial District.

21 18. Amazon.com and Amazon Web Services maintain and operate an extensive  
22 web-based ecosystem at <https://aws.amazon.com/> (the “AWS website”).

23 19. Both Amazon.com and Amazon Web Services, through the AWS website and  
24 other digital and physical facilities, regularly and systematically develop, manufacture,  
25 advertise, market, distribute, sell, offer for sale, and otherwise promote and support a variety  
26 of products and services which infringe the Patents-in-Suit.

27 20. Upon information and belief, on May 28, 2020, Amazon Web Services filed its  
28 2020 Annual Report with the Arizona Corporation Commission. A true and correct copy of a

1 record for that submission as retrieved from the ACC database is attached hereto as Exhibit C.  
2 The 2020 Annual Report indicates that AWS is authorized to issue 1,000,000 shares of  
3 common stock, and that a total of one (1) share of that common stock has been issued.

4 21. According to an article entitled “AWS is Amazon’s income generator, and more  
5 from the company’s latest earnings” written by Jonathan Capriel and published by the  
6 Washington Business Journal on October 25, 2019 (Exhibit D):

7 “Amazon Web Services, meanwhile, Amazon’s wildly profitable  
8 cloud computing subsidiary, registered operating income of \$2.2  
9 billion, or about 71% of the company’s entire operating income.”

10 22. The Amazon Defendants’ annual revenues attributable to infringing products  
11 and services facilitated by the AWS website represent a significant and growing proportion of  
12 Amazon.com’s total annual revenues.

13 23. Upon information and belief, the Amazon Defendants employ thousands of full  
14 time employees in Arizona and continue to actively recruit new employees in Arizona into  
15 positions involving software engineering, product development, project management, and  
16 extensive sales and support teams dedicated to AWS’ cloud-based products and services.

17 24. Upon information and belief, many of these employees maintain home-based  
18 offices in Arizona, and store Amazon related materials (digitally and otherwise) at their home-  
19 based offices in this District, which materials can be distributed and/or offered for sale in this  
20 District.

21 25. Both Amazon.com and Amazon Web Services maintain a physical place of  
22 business with an ongoing and continuous presence in this District.

23 26. Upon information and belief, both Amazon.com and Amazon Web Services  
24 regularly conduct business including accepting orders, making business decisions, and  
25 soliciting customers in this District.

26 27. Upon information and belief, both Amazon.com and Amazon Web Services  
27 have ratified or otherwise represented that they maintain a place of business in this District,  
28

1 for example by placing their names and/or logos on signage associated with their places of  
2 business.

3 28. The Amazon Defendants have conducted and continue to conduct business in  
4 this judicial District, including purposefully directing their actions and their on-line sales  
5 platform (the AWS website) into this judicial District and otherwise availing themselves of  
6 the privileges and protections of the laws of the State of Arizona.

7 29. The Amazon Defendants have sufficient minimum contacts within this District  
8 such that the exercise of jurisdiction over the Amazon Defendants by this Court does not  
9 offend traditional notions of fair play and substantial justice.

10 30. This Court has personal jurisdiction over the Amazon Defendants consistent  
11 with the principles of Due Process as embodied in the Fourteenth Amendment to the United  
12 States Constitution and the Arizona long-arm statute, Arizona Rule of Civil Procedure 4.2.

13 31. This action for patent infringement arises out of and relates to activities that the  
14 Amazon Defendants have purposefully directed into this District.

15 **VENUE**

16 32. 28 U.S.C. 1400(b) provides that:

17 “Any civil action for patent infringement may be brought in the  
18 judicial district where the defendant resides, or where the defendant  
19 has committed acts of infringement and has a regular and established  
20 place of business.”

21 33. Venue is proper in this District under 28 U.S.C. § 1400 because both Amazon  
22 Defendants, namely, Amazon.com, Inc. and Amazon Web Services, Inc., make, use, sell,  
23 and/or offer to sell infringing products and services in Arizona, either alone or in concert with  
24 each other and/or one or more additional entities as may be determined through discovery.

25 34. Venue is proper in this District because each Amazon Defendant also maintains  
26 regular and established places of business within Arizona.

35. Defendant Amazon.com, Inc. maintains corporate offices in this judicial District at 222 S Mill Ave, Tempe, Arizona 85281 (See Exhibit E; <https://www.downtowntempe.com/go/amazoncom>).

36. According to an article written by Russ Wiles and published by the Arizona Republic August 18, 2020 entitled “Amazon to add 500 jobs at expanded tech hub in Tempe” (Exhibit F):

“Amazon.com, which already ranks as one of Arizona's largest employers, said it will hire 500 people over the next two years at an expanded technology hub near Tempe Town Lake.

The online retailer said it will lease 90,000 square feet of space in a building under construction at 100 S. Mill Ave., part of the Hayden Ferry Lakeside development just north of the Arizona State University campus.

The complex will feature 1.6 million square feet of office, retail and residential space. Amazon also has rented space in other nearby buildings, where it employs about 3,000 people.”

(<https://www.azcentral.com/story/money/business/jobs/2020/08/18/amazon-hiring-500-jobs-expanded-tech-center-tempe/3382413001/>).

37. According to an article written by Erin Edgemon, Managing Editor, Phoenix Business Journal published October 21, 2020 and entitled “Amazon to hire 1,000 at new West Valley fulfillment center,” Amazon operates a large fulfillment center at 16920 W Commerce Drive, Goodyear, Arizona 85338 (Exhibit G):

“Amazon has at least 11 new fulfillment and delivery operations sites set to open before the end of the year in Arizona. The e-commerce giant is in the process of hiring thousands in the region to operate them.” (<https://www.bizjournals.com/phoenix/news/2020/10/21/amazon-to-hire-at-goodyear-fulfillment-center.html>).

38. According to an article posted August 19, 2020, by the City of Goodyear in City News entitled “Amazon Becomes Goodyear’s Largest Employer With New Robotics Facility

1 - The 855,000-square-foot facility will add over 1,000 full-time jobs in Goodyear to its existing  
2 employee base” (Exhibit H):

3 “Amazon has been in Arizona over 13 years and in Goodyear for just  
4 over a decade. The company now has 17,500 full- and part-time employees  
5 in the state.

6 The talent and the labor force in Arizona have been a great partner  
7 over the last 13 years,” said Matthew High, regional director of Amazon  
8 Fulfillment. “We’ve had a great relationship with the community, as well as  
9 the local officials, and we’re excited to continue growing out here.”

10 (<https://www.goodyearaz.gov/Home/Components/News/News/11680/1549>).

11 39. As of March 4, 2021, the Amazon Defendants’ “Jobs” website  
12 (<https://www.amazon.jobs/en>) advertises a total of 370 (363 full time) active job postings in  
13 Arizona (See Exhibit I). These active listings specifically identify 170 full time positions  
14 within Amazon Web Services. (See Exhibit J).

15 40. According to an article published March 14, 2019 and entitled “ASU, Amazon  
16 Web Services open Smart City Cloud Innovation Center,” Amazon Web Services launched its  
17 Cloud Innovation Center (CIC) Powered by AWS at ASU’s Skysong location in Scottsdale,  
18 Arizona in March 2019. (See Exhibit K).

19 41. According to an article dated January 20, 2021 entitled “ASU’s Smart City  
20 Cloud Innovation Center is ‘working backwards’ to innovate the future,” Amazon Web  
21 Services’ Arizona-based Cloud Innovation Center (CIC) uses a product development approach  
22 referred to by Amazon as “working backwards.” (See Exhibit L).

23 42. In a Slideshare<sup>TM</sup> presentation dated April 25, 2018, Amazon Web Services  
24 provides a tutorial on its “Working Backwards” methodology. (See Exhibit M;  
25 <https://www.slideshare.net/AmazonWebServices/working-backwards-from-the-customer>).

26 43. Defendant Amazon.com has committed acts of infringement and maintains  
27 regular and established places of business in this District by, *inter alia*, operating extensive  
28

1 product development, fulfillment, software engineering, sales, manufacturing, distribution,  
2 and customer service organizations in Arizona.

3 44. Defendant AWS has committed acts of infringement and maintains regular and  
4 established places of business in this District by, *inter alia*, operating extensive product  
5 development, fulfillment, software engineering, sales, manufacturing, distribution, and  
6 customer service organizations in Arizona.

7 45. Plaintiff Swarm Technology, LLC is an Arizona LLC, and its principal place of  
8 business is in this District.

9 46. Alfonso and Alejandra Iñiguez reside in this District.

10 47. Swarm's products, design and development records, intellectual property, and  
11 related documents are located in this District.

12 **THE RELATIONSHIP BETWEEN AMAZON.COM AND AWS**

13 48. Upon information and belief, Amazon Web Services, Inc. is a wholly owned  
14 subsidiary of Amazon.com, Inc.

15 49. Upon information and belief, Amazon.com, Inc. operates Amazon Web  
16 Services, Inc. as an integrated business division of Amazon.com, Inc.

17 50. Upon information and belief, Amazon.com and AWS have a history of common  
18 officers and directors including, *inter alia*, Andrew Jassy, Peter DeSantis, and Stephen  
19 Schmidt.

20 51. Upon information and belief, the day-to-day operations of Amazon.com and  
21 AWS are coordinated and controlled by Amazon's executive suite, nicknamed the "S-team,"  
22 which includes executives from both AWS and Amazon.com.

23 52. Amazon.com, Inc. is traded on the NASDAQ Global Select Market Exchange  
24 under the symbol AMZN, for and on behalf of itself and its subsidiaries including Amazon  
25 Web Services, Inc.

26 53. Upon information and belief, neither Amazon Web Services, Inc. nor AWS are  
27 separately traded on the NASDAQ or any other exchange under any other symbol.  
28

1           54. Amazon.com’s “Notice of 2020 Annual Shareholders & Proxy Statement” dated  
2 May 27, 2020 (See Exhibit N) states that:

3                   “Sales by independent third-party sellers – mostly small and medium-  
4 sized business (SMBs) - make up more than half the units sold in our  
5 stores. In 2019, we invested \$15 billion in infrastructure, services and  
6 tools, programs, and people to enable the success of these businesses.”

7           55. The aforementioned May 27, 2020 Statement further explains that SMBs selling  
8 their products on Amazon.com “[u]se AWS to run their businesses” because “AWS offers low  
9 cost, on-demand IT solutions to help start-ups build and launch their applications and  
10 services.”

11           56. Rather than promoting AWS as a separate company, Amazon offers its SMBs a  
12 seamless, integrated platform including on-line retail services under the AMAZON.COM  
13 brand, as well as cloud-based IT solutions under the AWS brand.

14           57. Upon information and belief, AMAZON.COM filed a single Annual Report  
15 (Form 10-K) with the Securities and Exchange Commission for the fiscal year ending  
16 December 31, 2020, on behalf of both Amazon.com and Amazon Web Services. (Exhibit O).

17           58. Page 3 of Amazon.com’s 10-K explains that Amazon.com’s operations are  
18 organized into three segments: North America, International, and Amazon Web Services  
19 (“AWS”). Page 3 further states that Amazon.com serves “developers and enterprises of all  
20 sizes, including start-ups, government agencies, and academic institutions, through AWS,  
21 which offers a broad set of on-demand technology services, including compute, storage,  
22 database, analytics, and machine learning, and other services.”

23           59. Amazon.com’s 10-K provides selected consolidated financial data for  
24 Amazon.com and its various divisions (e.g., AWS) including statements of cash flow,  
25 operations, income, balance sheets, and stockholder’s equity, and does not provide separate  
26 financial statements for AWS.

27           60. The United States Trademark Office has issued a large number of federal  
28 trademark registrations for the words AMAZON, AMAZON.COM, AMAZON WEB

1 SERVICES, and AWS, both with and without design elements such as the grocery cart logo  
2 or the curved arrow underlying the word AMAZON and pointing from the letter “a” to the  
3 letter “z.”

4 61. Many of the aforementioned trademarks involve goods and services spanning  
5 both: i) online retail/e-commerce products and services offered under the Amazon.com brand,  
6 as well as ii) IT on-demand products and services offered under the AWS brand.

7 62. Upon information and belief, all of the foregoing registrations are commonly  
8 owned by Amazon Technologies, Inc., a Nevada corporation doing business at 410 Terry Ave.  
9 N, Seattle, Washington, which is the same address where the headquarters of both  
10 Amazon.com and Amazon Web Services, Inc. are located.

11 63. The following exemplary registrations recite goods and services covering both  
12 on-line retail and IT on-demand goods/services, and include AMAZON or AMAZON.COM  
13 but not “web services or “AWS”: 6228267; 3414814; 4171965; 5655933; 6019093; and  
14 3411872. True and correct copies of the corresponding records retrieved from the USPTO’s  
15 Trademark Electronic Search System (TESS) are attached hereto as Exhibit P.

16 64. The following registrations recite goods and services covering both on-line retail  
17 and IT on-demand goods/services, and include AMAZON WEB SERVICES or AWS but not  
18 “Amazon.com”: 5676725; 6273100; 5878542; 1167503; and 3576161. True and correct  
19 copies of the corresponding records retrieved from the USPTO’s Trademark Electronic Search  
20 System (TESS) are attached hereto as Exhibit Q.

21 65. Upon information and belief, Amazon.com, Inc. exercises substantially total  
22 control over Amazon Web Services, Inc. or, alternatively, Amazon.com’s and AWS’s  
23 operations are commonly controlled or otherwise intermingled such each entity’s infringing  
24 acts and resulting liability may be imputed to the other.

25 66. Upon information and belief, Amazon.com, Inc. exercises substantially total  
26 control over Amazon Web Services, Inc. or, alternatively, Amazon.com’s and AWS’s  
27 operations are commonly controlled or otherwise intermingled such each entity’s contacts  
28 within Arizona may be imputed to the other for purposes of personal jurisdiction.

### **THE STORY BEHIND MR. IÑIGUEZ' INVENTIONS**

67. Alfonso Iñiguez was born in Tijuana, Mexico in 1965. He is pictured below (on the far right) with his mother and three siblings in approximately 1970:



68. Alfonso displayed remarkable abilities in science, technology, and mathematics at an early age. He also had an interest in how colonies of ants communicate with one another to perform tasks for the benefit of the queen, but without communicating with the queen directly. He would later apply his study of ant colonies to his design and development of co-processing architectures for computer systems.

69. While working at the American Consulate in Nogales, Mexico, Alfonso's mother obtained a United States Green Card. In 1975, after leaving her employment at the Consulate, she submitted a Green Card application for Alfonso when he was ten (10) years old. Instilled with an impeccable work ethic, Alfonso went on to receive a Bachelor of Science degree in Computer Engineering from the Universidad Autonoma de Guadalajara, México in 1989.

70. Alfonso obtained his Green Card in 1987 and emigrated to the United States in 1989 to pursue graduate studies. While working full time in various computer-related fields, Mr. Iñiguez attended the University of Arizona in Tucson, Arizona, and became a U.S. Citizen

1 in 1994. In 1995 he was awarded a Master of Science degree in Electrical Engineering from  
2 the University of Arizona.

3 71. During the 2009 recession, Mr. Iñiguez, was one of many employees laid off at  
4 Freescale Semiconductor (formerly Motorola, Inc.). After an extensive search, he secured an  
5 interview with a leading chip manufacturer as a Computer Architect.

6 72. Mr. Iñiguez prepared for his interview by reading books, papers, and performing  
7 extensive research in the field of computer architecture. He was struck by the inefficiencies  
8 associated with state-of-the-art computer processing architectures. He intuitively knew there  
9 was a better way for computer processors to cooperate with each other and with a central  
10 controller to perform complex processing tasks. He also believed that the swarm intelligence  
11 exhibited by ant colonies would play an important role in his new processing paradigm.

12 73. Drawing on his computer industry experience, Mr. Iñiguez identified two major  
13 drawbacks with existing multiprocessing frameworks. First, a significant portion of the CPU's  
14 processing cycles (bandwidth) was consumed assigning tasks to the "slave" processors.  
15 Second, the processors were often idle while waiting for a new task.

16 74. To address these shortcomings, Mr. Iñiguez invented a revolutionary new  
17 parallel processing paradigm, generally characterized by co-processors configured to  
18 proactively seek new tasks, without having to communicate directly with (or wait for) the  
19 CPU. These co-processors include hardware and/or software components which are variously  
20 referred to as "autonomous agents" configured to retrieve "tasks" or "device shadows."

21 75. On January 25, 2013, Mr. Iñiguez filed his first utility patent application with  
22 the United States Patent and Trademark Office, and thereafter filed additional utility patent  
23 applications each claiming priority to the original January 2013 filing date.

24 76. On September 29, 2015, the United States Patent and Trademark Office (the  
25 "USPTO") awarded U.S. Patent No. 9,146,777 entitled "Parallel Processing with Solidarity  
26 Cells by Proactively Retrieving from a Task Pool a Matching Task for the Solidarity Cell to  
27 Process" to Mr. Iñiguez.  
28

1           77. On 26 December 2017, the United States Patent and Trademark Office awarded  
2 U.S. Patent No. 9,852,004 entitled “System and Method for Parallel Processing using  
3 Dynamically Configurable Proactive Co-Processing Cells” to Mr. Iñiguez.

4           78. On 17 March 2020, the United States Patent and Trademark Office awarded U.S.  
5 Patent No. 10,592,275 entitled “System and Method for Swarm Collaborative Intelligence  
6 using Dynamically Configurable Proactive Autonomous Agents” to Mr. Iñiguez.

7           79. Swarm is the sole owner of all right, title, and interest in and to each of the  
8 foregoing Patents-in-Suit.

9           80. Various products and services made, used, sold, or offered for sale by the  
10 Amazon Defendants embody every element of at least one claim of each Patent-in-Suit, either  
11 literally or under the doctrine of equivalents.

12           81. The Patents-in-Suit disclose several embodiments, including a processing  
13 system having a controller configured to populate a task pool and one or more co-processors  
14 configured to proactively retrieve tasks from the task pool. In this way, the controller  
15 communicates directly with the task pool, and indirectly with the co-processors through the  
16 task pool.

17           82. Mr. Iñiguez contemplated many practical applications of his inventions, one of  
18 which includes networks comprising Internet of Things (IoT) devices. One problem faced by  
19 engineers and computer architects surrounds the control of large numbers of devices linked to  
20 an IoT network, and how to harness their collective processing capacity without over-  
21 burdening the CPU.

22           83. The demand for IoT devices and IoT networks continues to drive growth in  
23 cloud-based products and services involving computing, storage, networking, databases,  
24 analytics, application services, deployment, mobile tools, and developer tools. Present day IoT  
25 networks make these services available to virtually any device connected to the Internet.

26           84. To help explain the technology, Mr. Iñiguez and his family created a series of  
27 homemade videos, each lasting approximately four minutes. The videos feature teams of ants  
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1 working together and completing tasks, giving a visual metaphor of his revolutionary new  
2 computer architecture. These videos may be viewed at:

3 <https://vimeo.com/150745850> (CPU Architecture - Prior Art)

4 <https://vimeo.com/150748582> (Co-Processor Architecture - Prior Art)

5 <https://vimeo.com/150450660> (Solidarity Cell Architecture - Issued Patent)

6 <https://vimeo.com/150743111> (Heterogeneous Parallel Processing - Issued Patent)

7 <https://vimeo.com/150759740> (Internet of Things Parallel Processing - Issued Patent)

8 <https://vimeo.com/150744874> (Robot Automation - Issued Patent)

9 <https://vimeo.com/177881911> (Ants, Robots, IoT and Parallel Processing)

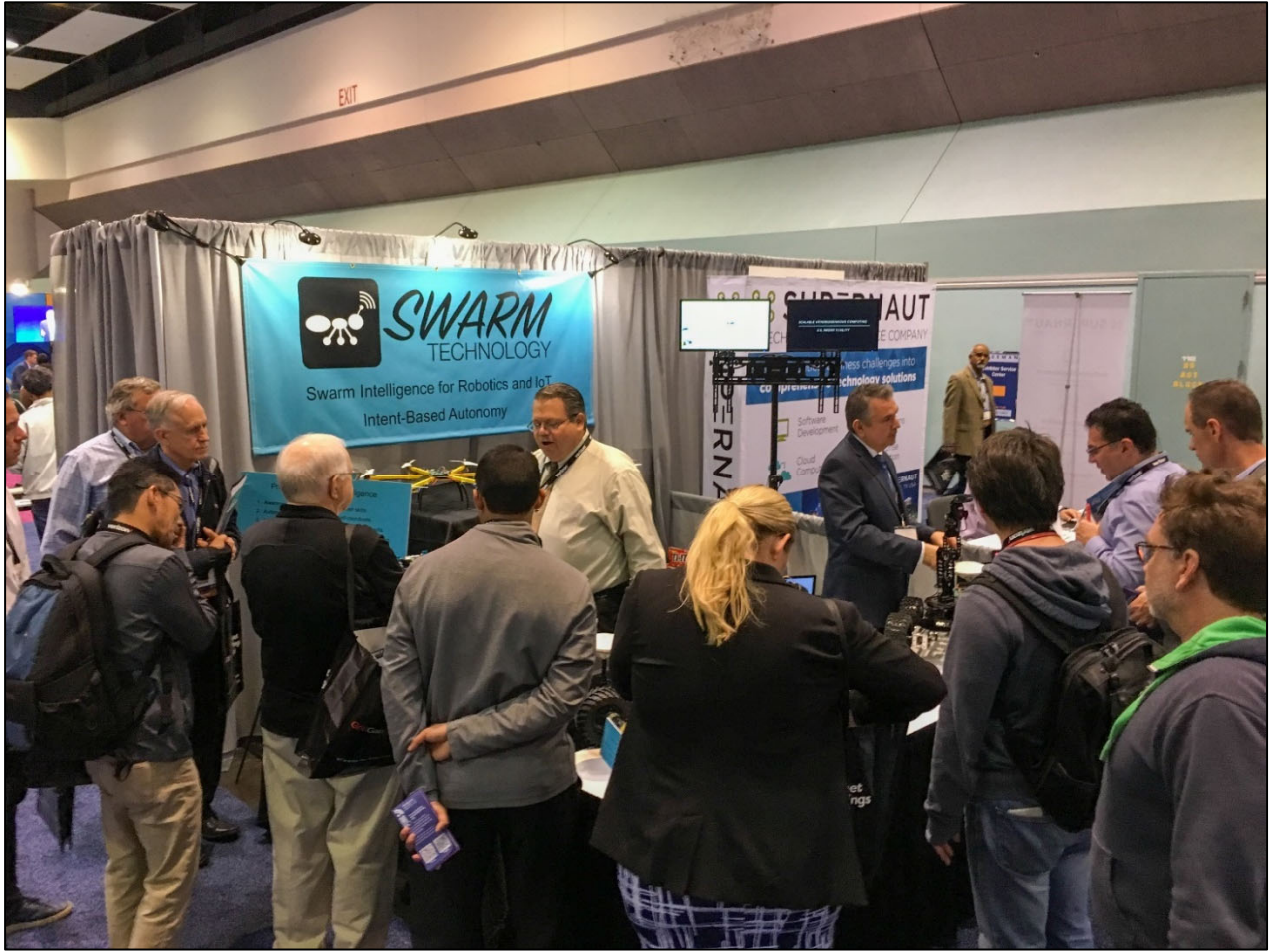
10 85. Mr. Iñiguez and his family presented his technology at trade shows and other  
11 industry events, such as the: i) “Internet of Things World Conference 2018,” Santa Barbara  
12 California, May 14 – 17, 2018; ii) “IoT Tech Expo North America 2017,” Santa Clara,  
13 California, November 29-30, 2017; iii) “International Conference on Intelligent Robots and  
14 Systems (IROS) 2017,” Vancouver, Canada, September 24–28, 2017; and iv) “Internet of  
15 Things World Conference 2017,” Santa Clara, California, May 16-18, 2017.

16 86. Below is a photograph (left-to-right) of the Iñiguez family including sons Ulises  
17 and Isaac, daughter Daniela, wife Alejandra, and husband Alfonso promoting Swarm  
18 Technology at an industry event in 2017:  
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87. Ulises Iñiguez is currently a Senior at University of Notre Dame studying Mechanical Engineering. Isaac Iñiguez is currently a Junior at Franciscan University studying Business and Marketing. Daniela Iñiguez is currently a Freshman at Franciscan University studying Engineering (scheduled to transfer to the University of Notre Dame to complete a B.S. in Aerospace Engineering). All three Iñiguez children are on academic scholarships.

88. Below is a photograph of Alfonso Iñiguez (right) and his cousin Pablo Garcia (B.S. Industrial Engineering - Instituto Tecnológico de Sonora, Mexico) promoting Swarm Technology at an industry event in 2018:



89. Mr. Iñiguez's technology has also been the subject of news articles and other press coverage, such as the IEEE News in May of 2017, the Business News in April of 2018, the East Valley Tribune in April 2016, the Business Journal in December of 2015, and the EE Times in December of 2017, among others.

90. Mr. Iñiguez is also the author of the following peer reviewed research paper entitled: "The Octopus as a Model for Artificial Intelligence: A Multi-Agent Robotic Case Study." The paper was published by the International Conference on Agents and Artificial Intelligence held in Porto, Portugal, in 2017. The International Conference on Agents and Artificial Intelligence is the most prestigious Artificial Intelligence conference in the World, it is extremely rare to include a company researcher (as opposed to a university researcher) as a featured author. A true and correct copy of the paper is attached hereto as Exhibit R, and may be found at:

1 <https://www.scitepress.org/Papers/2017/61254/61254.pdf>.

2 91. Mr. Iñiguez recently discovered that the many technology companies have  
3 incorporated his technology into their own products and services, and are marketing them to  
4 their own customers. Mr. Iñiguez determined that at least the following Amazon products and  
5 services infringe the Patents-in-Suit: i) AWS IoT Core; and ii) AWS IoT Greengrass. Product  
6 literature promoting and offering these services for sale in Arizona may be viewed at:

7 <https://aws.amazon.com/iot-core/?hp=tile&so-exp=below> and  
8 <https://aws.amazon.com/greengrass/?hp=tile&so-exp=below>,  
9 respectively.

10 92. After Mr. Iñiguez's first patent issued in September 2015, he contacted Amazon  
11 in an effort to initiate licensing discussions.

12 93. Specifically, on November 23, 2015, Swarm's outside patent counsel sent a  
13 letter to Mr. Werner Vogels at Amazon announcing the issuance of U.S. Patent No. 9,146,777  
14 (the "'777 Patent"), and the pendency of additional related patent applications. A true and  
15 correct copy of the 2015 letter is attached hereto as Exhibit S.

16 94. On February 10, 2016, Mr. Iñiguez sent an email to Amazon at  
17 [patents@amazon.com](mailto:patents@amazon.com) describing Swarm's technology. A true and correct copy of the  
18 February 2016 email is attached hereto as Exhibit T.

19 95. On August 10, 2016, Mr. Iñiguez sent an email to Amazon Robotics at  
20 [patents@amazon.com](mailto:patents@amazon.com) including links to Swarm's videos. A true and correct copy of the  
21 August 2016 email is attached hereto as Exhibit U.

22 96. On July 16, 2018, Swarm's outside patent counsel sent a letter to Jeffrey  
23 Blackburn at Amazon offering a license under the '777 Patent, the '004 Patent, and the pending  
24 application No. 15/852,480 which later issued as the '275 Patent. A true and correct copy of  
25 the 2018 letter is attached hereto as Exhibit V.

26 97. The Amazon Defendants were provided written notice of the Patents-in-Suit at  
27 least four times between 2015 and 2018. As such, their infringement may be willful under 35  
28 U.S.C. § 284.

98. The '004 Patent describes a system and method for parallel processing using dynamically configurable proactive co-processing cells.

99. One embodiment described in the '004 Patent includes a controller configured to populate a task pool. One or more co-processors, or solidarity cells, are configured to proactively retrieve tasks from the task pool. Each co-processor includes an agent that interrogates the task pool to seek a task to perform. As a result, the co-processors work together "in solidarity" with each other and with the task pool. Each co-processor is autonomous in that it may interact with the task pool without being instructed to do so by the controller. Devices and their associated co-processors may be added to a network on a "plug and play" basis.

100. A representative figure is below:

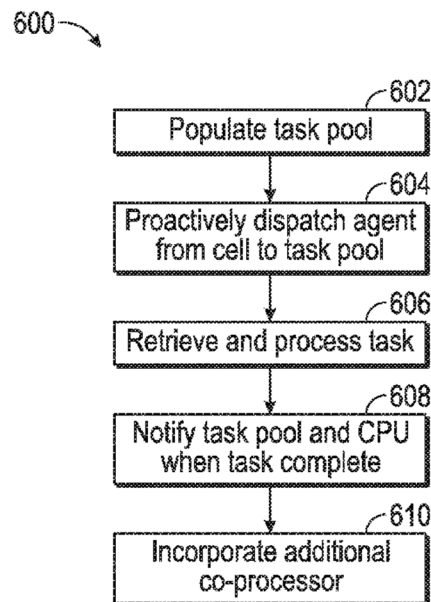


FIG. 6

101. The controller populates the task pool (602). The co-processors proactively dispatch an agent to the task pool (604). Each co-processor retrieves and processes a task (606). The task pool and controller are notified when the task is complete (608). An additional co-processor may be incorporated, "on boarded," or provisioned (610).

1           102. Claim 1 of the '004 Patent relates to a processing system including a task pool,  
2 a controller, and first and a second co-processors each configured to retrieve tasks from the  
3 task pool and update the task pool once the task is processed, without requiring direct  
4 communication with the controller.

5           103. Claim 1 of the '004 Patent is set forth in its entirety below:

6               1. A processing system, comprising:

7                     a task pool;

8                     a controller configured to populate the task pool with a  
9 plurality of first tasks and a plurality of second tasks;

10                    a first co-processor configured to successively: retrieve a first  
11 task from the task pool; deliver the first task to the first co-  
12 processor; process the first task; generate first resulting data;  
13 and update the task pool to reflect completion of the first task,  
14 all without any communication between the first co-processor  
and the controller; and

15                    a second co-processor configured to successively: retrieve a  
16 second task from the task pool; deliver the second task to the  
17 second co-processor; process the second task; generate second  
18 resulting data; and update the task pool to reflect completion  
of the second task, all without any communication between the  
second co-processor and the controller;

19                    wherein the processing system is configured to dynamically  
20 accept the first co-processor, the second co-processor, and an  
21 additional co-processor into the processing system on a plug-  
and-play basis without any communication with the controller.

22           104. As discussed below in conjunction with publicly available literature published  
23 in Arizona, many of the Amazon Defendants' products and services embody all of the  
24 foregoing claim elements.

25           105. As a result of the Amazon Defendants' infringement of the '004 Patent, Swarm  
26 has incurred substantial monetary and other damages.

27           106. The '275 Patent describes a system and method for collaborative intelligence  
28 using dynamically configurable proactive autonomous agents.

107. Claim 1 of the '275 Patent relates to a collaborative intelligence system including a task pool, a controller configured to populate the task pool with a plurality of tasks, and first and a second co-processors each configured to retrieve tasks from the task pool and update the task pool to reflect completion of the task, without requiring direct communication with the controller, and to autonomously work together in solidarity with the task pool to complete a common objective.

108. Claim 1 of the '275 Patent is set forth in its entirety below

1. A collaborative intelligence system, comprising:

a task pool;

a controller configured to populate the task pool with a plurality of first tasks and a plurality of second tasks;

a first co-processor configured to successively: proactively retrieve a first task from the task pool; process the first task; generate first resulting data; and update the task pool to reflect completion of the first task, all without any communication between the first co-processor and the controller; and

a second co-processor configured to successively: proactively retrieve a second task from the task pool; process the second task; generate second resulting data; and update the task pool to reflect completion of the second task, all without any communication between the second co-processor and the controller;

wherein the collaborative intelligence system is configured to dynamically accept the first co-processor, the second co-processor, and an additional co-processor into the processing system on a plug-and-play basis without any communication with the controller;

the plurality of first tasks and the plurality of second tasks are associated with a common objective;

the first and second co-processors autonomously work together in solidarity with the task pool to complete the common objective.

109. As detailed below in conjunction with publicly available literature published in Arizona, many of the Amazon Defendants' products and services embody all of the foregoing claim elements.

110. As a result of the Amazon Defendants' infringement of the '275 Patent, Swarm has incurred substantial monetary and other damages.

111. The Amazon Defendants are building their future on the back of Mr. Iñiguez' novel computer architecture. The widely recognized problem of controlling multiple IoT devices has been solved by Alfonso Iñiguez. His patented technologies directly address many of the challenges faced by today's software developers, and the Amazon Defendants know this.

### **AWS' PRODUCTS AND SERVICES**

112. The AWS website describes over 200 cloud-based products and services. Many of these products and services infringe one or more of the Patents-in-Suit either directly under 35 U.S.C. 271(a), through inducement under section 271(b), and/or by way of contributory infringement under Section 271(c).

113. For example, clicking on the Internet of Things product logo on the web page located at <https://aws.amazon.com/> reveals a plurality of sub-systems, including AWS IoT Core and AWS Greengrass. The following Claim Charts provide non-limiting illustrations which "map" the Patents-in-Suit to these exemplary infringing products.

### **EXEMPLARY CLAIM CHARTS**

114. A first claim chart mapping the elements of Claim 1 of the '004 patent to the infringing products, including References 1 – 9 and Figures A - F, is attached hereto as Exhibit W.

115. The "processing system" preamble is illustrated, *inter alia*, in Figure A.

116. The "task pool" element may be found at, *inter alia*, Reference 1, page 454; and Reference 4, page 1.

117. The "controller" and "populate" elements may be found at, *inter alia*, Reference 1, page 454; Reference 4, page 1; and Figure B.

1           118. The “first tasks” and “second tasks” elements generally correspond to the AWS  
2 term “shadows” and may be found at, *inter alia*, Reference 1, pages 454 and 494; Reference  
3 7, page 35; Reference 7, page 9; Figure C, D, E, and F; and Reference 7, page 165.

4           119. The “first co-processor” element generally correspond to the AWS term  
5 “device” and may be found at, *inter alia*, Reference 1, page 5; and Reference 5, page 1.

6           120. The “deliver the first task to the first co-processor” element may be found at,  
7 *inter alia*, Reference 1, page 454; and Reference 1, page 218.

8           121. The “process the first task” element may be found at, *inter alia*, Reference 1,  
9 page 5, page 454, and page 460.

10           122. The “generate first resulting data” element may be found at, *inter alia*, Reference  
11 10, page 1; and Reference 1, page 454.

12           123. The “and update the task pool to reflect completion of the first task, all without  
13 any communication between the first co-processor and the controller” element may be found  
14 at, *inter alia*, Reference 1, pages 454 and 494; and Reference 7, page 172.

15           124. The various elements pertaining to the “second co-processor” which are  
16 common to the aforementioned “first co-processor” may be found at, *inter alia*, the same  
17 References cited in the above discussion of the “first co-processor.”

18           125. The “wherein the processing system is configured to dynamically accept the first  
19 co-processor, the second co-processor, and an additional co-processor into the processing  
20 system on a plug-and-play basis without any communication with the controller” element may  
21 be found at, *inter alia*, Reference 1, page 494; and Reference 5, page 1.

22           126. A second claim chart mapping the elements of Claim 1 of the ‘275 patent to the  
23 infringing products, including References 1 – 9 and Figures A - F, is attached hereto as Exhibit  
24 X.

25           127. The “collaborative intelligence system” preamble is illustrated, *inter alia*, in  
26 Figure A; Reference 1, page 7; Reference 2, page 1; and Reference 3, page 2.

1           128. The “task pool” element may be found at, *inter alia*, Reference 1, pages 454 and  
2 494; Reference 4, page 1; Reference 7, pages 35 and 165; Reference 7, page 9; Figures C, D,  
3 E, and F.

4           129. The “controller configured to populate the task pool with a plurality of first tasks  
5 and a plurality of second tasks” element may be found at, *inter alia*, Reference 1, pages 454  
6 and 494; Reference 4, page 1; Reference 7, pages 35 and 165; Reference 7, page 9; and Figures  
7 B, C, D, E, and F.

8           130. The “first co-processor” element may be found at, *inter alia*, Reference 1, page  
9 5; and Reference 5, page 1.

10           131. The “proactively retrieve a first task from the task pool” element may be found  
11 at, *inter alia*, Reference 6, page 11; and Reference 1, page 462.

12           132. The “process the first task” element may be found at, *inter alia*, Reference 1,  
13 page 5, page 454, and page 460.

14           133. The “generate first resulting data” element may be found at, *inter alia*, Reference  
15 10, page 1; and Reference 1, page 454.

16           134. The “and update the task pool to reflect completion of the first task, all without  
17 any communication between the first co-processor and the controller” element may be found  
18 at, *inter alia*, Reference 1, pages 454 and 494; and Reference 7, page 172.

19           135. The various elements pertaining to the “second co-processor” which are  
20 common to the analogous elements pertaining to the aforementioned “first co-processor” may  
21 be found at, *inter alia*, the same References cited in the above discussion of the “first co-  
22 processor.”

23           136. The “wherein the collaborative intelligence system is configured to dynamically  
24 accept the first co-processor, the second co-processor, and an additional co-processor into the  
25 processing system on a plug-and-play basis without any communication with the controller”  
26 element may be found at, *inter alia*, Reference 1, pages 7 and 494; Reference 2, page 1; and  
27 Reference 5, page 1.  
28

**FIRST CLAIM FOR RELIEF**  
**Infringement of the '004 Patent (35 U.S.C. § 271)**

137. Swarm incorporates and realleges paragraphs 1 through 136 of this Complaint

138. Defendants have infringed and continue to infringe the '004 Patent by making, using, selling, offering to sell, and/or importing infringing products and services into the United States.

139. Defendants' actions as described herein constitute direct, induced, and/or contributory infringement of the '004 Patent in violation of 35 U.S.C 271(a), (b), and/or (c).

140. Defendants' actions as described herein constitute infringement of the '004 Patent either literally or under the doctrine of equivalents.

141. As a proximate result of Defendants' infringement of the '004 Patent, Plaintiff has been damaged and Defendants have unfairly profited in amounts to be proven at trial.

142. Defendants' infringement of the '004 Patent has been and continues to be willful, entitling Plaintiff to recover treble damages and/or attorney fees pursuant to 35 U.S.C. 284.

143. Defendants' knowing, intentional, and/or willful actions make this an exceptional case, entitling Plaintiff to an award of reasonable fees pursuant to 35 U.S.C. 285.

144. Defendant's direct, inducement, and/or contributory infringement of the '004 Patent has caused and will continue to cause Plaintiff irreparable harm unless they are enjoined by this Court.

**SECOND CLAIM FOR RELIEF**  
**Infringement of the '275 Patent (35 U.S.C. § 271)**

145. Swarm incorporates and realleges paragraphs 1 through 144 of this Complaint.

146. Defendants have infringed and continue to infringe the '275 Patent by making, using, selling, offering to sell, and/or importing infringing products and services into the United States.

147. Defendants' actions as described herein constitute direct, induced, and/or contributory infringement of the '275 Patent in violation of 35 U.S.C 271(a), (b), and/or (c).

148. Defendants' actions as described herein constitute infringement of the '275 Patent either literally or under the doctrine of equivalents.

149. As a proximate result of Defendants' infringement of the '275 Patent, Plaintiff has been damaged and Defendants have unfairly profited in amounts to be proven at trial.

150. Defendants' infringement of the '275 Patent has been and continues to be willful, entitling Plaintiff to recover treble damages and/or attorney fees pursuant to 35 U.S.C. 284.

151. Defendants' knowing, intentional, and/or willful actions make this an exceptional case, entitling Plaintiff to an award of reasonable fees pursuant to 35 U.S.C. 285.

152. Defendant's direct, inducement, and/or contributory infringement of the '275 Patent has caused and will continue to cause Plaintiff irreparable harm unless they are enjoined by this Court.

### **PRAYER FOR RELIEF**

WHEREFORE, Plaintiff prays for the following relief against Defendants, jointly and severally:

A. A judgment that Defendants have infringed one or more claims of each of the Patents-in-Suit;

B. An order and judgment temporarily and permanently enjoining Defendants and their officers, directors, agents, servants, employees, affiliates, attorneys, and all others acting in privity or in concert with them, and their parents, subsidiaries, divisions, successors and assigns, from further acts of infringement;

C. A judgment awarding Plaintiff all damages adequate to compensate for Defendants' infringement, but in no event less than a reasonable royalty, including all pre-judgment and post-judgment interest at the maximum rate permitted by law;

D. A judgment awarding Plaintiff all relief (including money damages) contemplated 35 U.S.C. § 154(d);

E. A judgment awarding Plaintiff all damages including treble damages, based on any infringement found to be willful, pursuant to 35 U.S.C. § 284, together with prejudgment interest;

F. A judgment awarding Plaintiff its costs pursuant to 35 U.S.C. § 284;

1 G. A judgment finding that this case is exceptional and awarding Plaintiff its  
2 attorney fees in accordance with 35 U.S.C. § 285; and

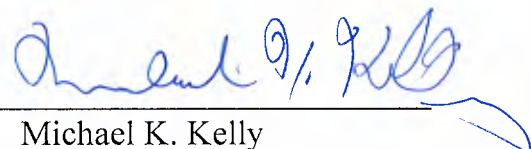
3 H. Any other remedy to which Plaintiff, or any one of them, may be entitled to or  
4 the Court deems just and proper.

5 **DEMAND FOR JURY TRIAL**

6 Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiff request a trial by jury of all  
7 aspects properly triable by jury.

8 DATED this 12th day of March 2021.

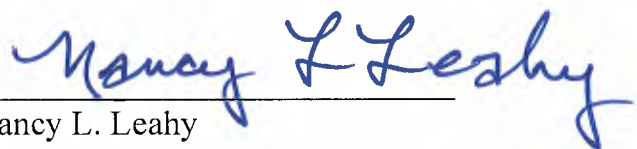
9 **BEUS GILBERT McGRODER PLLC**

10  
11 By 

12 Michael K. Kelly  
13 701 North 44th Street  
14 Phoenix, AZ 85008-6504  
15 (480) 429-3015  
16 Attorneys for Plaintiff

17 **CERTIFICATE OF FILING**

18 I hereby certify that on **March 12, 2021**, I electronically transmitted the foregoing  
19 document to the Clerk's Office using the ECF System for filing.

20  
21   
22 Nancy L. Leahy

23 Beus Gilbert McGroder, PLLC  
24 Attorneys for Plaintiff  
25  
26  
27  
28

**VERIFICATION OF PLAINTIFFS**

Plaintiff Swarm Technology, LLC, by and through its Member Alfonso Iñiguez, hereby declares under penalty of perjury that it has reviewed the foregoing Complaint, and the factual allegations contained therein are true and correct to the best of its knowledge, memory, information, and belief, and to those matters stated upon information and belief, it believes them to be true.

Executed on: March 12, 2021.

SWARM TECHNOLOGY, LLC ☒

By:



Alfonso Iñiguez

Its:

Member

(774452)