IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

S3G TECHNOLOGY LLC, Plaintiff, v. HOMEAWAY, INC.; HOMEAWAY.COM, INC.; and HOMEAWAY SOFTWARE, INC., Defendants.	Case No. 6:20-cv-564 **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff S3G Technology LLC ("S3G") alleges as follows for its complaint against Defendant HOMEAWAY, INC.; HOMEAWAY.COM, INC.; and HOMEAWAY SOFTWARE, INC. (collectively, "Defendants" or "HOMEAWAY"):

JURISDICTION AND VENUE

1. This is an action for patent infringement in violation of the Patent Act of the United States, 35 U.S.C. §§ 1 et seq.

2. This Court has original and exclusive subject matter jurisdiction over patent infringement claims for relief under 28 U.S.C. §§ 1331 and 1338(a).

3. The Court has specific and general personal jurisdiction over Defendants pursuant to due process and/or the Texas Long Arm Statute, due at least to Defendants' substantial business in this forum, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or

deriving substantial revenue from goods and services provided to individuals in Texas and in this District.

4. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1400(b) because, among other things, Defendants are subject to personal jurisdiction in this judicial district, Defendants have regular and established places of business in Texas and in this judicial district, Defendants have purposely transacted business involving the use of the accused products in this judicial district, and committed acts of infringement in this judicial district as described herein.

PARTIES

5. S3G is a limited liability company organized under the laws of the State of California with its principal place of business in Foster City, California. S3G has been, and continues to, develop technology-based solutions for rural and remote populations in India to facilitate economic empowerment and development. For example, S3G is developing mobile solutions that enable the authenticated access to different types of spaces, including to buildings and portions thereof. The information that S3G's technology solutions may collect and maintain about its users will further enable the delivery of educational and other services that may help these users to emerge from poverty and change their lives and those of their families. In connection with its mobile solutions, S3G has obtained patents covering its technology both in the United States and worldwide. For example, its patent portfolio includes additional granted patents and pending applications in Mexico, Brazil, Nicaragua, Costa Rica, India, Philippines and Indonesia.

6. The Managing Member of S3G, who is also the named inventor of the asserted patents, is an award-winning MIT-trained researcher, technologist and inventor who has used and continues to use innovative technologies to address many of the world's critical problems,

including poverty, access to financial services and access to clean drinking water. The World Economic Forum has recognized him for his professional accomplishments, commitment to society and potential to contribute to shaping the future of the world.

7. S3G is informed and believes, and on that basis alleges, that Defendant HOMEAWAY, INC. is organized and existing under the laws of the State of Delaware, having a place of business at 1011 West 5th Street, Suite 300, Austin, Texas 78703.

8. S3G is informed and believes, and on that basis alleges, that Defendant HOMEAWAY.COM, INC. is organized and existing under the laws of the State of Delaware, having a place of business at 1011 West 5th Street, Suite 300, Austin, Texas 78703.

9. S3G is informed and believes, and on that basis alleges, that Defendant HOMEAWAY SOFTWARE, INC. is organized and existing under the laws of the State of Delaware, having a place of business at 11800 Domain Blvd., Suite 300, Austin, Texas 78758.

10. S3G is further informed and believes, and on that basis alleges, that Defendants derive a significant portion of their revenue from the use, promotion and distribution of their products and services, including from the use of Defendants' mobile application for devices running the Android operating system known as HomeAway Vacation Rentals and Vrbo Vacation Rentals (collectively, "Defendants app")[1], and their methods, systems, computing devices, servers, software, and non-transitory computer readable storage medium that perform, execute, run, store, support or facilitate the use of the Defendants app (collectively, "Accused Instrumentalities").

[1] *See* https://play.google.com/store/apps/details?id=com.vacationrentals.homeaway&hl=en_US and https://play.google.com/store/apps/details?id=com.vrbo.android&hl=en_US.

11. S3G is informed and believes and thereon alleges that each of the Defendants conspired and acted in concert with one another to commit the wrongs against S3G alleged herein, and in doing so were at all relevant times the agents, servants, employees, principals, joint venturers, alter egos, and/or partners of each other. S3G is further informed and believes and on that basis avers that, in doing the things alleged in this Complaint, each of the Defendants was acting within the scope of authority conferred upon that Defendant by the consent, approval, and/or ratification of the other Defendants.

12. S3G is informed and believes, and on that basis alleges, that, at all times relevant hereto, Defendants have conducted and continue to conduct business, including the use, distribution, promotion, and/or the offer for sale and sale of their products and services using the Accused Instrumentalities, including the Defendants app, in this Judicial District. On information and belief, Defendants do business themselves, or through their subsidiaries, affiliates, and franchisees, in the State of Texas and the Western District of Texas.

PATENTS

13. United States Patent No. 8,572,571 (the "'571 patent") entitled "Modification of Terminal and Service Provider Machines Using an Update Server Machine" was duly and legally issued on October 29, 2013. A true and correct copy of the '571 patent is attached hereto as Exhibit "A" and incorporated herein by this reference. By a series of assignments, S3G is now the assignee of the entire right, title and interest in and to the '571 patent, including all rights to enforce the '571 patent and to recover for infringement. The '571 patent is valid and in force.

14. United States Patent No. 9,304,758 (the "'758 patent") entitled "Modification of Terminal and Service Provider Machines Using an Update Server Machine" was duly and legally issued on April 5, 2016. A true and correct copy of the '758 patent is attached hereto as Exhibit

"B" and incorporated herein by this reference. S3G is the assignee of the entire right, title and interest in and to the '758 patent, including all rights to enforce the '758 patent and to recover for infringement. The '758 patent is valid and in force.

15. United States Patent No. 10,387,140 (the "'140 patent") entitled "Modification of Terminal and Service Provider Machines Using an Update Server Machine" was duly and legally issued on August 20, 2019. A true and correct copy of the '140 patent is attached hereto as Exhibit "C" and incorporated herein by this reference. S3G is the assignee of the entire right, title and interest in and to the '140 patent, including all rights to enforce the '140 patent and to recover for infringement. The '140 patent is valid and in force.

The Technical Problems Addressed by the Patents-in-Suit

16. The '571 Patent, '758 Patent and the '140 Patent (collectively, the "Asserted Patents") disclose that at the time of the invention, often times, after a computerized system has been initially constructed, modifications may be required, either to improve the functionality of the system or to customize the system to meet new requirements. Typically, a software application includes computer-executable instructions that are not able to be edited or modified directly by a developer. Instead, the developer may make the required changes by either creating or editing original source code. Once edited or modified, the updated source code must then be recompiled or translated into an updated set of computer-executable instructions. These updated set of computer-executable instructions often includes a relatively large amount of information, which must then be distributed to the hardware devices in the system as an updated software application. '571 Patent, Col. 2:1-17.[2]

[2] Unless otherwise indicated, all citations are to the '571 Patent. The '758 and '140 Patents are continuations and continuation in part of the '571 Patent, respectively, and also include the portions of the specification cited herein.

17. At the time of the invention, in many situations it may be difficult to distribute a newly compiled version of the updated software application to all of the devices in the system. This is particularly true if the system is distributed over a large geographic area making it difficult to locate each system device and transport it to a central location where the newly updated computer-executable instructions can be uploaded. This lack of physical access to the devices often means that the new software application cannot be uploaded using a traditional wired connection (*e.g.*, an interface cable). Col. 2:18-26.

18. The Asserted Patents further explain that using a wireless communications network to upload the updated computer-executable instructions also has several significant drawbacks. First, the size of the updated computer-executable instructions may exceed the transmission capabilities of the communications network, *i.e.*, the size of the file is too large to be uploaded. Second, even if the updated computer-executable instructions can be uploaded and transmitted over the wireless network, it may take an excessive amount of time. Third, these problems are exacerbated if (1) the computer system includes a large number of devices that must be updated with the modified computer-executable instructions and (2) the devices contain different versions of the application or multiple applications need updates. Col. 2:26-52.

The Claimed Solution to the Technical Problems

19. The Asserted Patents are directed to a technological solution, *i.e.*, improving the way computers operate. In particular, the Asserted Patents claim a specific computerized system able to provide efficient modification of a specific type of software applications that are distributed across a network of remote devices. Col. 2:53-55. As an example, FIG. 1 (below) discloses, and the Asserted Patents claim, a unique and very specific type of computer system structure involving three entities: a service provider machine 110, a terminal machine 120 and an

update server machine 102. Within this specific system, a terminal machine 120 and a service provider machine 110 communicate via applications running on the machines (as depicted by the vertical arrows in the figure).

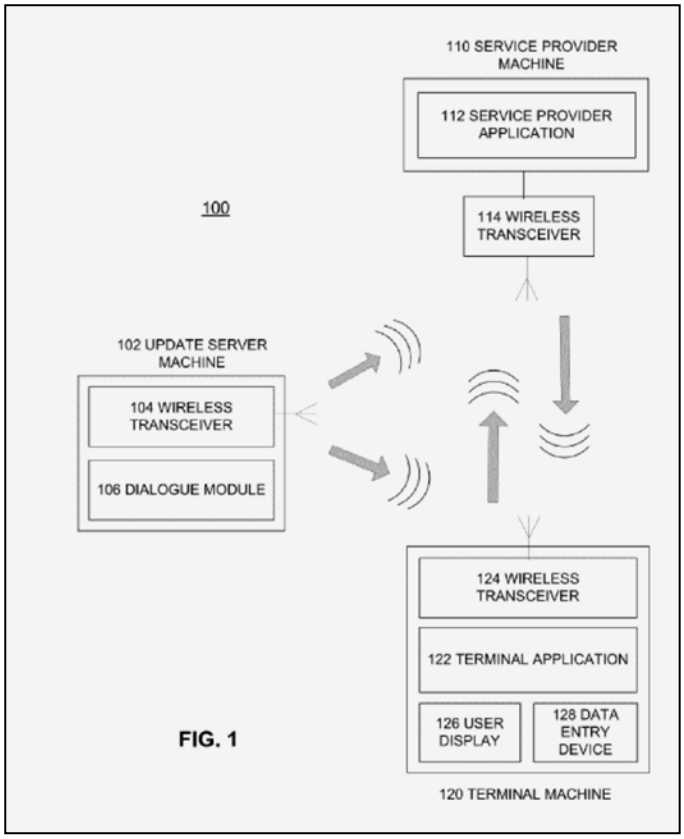

FIG. 1

20. As shown below in FIG. 2, the applications running on these machines have a very specific structure: namely, the terminal application 122 comprises first computer-executable instructions 224, which has been construed to mean "computer instructions that can be directly executed on a processor,"[3] and first code 222. Col. 7:40-45. The Asserted Patents expressly define that "code" is not just any generic software code; instead, the Asserted Patents teach a very specific structure for "code," clearly stating that "[t]he code represents at least some

[3] *See S3G Tech. LLC v. Unikey Techs., Inc.*, Civil Action No. 6:16-cv-400-RWS-KNM, Dkt. 74 [Report and Recommendation of United States Magistrate Judge], attached hereto as Exhibit D; *see also* Dkt. 91 [Order Adopting Rep. & Rec. of Mag. Judge], attached hereto as Exhibit E.

information that ***must be translated*** by the software application before it can be implemented on the machine processor." Col. 4:21-25 (emphasis added).[4] The terminal application conducts the terminal machine's portion of the dialogue with the service provider machine.

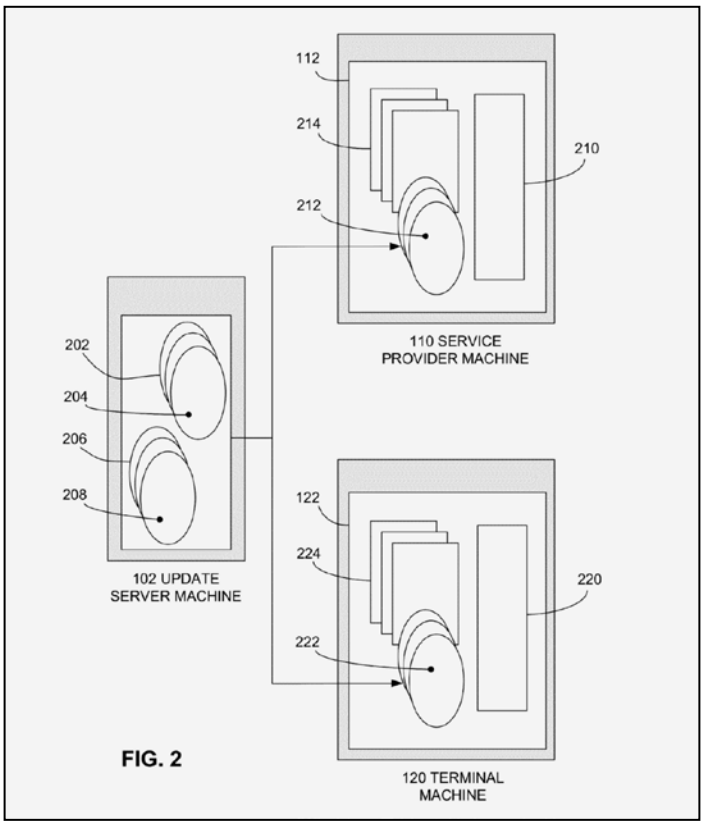

FIG. 2

21. In like fashion, as shown in FIG. 2, the service provider machine runs an application having a very specific structure: namely, the provider application 112 comprises second computer-executable instructions 214, which can be directly executed on a processor, and second code 212, which must be translated before it can be executed on a processor. The provider application conducts the service provider's portion of the dialogue with the terminal machine.

[4] Consistent with the specification, the term "code" has been construed to mean "information that must be translated before it can be executed on a processor." *See* Exhibit D at Appendix A.

22. FIGS. 1 and 2 also show that the computer system structure in the Asserted Patents is unique in having a third entity, an update server machine. The update server machine is able to communicate with both the terminal machine and the service provider machine (as depicted by the diagonal arrows in the FIG. 1). The update server machine also has a unique and very specific data structure for communicating with the terminal and service provider machines: namely, the update server machine sends one or more dialogue modules, which has been construed to mean "code or instructions related to a dialogue sequence."[5]

23. As part of the dialogue between the terminal machine and the service provider machine, the terminal machine is modified by receiving a terminal dialogue module. As noted, the dialogue module is a specific structure that contains information that must be translated by the software application before it can be implemented on the machine processor. After receiving the dialogue module, specific actions can be taken. For example, the dialogue module may replace existing terminal code already saved on the terminal machine or the terminal code may supplement other code previously saved on the terminal machine. Col. 8:44-52. These steps produce first updated code, which adapts the terminal application to display a further prompt for the terminal machine's portion of a modified dialogue sequence with the service provider machine. Significantly, when terminal and service provider applications are modified using a dialogue module it does not result in replacing the prior applications with entirely new applications. This is important because this system with its specific structures results in a number of technological benefits: namely, computing resource, improved network utilization, and design efficiencies. Col. 6:47-49; 14:43-48; FIGS. 8A-B.

[5] *Id.*

24. During litigation of the Asserted Patents, a Court also held that the "dialogue module" is a very specific type of structure:

> The recital [in the claims] of "sending a . . . dialogue module" demonstrates that the claim uses the term "module"' to refer to ***a particular type of structure rather than to any structure for performing a function***. Further, the specification is consistent with such an interpretation by disclosing that a "dialogue module" can contain code or other data and can be communicated:

Exhibit D at 12 (emphasis added).

25. The Court also held that the claimed three entity system of the Asserted Patents also is a particular structure. Specifically, this Court stated that "the surrounding claim language [of terminal machine] provides details regarding how the terminal machine interacts with other components . . . in a way that . . . inform[s] the structural character of [it] or otherwise impart[s] structure." *Id*. at 23. The Court held that "[s]ubstantially the same analysis" applies to service provider and update server machines. *Id.* at 26, 29.

26. Among other features, the Asserted Patents thus claim an unconventional and inventive solution to the problem of transmitting large executable files required to replace applications running on remote devices, which previously required networks having massive bandwidth. Specifically, the Asserted Patent disclose the unconventional and inventive system and method of transmitting dialogue modules to terminal and service provider machines to modify and/or update software applications running on those machines. The software applications also are unconventional and inventive in utilizing both computer-executable instructions, which can be directly executed on a processor, and code, which must be translated before it can be executed on a processor, to solve this technological problem.

27. The use of "dialogue modules" containing "code" also results in various technical benefits. For example, as the Asserted Patents explain, transmitting an entire software application may represent a "large amount of information" that may not be feasible to transmit

due to bandwidth limitations on data transfer over the network. Col. 2:31-32. And, even if an upload of the entire modified application is possible, it may take an unacceptable amount of time due to the slow transfer rate of a wireless network." Col. 2:40-44. By comparison, the Asserted Patents disclose that, "[i]n a preferred embodiment, the dialogue module is less than 1 Mb to facilitate communication over a network with limited data transfer capacity." Col. 6:47-49. Therefore, the use of the "dialogue modules" reduces network bandwidth utilization, thereby allowing efficient modification of applications running on remote devices on a network. Another benefit of using "dialogue modules" is that it enables the use of design tools that facilitate their development and modification. Col. 14:43-48, FIGS. 8A, 8B. These tools thus enable and improve the efficiency of modifying applications.

28. During the prosecution of the Asserted Patents, the United States Patent Examiner allowed the claims because, among other things, this unique structure described and claimed in the Asserted Patents was not known and would not have been obvious:

> As Applicants pointed out in the Remarks, **the prior art of record do not disclose and/or fairly suggest at least claimed limitations recited** in such manners in independent claim 1 " ... an update server machine comprising a processor and operable for sending a terminal dialogue module to the terminal machine and a provider dialogue module to the service provider machine to allow the terminal machine and the service provider machine to conduct a dialogue sequence with each other [....wherein the terminal application comprises a first set of computer-executable instructions and a first set of code, wherein the first set of computer-executable instructions are able to execute directly on a terminal processor of the terminal machine, and wherein the first set of code is not able to execute directly on the terminal processor; ... wherein the first set of updated code adapts the terminal application to use a second sequence of prompts and a second sequence of data entries for the terminal machine's portion of a modified dialogue sequence with the service provider machine...
>
> These **claimed limitations are not present in the prior art of record and would not have been obvious**, thus all pending claims are allowed.

Exhibit F ['571 FH, Notice of Allowability, dated July 11, 2013, at Examiner's Statement of Reasons for Allowance] (emphasis added).

FIRST CLAIM FOR RELIEF

Infringement of the ’571 patent

29. S3G refers to and incorporates herein by reference the preceding paragraphs.

30. Defendants, by the acts complained of herein, and by making, using, selling, offering for sale, and/or importing in the United States, including in the Western District of Texas, instrumentalities embodying the invention, have in the past, do now, and continue to infringe the ’571 patent directly, contributorily and/or by inducement, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271.

31. At least since the filing of this complaint, Defendants have had actual knowledge of the ’571 patent.

32. On information and belief, Defendants have directly infringed one or more claims of the ’571 patent by making, using, importing, supplying, selling, or offering for sale the Accused Instrumentalities. By doing so, Defendants have directly infringed at least claim 2 of the ’571 patent.

33. Defendants provide a system for modifying a terminal machine and a service provider machine ("Accused system").

34. The Accused system includes an update server machine (*e.g.*, a smart phone or other computing device accessing the Defendants system) comprising a processor and operable for sending a terminal dialogue module (*e.g.*, terminal machine portion of a Trip Board) to the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendants app) and a provider dialogue module (*e.g.*, service provider machine portion of a Trip Board) to the service provider machine (*e.g.*, Defendants server) to allow the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the

Defendants app) and the service provider machine (*e.g.*, Defendants server) to conduct a dialogue sequence (*e.g.*, series of prompts and corresponding user data entries) with each other. The Accused system includes an update server machine (*e.g.*, a smart phone or other computing device accessing the Defendants system) comprising a processor. Alternatively, the Accused system includes an update server machine (*e.g.*, Defendants server) comprising a processor. One of ordinary skill would understand that smart phones or other computing devices necessarily comprise a processor, *e.g.*, to run the operating system, applications, etc. The Accused system includes an update server machine (*e.g.*, a smart phone or other computing device accessing the Accused system) that is operable for sending a terminal dialogue module (*e.g.*, terminal machine portion of a Trip Board) to the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendants app). Alternatively, the Accused system includes an update server machine (*e.g.*, Defendants server) that is operable for sending a terminal dialogue module (*e.g.*, terminal machine portion of a Trip Board) to the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendants app (terminal application)). The Accused system can be accessed from any device, including PCs, Android and iOS tablets, and Android and iOS phones. Therefore, these and other devices that can access the Accused system constitute update server machine, which is a computing device capable of sending one or more dialogue modules. For example, without limitation, a dialogue module is sent from a user's device accessing the Accused system to the Defendants server. The Defendants server then sends information to the Defendants app. On information and belief, the format of the information that is sent from the Defendants server to the Defendants app is, for example, JSON. The Accused system includes an update server machine (*e.g.*, a smart phone or other computing device accessing the Accused system) that is operable for sending a provider

dialogue module (*e.g.*, service provider machine portion of a Trip Board) to the service provider machine (*e.g.*, Defendants server). This is done using, for example, HTTP. For example, without limitation, after receiving the respective dialogue module, users can view Trip Boards. For example, without limitation, after receiving a respective dialogue module, a user will be prompted to edit, delete or share one or more Trip Boards. In response to these prompts, the user selects the appropriate data entry (*e.g.*, button). Thereafter, the user is provided additional prompts. Alternatively, the Accused system includes an update server machine (*e.g.*, Defendants server) that is operable for sending a provider dialogue module (*e.g.*, service provider machine portion of a Trip Board) to the service provider machine (*e.g.*, Defendants server).

35. The Accused system includes a terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendants app) that is configured to run a terminal application (*e.g.*, Defendants app for Android) that conducts the terminal machine's portion of the dialogue sequence (*e.g.*, series of prompts and corresponding user data entries) with the service provider machine (*e.g.*, Defendants server). The terminal application conducts the terminal machine's portion of the dialogue sequence with the service provider machine because, for example, without limitation, using the Defendants app, a user is able to review, edit and delete a Trip Board. The user is prompted to edit or update the Trip Board. This information is necessarily communicated to the Defendants server because, for example, without limitation, it must be stored and available to the user, including in the future or to retrieve the latest list of homes within that Trip Board. The terminal application is operable for displaying a prompt in a first sequence of prompts and accepting a user data entry in an associated first sequence of user data entries as explained herein, including above. The Accused system includes a terminal application (*e.g.*, Defendants app for Android), and one of ordinary skill would

understand that the Defendants app for Android comprises a first set of computer executable instructions and a first set of code, wherein the first set of computer-executable instructions are able to execute directly on a terminal processor of the terminal machine, and wherein the first set of code is not able to execute directly on the terminal processor. For example, without limitation, the Android Runtime (ART) comprises computer executable instructions that are able to execute directly on a terminal processor, while the app's bytecode is not able to execute directly on the terminal processor.

36. The Accused system includes a service provider machine (*e.g.*, Defendants server) that is configured to run a provider application (*e.g.*, Defendants server application) that conducts the service provider machine's portion of the dialogue sequence (*e.g.*, series of prompts and corresponding user data entries) with the terminal machine. As explained herein, user data entries (corresponding to the prompts) are communicated from the terminal application on the terminal machine to the provider application on the service provider machine. The Accused system includes a provider application (*e.g.*, Defendants server application, which, upon information and belief, is, for example, a Java application), and one of ordinary skill would understand that the Defendants server application comprises a second set of computer-executable instructions and a second set of code, wherein the second set of computer-executable instructions are able to execute directly on a provider processor of the service provider machine, and wherein the second set of code is not able to execute directly on the provider processor. For example, without limitation, the Java platform, including the JVM engine, that manages the execution of the Java program comprises computer-executable instructions which are able to execute directly on a provider processor, while the Java program is not able to execute directly on the provider processor.

37. In the Accused system, the terminal dialogue module (*e.g.*, terminal machine portion of a Trip Board) modifies the first set of code to produce a first set of updated code wherein the first set of updated code adapts the terminal application to use a second sequence of prompts and a second sequence of data entries for the terminal machine's portion of a modified dialogue sequence (*e.g.*, series of prompts and corresponding user data entries) with the service provider machine. As explained above, when a user inputs a Trip Board using the Accused system, information is communicated to the Defendants app (terminal application on the terminal machine). As also explained above, without limitation, the dialogue sequence (*e.g.*, series of prompts and corresponding user data entries) is evidenced in the one or more prompts associated with a Trip Board. In response, the user selects the appropriate data entry (*e.g.*, button), e.g., edit, delete, etc. Additional prompts and associated data entries include, for example, without limitation, selecting one or more home results and their associated information, including the ability to make a booking. At least a portion of the information is necessarily stored on the terminal machine because, for example, without limitation, the Trip Board is necessarily available, even later, on the user's device and allows the user to select a Trip Board, even at a later time. Therefore, the terminal dialogue module modifies the first set of code to produce a first set of updated code. The first set of updated code adapts the terminal application to use a second sequence of prompts and a second sequence of data entries for the terminal machine's portion of a modified dialogue sequence with the service provider machine. For example, without limitation, as already explained herein, a second sequence of prompts and a second sequence of data entries is demonstrated when new Trip Boards are added or updated, and they appear on the user's device. This necessarily represents a modified dialogue sequence with the service provider machine. In the Accused system, the provider dialogue module (*e.g.*, service

provider machine portion of a Trip Board) modifies the second set of code to produce a second set of updated code wherein the second set of updated code adapts the provider application to use a second sequence of prompts and a second sequence of data entries for the service provider machine's portion of the modified dialogue sequence with the terminal machine. As discussed herein, when a user inputs a Trip Board using their device (*e.g.*, PC or mobile device), information is communicated to the Defendants server application (provider application on the service provider machine). As also explained herein, the dialogue sequence (*e.g.*, series of prompts and corresponding user data entries) is evidenced by the one or more prompts and the corresponding user data entry (*e.g.*, button). Additional prompts and data entries include, for example, without limitation, editing and deleting a Trip Board. At least a portion of the information is necessarily stored on the provider machine because, for example, without limitation, Trip Board is available on the Defendants server as well as on different devices, including at a later time. Therefore, the provider dialogue module modifies the second set of code to produce a second set of updated code. The second set of updated code adapts the provider application to use the second sequence of prompts and the second sequence of data entries for the service provider machine's portion of the modified dialogue sequence with the terminal machine. For example, without limitation, as already explained herein, a second sequence of prompts and a second sequence of data entries is demonstrated when new Trip Boards are added or updated, and they appear on a user's device. In the Accused system, the terminal dialogue module (*e.g.*, terminal machine portion of a Trip Board) does not modify the first set of computer-executable instructions, as is readily understood by one of ordinary skill. For example, without limitation, as already explained herein, ART comprises the first set of computer-executable instructions and is not modified by the terminal dialogue module. In the

Accused system, the provider dialogue module (*e.g.*, service provider machine portion of a Trip Board) does not modify the second set of computer-executable instructions, as is readily understood by one of ordinary skill. For example, without limitation, as already explained herein, the Java Platform, including the JVM engine, comprises the second set of computer-executable instructions and is not modified by the provider dialogue module.

38. On information and belief, at least since the filing of this Complaint, Defendants has knowingly and actively induced the infringement of one or more of the ’571 patent claims by, *inter alia*, marketing, promoting, and offering for use the Accused Instrumentalities, knowingly and intending that the use of such instrumentalities by Defendants customers and by users infringes the ’571 patent. For example, Defendants intend to induce such infringement by, among other things, promoting users to download and run its Defendants app knowing that the use of its application on a user’s portable device or smart phone in connection with supporting systems such as its server(s) infringes one or more claims of the ’571 patent.

39. On information and belief, at least since the filing of this Complaint, Defendants have contributed to the infringement of the ’571 patent by, *inter alia*, marketing and promoting the Accused Instrumentalities within the United States. The Accused Instrumentalities are not staple articles or commodities of commerce suitable for substantial non-infringing use and are known by Defendants to be especially made or especially adapted to the infringe the ’571 patent. As a result, Defendants’ Accused Instrumentalities have been used by its customers and by users to infringe the ’571 patent. Defendants continue to engage in acts of contributory infringement of the ’571 patent.

40. By reason of the acts of Defendants alleged herein, S3G has suffered damage in an amount to be proved at trial.

41. Defendants threaten to continue to engage in the acts complained of herein and, unless restrained and enjoined, will continue to do so, all to S3G's irreparable injury. It would be difficult to ascertain the amount of compensation that would afford S3G adequate relief for such future and continuing acts, and a multiplicity of judicial proceedings would be required. S3G does not have an adequate remedy at law to compensate it for the injuries threatened.

SECOND CLAIM FOR RELIEF

Infringement of the '758 patent

42. S3G refers to and incorporates herein by reference the preceding paragraphs.

43. Defendants, by the acts complained of herein, and by making, using, selling, offering for sale, and/or importing in the United States, including in the Western District of Texas, instrumentalities embodying the invention, have in the past, do now, and continue to infringe the '758 patent contributorily and/or by inducement, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271.

44. At least since the filing of this complaint, Defendants have had actual knowledge of the '758 patent.

45. On information and belief, Defendants have directly infringed one or more claims of the '758 patent by making, using, importing, supplying, selling, or offering for sale the Accused Instrumentalities. By doing so, Defendants have directly infringed at least claim 1 of the '758 patent.

46. The Accused system performs a method of conducting a dialogue between a terminal machine and a service provider machine.

47. The Accused system performs a method comprising displaying a first prompt on a terminal display of a terminal machine (*e.g.*, an Android smart phone or other Android

computing device running the Defendants app) by running a terminal application (*e.g.*, Defendants app for Android), the terminal application comprising first computer-executable instructions and first code that conduct the terminal machine's portion of the dialogue. The terminal application displays a first prompt and accepts a first data entry at the terminal machine, wherein the first data entry is associated with the first prompt. For example, without limitation, using the Defendants app, a user is able to access Trip Boards, and the user is prompted to review homes associated with Trip Boards. Additionally, a user is prompted to edit, delete or share Trip Boards. This information is necessarily communicated to the Defendants server because, for example, without limitation, it must be stored and available to the user in the future. One of ordinary skill would understand that the terminal application (*e.g.*, Defendants app for Android) comprises first computer executable instructions and first code. For example, without limitation, the Android Runtime (ART) comprises computer executable instructions, while the app's bytecode comprises code.

48. As explained above, the Accused system performs a method comprising accepting a first data entry at the terminal machine (e.g., an Android smart phone or other Android computing device running the Defendants app), wherein the first data entry is associated with the first prompt.

49. The Accused system performs a method comprising communicating information from the terminal machine (e.g., an Android smart phone or other Android computing device running the Defendants app) to the service provider machine (e.g., Defendants server), the information associated with the first data entry, the service provider machine (e.g., Defendants server) using a provider application (e.g., Defendants server application), the provider application comprising second computer-executable instructions and second code that conduct

the service provider machine's portion of the dialogue. In the Accused system, information from the terminal machine is communicated to the service provider machine, the information associated with the first data entry. For example, without limitation, using the Defendants app, a user is able to select, delete or edit a Trip Board. This information is necessarily communicated to the Defendants server because, for example, without limitation, it must be stored and available to the user in the future. The provider application (e.g., Defendants server application, which, upon information and belief, is, for example, a Java application) runs on the service provider machine (e.g., Defendants server), and one of ordinary skill would understand that the Defendants server application comprises second computer-executable instructions and second code. For example, without limitation, the Java platform, including the JVM engine that manages the execution of the Java program comprises computer-executable instructions, while the Java program comprises code.

50. The Accused system performs a method comprising receiving, at the terminal machine (e.g., an Android smart phone or other Android computing device running the Defendants app), a terminal dialogue module (e.g., terminal machine portion of a Trip Board) that replaces at least a portion of the first code to produce first updated code, wherein the first updated code adapts the terminal application (e.g., Defendants app for Android) to display a second prompt for the terminal machine's portion of a modified dialogue sequence (e.g., series of prompts and corresponding user data entries) with the service provider machine, wherein at least one of the first code, second code, and first updated code comprise Java Byte code. For example, when a user inputs a Trip Board using the Defendants system, information is communicated to the Defendants app (terminal application on the terminal machine). The format of the information that is sent from the Defendants server to the Defendants app is, based on

information and belief, for example, JSON. At least a portion of the information is necessarily stored on the terminal machine because, for example, without limitation, the Trip Board appears on the user's Android device and allows the user to select it even at a later time. Therefore, the terminal dialogue module replaces at least a portion of the first code to produce first updated code. The dialogue sequence (e.g., series of prompts and corresponding user data entries) is evidenced in the one or more prompts associated with a Trip Board and the corresponding user data entry of selecting, editing and deleting a Trip Board (e.g., button). Additional prompts and associated data entries include, for example, without limitation, selecting homes within a Trip Board, making bookings, and other associated prompts. At least one of the first code, second code, and first updated code comprise Java Byte code. As explained above, the terminal application is identified as, for example, without limitation, the Defendants app for Android, and the first code is, for example, without limitation, the app's bytecode. One of ordinary skill would understand this to comprise Java Byte code.

51. On information and belief, at least since the filing of this Complaint, Defendants have knowingly and actively induced the infringement of one or more of the '758 patent claims by, *inter alia*, marketing, promoting, and offering for use the Accused Instrumentalities, knowingly and intending that the use of such instrumentalities by Defendant customers and by users infringes the '758 patent. For example, Defendants intend to induce such infringement by, among other things, promoting users to download and run the Defendants app knowing that the use of its application on a user's portable device or smart phone in connection with supporting systems such as its server(s) infringes one or more claims of the '758 patent.

52. On information and belief, at least since the filing of this Complaint, Defendants have contributed to the infringement of the '758 patent by, *inter alia*, marketing and promoting

the Accused Instrumentalities within the United States. The Accused Instrumentalities are not staple articles or commodities of commerce suitable for substantial non-infringing use and are known by Defendants to be especially made or especially adapted to the infringe the '758 patent. As a result, Defendants' Accused Instrumentalities have been used by its customers and by users to infringe the '758 patent. Defendants continue to engage in acts of contributory infringement of the '758 patent.

53. By reason of the acts of Defendants alleged herein, S3G has suffered damage in an amount to be proved at trial.

54. Defendants threaten to continue to engage in the acts complained of herein and, unless restrained and enjoined, will continue to do so, all to S3G's irreparable injury. It would be difficult to ascertain the amount of compensation that would afford S3G adequate relief for such future and continuing acts, and a multiplicity of judicial proceedings would be required. S3G does not have an adequate remedy at law to compensate it for the injuries threatened.

THIRD CLAIM FOR RELIEF

Infringement of the '140 patent

55. S3G refers to and incorporates herein by reference the preceding paragraphs.

56. Defendants, by the acts complained of herein, and by making, using, selling, offering for sale, and/or importing in the United States, including in the Western District of Texas, instrumentalities embodying the invention, have in the past, do now, and continue to infringe the '140 patent contributorily and/or by inducement, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271.

57. At least since the filing of this complaint, Defendants have had actual knowledge of the '140 patent.

58. On information and belief, Defendants have directly infringed one or more claims of the ’140 patent by making, using, importing, supplying, selling, or offering for sale the Accused Instrumentalities. By doing so, Defendants have directly infringed at least claim 1 of the ’140 patent.

59. The Accused system performs a method of conducting a dialogue sequence between a terminal machine and a service provider machine.

60. The Accused system performs a method comprising displaying a first prompt on a terminal display of the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) by running a terminal application (*e.g.*, Defendant app for Android), the terminal application comprising first computer-executable instructions and first code that conduct the terminal machine's portion of the dialogue sequence between the terminal machine and the service provider machine. The terminal application displays a first prompt and accepts a first data entry at the terminal machine, wherein the first data entry is associated with the first prompt. For example, without limitation, using the Defendant app, a user is able to review, edit and delete a Trip Board. The user is prompted to edit or update the Trip Board. This information is necessarily communicated to the Defendant server because, for example, without limitation, it must be stored and available to the user in the future. One of ordinary skill would understand that the terminal application (*e.g.*, Defendant app for Android) comprises first computer executable instructions and first code. For example, without limitation, the Android Runtime (ART) comprises computer executable instructions, while the app’s bytecode comprises code.

61. As explained above, the Accused system performs a method comprising receiving entry of first data at the first prompt.

62. The Accused system performs a method comprising communicating information associated with the first data from the terminal machine (*e.g.,* an Android smart phone or other Android computing device running the Defendant app) to a provider application (*e.g.,* Defendant server application) at the service provider machine (*e.g.,* Defendant server), the provider application (*e.g.,* Defendant server application) comprising second computer-executable instructions and second code that conduct the service provider machine's portion of the dialogue sequence, and wherein the provider application is capable of sending an authorization code to the terminal machine. In the accused system, information associated with the first data is communicated from the terminal machine to a provider application at the service provider machine. For example, without limitation, using the Defendant app, a user is able to review, edit and delete a Trip Board. This information is necessarily communicated to the Defendant server application on the Defendant server because, for example, without limitation, it must be stored and available to the user in the future. The provider application (*e.g.,* Defendant server application, which, upon information and belief, is a Java application) runs on the service provider machine (*e.g.,* Defendant server), and one of ordinary skill would understand that the Defendant server application comprises second computer-executable instructions and second code. For example, without limitation, the Java platform, including the JVM engine, comprises computer-executable instructions, while the Java application comprises code. In the accused system, the provider application is capable of sending an authorization code to the terminal machine, for example, without limitation, by authorizing logging into the Defendant system.

63. The Accused system performs a method storing at least a portion of the information associated with the first data in memory for analysis. For example, the service provider application stores for analysis at least a portion of the information associated with the

first data, *e.g.*, a booking for a Trip Board house, so that analysis may be performed, e.g., identifying similar properties.

64. The Accused system performs a method comprising receiving, at the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app), third code (*e.g.*, terminal machine portion of a Trip Board) that modifies at least a portion of the first code to produce first updated code, wherein the first updated code adapts the terminal application (*e.g.*, Defendant app for Android) to conduct a modified dialogue sequence (*e.g.*, series of prompts and corresponding user data entries) with the service provider machine. For example, without limitation, when a user inputs a Trip Board using the Defendant system, information is communicated to the user's Defendant app (terminal application on the terminal machine). The format of the information that is sent from the Defendant server to the user's Defendant app is, for example, JSON. At least a portion of the information is necessarily stored on the terminal machine because, for example, without limitation, the Trip Board appears on the user's device and allows the user to select it even at a later time. Therefore, the terminal dialogue module modifies at least a portion of the first code to produce first updated code. The dialogue sequence (*e.g.*, series of prompts and corresponding user data entries) is evidenced in the one or more Trip Board and the corresponding user data entry of selecting a desired Trip Board (*e.g.*, button). Additional prompts include reviewing homes within Trip Boards, editing, deleting and inviting users to Trip Boards. For example, without limitation, the modified dialogue sequence is evidenced by the ability to access *new* Trip Boards or homes within Trip Boards.

65. The Accused system performs a method comprising receiving the third code is performed in response to the terminal machine satisfying a trigger condition. For example,

without limitation, receiving the third code is performed in response to the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) satisfying a trigger condition (*e.g.*, refreshing a screen).

66. The Accused system performs a method comprising the third code is received from an update server machine that is separate and distinct from the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) and the service provider machine (*e.g.*, Defendant server). For example, without limitation, as explained immediately above, the machine that is used by a user to input a Trip Board using the Defendant system would be separate and distinct from that terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) and the service provider machine (*e.g.*, Defendant server).

67. The Accused system performs a method comprising the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) and the service provider machine (*e.g.*, Defendant server) include different types of processors, whereby the first computer-executable instructions are not able to be executed on the service provider machine and the second computer-executable instructions are not able to be executed on the terminal machine. For example, without limitation, ARM-based processors are oftentimes used for mobile devices. (*See, e.g.*, http://www.arm.com/markets/mobile/, "The market defining ARM® Cortex®-A 32-bit and 64-bit processors are at the heart of the mobile application processors."). Alternative, x86 processors are oftentimes used for desktop and server machines. One of ordinary skill would understand that the architectures of these two processors are different, and that the first computer-executable instructions are not able to be executed on the

service provider machine and the second computer-executable instructions are not able to be executed on the terminal machine.

68. The Accused system performs a method comprising the first and second computer-executable instructions are fully compiled. As identified above, one of ordinary skill would understand that the first and second computer-executable instructions are fully compiled.

69. The Accused system performs a method comprising the terminal machine is distinct from the service provider machine. As identified above, one of ordinary skill would understand that the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) is distinct from the service provider machine (*e.g.*, Defendant server).

70. On information and belief, at least since the filing of this Complaint, Defendants have knowingly and actively induced the infringement of one or more of the ’140 patent claims by, *inter alia*, marketing, promoting, and offering for use the Accused Instrumentalities, knowingly and intending that the use of such instrumentalities by Defendant customers and by users infringes the ’140 patent. For example, Defendants intend to induce such infringement by, among other things, promoting users to download and run the Defendants app knowing that the use of its application on a user’s portable device or smart phone in connection with supporting systems such as its server(s) infringes one or more claims of the ’140 patent.

71. On information and belief, at least since the filing of this Complaint, Defendants have contributed to the infringement of the ’140 patent by, *inter alia*, marketing and promoting the Accused Instrumentalities within the United States. The Accused Instrumentalities are not staple articles or commodities of commerce suitable for substantial non-infringing use and are known by Defendants to be especially made or especially adapted to the infringe the ’140 patent.

As a result, Defendants' Accused Instrumentalities have been used by its customers and by users to infringe the '140 patent. Defendants continue to engage in acts of contributory infringement of the '140 patent.

72. By reason of the acts of Defendants alleged herein, S3G has suffered damage in an amount to be proved at trial.

73. Defendants threaten to continue to engage in the acts complained of herein and, unless restrained and enjoined, will continue to do so, all to S3G's irreparable injury. It would be difficult to ascertain the amount of compensation that would afford S3G adequate relief for such future and continuing acts, and a multiplicity of judicial proceedings would be required. S3G does not have an adequate remedy at law to compensate it for the injuries threatened.

JURY DEMAND

74. S3G demands a jury trial on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, S3G prays for relief as follows:

A. For an order finding that the '571, '758, and '140 Patents are valid and enforceable;

B. For an order finding that Defendants have infringed the '571, '758, and '140 Patents directly, contributorily and/or by inducement, in violation of 35 U.S.C. § 271;

C. For an order finding that Defendants' infringement is willful;

D. For an order temporarily, preliminarily and permanently enjoining Defendants, their officers, directors, agents, servants, affiliates, employees, subsidiaries, divisions, branches, parents, attorneys, representatives, privies, and all others acting in concert or participation with

any of them, from infringing the '571, '758, and '140 Patents directly, contributorily and/or by inducement, in violation of 35 U.S.C. § 271;

E. For an order directing Defendants to file with the Court, and serve upon S3G's counsel, within thirty (30) days after entry of the order of injunction, a report setting forth the manner and form in which it has complied with the injunction;

F. For an order awarding S3G general and/or specific damages adequate to compensate S3G for the infringement by Defendants, including a reasonable royalty and/or lost profits, in amounts to be fixed by the Court in accordance with proof, including enhanced and/or exemplary damages, as appropriate, as well as all of the profits or gains of any kind made by Defendants from their acts of patent infringement;

G. For an order awarding S3G pre-judgment interest and post-judgment interest at the maximum rate allowed by law;

H. For an order requiring an accounting of the damages to which S3G is found to be entitled;

I. For an order declaring this to be an exceptional case pursuant to 35 U.S.C. § 285 and awarding S3G its attorneys' fees;

J. For an order awarding S3G its costs of court; and

K. For an order awarding S3G such other and further relief as the Court deems just and proper.

DATED: June 24, 2020.

Respectfully Submitted,

By: */s/ Charles Ainsworth*

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