IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

In the Post Grant Review of:)
)
U.S. Patent No.:   10,398,978   )
)
)
)
)
)
)
For: COMPUTER CONTROL   )
METHOD, CONTROL PROGRAM   )
AND COMPUTER   )
)

Mail Stop Patent Board
Patent Trial and Appeal Board
P.O. Box 1450
Alexandria, VA 22313-1450

**DECLARATION OF MARK L. CLAYPOOL, Ph.D.
IN SUPPORT OF PETITION FOR POST GRANT
REVIEW OF U.S. PATENT NOS. 10,398,978**

I, Mark, L. Claypool, Ph.D., declare as follows:

I.   INTRODUCTION

1.   I have been asked by the party requesting this review, Supercell Oy ("Petitioner"), to provide my expert opinion in support of the above-captioned petition for post grant review of U.S. Patent No. 10,398,978 (the "'978 patent") challenging the patentability of claims 1-18 of the '978 patent. For convenience, I use the term "challenged patent" to refer to this patent and "challenged claims" to refer collectively to the claims.

2.   I currently hold the opinions set forth in this declaration.

3.   In summary, it is my opinion that the challenged claims of the challenged patent are invalid as obvious in view of the combination of references cited below. My detailed opinions on the claims are set forth below.

II.   BACKGROUND AND QUALIFICATIONS

4.   I earned a Bachelor of Arts degree from Colorado College and both a Master of Science in 1993 and Ph.D. in 1997 from the University of Minnesota.

5.   I am currently a professor in the department of Computer Science and a professor of Interactive Media and Game Development at Worcester Polytechnic Institute ("WPI") in Worcester, Massachusetts. I have been a Full Professor at WPI since 2009. I began working as Assistant Professor at WPI in 1997 and became an Associate Professor in 2004. I have taught courses covering computing topics

including operating systems, networks, distributed systems, multimedia networking, as well as courses covering game development topics including data analysis for games, the game development process and technical game development.

6.   I am an expert in computer games, including but not limited to the analysis, design and development of entertainment applications, with a research focus on the networking and distributed systems aspects of online games. I am the founder and Director for a decade for the Interactive Media and Game Development program, the first in the U.S. to offer a unique kind of program to teach students all aspects of the fundamentals of computer game development. I teach technical game development courses to undergraduate students, and aspects of online games to graduate students in multimedia networking courses. I advise undergraduate student projects (akin to a "senior thesis") and graduate student theses related to game development and game research. My expertise is enhanced and informed through peer-reviewing many papers as part of the technical program committees I am part of: ACM Multimedia Systems (MMSys) 2011-2020 (chair 2011 and 2012), ACM Workshop on Network and Systems Support for Games (NetGames) 2004-2018 (chair 2008), ACM Network Support for Digital Audio and Video (NOSSDAV) 2006-2020 (chair 2006), and the ACM Multimedia Conference 2004-2017 and 2020, among others. I have received government funding from NSF and MIT Lincoln Labs to research and develop distributed systems and network games, as well as

industry funding from Core, EMC, Dyn, and, most recently, Intel and Google to measure, evaluate and improve existing distributed systems and games.

7.   I have over 100 peer-reviewed publications issued from the early 1990s to the present on topics related to multimedia networking, network games, congestion control, information filtering and programming education. I am an author or co-author of two computer books related to computer games: *Dragonfly – Program a Game Engine from Scratch* and *Networking and Online Games: Understanding and Engineering Multiplayer Internet Games*. Online games are a core area of my research, making up about 1/3 of my research publications and over half of my most recent publications. In addition to my research and teaching responsibilities at WPI, I have advised over 25 Masters and Doctorate theses on a variety of relevant topics: multimedia scaling, games and latency, and cloud-based games. I have more than 25 years of experience in the field of computer science.

8.   My professional background and technical qualifications also are reflected in my Curriculum Vitae, which is attached as Ex. 1009.

III.   COMPENSATION AND RELATIONSHIP WITH PARTIES

9.   I am being compensated for my time. This compensation is not contingent upon my performance, the outcome of this matter, or any issues involved in or related to this matter.

10.   I have no financial interest in Petitioner or any related parties. I have been informed that GREE, Inc. ("GREE") owns the challenged patent. I have no financial interest in and have no contact with GREE beyond the kinds of cursory interactions I often have with game industry professionals at conferences. I similarly have no financial interest in the challenged patent and have not had any contact with the named inventors.

IV.   MATERIAL CONSIDERED

11.   I have reviewed and considered, in the preparation of this declaration, the following related to the challenged patent:

a.   The '978 patent (Ex. 1001) and the prosecution file history for the '978 patent (Ex. 1002).

12.   I also reviewed U.S. Patent No. 9,597,594 (Ex. 1003 "the '594 patent") and the prosecution file history for the '594 patent (Ex. 1004), a parent application to the challenged patent and the Final Written Decision in a PGR related to the '594 patent, PGR 2018-00008 (Paper 42).

13.   I understand that, for purposes of determining whether a reference will qualify as prior art, the challenged claims of the challenged patent are entitled to an effective filing date of no earlier than September 27, 2013.

14.   I have also reviewed and understand various references as discussed herein, including the following:

a. "Declaration of Antti Takala Regarding Clash of Clans Version 4.120" relating to the game Clash of Clans version 4.120 (Ex. 1010 "Clash").

b. "Declaration of Sean Olesiuk" regarding "Mastermind's In-Game Builder Post" (Ex. 1011 "Mastermind");

c. U.S. Patent No. 9,079,105 to Kim et al. (Ex. 1012 "Kim")

15. I understand that the above references form the bases for the grounds for invalidity set forth in the Petitions for Post Grant Review of the challenged patent. To understand the Clash of Clans game as available prior to the effective filing date of the challenged patent, I have reviewed the Clash reference (Ex. 1010) that discusses gameplay of Clash of Clans as available in version 4.120. Based on that Declaration, I understand that version 4.120 of Clash of Clans 4.120 was available before the effective filing date of the challenged patent. I have also reviewed the executable file "magic.exe" referenced in the Declaration as Clash of Clans version 4.120. I executed this file and personally reviewed how version 4.120 of Clash of Clans operates when executing on a personal computer. I have also personally recreated and verified the screenshots shown in Clash by operating the executable file of version 4.120 referred to therein.

16. Additionally, I am aware of information generally available to, and relied upon by, persons of ordinary skill in the art (POSITAs) as of the effective

filing date of the challenged patent, including computer games, technical dictionaries and technical reference materials (including, for example, textbooks, manuals, technical papers, articles, and relevant technical standards); some of my statements below are expressly based on such awareness.

17. I reserve the right to supplement my opinions to address any information obtained, or positions taken, based on any new information that comes to light throughout this proceeding.

V. BASIS OF OPINIONS FORMED

A. Level of Ordinary Skill in the Art

18. It is my understanding that the challenged patent is to be interpreted based on how they would be read by a person of "ordinary skill in the art" ("POSITA") at the time of the effective filing date of the application. It is my understanding that factors such as the education level of those working in the field, the sophistication of the technology, the types of problems encountered in the art, the prior art solutions to those problems, and the speed at which innovations are made may help establish the level of skill in the art.

19. I am familiar with the technology at issue and the state of the art at the effective filing date of the challenged patent, September 27, 2013.

20. In my opinion, the level of ordinary skill in the art of the challenged patent at the time of the effective filing date is a person with a bachelor's degree in

game design/development, interactive media, computer science, computer engineering, or a related field, with at least two years of professional experience working in computer game design/development. With more education, such as additional graduate degrees or study, less professional experience is needed to attain the ordinary level of skill. Similarly, with more experiential knowledge of computer games, such as experience developed while playing computer games, less professional experience is needed to attain the ordinary level of skill.

21. I consider myself to have at least such ordinary skill in the art with respect to the subject matter of the challenged patent at the time of the effective filing date.

VI. THE CHALLENGED PATENT

22. The challenged patent is a continuation of U.S. Application No. 14/983,984, which issued as U.S. Patent No. 9,597,594.

23. I understand that a continuation patent generally has the same title and specification, but different claims, than its parent. Since the challenged patent is related to the '594 patent and generally shares the same disclosure, the citations to the patent specification in my discussion below refer to the '594 patent unless otherwise noted.

24. The challenged patent is entitled "Computer Control Method, Control Program and Computer."

A. Purported Invention of the Challenged patent

25. The challenged patent describes a control method and system for arranging game contents within a game space. Ex. 1001 at Title and Abstract.

26. The challenged patent generally relates to a way of managing and playing a game involving transmitting and receiving information for reproducing positions of game contents arranged in a video game space. According to the background section, video games played on portable devices have become increasingly common, particularly "social games" where players can play against and communicate with one another. Such games include "city building games" where a player builds a city within a "virtual space" – which the '594 patent refers to as a "game space." Ex. 1003 at 1:27-30.

27. According to the specification of the '594 patent, social city building games are now designed so that one player's city can be attacked by the game pieces of a different player. Thus, the object of these city building games is to build and design a city that can defend against such attacks by strategically arranging the game contents (*e.g.*, by placing walls, buildings, soldiers, etc. in strategic locations). *Id.* at 1:30-34.

28. According to the challenged patent, one problem in these city-building games is that it is cumbersome for a user to manually rearrange all the different game pieces that players accumulate in their city, and players find it difficult to predict

what impact the new design will have. See Ex. 1003 at 1:42-60. This difficulty discourages players from re-designing their cities after a period of time, and as a result, players opt not to frequently change the layout of their cities, and the game becomes monotonous. *Id.* at Background. The specification purports to solve this problem through "making game contents and the arrangement of the game contents changeable by using templates" wherein game pieces "are automatically moved to the defined positions" on the game space defined by the template. *Id.* at 3:30-34, 4:34-37.

29.   An excerpt of Figure 4, below, illustrates the concept of creating and applying a template of game pieces in a video game. It describes a process in which the player selects an arrangement of game pieces to save as a template, the computer creates a record of the type and location of game pieces (*i.e.*, creates a template), and then the computer moves the game pieces in a game space in accordance with the template (*i.e.*, applies the template). *Id.* at Fig. 4 & 7:18-53. In Figure 4, grid 400 illustrates a game space. Nine game facilities are arranged within the game space: four illustrated as "black circles," three as "black triangles," and two as "black squares."

FIG. 4
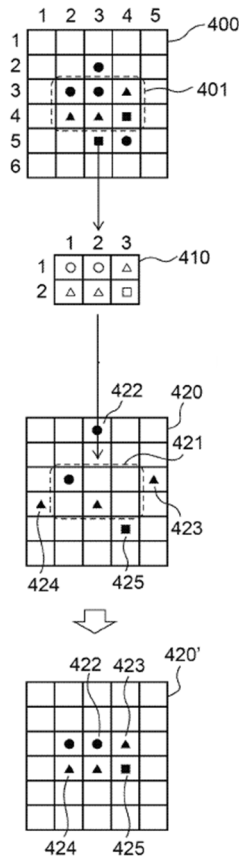
30. The player commands that the computer create a "template" of the game pieces as shown in box 401. The computer records the types and locations of these game pieces in a "template" shown in box 410. *Id.* at 7:18-36.

31. The player commands that the template 410 be applied to area 421 in game space 420. The computer then moves the pieces in game space 420 in accordance with the template, the result of which is shown in 420'. In other words, 401 shows the arrangement of game pieces the player commands to comprise the template, 410 demonstrates that the computer records the template, box 421 in game space 420 shows where the player commands the template to be applied, and 420'

shows the application of the template to the game space. The specification describes this process as the "concept of creating and applying a template." *Id.* at 7:16-17.

32. The specification describes three embodiments of the purported invention. The first embodiment envisions a single player environment where a single player controls the design of the city located within a game space. The player can select the game pieces from his or her game space to create a template that defines the positions of one or more game contents and then apply that template to another single player game space. *Id.* at 4:26-16:21. The second embodiment applies the same concept of applying a template, but the concept is applied "in a multi-player environment" instead of a single-player environment. *Id.* at 16:25-20:20; *see id.* at 17:24-25 & Fig. 9 (illustrating the "concept of applying a template in a multi-player environment"). The third embodiment is nearly identical to the first embodiment, with the exception that the template is not created by a player, but rather is a pre-existing template stored in a game server. *Id.* at 20:24-26:13.

33. The concept of managing and playing a game involving transmitting and receiving information for reproducing positions of game contents arranged in a game space is employed with generic computer equipment. The specification states that the claimed computer "may be, for example, a portable device, a desktop device, a server, etc., as long as it can execute the above procedure." *Id.* at 2:12-14. The components of the computer or device, the "device communication unit," "device

storage unit," "operation unit," and "display unit," are described in purely functional and generic terms. *Id.* at 4:55-66 & Fig. 2.

34. The specification also describes generic computer functionality for storing the received information. *See generally id.* at 5:19-37. The information is stored within a generic "device storage unit" of the portable device playing the game or in a server connected to the device. *Id.* at 5:19-20. The device storage unit stores several tables, functionally described as a "facility table," a "facility-type table," and a "template table." *Id.* at 5:29-37.

35. The independent claims of the challenged patent recite various purported inventive aspects of the templates disclosed by the '594 patent. The '978 patent includes three claims sets: 1-6, 7-12, and 13-18. Ex. 1001 at 26:25-28:57. Claim 1 recites a method performed by a portable electronic device comprising steps for creating and applying a template in a game. While claim 1 recites a method, claim 7 and claim 13 recite, respectively, non-transitory computer readable media and "circuitry configured to" perform the essentially same steps as recited in claim 1. *See* Ex. 1001 at 27:6-27:28; 28:8-28.

36. In particular, claim 1 recites executing a game by arranging a plurality of game contents in a "game space" based on a command received from a first player. *See* Ex. 1001 at 26:25-32. The game contents include contents "for defending from an attack initiated by a second player." *Id.* In the challenged patent,

these game contents for "defending from an attack initiated by a second player" are referred to as including various types of objects, such as "arrangement of items such as protective walls, buildings that are subject to an attack, protecting soldiers, weapons, etc." Ex. 1003 at 1:47-50. "Further, types [of game objects] are not limited to buildings, walls, fences and so forth, any other game items such as soldiers and weapons to fight back against an attack by a different player may be applicable." *Id.* at 26:1-4.

37. In further detail, claim 1 requires receiving a command to create a template from the first player and creating, responsive to that command, "a plurality of templates" defining respective positions of the plurality of game contents within the game space. Ex. 1001 at 26:32-37. Claim 1 further requires creating a plurality of images that each correspond to one of the plurality of templates, displaying a screen including the plurality of images, and receiving a selection corresponding to one of the displayed images. Ex. 1001 at 26:38-42. Finally the template corresponding to the received selection is applied to a predetermined area within the game space. Ex. 1001 at 26:43-44.

38. Claim 1 has dependent claims 2-6. Claim 2 requires that the positions of the game contents within the game space are defined by coordinates in the game space. Ex. 1001 at 26:45-48. Claim 3 requires displaying an interface including the game space and images corresponding to a plurality of game contents, receiving a

command to allocate a game content in an area of the game space, and allocating the game content to the area based on the command. Ex. 1001 at 26:49-58. Claim 4 depends on claim 3 and requires that the plurality of game contents have different types and different image data. Ex. 1001 at 26:59:63. Claim 5 depends on claim 1 and requires allocating the applied template as the first player's "active allocation" of the plurality of game contents upon receiving a command from the first player. Ex. 1001 at 26:64-67. Claim 6 requires registering the applied template to a server. Ex. 1001 at 27:1-5.

39. As noted above, independent claims 7 and 13 and corresponding dependent claims 8-12 and 14-18 respectively recite executable computer-readable instructions on a computer-readable media and "circuitry configured to" perform the steps recited in claims 1-6. *See* Ex. 1001 27:6-28:57. There are a few minor differences: while claim 1 recites that the template is applied to a "predetermined area" of the game space, claims 7 and 13 specify only that the template is applied to the game space without requiring a "predetermined area." Ex. 1001 at 27:28-29; 28:27-28. Similarly, while claim 1 recites that the game contents are for defending against a "second player," claims 7 and 13 recite "another player." See Ex. 1001 at 27:14-15; 28:13-14.

B. Prosecution History

40. The '978 patent was originally filed on December 29, 2016 as U.S. Application No. 15/393,646.

41. The '978 patent is a continuation of 14/983,894, now Pat. No. 9,597,594, filed Dec. 30, 2015 which is a continuation of PCT/JP2014/075673, filed Sept. 26, 2014. All of these applications claim priority to two Japanese Patent Applications, No. 2014-080554 filed April 9, 2014 and No. 2013-202721 filed Sept. 27, 2013. I understand for the purposes of this Post Grant Review proceeding that the challenged patent has an effective filing date of no earlier than September 27, 2013.

42. I have reviewed the prosecution histories of the challenged patent and the '594 patent. I understand that comments made during prosecution of a particular patent may influence the meaning of terms in the claims of that patent, as well as terms in other claims in the same patent family.

VII. LEGAL STANDARD FOR CLAIM CONSTRUCTION

43. It is my understanding that "[i]n a post-grant review proceeding, a claim of a patent…shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary

meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.200(b).

44.   I am not a patent attorney and my opinions are limited to what I believe a POSITA would have understood the meaning of certain claim terms to be, based on the patent specifications and prosecution histories. In my opinion, a POSITA would have no difficulty applying the plain and ordinary meanings of the majority of terms used in the challenged claims.

45.   I have reviewed the final decision by the Patent Trial and Appeal Board for the '594 patent in PGR2018-00008 and understand that a "template" was construed in that decision as "a record." PGR 2018-00008 Final Written Decision (Paper 42).

46.   I understand that the '978 patent is being asserted against Petitioner in *GREE, Inc. v. Supercell Oy*, Case No. 2:19-cv-00200 (E.D. Tex. filed May 27, 2019) (the "District Court Litigation"). I also understand and have reviewed the District Court Litigation's construction of certain claim terms in the '978 patent. *See* Ex. 1019. The District Court Litigation construed "template" as "data structure storing a pattern," "apply[ing] a template" as "apply[ing]…during game play," "game space" as "virtual space within which the game is played," and "active allocation" as "game contents currently allocated within the game space." *Id*. at 16, 29, 32, 38. My conclusions regarding validity of the '978 patent are the same under both the

Patent Trial and Appeal Board and the District Court Litigation constructions of the claim terms of the '978 patent.

47.   In my opinion, in view of the disclosures in the specification of the challenged patents and the prosecution history of the patent family, the claim limitations "creating, responsive to the received command to create the template, a plurality of templates defining the plurality of game contents and respective positions of game contents within the game space" of claims 1, 7, and 13 require further explanation.

48.   Each of these limitations requires creating, "responsive to the received command to create the template" a **plurality** of templates. I understand at least one plausible interpretation of "responsive to" is to mean that the "plurality of templates" are required to be created in response to a single command received from the user. Based on this plausible meaning, this limitation is not adequately described in the challenged patents as discussed below. As such, under this plausible meaning of this limitation, these claims have insufficient written description and are not valid under § 112.

49.   An equally plausible interpretation is that this limitation does not require a single command to create the plurality of templates, but instead creates the "plurality of templates" "responsive to" one of a set of commands received from the user. Under this alternate meaning, the claims are obvious and not valid under § 103

as more fully discussed below. Because of these different equally plausible meanings, these claims do not inform a POSITA about the scope of the invention with reasonable certainty, and are thus indefinite as discussed below.

VIII. WRITTEN DESCRIPTION STANDARD

50. I understand that 35 U.S.C. 112 (a) requires that the "specification shall contain a written description of the invention." I understand that a key inquiry for sufficiency of the written description of a claimed invention is whether a patent specification describes the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. I understand that an applicant demonstrates possession of the claimed invention by describing the claimed invention with all of its limitations using words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. I understand that a claimed invention as a whole "may not be adequately described if the claims require an essential or critical feature which is not adequately described in the specification and which is not conventional or known in the art." M.P.E.P. 2163. I understand the "fundamental factual inquiry" is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as claimed. *Id.*

IX. INDEFINITENESS STANDARD

51.   I understand that 35 U.S.C. 112 (b) requires that the "specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention." I understand that the key inquiry under section 112(b) is whether a patent's claims, viewed in light of the specification and prosecution history, informs those skilled in the art about the scope of the invention with reasonable certainty. I also understand that a claim is indefinite under section 112(b) if language of the claim has more than one plausible meaning, and no informed and confident choice is available among the multiple plausible meanings. I understand that "[t]he primary purpose of this requirement of definiteness of claim language is to ensure that the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the patent." M.P.E.P. 2173. I further understand that "[c]laims that do not meet this standard must be rejected under 35 U.S.C. 112(b)." *Id.*

X.   ANALYSIS OF THE BASIS UNDERLYING THE GROUNDS OF REJECTION FOR LACK OF WRITTEN DESCRIPTION SET FORTH IN THE PETITIONS FOR POST GRANT REVIEW

52.   On review of the claims 1, 7, and 13 of the '978 patent, the specification would not have conveyed with reasonable clarity to a POSITA that, as of the priority date of the challenged patents, the inventors had possession of the claimed invention.

53. Claim 1 of the '978 patent recites a method including a step of "creating, responsive to the received command to create the template, a plurality of templates defining the plurality of game contents and respective positions of the plurality of game contents within the game space."

54. Claim 7 recites a computer-readable media having instructions executable to perform the same functional limitation, and claim 13 recites "circuitry configured to" do the same.

55. On review of the disclosures of the challenged patents, I cannot identify adequate written description for creating, in response to a received command to create the template, a **plurality** of templates. In reviewing the parent '594 patent specification, each time that a template is created, the '594 patent discloses creating "a" template, rather than creating a plurality of templates. For example, the first embodiment discussed in the '594 patent discloses: "When an area is selected by the player via the operation unit 23 (step S122) and a command to create a template is given, the template creation unit 252 creates a template (step S124)." Ex. 1003 at 14:37-40. In the second embodiment, relating to a multi-player environment, rather than disclosing creating a plurality of templates based on a received command, the '594 patent disclosure shows "combining templates in a multi-player environment." *Id.* at 19:61-62. The specification discloses combining templates into a single template and that a device obtains templates from each player's device and "creates

a new template by arranging the obtained templates on the designated areas." *Id.* at 20:12-13. The third embodiment, discussed at cols. 20-26, discusses an embodiment including preexisting templates that may be associated with particular events. "In the above-described embodiment [embodiments before the third embodiment], is assumed that templates are created by the player. However, preexisting templates may also be distributed by a server or the like." *Id.* at 20:24-26. None of these portions of the supporting disclosure would have been understood to convey possession of the creation of a plurality of templates based on "a" template creation command, nor do I find support for this concept in the remainder of the supporting disclosure.

56. Accordingly, a POSITA reviewing the disclosure supporting the challenged patents (including the '594 patent), would not have found a sufficient written description demonstrating possession of the claimed invention, and particularly the limitation to "create a plurality of templates" responsive to receiving a player's template creation command" of claims 1, 7, and 13 of the '978 patent.

XI. ANALYSIS OF THE BASIS UNDERLYING THE GROUNDS OF REJECTION FOR INDEFINITENESS SET FORTH IN THE PETITIONS FOR POST GRANT REVIEW

57. Claims 1, 7, and 13 of the '978 patent do not, when viewed in light of the specification and prosecution history, inform a POSITA about the scope of the invention with reasonable certainty.

58.   As discussed above, the language of these claims permits at least two equally plausible interpretations in my opinion, namely: (1) that a single command received from the player creates multiple templates, or (2) that the template creation command is one of a set of commands received from the user that creates the plurality of templates. The specification provides no guidance regarding which of these two plausible interpretations apply to the creating step recited in claims 1, 7, and 13.

59.   Accordingly, claims 1, 7, and 13 of the '978 patent do not, when viewed in light of the specification and prosecution history of the challenged patents (including the '594 patent and the '594 patent's prosecution history), inform a POSITA about the scope of the invention with reasonable certainty.

XII.   ANTICIPATION AND OBVIOUSNESS STANDARDS

60.   I understand that "anticipation" is a question of fact and that for a reference to anticipate a claimed invention it must disclose each and every element set forth in the claim for that invention. I further understand that the requirement of strict identity between the claim and the reference is not met if a single element or limitation required by the claim is missing from the applied reference.

61.   It is further my understanding that a statement by an applicant in the specification or made during prosecution identifying the work of another as "prior art" is an admission which can be relied upon for both anticipation and obviousness

determinations, regardless of whether the applicant admitted prior art ("AAPA") would otherwise qualify as prior art.

62.   It is my further understanding that a prior art reference is anticipatory only if it discloses each and every limitation of the claim (as properly construed) at issue. In other words, every limitation of a claim must identically appear in a single prior art reference for it to anticipate a claim.

63.   It is further my understanding that a claimed invention is unpatentable if the differences between the invention and the prior art are such that the subject matter of the claim as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains (i.e., a POSITA).

64.   It is my understanding that obviousness is a question of law based on underlying factual issues including (1) the scope and content of the prior art, (2) the differences between the prior art and the asserted claims, (3) the level of ordinary skill in the pertinent art, and (4) the existence of secondary considerations such as commercial success, long-felt but unresolved needs, failure of others, etc.

65.   I understand that for a single reference or a combination of references to render obvious the claimed invention, a POSITA must have been able to arrive at the claims by altering or combining the applied references.

66. I understand that an obviousness evaluation can be based on a combination of multiple prior art references. I understand that the prior art references themselves may provide a suggestion, motivation, or reason to combine, but other times the nexus linking two or more prior art references is simple common sense. I further understand that obviousness analysis recognizes that market demand, rather than scientific literature, often drives innovation, and that a motivation to combine references may be supplied by the direction of the marketplace.

67. I understand that if a technique has been used to improve one device or product, and a POSITA would have recognized that it would improve similar devices or products in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

68. I also understand that practical and common sense considerations should guide a proper obviousness analysis, because familiar items may have obvious uses beyond their primary purposes. I further understand that a POSITA looking to overcome a problem will often be able to fit together the teaching of multiple publications. I understand that obviousness analysis therefore takes into account the inferences and creative steps that a POSITA would have employed under the circumstances.

69.   I understand that a particular combination may be proven obvious merely by showing that it was obvious to try the combination. For example, when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a POSITA has good reason to pursue the known options within his or her technical grasp because the result is likely the product not of innovation but of ordinary skill and common sense.

70.   I also understand that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. When a work is available in one field of endeavor, design incentives and other market forces can prompt variation of it, either in the same field or a different one. If a POSITA can implement a predictable variation, the patent claims are likely obvious.

71.   It is further my understanding that a proper obviousness analysis focuses on what was known or obvious to a POSITA, not just the patentee. Accordingly, I understand that any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.

72.   I understand that a claim can be obvious in light of a single reference, without the need to combine references, if the elements of the claim that are not

found explicitly or inherently in the reference can be supplied by the common sense of one of skill in the art.

73.   I understand that secondary indicia of non-obviousness may include (1) a long felt but unmet need in the prior art that was satisfied by the invention of the patent; (2) commercial success of processes covered by the patent; (3) unexpected results achieved by the invention; (4) praise of the invention by others skilled in the art; (5) taking of licenses under the patent by others; (6) deliberate copying of the invention; (7) failure of others to find a solution to the long felt need; and (8) skepticism by experts.

74.   I also understand that there must be a relationship between any such secondary considerations and the invention.   I further understand that contemporaneous and independent invention by others is a secondary consideration supporting an obviousness determination.

75.   In sum, my understanding is that prior art teachings are properly combined where a POSITA having the understanding and knowledge reflected in the prior art and motivated by the general problem facing the inventor, would have been led to make the combination of elements recited in the claims.   Under this analysis, the prior art references themselves, or any need or problem known in the field of endeavor at the time of the invention, can provide a reason for combining the elements of multiple prior art references in the claimed manner.

XIII. ANALYSIS OF THE TECHNICAL BASIS UNDERLYING THE GROUNDS OF REJECTION FOR OBVIOUSNESS SET FORTH IN THE PETITIONS FOR POST GRANT REVIEW

A. State of the Art

76. Multi-player, networked games with game information shared between users operating different devices has been widely available since at least the 1990's. Early online multi-player networked games from this time period include "Multi-User Dungeons", or "MUDs" available since at least the 80's. These MUDS were text-based games, many of which included features of traditional role-playing games, such as Dungeons and Dragons, and included user-created content that other players could encounter and interact with. Online games with a wide variety of gameplay types and gameplay mechanics features have been widely available since then on a variety of platforms, including traditional desktop computers, laptops, game consoles, handheld gaming devices, and smart phones.

77. Since at least the 1990s, long before the effective filing date of the challenged patent, many games included gameplay with users establishing and attacking bases of other players with gameplay objects also used for defending against attacks by other users. Popular "real-time strategy" games such as "Warcraft" and "Command and Conquer" debuted in the 1990s for Windows PCs and included gameplay with players establishing bases, collecting resources, and building armies that attack an opponent's base. Each of these games launched several successful

sequels through the 90's and 2000's and would be well known to online gamers. These games featured multi-player gameplay in which players simultaneously and in "real-time" establish bases on a map and can attack other players.

78.   Finally, the '594 patent, the parent of the challenged patent, refers to both SimCity and Clash of Clans as "city building" games in which players "can build various facilities" such as houses, streets, ports, train stations, airports, castles, and training facilities. Ex. 1003 at 1:27-38. As recognized in the '594 patent about this acknowledged prior art, the location of the various facilities in each of these existing types of games affects gameplay and a base's ability to defend against attacks. *Id.* at 1:42-60 ("Further, it is hard to understand what kind of effect changing a city would have against an attack from a different player").

79.   Before the effective filing date of the challenged patent it was well known to create, save and apply configurations of game contents in a game space. These techniques were well known before electronic gaming and were used in classic football playbooks which specify how players should line up before and move during a play. These techniques were also well known in electronic games. For example, Kim (Ex. 1012) discloses players saving and setting team formations, for example in a sports game, and allowing a player to "immediately and easily change between formations even during game play." Ex. 1012 at 2:29-30. Fig. 5 of Kim '105 shows an example character position setting screen for a formation:

Fig.5
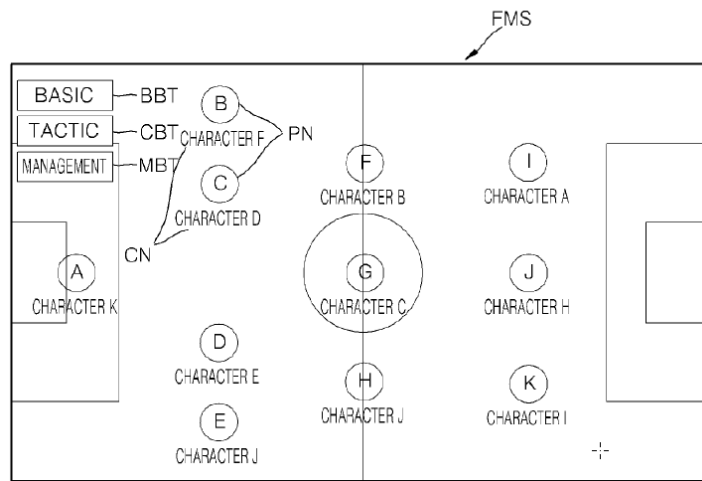
80.   Kim discloses that a player may select one of the characters, A-K, and move the character in the formation. Kim discloses using the distance between characters to determine whether the player intends to move or replace characters: "If the character is moved (S445), it is judged whether or not a distance between the moved character and the most adjacent character is greater than a preset minimum distance between neighboring characters (S446). If the distance between the moved character and the most adjacent character is greater than the preset minimum distance between neighboring characters, … the character is displayed at the moved position (S447). . . . However, if the distance between the moved character and the most adjacent character is not greater than the preset minimum distance between neighboring characters, it is judged whether or not character replacement is requested (S441). That is, if the character is moved to a position excessively close

to another character, the team management apparatus may judge that the user wishes to replace the character, rather than to move the character." Ex. 1012 at 13:63-14:18.

81.   Kim discloses that these player-created formations may be added to formations useable by the player in the game: "these formations are added only upon receiving the formation addition request signal from the user." *Id.* at 8:57-60. "As such, the online game of the present invention provides the user with a plurality of formations to allow the user to change between formations during game play." *Id.* at 8:65-67.

82.   The manual for Gratuitous Space Battles (GSB), a game published in 2009, discloses players "assembl[ing] [ships] into fleet formations for each battle. Ex. 1013 at p. 1. At a displayed deployment screen, GSB discloses "plac[ing] the individual ships in battle formation and issu[ing] orders on how to engage the enemy." *Id.* at pp. 1, 5. GSB recognizes that the arrangement of ships in a formation deployment is a determining factor in "influenc[ing] how the battle will play out for your fleet." *Id.* at p. 5. GSB discloses that once the player has defined a formation deployment, s/he may save the deployment "for later use," and that a player may have "a large number of different saved deployments for each mission." *Id.* at p. 5. GSB discloses that different players at different devices may create and save their own formation deployments, for their own use during gameplay and/or to challenge other players. *Id.* at pp. 9-10.

83.   In another example, U.S. Patent Publication 2007/0105626 to Cho discloses a user drawing movement patterns for a game, which "are stored and a game object can be moved in accordance with a movement pattern selected from the memory by the user. This example … can be applied … to a football game in which a user can design and store plays involving various football player movements. These plays can be selected during a game against an opponent." Ex. 1014 at ¶ 5. Cho discloses using these movement paths at a future time: "These plays can be created [in] advance and stored in memory for selection during the game. . . Similar plays may be developed in which defensive players are moved in accordance with paths drawn using the touchscreen. In other implementations, the touchscreen may be used to develop various offensive and defensive formations and paths may be drawn to move the players from these initial formations." Ex. 1014 at ¶ 52. Cho also discloses that these drawn maps may be stored and sent to other players for use:

> "The map and/or drawn tactical data may be sent in real-time from the video game system of the user drawing on the map (i.e., while the user is drawing). Users may save in the memory of the video game system maps and/or drawn tactical data generated locally or received from other users. This enables users to review drawings made in the past (i.e., playback the drawing). Drawings may be selected, for example, from a menu displayed on a display screen of the video game system. The drawings selected from memory may be further modified and communicated to other users."

Ex. 1014 at ¶ 65.

84.   It was also prevalent and well known for electronic games to use various ways to communicate and manage game information. It was well known for games to be implemented with game devices communicating directly with one another in a "peer-to-peer" arrangement, and for game devices to use a central game server that manages game information. The central game server often maintains other data about such games, including information about each player and to synchronize play data across different devices. As a result, various networking topologies for providing a game to multiple users and for enabling users to share information with one another were well known. As shown in Fig. 13 of Kim, a game server may also store game information remotely from individual game clients:

Fig.13
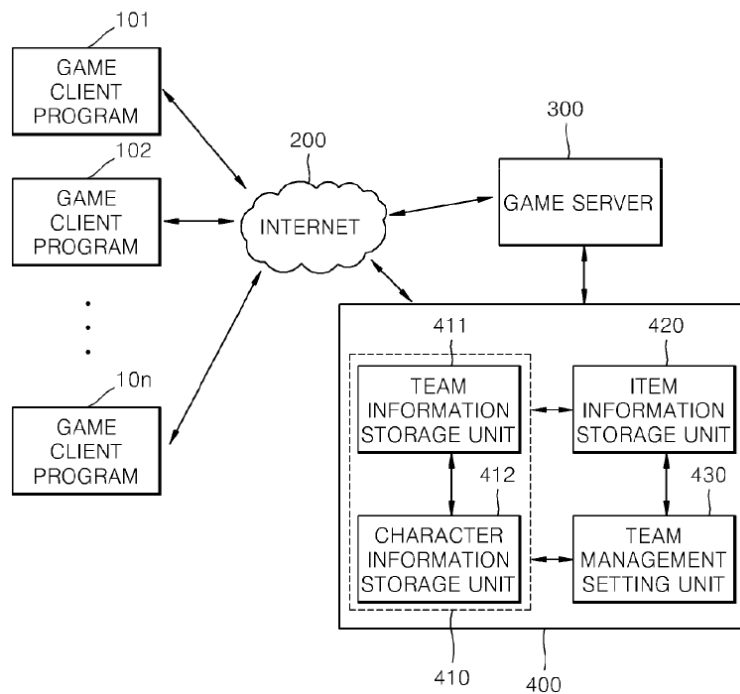
Ex. 1012 at Fig. 13. It was also common for a central server to store and coordinate information between devices playing a game.

B. Relevant Prior Art References

1. Clash of Clans

85. Clash of Clans is an online multi-player game by Supercell that was available to the public and released for play on iOS devices prior to the effective filing date of the challenged patent. Clash of Clans became very successful and was, and still is, a popular online mobile game. As one review describes, "Clash of Clans is a superb game, freemium or otherwise, with more nuance than most give it credit for. That's why it's passed the test of time since its launch and still has an active community devotedly constructing elaborate fortresses in the hope of becoming invincible." Ex. 1015 (Pocket Gamer Clash of Clans Review, Dec. 18 2012, archived May 2 2013). I personally have played Clash of Clans.

86. Accordingly, Clash of Clans was a popular and well-known game that would have been known to a POSITA at the time of the effective filing date of the challenged patent. The '594 patent, parent to the challenged patent, recognizes Clash of Clans as a prior art game. Ex. 1003 at 1:18-38.

87. As with many online games, Clash of Clans has been updated over time with different versions and to provide different features to players of the game. These include versions both before and after the effective filing date of the

challenged patent. To ensure that I understand the features and functionality of Clash of Clans as it existed prior to the effective filing date of Sept. 27, 2013, I reviewed Clash, a declaration which describes the operation of version 4.120 of Clash of Clans, which I understand to be a version available prior to the effective filing date of the challenged patent. See Ex. 1010. I have also reviewed and executed the executable file containing version 4.120 of Clash of Clans and referenced in Clash. My discussion below is based on my understanding of Clash of Clans 4.120 as described by the declaration of Antti Takala (Ex. 1010) and confirmed by my review of the executable file. Hence, any references to "Clash of Clans" are referring to the game as it existed prior to the effective filing date of the challenged patent.

88. Clash of Clans allows a player to develop a base including defensive elements for defending the player's base and likewise attacking other players' bases. "One object of the game is for a player to protect his or her "Town Hall" building and resource storage containers by arranging game objects in a player's village in a strategic manner. The arrangement of the objects affects how the village defends against attacks from other players." Ex. 1010 at ¶ 21.

89. Clash of Clans provides for players to place and move gameplay objects in a play area. Ex. 1010 at ¶¶ 15-19. "As shown above, the play area is made up of a grid of individual tiles on which the gameplay objects may be placed. The

unoccupied tiles in the play area alternate dark and light colors. The different gameplay objects include different types of objects, such as buildings (e.g., town hall, cannons, archer towers, etc.), walls, traps (e.g., bombs and springs), and obstacles." *Id.* at ¶ 17. "Surrounding the play area grid is a border area in which buildings may not be placed, but where the game may place obstacles and where opposing players may drop troops during an attack." *Id.* at ¶ 19. Players may place new objects in the gameplay area, for example by selecting the new object from a menu and selecting a location to place the object:

Ex. 1010 at ¶¶ 25-29, Figs. 7 & 8.

90.   Players may also move objects in the gameplay area. *Id.* at ¶¶ 22-24. The following example shows a player moving a cannon object:

Id. at Figs. 4-5. A POSITA would have understood that Clash of Clans provides for the placement and movement of gameplay objects within a game space. The cannon object discussed above would have been understood to be one of several types of gameplay objects in Clash of Clans that are used in defense of the player's base when attacked. See *id.* ¶¶ 30-34 and accompanying Figures ("Attacked by Other Players").

91.   Clash of Clans also provides a "replay" feature to watch how another player attacked the player's base.

Ex. 1010 at Fig. 22. A POSITA would have understood that players may use that information to modify the player's base to protect against that type of attack in the future. As review of the Clash of Clans published by Pocket Gamer described: "The first time you see your base wiped out, you'll watch the replay to see how it happened, rebuild, and perhaps shore up certain areas of your base." Ex. 1015 at 2 (Clash of Clans review – iPhone reviews | Pocket Gamer). In addition, a POSITA would have understood that because the positioning of gameplay objects affects how the base defends against attacks, players would want a convenient way to move or rearrange objects in a player's base.

92.   The execution of the Clash of Clans application on an iOS device (e.g., an iPhone or iPad) would have been understood to be a computing or informational device operable to perform the various gameplay functions of Clash of Clans. During operation of Clash of Clans, a POSITA would have understood that the device operating the game is in communication with a gameplay server that stores game data and coordinates gameplay between players. "The information associated with each player includes one or more devices associated with the player's village." Ex. 1010 at ¶ 48. "The gameplay server stores and maintains information about a player's village, including the location of game objects (i.e. buildings, walls, resource collectors, obstacles) within the village and any related status of these game objects." *Id.* at ¶ 50. Clash also describes a data structure that stores how information about a village is stored. The location of individual objects are stored along with data including coordinates of the objects in the village: "The file shows the information regarding the 'buildings' in the village along with their levels and locations." *Id.* at ¶ 50. "The location of the building object is further shown with stored x-y coordinates." *Id.* Even without reference to the specific data structure shown in Clash, a POSITA would have understood from execution of Clash of Clans version 4.120 that gameplay objects would be stored with associated positioning data having coordinates with respect to the "play area grid." See *Id.* at ¶¶ 17-20.

93.   Accordingly, a POSITA would have understood the gameplay server to coordinate matchmaking between players and to store information associated with player villages to facilitate matchmaking. When players "Find a Match," a gameplay server selects another base for the player to attack. See *Id.* at ¶¶ 41-43. Information is sent to the attacker about the defending player's village: "That information includes the layout of the defending village, the status of the objects in the defending village, and any resources that may be available for looting in the defending village." *Id.* at ¶ 43.

94.   In other words, Clash of Clans as executed on an iOS device discloses an information processing system that includes one or more non-transitory computer-readable mediums including executable computer program instructions in the form of one or more programs, is a terminal device including circuitry, and is an electronic device. The device (i.e., an iOS device) includes a display configured to display screens for displaying interfaces of the game and receiving player commands via the touchscreen of the iOS device. The device executes the computer program instructions and includes processing, memory, and a touchscreen, having circuitry configured to perform the various aspects of the game I discuss herein.

95.   These aspects include players placing, or "allocating" gameplay objects to a game space and moving, arranging, repositioning, or changing the position of these gameplay objects. These gameplay objects and the layout of these objects in

a player's village are used by players for defense against attacks by other players. In addition, the layout and placement of these gameplay objects are sent to other players. These aspects also include the device communicating with other devices and a server to communicate game information, including the placement and locations of the various types of gameplay objects in a player's base. Similarly, a POSITA would have understood that a server receives such information from devices operating the Clash of Clans application and would have performed gameplay coordination, including receiving information about player base layouts, matchmaking and sending information about player base layouts to other players.

2. Mastermind

96. Mastermind combines a post titled "Mastermind's In-Game Builder Idea (with LOADS of pictures!)" and a post titled "Mastermind's In-Game Builder Post" both made on September 11, 2013 to a community forum for Clash of Clans by a user using the name "Mastermind." Ex. 1011 at 12-30. The forum was hosted by Supercell and the postings made thereon were publicly available on the Internet. Mastermind would thus would have been available to the public prior to the effective filing date of the challenged patent. I understand the version of the posts I reviewed faithfully represents the posts as they existed before the effective filing date of the challenged patent.

97.   As was common with many games at the time, Supercell hosted forums

for players to discuss and provide suggestions for its games. Developers would have

looked to suggestions from the community on forums such as this one to identify

features, modifications, and other changes to make to a game offered to the

community.

98.   Mastermind was one such suggestion, in which the author identified the

idea as "more of an 'Ideas & Suggestions'" topic. *Id.* at 13. Mastermind provides a

suggestion for a "Base Builder" because "[a]nother thing many Clashers have been

asking for since the beginning is the ability to save a base design or 2, and to be able

to switch between them." *Id.* at 13-14. Mastermind also describes conditions in the

game in which players may wish to easily switch between multiple layouts: "This

would be important for Farmers and Trophy Hunters, as they could easily cycle

between 2 different bases tailored around whatever camp they currently are in

(farming or trophy pushing)." *Id.* at 14.

99.   Mastermind recognized that the existing approach in Clash of Clans

could be improved because "[c]urrently, the way to build a base is to move

everything you have over to the side/edges of the base and then start moving things

back in a new formation. The problem with this is that it is very time consuming

and inefficient, which turns a lot of people off from creating new bases. Once you

get into TH9 and TH10 bases, it becomes very hard to make a new base because of

the sheer number of movable pieces there are and how little space you have to work with. An In-Game Base Builder would help immensely in this department." *Id.* at 13. Mastermind includes an example of "moving everything you have over to the side/edges of the base":

Id. at 14.

100.   Mastermind further explains that "Although it is possible to redesign a base currently, the suggestions I am offering will hopefully ease the process of base building and add some cool new features!" *Id.* at 14.

101.   Mastermind proposes two additions: "Base Builder and Design Layouts." As an overview, the "Base Builder" concept proposed by Mastermind provides an interface for a user to place structures and gameplay objects on the map

and save a "Layout" for a base. The "Design Layout" concept provides a way for users to select one of the saved base layouts to quickly modify the layout of a base. "Builder will take you to the actual base Builder where you can design a new base, and Layouts is where your previously made Base Designs are saved (and where you can switch from one base design to another in a matter of seconds)." *Id.* at 15.

102. Mastermind shows an interface for the "Base Builder" concept that provides a way for a user to place gameplay objects:

Ex. 1011 at 16. Mastermind describes this figure by explaining that "As you can see, there are many new features and buttons that I will explain very clearly for you all. The base is completely open, allowing the user to have free reign of placing

objects. This feature alone is the reason I want the idea (whether my version or another) in the game badly." *Id.* at 16. The icons at the bottom of this display are described as "the heart of the Base Builder."

Id. at 16. Mastermind explains that this interface is inspired by the interface normally used for attacking bases in the game: "I've made it to look like an Attack you would make on any base. But instead of troops, base items are in their place. Everything in this window is pretty self explanatory: it includes the picture of the item and how many items there are. In this instance, there are five Level 10 Cannons you can place. As you may notice, there are 2 different Archer Towers. That simply means they are different levels (as shown in the picture)." *Id.* A POSITA would have understood that this interface permits a user to select an object in the lower interface and place or "drag" the item to the main base area to place it. A POSITA would also understand the interface to distinguish different gameplay objects according to the different types of the objects, for example distinguishing between a cannon and an archer tower, and even between different "levels" of an archer tower.

103. Mastermind further illustrates the placement of a gameplay object, a "Town Hall" in the gameplay area:

Id. at 17. Mastermind explains how the interface is modified after placing an object in the base: "The number went from a white x1 of a quantity to a grayed out x0, meaning no more Town Halls are able to be placed. The background turned from a bright blue color to a dull magenta, signifying more visually that there are no other Town Halls to be placed." *Id.* Mastermind also discusses including an "info screen" providing information about the selected item, along with a "send back" button to "send the Town Hall (or any selected item) back to the inventory." *Id.* at 18.

104. Mastermind also describes how to place additional items, and in particular an approach to place walls in the base. *Id.* at 18-21. When placing items, Mastermind also discloses that items for placement could be navigated by a category

selection interface, including "Defense, Army, Walls, Decorations, Resources, and All" as shown by the following button icons:

Id. at 16. Mastermind also shows an example for the placement of a defense building, a cannon and additional objects. "We click on the Defense Category Button and place a Cannon (which shows its radius)."

*Id.* at 21. Mastermind then shows the placement of additional items to the base:

105.   A POSITA would have understood the "Base Builder" interface shown on these examples to disclose placing, allocating, moving, and removing gameplay objects from the game space and to set respective positions of those objects in the game space.

106.   Mastermind also discloses saving a layout for later use. In the example discussed by Mastermind, to use a base set up with the proposed base builder requires using "every placed item" ("in order to USE a layout, the base must have every item placed." *Id.* at 23. Mastermind also discusses that players can save "unfinished" bases (i.e., those where not all items have been placed), to later be completed. *Id.* A POSITA would have understood that this would permit a user to place some gameplay objects of the user and to later add additional gameplay objects

to the base layout. In addition, a POSITA would have understood that the requirement that a player use "all" of the items is a suggested requirement when implementing Mastermind's suggestion in the game of Clash of Clans, and that in other games the proposed layouts may be used while using fewer than all gameplay objects. For example, other games permit a player to place less than a required allocation of resources. As a particular example, "Gratuitous Space Battles" discloses that allocating units in its fleet uses a portion of a limited budget, and that "Every credit that you leave in the budget without spending is converted to honor if you actually win the battle." Ex. 1013 at 5.

107. Mastermind discloses that the particular layout of structures may be saved by a player after the player uses the interface to place items:
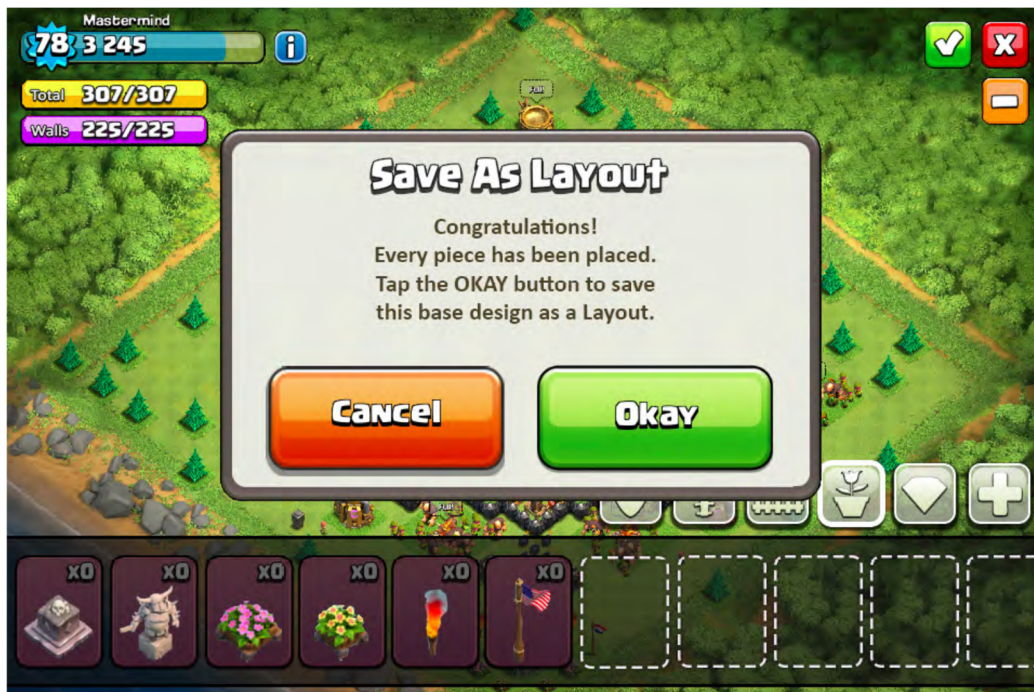
Ex. 1011 at 24. A POSITA would have understood this image and associated disclosure to mean that the layout would be stored by the Clash of Clans application, and, as with other game data, sent via a network to a game server for storage. A POSITA would also have understood that storing the layout would mean storing the particular types of objects along with the positions of those objects as placed by the player in the Base Builder interface. Because the game space is composed of a grid of tiles, a POSITA would also understand that the positions of these objects could be represented as coordinates in the game space. See Ex. 1010 at ¶ 17 ("The play area is made up of a grid of individual tiles . . . .").

108. In addition to the "Base Builder" interface, Mastermind also discloses that a player may "import" a player's existing village to create a layout: "there could be an added button in the builder to import your current base for if you want to save changes you made to a layout." Ex. 1011 at 27. A POSITA would have understood that "importing your current base" would permit the positions of gameplay objects in a player's current village to be displayed in the Base Builder interface and saved as a layout, with or without additional modifications to the gameplay object positions in the Base Builder interface. In this way, a layout could be created based on the positions of gameplay objects in the player's existing village.

109. Mastermind also discloses an interface for displaying layouts, which may be used for saving a layout or selecting among layouts to arrange a player's

base. When a player selects to save a layout created by the user, Mastermind discloses displaying a screen of "Layouts" with two layouts previously created by a user, and adding a new layout as "Layout 3":

Id. at 24-25. As shown in these example layouts, the layouts shown in Mastermind include a graphical representation of the layout. Said another way, the graphic illustrating each layout shows a miniature version, or thumbnail, of the corresponding layout. That is, a POSITA would have recognized that each layout is represented with an associated image of the layout and the arrangement of gameplay objects in the layout.

110. Mastermind also discloses that selecting of the layouts in the layout screen may be used to modify or use a layout: "Clicking a Layout will prompt you with a few choices:" "Use this Layout" "Rename Layout" "Share Layout" "Delete Layout". *Id.* at 26. Mastermind discloses that selecting the image of the layout permits the player to then rearrange the player's base to the selected layout:

"Choosing the Use This layout option will automatically switch your base to whatever design you select!"

111.　Layouts may be shared between players using different devices: "The Share Layout option would work much like a Shared Replay and would appear in Clan Chat/Private Message, allowing others to use your base design as their own! I think there are definitely pros and cons to this option, the 1 con being preventing creativity from everyone, although most designs are copies of each other anyways and this option would save time. The pros would include promoting better community within clans, allowing more experienced clan members to literally share their base design knowledge with newer members, and many other good options." A POSITA would have understood that the layouts may be shared directly from one device to another, or may be shared indirectly through the game server. A POSITA would also understand Mastermind to disclose that the shared layouts could be implemented by the other players receiving the shared layout ("some clans could do [sic] all use the same design … and have a base design act almost as another figurative Clan Emblem, distinguishing clan from clan."). *Id.* at 27. Although not explicitly disclosed by Mastermind, a POSITA would have understood that to implement this feature discussed by Mastermind, a player receiving a design from another player could add the received layout to the "Layout" interface shown by

Mastermind (e.g., as layout 4), and at which point the receiving player could use and access the received layout like any other layout shown in the interface.

112. A POSITA would also understand the received layout could be displayed in the Base Builder so that the receiving player could further modify the received layout. In addition, if the receiving player has different gameplay objects or obstacles that prevent the use of the layout, the receiving player could modify the layout in the Base Builder to account for the different gameplay objects. See *Id.* at 27 ("When trying to switch bases or use a base, if an obstacle would be interfering with a moveable base object, a message would come on screen telling the user that an obstacle was in the way and requiring those obstacle(s) to be cleared before the base could be put to use."). If a receiving player had gameplay objects that were not included in the shared layout (i.e., more gameplay objects than specified in the layout), then a POSITA would have understood that these gameplay objects may be displayed in the interface elements of the Base Builder for placement. Likewise, if the receiving player did not have objects designated in a layout, A POSITA would have understood that the object could be omitted from the layout for the receiving user or an indication could be provided that the player does not have objects included in the layout. After the player receiving a shared layout adds the layout to the layout interface, a POSITA would have understood that the receiving player could apply the layout to the player's own base, for example by selecting the layout in the layout interface.

3.   U.S. Patent 9,079,105 to Kim

113.   U.S. Patent No. 9,079, 105 to Kim et al. ("Kim") was issued on July 14, 2015 and is titled "Method and Apparatus for Managing Team in Online Game." Ex. 1012. The Kim Patent matured from U.S. Application no. 13/988,086, filed May 17, 2013 as a U.S. national phase application of PCT Application No. PCT/KR2012/004015. I understand that Kim would be considered to be publicly available before the effective filing date of the challenged patent.

114.   Kim discloses "a method for managing a team in an online game" with a team management screen for setting a formation of the team, "adding the formation if the number of currently set formations is less than the maximum number of formations, and setting a formation change shortcut key." *Id.* Abstract.

115.   Kim provides an interface for users to set a formation, add the formation to a limited number of formations (i.e., up to the "maximum number" of formations), set a formation change shortcut key, and change formations during a game using the formation change shortcut key, as shown in Fig. 1:
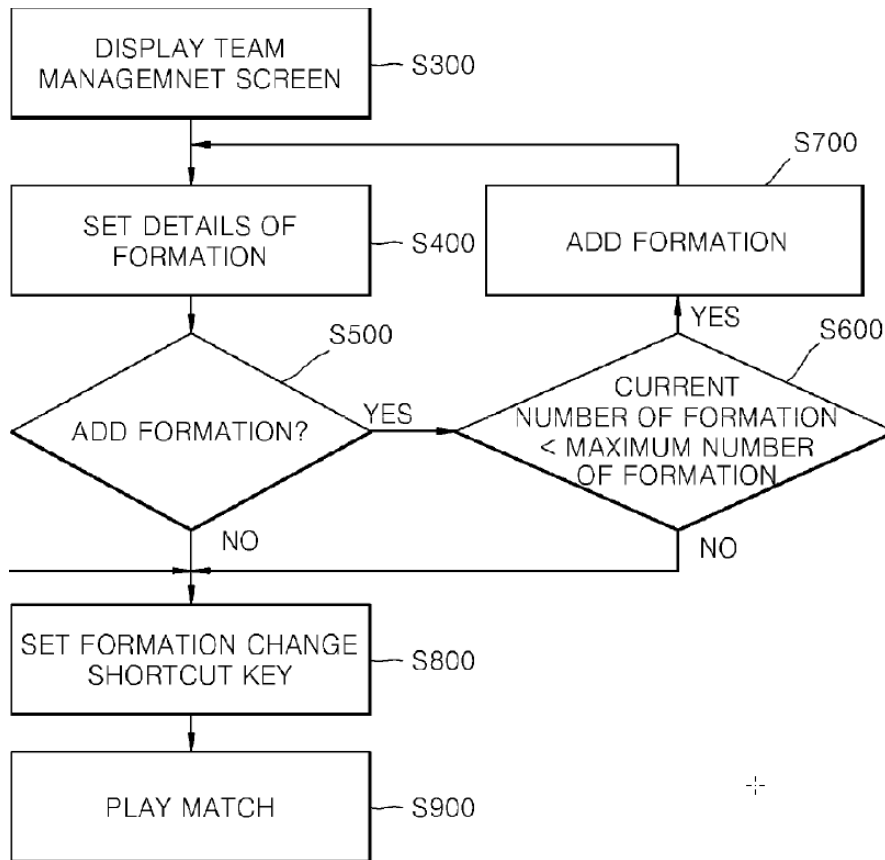
Ex. 1012, Fig. 1. "As such, the online game of the present invention provides the user with a plurality of formations to allow the user to change between formations during gameplay." Ex. 1012 at 8:65-67. As Kim summarizes: "Consequently, the method for managing a team in an online game according to the present invention as described above with reference to Fig. 1 may allow the user to set a preliminary formation in addition to a basic formation, to set details of each formation, and to immediately change between a plurality of formations using a shortcut key for change between formations during game play." Ex. 1012 at 9:47-53.

116. Kim discloses various interfaces for setting team formations and setting "tactics" for characters in the formation. Kim recognizes that visual representation

of these settings is often preferable: "Preferably, the team management screen provides as much visual information as possible to assist the user in more easily managing a team. A variety of team management screens may be configured according to games. If there are many categories to be managed, a game screen may be divided into several areas, or a plurality of tabs may be provided." Ex. 1012 at 8:18-26.

117. Kim discloses that a user may customize formations based on an initial formation termed a "preliminary" formation or a "basic" formation. "The formation selection unit displays a plurality of formations preset by the team management apparatus. That is, assuming that the team management apparatus presets a plurality of formations, such as 4-2-4, 4-3-3, and 4-4-2, and the user selects one of the plurality of formations, a plurality of characters on a team will be arranged according to the selected formation. The user may have difficulty in directly correcting positions of a plurality of characters individually in order to set a plurality of formations. Accordingly, in an online game, it is preferable that the team management apparatus preset a plurality of formations to allow the user to select a desired one of the plurality of formations, and thereafter to simply adjust respective positions of a plurality of characters in the selected formation, which ensures easier user setting of the plurality of formations." Ex. 1012 at 10:45-60. A POSITA would have understood this to mean that Kim's preset formations would provide an initial

arrangement of characters for playing the game that can then be modified by the user in the formation setting interface. "The formation setting unit FMS displays positions of a plurality of characters arranged according to a formation that is selected from among the basic formation BF and the preliminary formation PF1. In addition, the formation setting unit FMS may allow the user to adjust respective positions of the plurality of characters." *Id.* at 10:62-67.

118. Kim also discloses that a character placed at a given position may be replaced with another character. "[R]eplacement of characters may occur not only between characters arranged in a selected formation, but also between a character arranged in a selected formation and a substitute character not arranged in the selected formation." Ex. 1012 at 11:38-45. Kim also discloses that the arranged characters may differ from the number of characters available to a user: "[A] team may include a greater number of characters than the number of characters that may participate in a game. In the present invention, such extra characters are referred to as substitute characters for replacement with characters that are participating in a game." *Id.* at 14:22-26.

119. While Kim discusses formations for an online soccer game, it recognizes that its disclosure applies to other types of games with formations and is not limited to online soccer games. *Id.* at 10:25-29. Kim recognizes that formations in various kinds of games often affect success: "In addition, a formation may be a decisive factor

in the victory or defeat of a team even in games other than online sports games." *Id.*
at 1:62-64. "[A] formation, which refers to all the respective positions of the plurality
of characters, is an important factor in such a team management game." *Id.* at 1:53-
55. A POSITA would have recognized that the use of formations as shown by Kim
could have been used for various types of games in which "respective positions of the
plurality of characters may be a decisive factor in the victory or defeat." As such a
POSITA would have understood that formations "which refers to all the respective
positions of the plurality of characters" could be applied to different types of games
with different gameplay objects. Though Kim refers to placing characters on a team,
a POSITA would have understood similar principles to apply to formations of other
gameplay objects according to rules of another game.

120. Kim shows an interface for setting character position in Fig. 5:


Fig.5
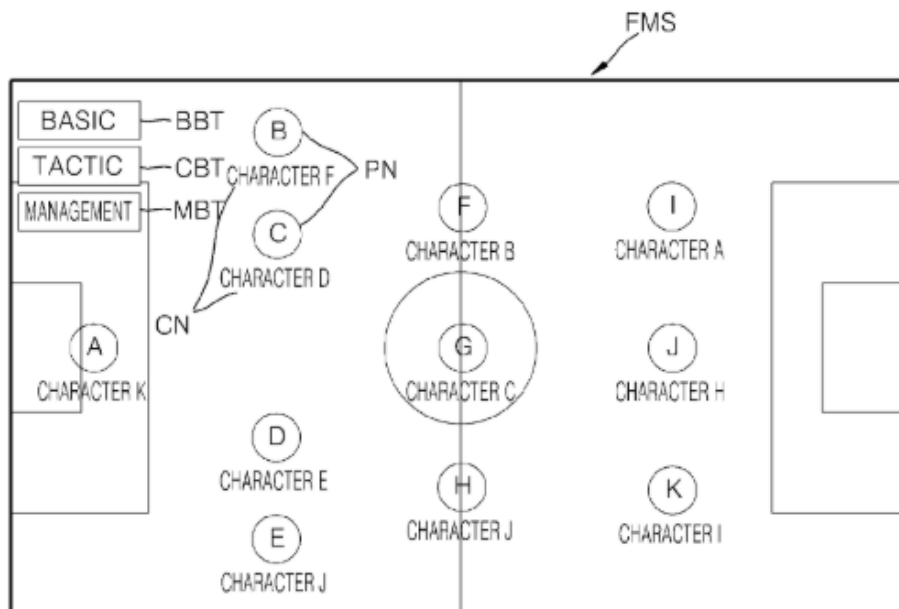
Ex. 1012, Fig. 5. Kim discloses that the user may move characters to replace characters at another position or to move the position of a character within the formation. *Id.* at 13:29-35, 13:50-52. "After the character is selected, the team management apparatus displays a boundary area of the selected character (S444). Here, the boundary area refers to an area where the respective characters (character A to character K) may maintain the position name (PN) thereof. . . . If the character is moved (S445), it is judged whether or not a distance between the moved character and the most adjacent character is greater than a preset minimum distance between neighboring characters (S446)." *Id.* at 13:57-66. When the character is moved within the minimum distance, the player is replaced, and when the player is outside the minimum distance, "the character is displayed at the moved position." *Id.* at 13:65-14:18. A POSITA would have understood this interface to permit users to arrange players within the formation at different locations and to replace characters within the formation with another character from the formation or from a character who is not currently in the formation.

121. Kim further discloses a tactic setting screen in Fig. 8 that permits a user to specify an "offense disposition adjustment sign and "defense disposition adjustment sign." See Ex. 1012 at Fig. 8, 15:4-15:56. "[T]he user may adjust the offense disposition and defense disposition of each of the plurality of characters, and each character having the adjusted disposition may show a greater offense

participation frequency or a greater defense participation frequency according to preset disposition, which may change details of a game." *Id.* at 15:57-62. A POSITA would have understood this to provide a means for users to modify how characters operate on defense or offense during the game when that formation is being used.

122.   Kim also discloses an arrangement of systems for managing a team in an online game in Fig. 13:

Fig.13
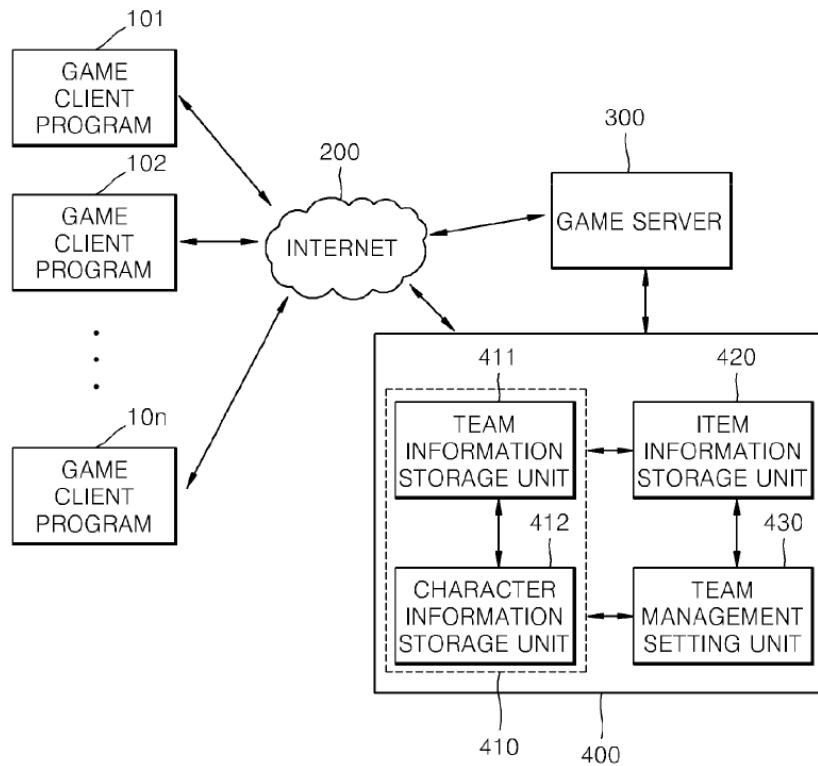
Ex. 1012 at Fig. 13. As shown in Fig. 13, Kim discloses that several game client programs operating on user terminals (101-10n) interact with a game server 300 and a team management apparatus 400 through the Internet. "Each of the plurality of

user terminals 10*l* to 10*n* is connected to the game server 300 through the internet 200, and is provided with a game client for implementation of a game." *Id.* at 18:8-11. Kim also discloses that various types of devices may be used as the "user terminals": "Although Fig. 13 illustrates a plurality of users as being connected to the game server through computers 10*l* to 10*n*, instead of the computers, there may be other terminals that are connected to the game server 300 through the Internet 200 to perform a game. For example, mobile communication terminals, and Internet connectable televisions may be used." Ex. 1012 at 18:15-21. Similarly, Kim discloses that the game client may already be present on a user terminal or that the game server 300 may control installation of game clients. *Id.* at 18:33-36.

123. Kim discloses that "The game server 300 may include a game database (not shown) that stores game control logics on a per game basis. Here, game logics refer to specified rules to enable automated progress of a game according to a predefined rule, and may correspond to a series of game progress procedures." Ex. 1012 at 18:37-41. Kim discloses that the game server 300 may include the team management apparatus 400 and the team information storage unit 411. *Id.* at 19:34-43.

124. To store and apply team formation data, Kim discloses an "information storage unit 410 in which team information as well as character information are stored. . . and a team management setting unit 430 that may set a plurality of

formations with respect to a user management team by providing a team management screen and may perform character replacement at each position." Ex. 1012 at 18:42-51. "The team information storage unit 41 stores basic team information on teams that are basically provided in a game as well as information on teams that are organized individually by the user." *Id.* at 18:54-58.

125. Kim discloses that "Upon receiving a team management screen request signal from the user terminal, the team management setting unit 430 configured a team management screen by acquiring information on a user team and information on a plurality of characters on the user team from the team information storage unit 411 and the character information storage unit 412, and displays the team management screen on the user terminal." Ex. 1012 at 18:62-19:1. "The team management setting unit 430 stores a plurality of preset formations. If the user requests a particular formation, the team management setting unit 430 may change positions of characters on the team according to the corresponding formation. Thereafter, if the user performs replacement of characters according to the selected formation, or performs change between formations via position movement of the characters, the changed results are stored in the team information storage unit 411." *Id.* at 19:10-19.

126. Kim also discloses that the various systems shown in Fig. 13, in executing the described functions, may include "communication protocol related

code that designates a communication method between the computer processor and any other remote computers, servers, or the like using a computer communication module (for example, a wired and/or wireless communication module) as well as information or media for transmission/reception during communication." Ex. 1012 at 20:15-24. "In the embodiments of the present invention, the terms "communication", "communication network", and "network" may be used interchangeably. The three terms may refer to as wired/wireless local area and wide area data transmission/reception networks to enable transmission/reception of files between user terminals and between a user terminal and a download server." Ex. 1012 at 7:6-12.

127. Finally, Kim discloses that its techniques are applicable to computing devices of various types and that "The above described functions may be executed as the aforementioned program is recorded in a computer readable recording medium and is executed by a computer." Ex. 1012 at 19:61-63; see also *id.* at 19:64-21:6.

4. Motivation to Combine Clash of Clans and Mastermind

128. It would have been obvious for a POSITA at the time of the effective filing date of the challenged patent to combine Clash of Clans and Mastermind. A POSITA would have understood the motivation discussed by Mastermind that "it becomes very hard to make a new base because of the sheer number of movable

pieces there are." Ex. 1011 at 13. A POSITA would have understood that the base design interface and "Layouts" proposed by Mastermind could be implemented to improve these features of Clash of Clans as available at the time of Mastermind. I understand that there may be various rationales for a POSITA to combine the teachings of various references. Here, a POSITA would have recognized a specific teaching/suggestion/motivation to modify Clash of Clans with Mastermind because Mastermind specifically suggests modifying Clash of Clans. In addition, a POSITA would have recognized that this combination would have combined the disclosed features according to known methods and would have yielded predictable results.

129. The "Base Builder" and "Layouts" discussed by Mastermind would have been readily incorporated by a POSITA to the Clash of Clans game. In particular, Mastermind specifically illustrates how an interface for placing objects to create a layout would operate and how to display a selection of layouts for a player. One skilled in the art would have understood how to implement the interface shown by Mastermind and how to save the placement of objects in a layout as shown by Mastermind and apply a saved object. For example, a POSITA would have understood that the placement of gameplay objects to be located at individual tiles of the gameplay area and that the location of gameplay objects could be described according to coordinates or location of the gameplay objects on the play area, similar to how existing base layouts were stored by Clash of Clans. In addition, it was well

known in the art at the time for electronic games to save and load positions of gameplay objects or other information for moving gameplay objects, for example as shown by Kim, Gratuitous Space Battles, and Cho as discussed above. As these other systems successfully implemented such features, a POSITA would have used known methods to successfully implement the "Base Builder" and "Layout" features of Mastermind into Clash of Clans with predictable results.

130. In implementing the features disclosed in Mastermind, a POSITA would have found it obvious to use the existing devices used by Clash of Clans, such as the iOS devices operating a game application and a game server that coordinates play between devices. Clash of Clans provided for the player's positioning of gameplay objects to be communicated with the server. Ex. 1010 at ¶ 13. It would have been obvious for the position of objects designated with the "Base Builder" shown in Mastermind to likewise have also been sent to the game server. This would provide a means for the gameplay server to store this data, for example to provide the layout for use by other of the player's devices. As discussed above, it was also well known in the art for game related information, such as the position of gameplay objects, to be stored at various locations according to the needs of various games. Accordingly, it would have been obvious to a POSITA that the location of gameplay objects placed in the "Base Builder" and as "Layouts" may variously be stored at the client device, at a game server, or stored at other client devices.

131. Likewise, to implement the "sharing" feature discussed by Mastermind, it would have been obvious to a POSITA that this would include sending the layout created by a player on one device (e.g., that player's iOS device operating the Clash of Clans application) to another player's device (e.g., the other player's iOS device operating the Clash of Clans application) to share a layout created by a user through a game server or directly from one player's device to another. Stated another way, it would have been obvious for the game server to receive the layout created by one player on one device and to send the layout to another device operated by another player. When receiving a layout, it would have been apparent to a POSITA that the layout could be displayed to the player receiving the layout in a similar manner to the "Layout Editor" view shown in Mastermind or that the received layout could be added to the layout of a user.

132. To the extent that this is not apparent from the express disclosure of Mastermind, it would have been well known to a POSITA to share and display content between users that could be incorporated to another player's game. For example, Cho discloses that information for moving gameplay objects can be shared amongst and displayed to various players who may further modify that information. See Ex. 1014 at Fig. 11. Cho also discloses that "Users may save in the memory of the video game system maps and/or drawn tactical data generated locally or received from other users. This enables users to review drawings made in the past (i.e.,

playback the drawing). Drawings may be selected, for example, from a menu displayed on a display screen of the video game system. The drawings selected from memory may be further modified and communicated to other users. In addition to storing the 'drawing performances' on the user's own system (e.g., it gets stored there when they view it for the first time), it can be downloaded or streamed from a server that caches this data." Ex. 1014 at ¶¶ 65-66.

5. Motivation to Combine Clash of Clans, Mastermind, and Kim

133. It also would have been obvious for a POSITA at the time of the effective filing date of the challenged patent to combine Clash of Clans, Mastermind, and Kim. In particular, it would have been obvious to a POSITA to implement the Clash of Clans-Mastermind combination using the computing systems disclosed by Kim because Kim provides an online system for managing formation data in games. Kim relates to a similar field as that of Clash of Clans-Mastermind and provides for modifying formations of game characters, recognizing that its teachings are "not limited to online soccer games." Ex. 1012 at 10:25-29. As a result, it would have been obvious to combine elements from Clash of Clans and Mastermind with Kim according to known methods to yield predictable results. In addition, use of the game server 300 of Kim that "stores game control logics" to "enable automated progress of a game" (Ex. 1012 at 18:36-42) would have been a simple substitution of Kim's game server 300 for the game server that coordinates play in Clash of

Clans. Kim discloses that its team management apparatus may be included in the game server 300. *Id.* at 19:40-43. Likewise, it would have been obvious to a POSITA to modify Kim's team management setting unit 430 to store the "Layouts" of the Clash of Clans-Mastermind combination and would have been combinable using known methods to yield predictable results. Further, it would have been obvious to a POSITA to include Kim's "shortcut key" (or another interface element for this purpose) for modifying team formations to provide an convenient way to modify a player's base layout during a game.

6. Secondary Considerations

134. I am unaware of any secondary considerations that would render the claims of the challenged patent non-obvious. I am not aware of the inventors of the challenged patent or GREE practicing or marketing the alleged invention of the challenged patent, and therefore, no commercial success has been achieved for the processes covered by the patents. In addition, the challenged patent does not satisfy any long felt but unmet need because a review of the prior art, including the references cited herein, already met the same needs as the features of each claim. Similarly, the alleged invention(s) of the challenged patent does not achieve any unexpected results because the prior art, including those cited herein, disclose the same processes achieving the same results. I am, likewise, unaware of any praise of the alleged invention of the challenged patent by others skilled in the art, deliberate

copying of the alleged invention, or any licenses taken under the challenged patent by others.

7. Detailed Analysis

135. For the reasons provided in the chart below, the combination of Clash, Mastermind, and Kim render obvious all claims of the challenged patent.

136. The charts below list claim language from the challenged patent on the left side and provides my analysis for why the claims are obvious in view of the prior art references on the right side.

137. My analysis in the charts and earlier describes obvious combinations in which Clash of Clans is treated as the base reference and modified using teachings from the other references. A POSITA would recognize that other configurations of the references are also obvious.

138. To aid in referencing to individual portions of the chart, I enclose the chart for each claim under a separate paragraph number of this declaration.

139. '978 Patent Claim 1:

	Claim: 1	**Prior Art Analysis**
1.0	1. A method performed by a portable electronic device, the method comprising:	*Claim 1 is obvious in view of the combination of Clash, Mastermind, and Kim.* *Clash discloses a method performed by a portable electronic device:* "Clash of Clans is played by a player executing the Clash of Clans application on a device, such as an

Claim: 1	Prior Art Analysis
	iPhone or other iOS device, in communication with a gameplay server via the Internet." Ex. 1010 at ¶ 13. *The electronic device of Clash (e.g., the iOS device) is portable and performs a method while carrying out the game functions described below.* *To the extent a portable electronic device performing a method is not disclosed in Clash, Kim discloses these aspects:* "Therefore, it is an object of the present invention **to provide a method for managing a team in an online game**, in which a user may set a plurality of formations that represent arrangements of a plurality of characters on a team prior to playing a match, and may set a shortcut key for change between the plurality of formations, which allows the user to immediately and easily change between formations even during gameplay." Ex. 1012 at 2:24-30. "**Hereinafter, an apparatus and method for managing a team in an online game according to the embodiments of the present invention will be described** with reference to the accompanying drawings." Ex. 1012 at 6:40-43. "**Each of the plurality of user terminals** *10l* to 10*n* is connected to the game server 300 through the internet 200, and **is provided with a game client for implementation of a game**." Ex. 1012 at 18:8-11. *Kim's user terminals and game server are electronic devices and the game client by implementing the game performs a method.* *Kim discloses that its electronic devices may be mobile:* Although FIG. 13 illustrates a plurality of users as being connected to the game server 300 through

Claim: 1	Prior Art Analysis
	computers 101 to 10n, instead of the computers, there may be other terminals that are connected to the game server 300 through the Internet 200 to perform a game. For example, **mobile communication terminals**, and Internet connectable televisions may be used. Ex. 1012 18:15-21. The computer, which can read the recording medium, in which the application, i.e. the program for execution of the method for managing a team in an online game according to the respective embodiments of the present invention, may include a general PC, such as a general desktop or **laptop computer, a smart phone, a tablet PC, a Personal Digital Assistant (PDA), and a mobile terminal such as a mobile communication terminal**, and moreover, may be construed as all possible computing devices. Ex. 1012 20:56-64. In addition, if the computer, which can read the recording medium, in which the application, i.e. the program **for execution of the method** for managing a team in an online game according to the respective embodiments of the present invention, is a smart phone, tablet PC, a PDA, or a mobile terminal, the application may be downloaded from the application provider server into the general PC, and may be installed in the mobile terminal via a synchronization program. Ex. 1012 20:65-21:6. *The mobile electronic devices disclosed by Kim constitute portable electronic devices.*
1.1	executing a game by arranging, based on a command received from a first player, a	*Clash discloses executing a game, Clash of Clans as discussed in § 1.0. In the game, gameplay objects (game contents) are placed (arranged) within a player's village/play area, also termed a "base" in*

	Claim: 1	Prior Art Analysis
	plurality of game contents within a game space, the game contents including at least game contents for defending from an attack initiated by a second player;	*Mastermind (a game space) based on a command received from a first player (e.g., using the touch screen of an iOS device), where the gameplay objects include at least a gameplay object (at least game contents) for defending from an attack initiated by another player (a second player):* "As shown in Fig. 1, the village includes various gameplay objects placed in a play area. . . . [T]he play area is made up of a grid of individual tiles on which the gameplay objects may be placed. The unoccupied tiles in the play area alternate dark and light colors. The different gameplay objects include different types of objects, such as buildings (e.g., town hall, cannons, archer towers, etc.), walls, traps (e.g., bombs and springs), and obstacles." Ex. 1010 at ¶¶ 16-17. "Surrounding the play area grid is a border area in which buildings may not be placed, but where the game may place obstacles and where opposing players may drop troops during an attack." Ex. 1010 at ¶ 19. "One object of the game is for a player to protect his or her "Town Hall" building and resource storage containers **by arranging game objects in a player's village in a strategic manner**. **The arrangement of the objects affects how the village defends against attacks from other players**." Ex. 1010 at ¶ 21. *The individual gameplay objects, such as cannons and archer towers, as well as the arrangement of the gameplay objects, are "for defending from an attack initiated by a second player."*
1.2	receiving a command to create a template from the first player;	*Mastermind discloses a "Base Builder" interface for arranging gameplay objects to be saved as a layout (template) in a "Layouts" interface. The first player uses the Layouts interface to provide a command to create a template, and this command is received by the portable electronic device:*

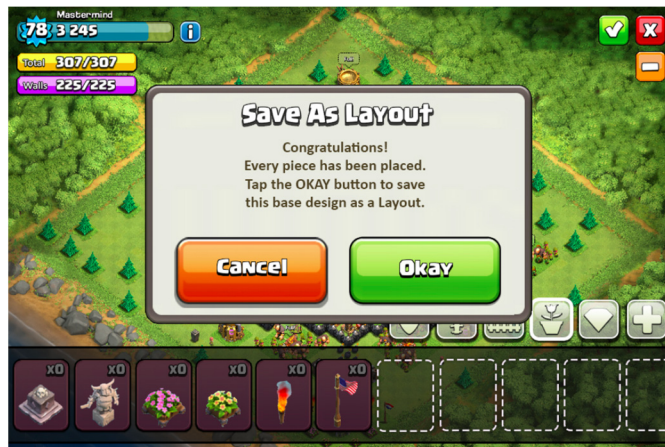| Claim: 1	Prior Art Analysis
	"Builder will take you to the actual base Builder where you can design a new base, and **Layouts is where your previously made Base Designs are saved** (and where you can switch from one base design to another in a matter of seconds)." Ex. 1011 at 15.

"We click on the Defense Category Button and place a Cannon (which shows its radius"

Ex. 1011 at 21.

Mastermind discloses receiving a command to create a layout (a template) from the first player:

"With everything complete, we can now click the Green Check Button once again and actually **save our base as a Layout**!" Ex. 1011 at 24.

"Click OKAY to save your design as a Layout." Ex. 1011 at 24.

Claim: 1	Prior Art Analysis
	"Once the base design is complete, this is the screen you will be taken to.

Right after clicking the Green Check Button to save our design, our only option is to save the design or exit out (at the top-right). If we choose to save our design in Layout 1 or Layout 2, an option will appear allowing us to either Overwrite the previous design or cancel.

But let's choose the Empty area at the bottom left.

Once chosen, **our new base design is saved as Layout 3**!

Congratulations! That is how a base is made and saved in the Mastermind Base Builder!" Ex. 1011 at 24-25.

Claim: 1	Prior Art Analysis
	The received command from a first player to save a base design (the selection of the Green Check Button and "Okay") in Mastermind's Base Builder interface to create a layout is a received command to create a layout (template).
1.3 creating, responsive to the received command to create the template, a plurality of templates defining the plurality of game contents and respective positions of the plurality of game contents within the game space;	*Mastermind discloses receiving a command to create a template as discussed in § 1.2.* *Mastermind further discloses creating a layout (a template) defining the plurality of game contents and respective positions of the plurality of game contents within the game space:* "Builder will take you to the actual base Builder where you can design a new base, and Layouts is where your previously made Base Designs are saved (and where you can switch from one base design to another in a matter of seconds)." Ex. 1011 at 15. "We click on the Defense Category Button and place a Cannon (which shows its radius" Ex. 1011 at 21. *The cannon is an example of game content having a respective position within the game space. A layout can, and would typically, have a plurality of game contents at respective positions within the game space*

Claim: 1	Prior Art Analysis
	(as illustrated by the other game contents to be placed illustrated along the bottom of the image shown above).

Mastermind discloses that templates are created and saved to a "Layouts" interface:

"Right after clicking the Green Check Button to save our design, our only option is to save the design or exit out (at the top-right). If we choose to save our design in Layout 1 or Layout 2, an option will appear allowing us to either Overwrite the previous design or cancel.

But let's choose the Empty area at the bottom left.

Once chosen, **our new base design is saved as Layout 3**!

Congratulations! That is how a base is made and saved in the Mastermind Base Builder!" *Ex. 1011 at 24-25.*

Mastermind explicitly discloses existence of a plurality of layouts. A POSITA would have recognized from this disclosure, and other disclosure in Mastermind described above, that a plurality of layouts (e.g., as shown in the Layouts interface) could obviously be created in the same manner responsive to receiving the command to save the layout.

	Claim: 1	Prior Art Analysis
1.4	creating a plurality of images that each correspond to one of the plurality of templates;	*Mastermind discloses creating a plurality of images that each correspond to one of the plurality of layouts (templates):* "Once the base design is complete, this is the screen you will be taken to. As we can see, we already have 2 previous base designs saved and 2 spaces empty. Right after clicking the Green Check Button to save our design, our only option is to save the design or exit out (at the top-right). If we choose to save our design in Layout 1 or Layout 2, an option will appear allowing us to either Overwrite the previous design or cancel. But let's choose the Empty area at the bottom left.

Claim: 1	Prior Art Analysis
	Once chosen, our new base design is saved as Layout 3! Congratulations! That is how a base is made and saved in the Mastermind Base Builder!" Ex. 1011 at 24-25. *The images shown in the various spaces (e.g., layout 1, layout 2) are the created plurality of images that each correspond to one of the plurality of layouts.*
1.5 displaying a screen including the plurality of images;	*Mastermind discloses displaying a screen including the plurality of images. The screen is shown in § 1.4 and below:*
1.6 receiving a selection corresponding to one of the displayed images; and	*Mastermind discloses receiving a selection corresponding to one of the displayed images:* "Clicking a Layout will prompt you with a few choices: • Use this Layout • Rename Layout • Share Layout • Delete Layout

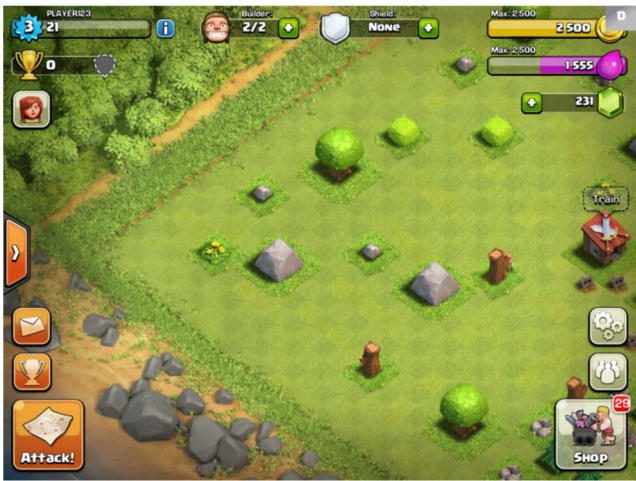|	Claim: 1	Prior Art Analysis
		Choosing the Use This Layout option will automatically switch your base to whatever design you select!" Ex. 1011 at 26.
		Choosing the "Use this Layout" option causes the game to receive a selection of a layout corresponding to one of the displayed images.
1.7	applying a template corresponding to the received selection to a predetermined area within the game space.	*Mastermind discloses applying the layout (template) corresponding to the received selection to the base:*
		"Clicking a Layout will prompt you with a few choices:
		• Use this Layout
		• Rename Layout
		• Share Layout
		• Delete Layout
		Choosing the Use This Layout option will automatically switch your base to whatever design you select!" Ex. 1011 at 26.
		Automatically switching the base to the selected design constitutes applying the layout (template) corresponding to the received selection to the game space.
		Clash in combination with Mastermind discloses that the layout is applied to a predetermined area within the game space.
		Clash discloses that a player has a village/play area (game space) and that gameplay objects are placed on a grid of individual tiles within the village/play area. Surrounding the grid is an area in which buildings (a type of gameplay object) may not be placed:
		"As shown in Fig. 1, the village includes various gameplay objects placed in a play area. . . . [T]he play area is made up of a grid of individual tiles on which

Claim: 1	Prior Art Analysis
	the gameplay objects may be placed. The unoccupied tiles in the play area alternate dark and light colors. The different gameplay objects include different types of objects, such as buildings (e.g., town hall, cannons, archer towers, etc.), walls, traps (e.g., bombs and springs), and obstacles." Ex. 1010 at ¶ 16-17.

"Surrounding the play area grid is a border area in which buildings may not be placed, but where the game may place obstacles and where opposing players may drop troops during an attack." Ex. 1010 at ¶ 19.

Figs. 3A-3D of Clash illustrate the border area surrounding the play grid area:

"Figs. 3A-D show the border area surrounding the play area grid. As shown in the figures below, the play area is a square shape comprising a grid of light and dark green squares. The corners of this grid are displayed in each figure, and the border between the play area grid and the border area is shown with a light brown line. Fig. 3A shows the west corner of the play area grid, Fig. 3B shows the north corner, Fig 3C shows the east corner, and Fig. 3D shows the south corner."

Ex. 1010 at ¶ 20, Fig. 3A; see also Figs. 3B-3D.

Claim: 1	Prior Art Analysis
	Mastermind discloses the Base Builder interface in which gameplay objects are arranged within the "play area" shown by Clash: Ex. 1011 at 15. *Mastermind discloses a completed base having gameplay objects in the play area to be saved as a layout:* "With everything complete, we can now click the Green Check Button once again and actually save our base as a Layout!" Ex. 1011 at 23-24.

Claim: 1	Prior Art Analysis
	The gameplay area where players arrange objects in the Base Builder interface constitutes a "predetermined area" within the game space to which the layout is applied when the "Use this Layout" option is selected in Mastermind.
	To the extent not disclosed in Clash and Mastermind, Kim discloses "applying a template corresponding to the received selection to a predetermined area within the game space." As discussed in § 1.0, Kim discloses managing a team in an online game in which a player may set a plurality of formations. Kim further discloses that the player may change the formation (apply the template) on the display of the user terminal in real time during game play:
	"Therefore, it is an object of the present invention **to provide a method for managing a team in an online game**, **in which a user may set a plurality of formations that represent arrangements of a plurality of characters** on a team prior to playing a match, and **may set a shortcut key for change between the plurality of formations, which allows the user to immediately and easily change between formations even during gameplay**." Ex. 1012 at 2:24-30.
	"The team management setting unit may store the plurality of preset formations each represented in a numerical form, and **may change positions of the plurality of characters displayed on the formation setting unit** according to the selected formation upon receiving a signal for selection of one formation among the plurality of formations from the user terminal."
	"According to the present invention, in an online game in which a user performs a match via team management, the user may set a plurality of formations that represent arrangements of a plurality of characters

Claim: 1	Prior Art Analysis
	on a team prior to playing a match, **and may freely change between formations using a shortcut key during game play.**" Ex. 1012 at 5:47-58. "After formation addition and setting of the details are completed, a shortcut key for change between formations is set (S800). During gameplay, the user is prevented from entering the team management screen for change between formations. Thus, **the team management apparatus has to provide a short cut key to allow the user to select a particular key of a keyboard so as to easily change between formations during game play**. Typically, since change between formations is not frequently required during game play, the shortcut key need not be readily accessible by the user. That is, since the shortcut key is used infrequently, one key on a number keypad of the keyboard may be set to the change shortcut key. Ex. 1012 at 9:26-37. *A POSITA would have found it obvious to incorporate Kim's short cut key into the game of Clash-Mastermind because it would allow the player to "easily change between layouts/formations during game play." Doing so is a combination of prior art elements according to known methods to yield predictable results.*

140. '978 Patent Claim 2:

	Claim: 2	Prior Art Analysis
2.0	2. The method of claim 1, wherein the respective positions of the plurality of game contents within the game space are defined by coordinates in the game space.	*Claim 2 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a method as discussed in § 1.0.* *Clash further discloses that the respective positions of the plurality of gameplay objects (game contents) within the village/play area (game space) are defined by coordinates in the village/play area:*

Claim: 2	Prior Art Analysis
	"As shown in Fig. 1, the village includes **various gameplay objects placed in a play area. . . . [T]he play area is made up of a grid of individual tiles on which the gameplay objects may be placed.** The unoccupied tiles in the play area alternate dark and light colors. The different gameplay objects include different types of objects, such as buildings (e.g., town hall, cannons, archer towers, etc.), walls, traps (e.g., bombs and springs), and obstacles." Ex. 1010 at ¶¶ 16-17. "The gameplay server stores and maintains information about a player's village, including the location of game objects (i.e. buildings, walls, resource collectors, obstacles) within the village and any related status of these game objects. A portion of the 'starting home' data file, which is the information regarding the initial layout of a player's village, is reproduced below as Fig. 20. The file shows the information regarding the 'buildings' in the village along with their levels and locations. The "data" is the ID of the object. For example, building "data" 10000001 is the Town Hall building. **The location of the building object is further shown with stored x-y coordinates.**" Ex. 1010 at ¶ 50.

Claim: 2	Prior Art Analysis
	"When a village is modified during gameplay (e.g., game objects are added, moved, upgraded, etc.), the village information is updated and stored at the player's device in a similar format, and the Clash of Clans application sends the modification to the gameplay server, which updates the village information stored at the gameplay server." Ex. 1010 ¶ 51.
	The grid of individual tiles on which the plurality of gameplay objects (game contents) are placed are coordinates in the game space that define the respective positions of the gameplay objects.

141. '978 Patent Claim 3:

Claim: 3	Prior Art Analysis
3.0	3. The method of claim 1, comprising:	*Claim 3 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a method as discussed in § 1.0.*
3.1	displaying an interface including the game space and images corresponding to a plurality of game contents; and	*Clash discloses displaying an interface including the village/play area (game space) and images corresponding to a plurality of gameplay objects (game contents):*

Claim: 3	Prior Art Analysis
	Fig. 1 "As shown in Fig. 1, the village includes **various gameplay objects placed in a play area. . . . [T]he play area is made up of a grid of individual tiles on which the gameplay objects may be placed.** The unoccupied tiles in the play area alternate dark and light colors. The different gameplay objects include different types of objects, such as buildings (e.g., town hall, cannons, archer towers, etc.), walls, traps (e.g., bombs and springs), and obstacles." Ex. 1010 at ¶¶ 16-17. *Fig. 1 illustrates the displayed interface which includes the village/play area and images corresponding to a variety of gameplay objects (game contents).*
3.2	receiving a command to allocate at least one of the plurality of game contents in an

3.2	receiving a command to allocate at least one of the plurality of game contents in an	*Clash discloses receiving a command to allocate at least one of the plurality of gameplay objects (game contents) in an area of the village/play area (game space):*

Claim: 3	Prior Art Analysis
area of the game space; and	"If the player selects the "Cannon" object from the Defenses interface, the village screen will be displayed and the player will need to select a location in the village to place the game object (the cannon) as shown in Fig. 8. The player confirms the purchase of the object from the shop and the location of the object in the village by selecting the green checkmark icon." Ex. 1010 at ¶ 28, Fig. 8. *Clash receives a command to allocate a gameplay object (game contents), the cannon, in the village (game space).*
3.3 allocating the at least one of the plurality of game contents to the area of the game space based on the received command.	*Clash discloses allocating the at least one of the plurality of gameplay objects (game contents) to village (game space) based on the received command.* *As shown in §3.2, the cannon is allocated to the village when the player confirms the purchase of the object from the shop and the location of the object in the village.*

142.   '978 Patent Claim 4:

	Claim: 4	Prior Art Analysis
4.0	4. The method of claim 3, wherein	*Claim 4 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a method as discussed in §§ 1.0, 3.0.*
4.1	the plurality of game contents are categorized into a plurality of different types of game content, and	*Clash discloses the plurality of gameplay objects (game contents) are categorized into a plurality of different types of gameplay objects:* "As shown in Fig. 1, the village includes various gameplay objects placed in a play area. In the village shown above there is a central "Town Hall" object, gold "Wall" objects, various defensive towers including two "Archer Towers," two "Cannons," a "Mortar" and an "Air Defense." Other gameplay objects include a resource collectors and storage containers and objects to train and store "Troops."" Ex. 1010 at ¶ 16. *The "Town Hall," "Wall," "Cannons" etc. are a plurality of gameplay objects (game contents) categorized into a plurality of different types of gameplay objects.*

	Claim: 4	Prior Art Analysis
4.2	different image data is associated with each of the plurality of different types of game content.	*Clash discloses that different image data is associated with each of the plurality of different types of gameplay objects (game content).* *The different image data are shown in Fig. 1 of Clash for the different types of gameplay objects:* *For example, the cannons and walls are each associated with different image data.*

143. '978 Patent Claim 5:

	Claim: 5	Prior Art Analysis
5.0	5. The method of claim 1, comprising: allocating the applied template as the first player's active allocation of the plurality of game contents upon receiving a command from the first player.	*Claim 5 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a method as discussed in § 1.0.* *Mastermind discloses allocating the applied layout (template) as the first player's active allocation of the plurality of gameplay objects (game contents) upon receiving a command from the first player:* "Clicking a Layout will prompt you with a few choices: • Use this Layout

| Claim: 5	Prior Art Analysis
	• Rename Layout
	• Share Layout
	• Delete Layout
	Choosing the Use This Layout option will automatically switch your base to whatever design you select!" Ex. 1011 at 26.
	The automatically switching of the base to the selected design constitutes allocating the applied template as the player's active allocation of the plurality of gameplay objects (game contents) upon receiving a command from the player.

144. '978 Patent Claim 6:

	Claim: 6	Prior Art Analysis
6.0	6. The method of claim 1, comprising: registering the applied template to a server by transmitting information corresponding to the applied template to the server via a communication interface of the portable electronic device.	*Claim 6 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a method as discussed in § 1.0.* *Clash discloses transmitting information corresponding to the game to the server via a communication interface of the portable electronic device:* "Clash of Clans is played by a player executing the Clash of Clans application on a device, such as an iPhone or other iOS device, in communication with a gameplay server via the Internet." Ex. 1010 ¶13. "The gameplay server maintains data about each player and coordinates gameplay between the players. As part of this function, a gameplay server maintains information about each player's village, attacks made by players, messages between players, and facilitates matchmaking between players. The gameplay server exchanges data with iOS devices

Claim: 6	Prior Art Analysis
	running the application that communicate with it via a network. The devices, in turn, exchange data with the server in order to perform the various functions within the game." Ex. 1010 at ¶14.

"After a player places or moves a game object, the Clash of Clans application executing on the player's device updates the gameplay server with the positions of gameplay objects in the player's village. The update occurs by the iOS device sending data over a network to the game play server, which processes the data and updates user information accordingly." Ex. 1010 at ¶29.

The communications between the iOS device and the server inherently and obviously use a communication interface of the device.

Mastermind discloses applying a layout (template) as discussed in § 1.7. Mastermind also discloses that layouts can be shared with other players:

"Clicking a Layout will prompt you with a few choices:

- Use this Layout

- Rename Layout

- Share Layout

- Delete Layout

Choosing the Use This Layout option will automatically switch your base to whatever design you select!" Ex. 1011 at 26.

"The Share Layout option would work much like a Shared Replay and would appear in Clan Chat/Private Message, allowing others to use your base design as their own!" Ex. 1011 at 27. |

Claim: 6	Prior Art Analysis
	A POSITA would have recognized and found it obvious that a layout (template) would be registered to a server by transmitting information corresponding to the layout to the server in order to allow the server to transmit the information to portable electronic devices of other players.
	To the extent "registering the applied template to a server…" is not disclosed by Clash/Mastermind, Kim discloses a "team management apparatus" (connected with a game server 300) that stores team formation information (a template) received from game clients:
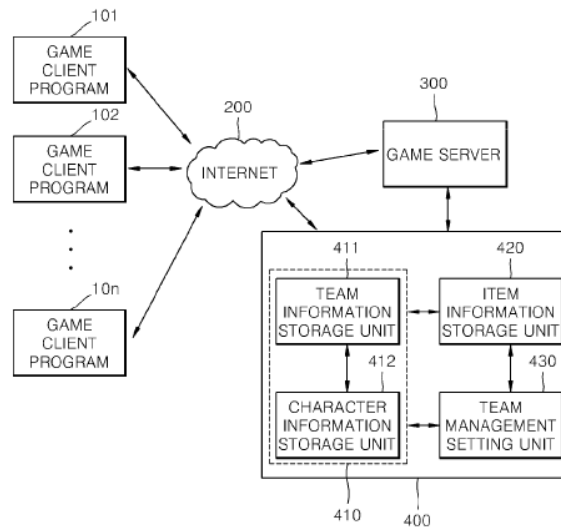
Ex. 1012, Fig. 13.

"The team management apparatus 400 includes an information storage unit 410 in which team information as well as character information are stored . . . and a team management setting unit 430 that may set a plurality of formations with respect to a user management screen and may perform character replacement at each position." Ex. 1012 at 18: 42-51.

"[T]he information acquired from the team information storage unit 411 may include information on characters included in the team and

Claim: 6	Prior Art Analysis
	information on at least one formation, and the information on the at least one formation may contain information on a formation that the user directly sets." Ex. 1012 at 19:2-6. "If the user requests a particular formation, the team management settings unit 430 may change positions of characters on the team according to the corresponding formation. Thereafter, if the user performs replacement of characters according to the selected formation, or performs change between formations via position movement of the characters, the changed results are stored in the team information storage unit 411." Ex. 1012 at 19:12-19. *The POSITA would also have found it obvious to combine Clash, Mastermind, and Kim to register the applied layout (template) to the server by transmitting information corresponding to the applied layout to the server via a communication interface of the electronic device because Clash's server "maintains data about each player" and "maintains information about each player's village."*

145. '978 Patent Claim 7:

	Claim: 7	Prior Art Analysis
7.0	7. One or more non-transitory computer readable media, including computer-program instructions, which when executed by an electronic device, cause the electronic device to:	*Claim 7 is obvious in view of the combination of Clash, Mastermind, and Kim.* *As discussed in § 1.0, Clash discloses an electronic device.* *The electronic device of Clash (e.g., the iOS device) inherently and obviously includes one or more non-transitory computer readable media including computer-program instructions which when*

Claim: 7	Prior Art Analysis
	executed by an electronic device, cause the device to perform the game functions recited below.
	To the extent that the claimed one or more non-transitory computer readable media are not disclosed in Clash, Kim discloses these aspects:
	"Each of the plurality of user terminals 10*l* to 10*n* is connected to the game server 300 through the internet 200, and is provided with a game client for implementation of a game." Ex. 1012 at 18:8-11.
	"**The above described functions may be executed as the aforementioned program is recorded in a computer readable recording medium and is executed by a computer**." Ex. 1012 at 19:61-63.
	"In addition, although all the constituent elements may be realized respectively as independent hardware, some or all of the constituent elements may be selectively combined and be realized as a computer program having a program module that performs some functions or all functions of one piece of hardware or a plurality of pieces of hardware. The codes and code segments constituting the computer program may be easily deduced by those skilled in the art. **The embodiments of the present invention may be realized as the computer program is stored in the computer readable medium that can be read by the computer and is read and executed by the computer**. The storage medium for the computer program may include a magnetic recording medium, an optical recording medium, and the like."
	Ex. 1012 at 21:13-26.
7.1	execute a game by arranging, based on a command received from a first player, a	*See § 1.1. The "second player" recited in claim 1 and discussed at § 1.1 is "another player."*

	Claim: 7	Prior Art Analysis
	plurality of game contents within a game space, the game contents including at least game contents for defending from an attack initiated by another player;	
7.2	receive a command to create a template from the first player;	*See § 1.2.*
7.3	create, responsive to the received command to create the template, a plurality of templates defining the plurality of game contents and respective positions of the plurality of game contents within the game space;	*See § 1.3.*
7.4	create a plurality of images that each correspond to one of the plurality of templates;	*See § 1.4.*
7.5	display a screen including the plurality of images;	*See § 1.5.*
7.6	receive a selection corresponding to one of the displayed images; and	*See § 1.6.*

Claim: 7	Prior Art Analysis
7.7 apply a template corresponding to the received selection to the game space.	*See § 1.7. Applying the template to a "predetermined area within the game space" as discussed at § 1.7 constitutes applying the received selection to the game space.*

147. '978 Patent Claim 8:

Claim: 8	Prior Art Analysis
8.0 8. The one or more non-transitory computer readable media of claim 7, wherein the respective positions of the plurality of game contents within the game space are defined by coordinates in the game space.	*Claim 8 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a non-transitory computer readable media as discussed in § 7.0.* *See § 2.0.*

148. '978 Patent Claim 9:

Claim: 9	Prior Art Analysis
9.0 9. The one or more non-transitory computer readable media of claim 7, wherein the computer-program instructions, when executed by the electronic device,	*Claim 9 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a non-transitory computer readable media as discussed in § 7.0.* *See § 3.0.*

	Claim: 9	Prior Art Analysis
	cause the electronic device to:	
9.1	display an interface including the game space and images corresponding to a plurality of game contents;	*See § 3.1.*
9.2	receive a command to allocate at least one of the plurality of game contents in an area of the game space; and	*See § 3.2.*
9.3	allocate the at least one of the plurality of game contents to the area of the game space based on the received command.	*See § 3.3.*

149.   '978 Patent Claim 10:

	Claim: 10	Prior Art Analysis
10.0	10. The one or more non-transitory computer readable media of claim 9, wherein	*Claim 10 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a non-transitory computer readable media as discussed in §§ 7.0, 9.0.* *See § 4.0.*
10.1	the plurality of game contents are categorized into a	*See § 4.1.*

	Claim: 10	Prior Art Analysis
	plurality of different types of game content, and	
10.2	different image data is associated with each of the plurality of different types of game content.	*See § 4.2.*

150. '978 Patent Claim 11:

	Claim: 11	Prior Art Analysis
11.0	11. The one or more non-transitory computer readable media of claim 7, wherein the computer-program instructions, when executed by the electronic device, cause the electronic device to: allocate the applied template as the first player's active allocation of the plurality of game contents upon receiving a command from the first player.	*Claim 11 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a non-transitory computer readable media as discussed in § 7.0.* *See § 5.0.*

151. '978 Patent Claim 12:

	Claim: 12	Prior Art Analysis
12.0	12. The one or more non-transitory computer readable media of claim 7, wherein the computer-program instructions, when executed by the electronic device, cause the electronic device to: register the applied template to a server by transmitting information corresponding to the applied template to the server via a communication interface of the electronic device.	*Claim 11 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a non-transitory computer readable media as discussed in § 7.0.* *See § 6.0.*

152. '978 Patent Claim 13:

	Claim: 13	Prior Art Analysis
13.0	13. An electronic device comprising: circuitry configured to	*Claim 13 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose a method performed by an electronic device as discussed in §§ 1.0, 7.0.* *Clash discloses an electronic device:* "Clash of Clans is played by a player executing the Clash of Clans application on a device, such as an iPhone or other iOS device, in communication with

Claim: 13	Prior Art Analysis
	a gameplay server via the Internet." Ex. 1010 at ¶ 13.
	The electronic device of Clash (e.g., the iOS device) inherently and obviously includes circuitry configured (e.g., by executing software) to perform the game functions recited below.
	To the extent an electronic device comprising circuity configured to perform game functions is not disclosed in Clash, Kim discloses these aspects:
	"Each of the plurality of user terminals 10*l* to 10*n* is connected to the game server 300 through the internet 200, and is provided with a game client for implementation of a game." Ex. 1012 at 18:8-11.
	"The above described functions may be executed as the aforementioned program is recorded in a computer readable recording medium and is executed by a computer." Ex. 1012 at 19:61-63.
	"In addition, although all the constituent elements may be realized respectively as **independent hardware**, some or all of the constituent elements may be selectively combined and be realized as a computer program having a program module that performs some functions or all functions of **one piece of hardware or a plurality of pieces of hardware**. The codes and code segments constituting the computer program may be easily deduced by those skilled in the art. The embodiments of the present invention **may be realized as the computer program is stored in the computer readable medium that can be read by the computer and is read and executed by the computer**. The storage medium for the computer program may include a magnetic recording medium, an optical recording medium, and the like."
	Ex. 1012 at 21:13-26.

	Claim: 13	Prior Art Analysis
		Kim's user terminals are electronic devices and inherently include circuitry for implementing a game. *See §§ 1.0, 7.0.*
13.1	execute a game by arranging, based on a command received from a first player, a plurality of game contents within a game space, the game contents including at least game contents for defending from an attack initiated by another player;	*See §§ 1.1, 7.1.*
13.2	receive a command to create a template from the first player;	*See §§ 1.2, 7.2.*
13.3	create, responsive to the received command to create the template, a plurality of templates defining the plurality of game contents and respective positions of the plurality of game contents within the game space;	*See §§ 1.3, 7.3.*
13.4	create a plurality of images that each correspond to one of	*See §§ 1.4, 7.4.*

	Claim: 13	Prior Art Analysis
	the plurality of templates;	
13.5	display a screen including the plurality of images;	*See §§ 1.5, 7.5.*
13.6	receive a selection corresponding to one of the displayed images; and	*See §§ 1.6, 7.6.*
13.7	apply a template corresponding to the received selection to the game space.	*See §§ 1.7, 7.7.*

153.   '978 Patent Claim 14:

	Claim: 14	Prior Art Analysis
14.0	14. The electronic device of claim 13, wherein the respective positions of the plurality of game contents within the game space are defined by coordinates in the game space.	*Claim 14 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose an electronic device as discussed in § 13.0. See §§ 2.0, 8.0.*

154. '978 Patent Claim 15:

	Claim: 15	**Prior Art Analysis**
15.0	15. The electronic device of claim 13, wherein the circuitry is configured to:	*Claim 15 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose an electronic device as discussed in § 13.0. See §§ 3.0, 9.0.*
15.1	display an interface including the game space and images corresponding to a plurality of game contents;	*See §§ 3.1, 9.1.*
15.2	receive a command to allocate at least one of the plurality of game contents in an area of the game space; and	*See §§ 3.2, 9.2.*
15.3	allocate the at least one of the plurality of game contents to the area of the game space based on the received command.	*See §§ 3.3, 9.3.*

155. '978 Patent Claim 16:

	Claim: 16	**Prior Art Analysis**
16.0	16. The electronic device of claim 15, wherein	*Claim 16 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose electronic device as discussed in §§ 13.0 and 15.0.* *See § 10.0.*

	Claim: 16	Prior Art Analysis
16.1	the plurality of game contents are categorized into a plurality of different types of game content, and	*See §§ 4.1, 10.1.*
16.2	different image data is associated with each of the plurality of different types of game content.	*See §§ 4.2, 10.2.*

156. '978 Patent Claim 17:

	Claim: 17	Prior Art Analysis
17.0	17. The electronic device of claim 13, wherein the circuitry is configured to: allocate the applied template as the first player's active allocation of the plurality of game contents upon receiving a command from the first player.	*Claim 17 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose an electronic device as discussed in § 13.0. See §§ 5.0, 11.0.*

157. '978 Patent Claim 18:

	Claim: 18	Prior Art Analysis
18.0	18. The electronic device of claim 13, wherein the circuitry is configured to:	*Claim 18 is obvious in view of the combination of Clash, Mastermind, and Kim. Clash and Kim disclose an electronic device as discussed in § 13.0.*

register the applied template to a server by transmitting information corresponding to the applied template to the server via a communication interface of the electronic device.	*See §§ 6.0, 12.0.*

XIV. CONCLUSION

158. For the reasons presented above, it is my opinion that the challenged patent is invalid as obvious in view of the applied references.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: June 1, 2020

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