

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

S3G TECHNOLOGY LLC,

Plaintiff,

v.

CRACKER BARREL OLD COUNTRY  
STORE, INC.,

Defendant.

Case No. 2:21-cv-250

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff S3G Technology LLC (“S3G”) alleges as follows for its complaint against Defendant Cracker Barrel Old Country Store, Inc. (“Defendant” or “Cracker Barrel”):

**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 Defendant pursuant to due process and/or the Texas Long Arm Statute, due at least to Defendant’s 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, Defendant is subject to personal jurisdiction in this judicial district, Defendant has a regular and established place of business in Texas and in this judicial district, Defendant has purposely transacted business involving the use of the accused instrumentalities 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 that 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 Cracker Barrel Old Country Store, Inc. is a corporation organized and existing under the laws of the State of Tennessee, headquartered at 305 Hartmann Drive, Lebanon, Tennessee 37087, and having numerous places of business in this judicial district. Defendant is in the business of *inter alia* providing restaurant services and gift stores with a Southern country theme. S3G is further informed and believes, and on that basis alleges, that Cracker Barrel derives a significant portion of its revenue from the promotion and/or sale of its products and services through the use of its mobile application for devices running the Android operating system,<sup>1</sup> the mobile applications for iOS,<sup>2</sup> (collectively, “Defendant app”), corresponding applications running on servers, and supporting system(s), server(s), and software (along with the Defendant App collectively the “Accused Instrumentalities”).

8. S3G is informed and believes, and on that basis alleges, that, at all times relevant hereto, Cracker Barrel has conducted and continues to conduct business, including the manufacture, distribution, promotion, and/or the use of the Accused Instrumentalities to offer for sale and sell its products and services in this Judicial District. On information and belief, Cracker Barrel does business itself, or through its subsidiaries, and affiliates in the State of Texas and the Eastern District of Texas.

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<sup>1</sup> <https://play.google.com/store/apps/details?id=com.crackerbarrel.app>

<sup>2</sup> <https://apps.apple.com/us/app/cracker-barrel/id390165371>

**PATENTS**

9. United States Patent No. 9,081,897 (the “’897 patent”) entitled “Modification of Terminal and Service Provider Machines Using an Update Server Machine” was duly and legally issued on July 14, 2015. A true and correct copy of the ’897 patent is attached hereto as Exhibit “A” and incorporated herein by this reference. By assignment, S3G is now the assignee of the entire right, title and interest in and to the ’897 patent, including all rights to enforce the ’897 patent and to recover for infringement. The ’897 patent is valid and in force.

10. United States Patent No. 9,940,124 (the “’124 patent”) entitled “Modification of Terminal and Service Provider Machines Using an Update Server Machine” was duly and legally issued on April 10, 2018. A true and correct copy of the ’124 patent is attached hereto as Exhibit “B” and incorporated herein by this reference. S3G is the owner of the entire right, title and interest in and to the ’124 patent, including all rights to enforce the ’124 patent and to recover for infringement. The ’124 patent is valid and in force.

11. United States Patent No. 10,261,774 (the “’774 patent”) entitled “Modification of Terminal and Service Provider Machines Using an Update Server Machine” was duly and legally issued on April 16, 2019. A true and correct copy of the ’774 patent is attached hereto as Exhibit “C” and incorporated herein by this reference. S3G is the owner of the entire right, title and interest in and to the ’774 patent, including all rights to enforce the ’774 patent and to recover for infringement. The ’774 patent is valid and in force.

**The Patents-in-Suit Are Directed to Solving the Technical Problem of Efficiently Modifying Software Applications on Remote Devices Over a Network**

12. The '897, '124, and '774 patents (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. '897 Patent, Col. 2:4-20.<sup>3</sup>

13. 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. 2:21-29.

14. 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

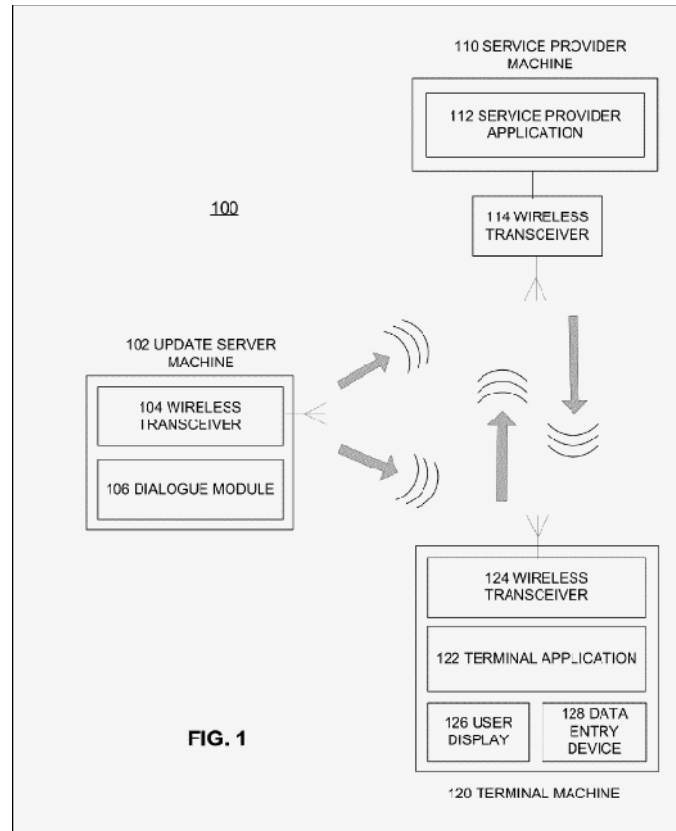
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<sup>3</sup> Unless otherwise indicated, all citations are to the '897 patent.

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. 2:30-55.

**The Claimed Inventions Provide A Technical Solution  
Incorporating Unique 3-Entity Systems and Data Structures  
That Permit Efficient Modification of Software Over a Network**

15. The claims of the Asserted Patents are directed to a specific, technological solution, *i.e.*, improving the way computers operate over a network. 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).



16. As shown in FIG. 1, an update server machine 102 communicates with service provider machines 110 and the terminal machines 120 to provide updated code or information that must be translated to modify their respective applications and allow them to interact using a modified dialogue sequence. The *Unikey* Court<sup>4</sup> found that this three entity system is more than machines with general purpose processors in light of the way the machines interact with other components in the claimed invention:

[H]ere the surrounding claim language provides details regarding how the “terminal machine” “interacts with other components . . . in a way that . . . inform[s] the structural character of the limitation-in-question or otherwise impart[s] structure . . . .”

<sup>4</sup> 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.

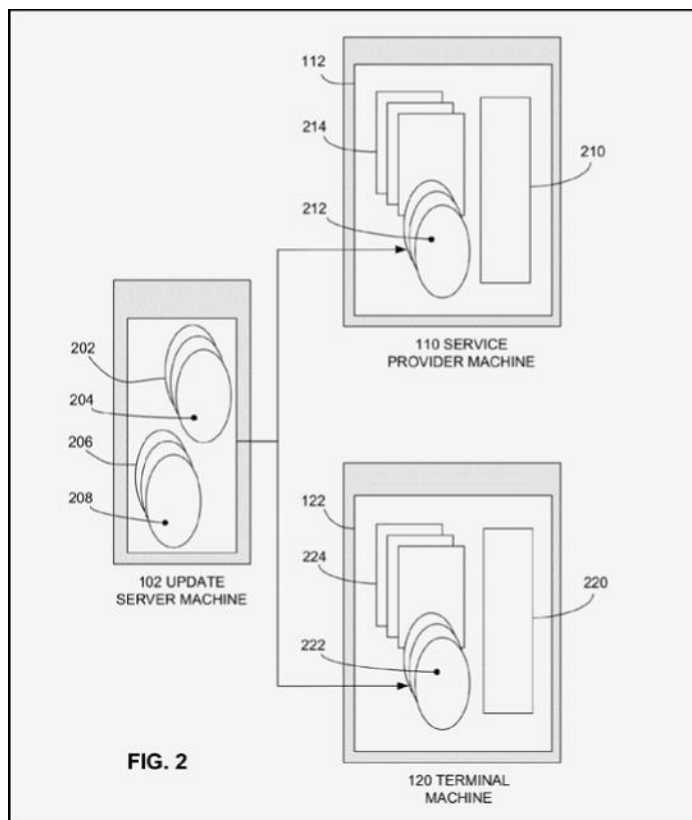
Ex. D at 23 (describing the claimed terminal machine), 26 (same as to service provider machine), 29 (same as to update server machine).

17. As shown below in FIG. 2, and recited in the claims, the applications running on these machines have a very specific data 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,” 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 information that must be translated by the software application before it can be implemented on the machine processor.” Col. 4:21-25 (emphasis added).<sup>5</sup> The terminal application conducts the terminal machine’s portion of the dialogue with the service provider machine. In like fashion, as shown in FIG. 2, and recited in the claims, the service provider machine runs an application having a very specific data 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.

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<sup>5</sup> 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.





18. FIGS. 1 and 2 also show that the computer system structure recited in the claims of 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.”<sup>6</sup>

19. The specification further disclose, and the claims recite, that 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

<sup>6</sup> Exhibit D at Appendix A.

data 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, conserving computing resources, improved network utilization, and design efficiencies when modifying the dialogue sequence between the terminal and service provider machines. Col. 6:47-49; 14:43-48; FIGS. 8A-B.

20. Claims reciting the use of a “dialogue module” are not abstract and have been construed to refer to a particular type of data structure rather than a generic or abstract structure. In particular, during litigation involving the Asserted Patents, a Court in this District held that the “dialogue module” is a very specific type of data 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).

21. During the prosecution of a parent to 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 in the art at the time 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, quoting Examiner's Statement of Reasons for Allowance] (emphasis added).<sup>7</sup>

22. Among other features, the claims of the Asserted Patents thus recite a specific (i.e., non-abstract), 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, and the claims recite, specific means and methods of transmitting dialogue modules to terminal and service provider machines to modify and/or update software applications running on those machines. As explained above, such means and methods are not abstract and constitute unconventional and inventive technical solutions to address the way computers function over a network. The software applications also are unique, unconventional and inventive in utilizing

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<sup>7</sup> The '571 Patent shares the same specification with the Asserted Patents.

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.

23. In addition, the claimed inventions recite additional features that individually, and in combination with the claimed systems and methods as a whole, are not well-known, routine or conventional and reflect inventive concepts. Non-limiting examples from the '897 patent include requiring that: the terminal processor and the provider processor are different types of processors, wherein the first set of computer-executable instructions are not able to be executed on the provider processor, and wherein the second set of computer-executable instructions are not able to be executed on the terminal processor (claim 2), updated code further adapts the terminal application to use a custom graphical user interface (claim 5), the terminal machine is configured to conduct a dialog sequence with the second terminal machine (claim 12), service provider machine is configured to communicate with a second service provider machine (claim 13), update server machine is configured to communicate with a second update server machine (claim 15), the terminal dialogue module is selected based on the identification of the user (claim 18), the terminal dialogue module is selected based on the input/output (I/O) capabilities of the terminal machine (claim 19), and one or more of the terminal dialogue module and the provider dialogue module are selected based on version identification information related to either the first set and the second set of code, respectively (claim 20).

**The Claimed Inventions Improve the Way Computers Function**

24. As set forth above and in the specifications, the claimed inventions are directed to a particularized unconventional and inventive solution to the technical problem of transmitting large executable files required to replace or modify applications running on remote devices over

a network, which previously required networks having massive bandwidth or an excessive amount of time. The use of unique data structures, the arrangement of the various components, and the way they interact 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. 2:30-35. 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. 2:43-47. 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. 6:51-53. By transmitting much smaller amounts of information using “dialogue modules,” which are significantly smaller because of their unique data structure, to modify the remote applications, the amount of information transmitted over a network is dramatically reduced, the time required is significantly shortened, and software can be updated using low bandwidth networks. Another benefit of using “dialogue modules” is that it enables the use of design tools that facilitate their development and modification. Col. 14:44-51, FIGS. 8A, B. Such tools also enable and improve the efficiency of modifying software applications distributed over a computer network.

### **FIRST CLAIM FOR RELIEF**

#### **Infringement of the '897 patent**

25. S3G refers to and incorporates herein by reference the preceding paragraphs.
26. Defendant, by the acts complained of herein, and by making and using instrumentalities embodying the invention, has in the past, does now, and continues to infringe

the '897 patent directly, contributorily, and/or by inducement, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271.

27. At least since the filing of this complaint, Defendant has had actual knowledge of the '897 patent. On information and belief, Defendant deliberately and willfully continues to infringe despite such knowledge of the '897 patent and notice of its infringement.

28. On information and belief, Defendant has directly infringed one or more claims of the '897 patent by making and using the Accused Instrumentalities. By doing so, Defendant has directly infringed at least claim 1 of the '897 patent.

29. Defendant provides a system for modifying one or more terminal machines and one or more service provider machines.

30. The accused system includes one or more update server machines (*e.g.*, a smart phone or other computing device accessing the Defendant system, *e.g.*, accessing the Defendant website) comprising a processor and operable for sending a terminal dialogue module (*e.g.*, terminal machine portion of a favorite order) to a respective terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) and a provider dialogue module (*e.g.*, service provider machine portion of a favorite order) to a respective service provider machine (*e.g.*, Defendant server) to allow the terminal machine and the service provider machine 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 Defendant system) comprising a processor. Alternatively, the accused system includes an update server machine (*e.g.*, Defendant 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 Defendant system) that is operable for sending a terminal dialogue module (*e.g.*, terminal machine portion of a favorite order) to the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app). Alternatively, the accused system includes an update server machine (*e.g.*, Defendant server) that is operable for sending a terminal dialogue module (*e.g.*, terminal machine portion of a favorite order) to the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app (terminal application)). The Defendant system can be accessed from any device, including PC, Android and iOS tablets, and Android and iOS phones. Therefore, these and other devices that can access the Defendant 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 Defendant system to the Defendant server. The Defendant server then sends information to an user's Defendant app. On information and belief, the format of the information that is sent from the Defendant server to the Defendant app is, for example, JSON. The accused system includes an update server machine (*e.g.*, a smart phone or other computing device accessing the Defendant system) that is operable for sending a provider dialogue module (*e.g.*, service provider machine portion of a favorite order) to the service provider machine (*e.g.*, Defendant server). This is done using, for example, HTTP. For example, without limitation, after receiving the respective dialogue module users can view favorite orders. For example, without limitation, after receiving a respective dialogue module, a user will be prompted with one or more favorite orders to, for example, edit, delete or order a favorite order. 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.*, Defendant server) that is operable for sending a provider dialogue module (*e.g.*, service provider machine portion of a favorite order) to the service provider machine (*e.g.*, Defendant server).

31. The accused system includes a terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) that is configured to run a terminal application (*e.g.*, Defendant 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.*, Defendant server), 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. 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 Defendant app, a user is able to access, edit, delete and order a favorite order. The user is prompted to edit or delete the favorite order, *e.g.*, by editing favorite order items. 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. 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.*, Defendant app for Android), and one of ordinary skill would understand that the Defendant 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.

32. The accused system includes a service provider machine (*e.g.*, Defendant server) that is configured to run a provider application (*e.g.*, Defendant 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, wherein the provider 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. The accused system includes a provider application (*e.g.*, Defendant server application, which, upon information and belief, is a .NET application), and one of ordinary skill would understand that the Defendant 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 CLR engine comprises computer-executable instructions which are able to execute directly on a provider processor, while the .NET application is not able to execute directly on the provider processor.

33. In the accused system, the terminal dialogue module (*e.g.*, terminal machine portion of a favorite order) modifies the first set of code to produce a first set of updated code, wherein the provider dialogue module (*e.g.*, service provider machine portion of a favorite order)

modifies the second set of code to produce a second set of updated code, wherein the terminal dialogue module does not modify the first set of computer-executable instructions and wherein the provider dialogue module does not modify the second set of computer-executable instructions, wherein the first set of updated code adapts the terminal application to use a modified dialogue sequence (*e.g.*, series of prompts and corresponding user data entries) with the service provider machine, and wherein the second set of updated code adapts the provider application to use the modified dialogue sequence with the terminal machine. As explained above, when a user inputs a favorite order using the Defendant system, information is communicated to the user's Defendant 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 favorite orders. In response, the user selects the appropriate data entry (*e.g.*, button). Additional prompts include deleting, editing and ordering a favorite order. At least a portion of the information is necessarily stored on the terminal machine because, for example, without limitation, the favorite order appears on the user's Android device and allows the user to select it even at a later time. Therefore, the provider dialogue module modifies the second set of code to produce a second 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 favorite orders are added, and they appear on the user's Android 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

favorite order) 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 favorite order using their device (*e.g.*, PC or mobile device), information is communicated to the Defendant 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 in the one or more favorite orders and the corresponding user data entry of selecting the appropriate favorite order (*e.g.*, button). Additional prompts include deleting, editing and ordering favorite orders. At least a portion of the information is necessarily stored on the provider machine because, for example, without limitation, the favorite order information is available on the Defendant 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 favorite orders are added, and they appear on the user's Android device. In the accused system, the terminal dialogue module (*e.g.*, terminal machine portion of a favorite order) 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 favorite order) 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 CLR engine comprises the second set of computer-executable instructions and is not modified by the provider dialogue module.

34. On information and belief, at least since the filing of this Complaint, Defendant has knowingly and actively induced the infringement of one or more of the '897 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 '897 patent. For example, Defendant intends to induce such infringement by, among other things, promoting users to download and run its mobile applications, including at least applications for devices running the Android operating system, knowing that the use of the its applications 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 '897 patent.

35. On information and belief, at least since the filing of this Complaint, Defendant has contributed to the infringement of the '897 patent by, *inter alia*, marketing and promoting products and services. Defendant has used and promoted within the United States the Accused Instrumentalities, which are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are known by Defendant to be especially made or especially adapted to the infringe the '897 patent. As a result, Defendant's Accused Instrumentalities have been used by its customers and by users to infringe the '897 patent. Defendant continues to engage in acts of contributory infringement of the '897 patent.

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

37. Defendant threatens 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 '124 patent**

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

39. Defendant, by the acts complained of herein, and by making and using instrumentalities embodying the invention, has in the past, does now, and continues to infringe the '124 patent directly, contributorily, and/or by inducement, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271.

40. At least since the filing of this complaint, Defendant has had actual knowledge of the '124 patent. On information and belief, Defendant deliberately and willfully continues to infringe despite such knowledge of the '124 patent and notice of its infringement.

41. On information and belief, Defendant has directly infringed one or more claims of the '124 patent by making and using the Accused Instrumentalities. By doing so, Defendant has directly infringed at least claim 1 of the '124 patent.

42. The accused system includes a method of conducting a dialogue between a terminal machine and a service provider machine.

43. The accused system includes 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 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. 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 favorite order information and edit favorite orders. The user is prompted with one or more favorite orders to, for example, order favorite orders. The user is also able to edit and delete favorite orders. 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.

44. As explained above, the accused system includes 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 Defendant app), wherein the first data entry is associated with the first prompt.

45. The accused system includes a method comprising communicating information associated with the first data entry from the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) to the service provider machine (*e.g.*, Defendant server), wherein the service provider machine (*e.g.*, Defendant server) uses a 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, 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 entry is communicated from the terminal machine to the service provider machine. For example, without limitation, using the Defendant app, a user is able to edit favorite orders. 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. The provider application (*e.g.*, Defendant server application, which, upon information and belief, is a .NET 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 CLR engine comprises computer-executable instructions, while the .NET 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.

46. The accused system includes a method storing at least a portion of the information associated with the first data entry in memory for analysis. For example, the service provider stores for analysis at least a portion of the information associated with the first data entry, *e.g.*, an order of a favorite order, so that these orders may be analyzed and the appropriate rewards can be made available on the Defendant system. If at least a portion of the information was not stored in memory, the rewards would not be available to the user.

47. The accused system includes a method comprising receiving, at the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app), a terminal dialogue module (*e.g.*, terminal machine portion of a favorite order) that updates 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 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, the second code, and the first updated code comprise intermediate code. For example, when a user inputs a favorite order 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 favorite order appears on the user's Android device and allows the user to select it even at a later time. Therefore, the terminal dialogue module updates 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 favorite orders and the corresponding user data entry of selecting a desired favorite order (*e.g.*, button). Additional prompts include reviewing favorite order information and editing and deleting favorite orders. For example, without limitation, the second prompt is evidenced by the ability to access *new* favorite orders. At least one of the first code, the second code, and the first updated code comprise intermediate code. As explained above, the terminal application is identified as, for example, without limitation, the Defendant app for Android, and the first code as, for example, without limitation, the app's bytecode.

48. On information and belief, at least since the filing of this Complaint, Defendant has knowingly and actively induced the infringement of one or more of the '124 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 '124 patent. For example, Defendant intends to induce such infringement by,



among other things, promoting users to download and run its mobile applications, including at least applications for devices running the Android operating system, knowing that the use of the its applications 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 '124 patent.

49. On information and belief, at least since the filing of this Complaint, Defendant has contributed to the infringement of the '124 patent by, *inter alia*, marketing and promoting products and services. Defendant has used and promoted within the United States the Accused Instrumentalities, which are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are known by Defendant to be especially made or especially adapted to the infringe the '124 patent. As a result, Defendant's Accused Instrumentalities have been used by its customers and by users to infringe the '124 patent. Defendant continues to engage in acts of contributory infringement of the '124 patent.

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

51. Defendant threatens 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 '774 patent**

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

53. Defendant, by the acts complained of herein, and by making and using instrumentalities embodying the invention, has in the past, does now, and continues to infringe the '774 patent directly, contributorily, and/or by inducement, literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271.

54. At least since the filing of this complaint, Defendant has had actual knowledge of the '774 patent. On information and belief, Defendant deliberately and willfully continues to infringe despite such knowledge of the '774 patent and notice of its infringement.

55. On information and belief, Defendant has directly infringed one or more claims of the '774 patent by making and using the Accused Instrumentalities. By doing so, Defendant has directly infringed at least claim 1 of the '774 patent.

56. The accused system includes a method of conducting a dialogue sequence between a terminal machine and a service provider machine.

57. The accused system includes 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. 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 favorite order information and edit favorite orders. The user is prompted to with one or more favorite orders to, for example, review favorite orders. The user is also able to edit favorite orders. 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.

58. As explained above, the accused system includes 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 Defendant app), wherein the first data entry is associated with the first prompt.

59. The accused system includes a method comprising communicating information associated with the first data entry from the terminal machine (*e.g.*, an Android smart phone or other Android computing device running the Defendant app) to the service provider machine (*e.g.*, Defendant server), wherein the service provider machine (*e.g.*, Defendant server) uses a 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 information for authorization to the terminal machine. In the accused system, information associated with the first data entry is communicated from the terminal machine to the service provider machine. For example, without limitation, using the Defendant app, a user is able to edit favorite orders. 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. The provider application (*e.g.*, Defendant server application, which, upon information and belief, is a .NET 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 CLR engine comprises computer-executable instructions, while the .NET comprises code. In the accused system, the provider application is capable of sending information for authorization to the terminal machine, for example, without limitation, by authorizing logging into the Defendant system.

60. The accused system includes 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 favorite order) 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 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. For example, when a user inputs a favorite order 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 favorite order appears on the user's Android 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 favorite orders and the corresponding user data entry of selecting a desired favorite order (*e.g.*, button). Additional prompts include reviewing detailed favorite order information and editing and deleting favorite orders. For example, without limitation, the second prompt is evidenced by the ability to access *new* favorite orders.

61. On information and belief, at least since the filing of this Complaint, Defendant has knowingly and actively induced the infringement of one or more of the '774 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 '774 patent. For example, Defendant intends to induce such infringement by, among other things, promoting users to download and run its mobile applications, including at least applications for devices running the Android operating system, knowing that the use of the its applications 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 '774 patent.

62. On information and belief, at least since the filing of this Complaint, Defendant has contributed to the infringement of the '774 patent by, *inter alia*, marketing and promoting products and services. Defendant has used and promoted within the United States the Accused Instrumentalities, which are not staple articles or commodities of commerce suitable for substantial non-infringing use, and are known by Defendant to be especially made or especially adapted to the infringe the '774 patent. As a result, Defendant's Accused Instrumentalities have been used by its customers and by users to infringe the '774 patent. Defendant continues to engage in acts of contributory infringement of the '774 patent.

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

64. Defendant threatens 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**

65. 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 '897, '124, and '774 patents are valid and enforceable;
- B. For an order finding that Defendant has infringed '897, '124, and '774 patents directly, contributorily and/or by inducement, in violation of 35 U.S.C. § 271;
- C. For an order finding that Defendant's infringement is willful;
- D. For an order temporarily, preliminarily and permanently enjoining Defendant, its 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 '897, '124, and '774 patents directly, contributorily and/or by inducement, in violation of 35 U.S.C. § 271;
- E. For an order directing Defendant 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 Defendant, 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 Defendant from its 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: July 8, 2021

Respectfully Submitted,

By: /s/ Charles Ainsworth

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