

Claim Construction Comparison (identical language highlighted in yellow)

Petition (pp. 9-12)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 30-34)
For IPR proceedings, the Board applies the claim construction standard set forth in <i>Phillips v. AWH Corp.</i>, 415 F.3d 1303 (Fed. Cir. 2005) (<i>en banc</i>). See 83 Fed. Reg. 51,340-59 (Oct. 11, 2018). Under <i>Phillips</i>, claim terms are typically given their ordinary and customary meanings, as would have been understood by a POSA, at the time of the invention, having taken into consideration the language of the claims, the specification, and the prosecution history of record. <i>Phillips</i>, 415 F.3d at 1313; see also <i>id.</i> at 1312-16. Other than one term identified below, the Board need not construe any other claim terms, as the claims are unpatentable under any reasonable construction. <i>Toyota Motor Corp. v. Cellport Systems, Inc.</i>, IPR2015-00633, Paper No. 11 at 16 (P.T.A.B. Aug. 14, 2015).²	30. I have given all the claim terms (except one described below) of the challenged claims their plain and ordinary meaning, as would be understood by a POSITA, at the time of the alleged invention, which I understand is early 2010s (including April 4, 2012) having taken into consideration the language of the claims, the specification, and the prosecution history of record.

Claim Construction Comparison (identical language highlighted in yellow)

Petition (pp. 9-12)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 30-34)
Independent claim 1 recites “providing a real time scoreboard with time clock to each contestant processing device that <i>displays an individual contestant’s progress with respect to both the time frame for answering questions and questions answered correctly</i> while answering the series of questions during an academic competition.”³ (Ex. 1001, 40:63-41:1 (emphasis added).) Claim 14 recites the same limitation. (<i>Id.</i>, 42:54-59.) As explained below, displaying “<i>an individual contestant’s progress with respect to [] the time frame for answering questions</i>” while answering the series of questions presented to the contestant, should be construed as <u>displaying the total time that is remaining or has elapsed for answering the series of questions, as opposed to displaying the time remaining or elapsed for each question in the series of questions.</u> This construction is consistent with the claims, specification, and further supported by the patentee’s remarks during prosecution, where the patentee expressly distinguished prior art that shows the time remaining to answer an individual question instead of showing the total time remaining to answer all of an entire series of questions. (Ex. 1002, ¶¶30-34.)	31. Independent claim 1 recites “providing a real time scoreboard with time clock to each contestant processing device that <i>displays an individual contestant’s progress with respect to both the time frame for answering questions and questions answered correctly</i> while answering the series of questions during an academic competition.”³ (Ex. 1001, 40:63-41:1 (emphasis added).) Claim 14 recites the same limitation. (<i>Id.</i>, 42:54-59.) As I explain below, in the context of the ’825 patent, displaying “<i>an individual contestant’s progress with respect to [] the time frame for answering questions</i>” while answering the series of questions presented to the contestant, refers to <u>displaying the total time that is remaining or has elapsed for answering the series of questions.</u> The total time remaining or elapsed for the “series of questions” is different from <u>the time remaining or elapsed for each question in the series of questions.</u> I understand that the above is Petitioner’s interpretation of the relevant limitation and I have applied this understanding in my analysis.

Claim Construction Comparison (identical language highlighted in yellow)

Petition (pp. 9-12)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 30-34)
The claim itself compels the proffered construction because it recites “presenting [] a <i>series of test questions</i> to the contestant processing devices of the individual contestants of competing teams for response in a <i>time frame allocated for the academic competition</i>” and “display[ing] an individual contestant’s progress with respect to [] <i>the time frame for answering questions</i>” (plural for the “series of test questions”) as opposed to reciting display of progress with respect to an individual question (singular). The specification also repeatedly explains that the invention allows the contestants to keep track of the time remaining to answer the entire set of questions by displaying either the time remaining or time elapsed in the <i>entire contest</i>. (Ex. 1001, 2:9-12 (“[o]f particular value, a specialized clock not only keeps track of time remaining, but alerts the student as to whether he/she is on pace to finish the questions on time.”), 17:29-38 (“The time mechanism shows where the Team Member is in relation to his/her opponent, how much time has elapsed in the test and consecutively for each question, and whether he/she is on pace to finish on time.”), 17:60-65 (“The radius line rotates around the clock figure until no time remains.”).)	32. The claim itself compels the proffered construction because it recites “presenting [] a <i>series of test questions</i> to the contestant processing devices of the individual contestants of competing teams for response in a <i>time frame allocated for the academic competition</i>” and “display[ing] an individual contestant’s progress with respect to [] <i>the time frame for answering questions</i>” (plural for the “series of test questions”) as opposed to reciting display of progress with respect to an individual question (singular). 33. The specification also repeatedly explains that the invention allows the contestants to keep track of the time remaining to answer the entire set of questions by displaying either the time remaining or time elapsed in the <i>entire contest</i>. (Ex. 1001, 2:9-12 (“[o]f particular value, a specialized clock not only keeps track of time remaining, but alerts the student as to whether he/she is on pace to finish the questions on time.”), 17:29-38 (“The time mechanism shows where the Team Member is in relation to his/her opponent, how much time has elapsed in the test and consecutively for each question, and whether he/she is on pace to finish on time.”), 17:60-65 (“The radius line rotates around the clock figure until no time remains.”).)

Claim Construction Comparison (identical language highlighted in yellow)

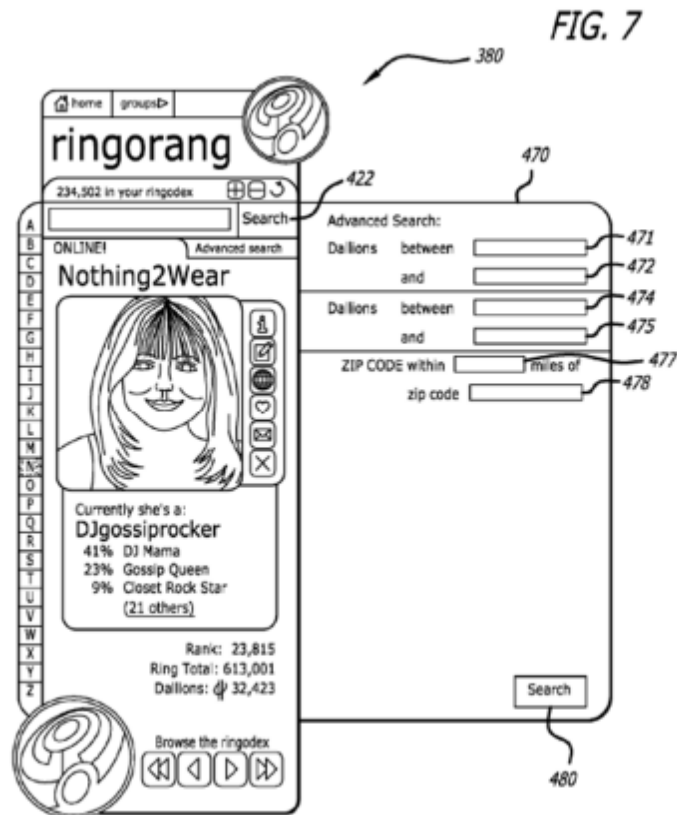
Petition (pp. 9-12)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 30-34)
Moreover, during prosecution, Patent Owner distinguished the prior art by characterizing the claim language at issue in a manner that supports the construction. Patentee's remarks not only support but confirm the correctness of Petitioner's construction. <i>Univ. of Massachusetts v. L'Oreal S.A.</i>, 36 F.4th 1374, 1379 (Fed. Cir. 2022) ("The prosecution history, in particular, 'may be critical in interpreting disputed claim terms,'" and "even where 'prosecution history statements do not rise to the level of unmistakable disavowal, they do inform the claim construction.'") (internal citation omitted). Specifically, patentee represented that the Panetta and Lavanchy prior art do not disclose a real time scoreboard that "permits each individual contestant to track his/her and his/her opponent's progress with respect to both the time frame for answering questions and questions answered correctly while answering the series of questions during an academic competition." (Ex. 1004, 478 (emphases in original).)⁴ Patentee expressly emphasized that in "Panetta and Lavanchy, a separate time component operates for each question" whereas "the claimed academic competition allocates an undivided time period to all players to answer the <u>entire</u> series of questions." (<i>Id.</i> (emphasis added).) According to patentee, these references do not disclose a feature whereby the contestant can know "how much time remains in the contest." (<i>Id.</i>) Thus, patentee unequivocally represented and confirmed that the claim language "progress with respect to both the time frame for answering questions . . . while answering the series of questions during an academic competition" refers to progress with respect to the time for the entire contest (not just one question). For the above reasons, Petitioner's construction should be adopted.	34. Finally, during prosecution, patentee represented that the Panetta and Lavanchy prior art do not disclose a real time scoreboard that "permits each individual contestant to track his/her and his/her opponent's progress with respect to both the time frame for answering questions and questions answered correctly while answering the series of questions during an academic competition." (Ex. 1004, 478 (emphases in original).)⁴ Patentee explained that in "Panetta and Lavanchy, a separate time component operates for each question" whereas "the claimed academic competition allocates an undivided time period to all players to answer the <u>entire</u> series of questions." (<i>Id.</i> (emphasis added).) According to patentee, these references do not disclose a feature whereby the contestant can know "how much time remains in the contest." (<i>Id.</i>) Thus, in my opinion, patentee represented and confirmed that the claim language "progress with respect to both the time frame for answering questions . . . while answering the series of questions during an academic competition" refers to progress with respect to the time remaining or elapsed for the entire contest (i.e., the time remaining or elapsed for answering the series of questions as opposed to the time remaining or elapsed for answering an individual question in the series of questions).

Ground 1, Limitation [1.d] Comparison (identical language highlighted in yellow)

Petition (pp. 23-27)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 62-66)
v) [1.d] “enabling a user, through a user interface connected to said database, to perform at least one of the following: (1) create a league of teams and a cycle of academic competition amongst the league of teams, (2) search for and select at least one team for participation in an inter-team academic competition, and (3) divide a team into multiple teams for an intra-team academic competition;” Feeney discloses limitation [1.d] by disclosing “enabling a user, through a user interface connected to said database, to . . . 2) search for and select at least one team for participation in an inter-team academic competition.” (Ex. 1002, ¶¶62-66.)¹⁰ As explained below, system 80 (and thus the “processor”) enables a player (“user”) to search for and select a team through a user interface 300 (“user interface”), where the user interface 300 is connected to storage device 83 (“said database”).	v. [1.d] “enabling a user, through a user interface connected to said database, to perform at least one of the following: (1) create a league of teams and a cycle of academic competition amongst the league of teams, (2) search for and select at least one team for participation in an inter-team academic competition, and (3) divide a team into multiple teams for an intra-team academic competition;” 62. Feeney discloses limitation [1.d] by disclosing “enabling a user, through a user interface connected to said database, to . . . 2) search for and select at least one team for participation in an inter-team academic competition.”⁸ As explained below, system 80 (and thus the “processor”) enables a player (“user”) to search for and select a team through a user interface 300 (“user interface”), where the user interface 300 is connected to storage device 83 (“said database”).

Petition (pp. 23-27)

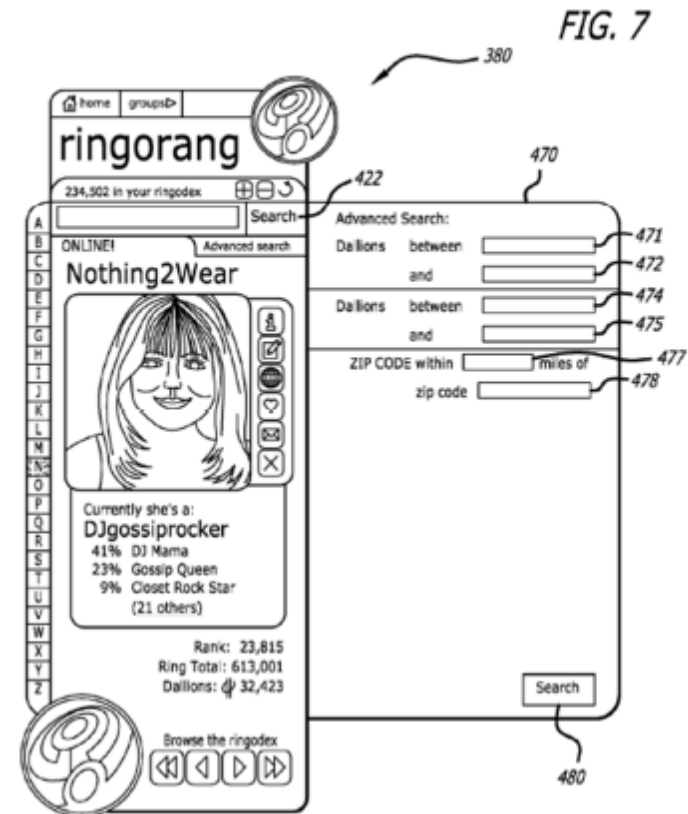
Figure 7 (shown below) illustrates the Ringodex 380, which is an interface that is part of the user interface 300. (Ex. 1005, 14:50-54.)



(Id., FIG. 7.)

Dr. Abowd Declaration (Ex. 1002, ¶¶ 62-66)

63. Figure 7 (shown below) illustrates the Ringodex 380, which is an interface that is part of the user interface 300. (Ex. 1005, 14:50-54.)



(Id., FIG. 7.)

Ground 1, Limitation [1.d] Comparison (identical language highlighted in yellow)

Petition (pp. 23-27)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 62-66)
In the Ringodex 380, a player can click the “Advanced tab 425” (<i>id.</i>, 18:28-38) to perform a search for a ring or team (<i>id.</i>, 18:45). “[A]fter the search, the player [] can browse through the search results.” (<i>Id.</i>, 18:60-63.) The search results include profile cards for players meeting the search criteria. (<i>Id.</i>, 19:1-14.) Clicking on any search result “causes the corresponding profile card to be displayed in Ringodex 380.” (<i>Id.</i>, 19:28-38.) The player can view the selected profile card and click the Send Message button 415 to request to join the player’s ring (i.e., team). (<i>Id.</i>, 18:9-19.) A POSA would understand that the above functionality enables a player to: (a) search for a team (e.g., by specifying the “ring or team membership”), (b) view player profile cards of players in that team, and (c) contact a specific player to request to join their team. (Ex. 1002, ¶64.) The act of requesting to join a team constitutes selecting “at least one team for participation in an inter-team academic competition.” Thus, Feeney discloses “enabling a user, through a user interface . . . to perform at least one of the following . . . (2) search for and select at least one team for participation in an inter-team academic competition.”	64. In the Ringodex 380, a player can click the “Advanced tab 425” (<i>id.</i>, 18:28-38) to perform a search for a ring or team (<i>id.</i>, 18:45, 18:60-63 (“For example, after the search, the player preferably can browse through the search results using browsing controls 402.”)). The search results include profile cards for players meeting the search criteria. (<i>Id.</i>, 19:1-14 (“Returning to FIG. 7, while browsing through the search results (resulting from a basic or advanced search), the player can click on the ‘minus’ sign 431 to remove the present profile card from the search results. At any time, the player preferably has the ability to save the search results as a group or a set of profile cards, e.g., designating any desired label for such group or set. The player preferably also can add the currently displayed profile card to an existing grouping by clicking on the ‘plus’ sign 432. Once the player is finished with the present search results, he or she can click on the ‘refresh’ button 433 in order to clear the search results and revert the Ringodex 380 to the default, i.e., all player profile cards in the contest universe or, in certain embodiments, to the state of the Ringodex 380 immediately prior to the current search.”)). Clicking on any search result “causes the corresponding profile card to be displayed in Ringodex 380.” (<i>Id.</i>, 19:28-38 (“In addition to (or instead of) the search results being displayed through the Ringodex 380, in certain embodiments or in certain cases (e.g., depending upon

Ground 1, Limitation [1.d] Comparison (identical language highlighted in yellow)

Petition (pp. 23-27)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 62-66)
	player settings) the search results are displayed in the main content window 345 (or some other interface that is larger than Ringodex 380), e.g., with profile pictures and usernames. Clicking on any given entry in such search results preferably causes the corresponding profile card to be displayed by the Ringodex 380 or, in alternate cases or embodiments, causes the entire profile card to be displayed within the main content window 345 (or such other larger interface).”) The player can view the selected profile card and click the Send Message button 415 to request to join the player’s ring (i.e., team). (<i>Id.</i>, 18:9-19 (“Send Message button 415 allows the player to send a message to the player whose profile card currently is being viewed or, in certain embodiments, to all members of the currently selected group. In the preferred embodiments, the player has the ability to compose a free-form message and/or to select one or more messages from a set of predefined messages (such as: an invitation to join the player’s ring; a request to join the player’s ring; a request to form a ring; or a challenge that requests the other player to compete, e.g., one-on-one, against the player).”) A POSITA would understand that the above functionality enables a player to: (a) search for a team (e.g., by specifying the “ring or team membership”), (b) view player profile cards of players in that team, and (c) contact a specific player to request to join their team. The act of requesting to join a team constitutes selecting “at least one team for participation in an inter-team academic competition.” Thus, Feeney discloses “enabling a user, through a user interface ... to perform at least one of the following ... (2) search for and select at least one team for participation in an inter-team academic competition.”

Ground 1, Limitation [1.d] Comparison (identical language highlighted in yellow)

Petition (pp. 23-27)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 62-66)
Feeney also discloses the same feature in a slightly different manner. For example, say a player is looking to join a team but doesn't know which team he/she wants to join. The player can run a search for players (e.g., players in a certain geographic area), browse their profiles and send a message to a selected player to join their team, as discussed above. (Ex. 1005, 18:34-46.) Thus, Feeney enables searching for and selecting a team to join, as recited in claim limitation [1.d].	65. Feeney also discloses the same feature in a slightly different manner. For example, say a player is looking to join a team but doesn't know which team he/she wants to join. The player can run a search for players (e.g., players in a certain geographic area), browse their profiles and send a message to a selected player to join their team, as discussed above. (<i>Id.</i>, 18:34-46 (“With respect to the latter, clicking on Advanced tab 425 preferably unfolds a ‘drawer’ giving the player options for entering more specific or targeted search criteria, such as by permitting searching across any combination of a variety of different parameters. In the preferred embodiments, such parameters can include any or all of: game performance statistics (e.g., rank, Dallions or points earned, accuracy percentage, accuracy percentage by category or accuracy percentage within a specified time period); geographical parameters (e.g., location of the players by city or ZIP code); chosen sponsor badges; identifier components (i.e., the subjects in which a player excels); ring or team membership; or any character string, word or keyword in a player’s profile.”), 18:9-19.) Thus, Feeney enables searching for and selecting a team to join, as recited in claim limitation [1.d].
Feeney further discloses that user interface 300 is “connected to said database” because user interface 300 displays the player profile cards that are saved in storage device 83 (“said database”). (<i>Id.</i>, 5:25-37.) And it is the processor of system 80 in server 12 that enables this feature. (<i>Id.</i>, 15:1-10; <i>supra</i> Section IX.A.1.iv.)	66. Feeney further discloses that user interface 300 is “connected to said database” because user interface 300 displays the player profile cards that are saved in storage device 83 (“said database”). (<i>Id.</i>, 5:25-37.) And it is the processor of system 80 in server 12 that enables this feature. (<i>Id.</i>, 15:1-10; <i>supra</i> Section IX.A.1.iv.)

Ground 1, Limitation [1.e] Comparison (identical language highlighted in yellow)

Petition (pp. 27-31)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 67-71)
vi) [1.e] “presenting a series of test questions to the contestant processing devices of the individual contestants of competing teams for response in a time frame allocated for the academic competition;” Feeney discloses this limitation. (Ex. 1002, ¶¶67-71.) Feeney discloses that the contests “typically involve[es] questions to be answered or other problems to be solved.” (Ex. 1005, 20:2-8.) As an example, “a stream of problems . . . is provided by server 12” to the players as part of a “one-month general knowledge contest.” (<i>Id.</i>, 20:18-25.) These questions/problems can be delivered “simultaneously” to multiple participating players “as described in the ‘179 Application” (<i>id.</i>, 20:47-49), which is “incorporated by reference [in Feeney] . . . in full.” (<i>Id.</i>, 2:66-3:6.) The ‘179 application describes simultaneous delivery of a number of problems, which may include “multiple-choice” or other types of questions, to a user interface (illustrated below) of each player device. (Ex. 1008, ¶¶ [68], [77], [79], FIG. 8.)  FIG. 8	vi) [1.e] “presenting a series of test questions to the contestant processing devices of the individual contestants of competing teams for response in a time frame allocated for the academic competition;” 67. Feeney discloses this limitation. Feeney discloses that the contests “typically involve[es] questions to be answered or other problems to be solved.” (Ex. 1005, 20:2-8.) As an example, “a stream of problems . . . is provided by server 12” to the players as part of a “one-month general knowledge contest.” (<i>Id.</i>, 20:18-25.) These questions/problems can be delivered “simultaneously” to multiple participating players “as described in the ‘179 Application” (<i>id.</i>, 20:47-49), which is “incorporated by reference [in Feeney] . . . in full.” (<i>Id.</i>, 2:66-3:6.) The ‘179 application describes simultaneous delivery of a number of problems, which may include “multiple-choice” or other types of questions, to a user interface (illustrated below) of each player device. (Ex. 1008, ¶¶ [68] (“Preferably, the contest is played over an extended period of time, such as anywhere from several days to a month, or even longer. As discussed in more detail below, the contest involves a number of problems, which may include multiple-choice or other types of questions. Preferably, each problem is made available to <i>all</i> of the players at substantially the same time, and multiple problems are made available each day of the contest. In order to address the situation that everyone will not necessarily be able to play at the same time, more problems preferably are made available than the number of problems that each player is permitted to respond to, under the rules of the contest.”) (emphasis added), [77] (“In step 137, the problem is presented substantially simultaneously to all of the participating players. In the present embodiment, participating players are required to answer an ordinary problem (special problems

Ground 1, Limitation [1.e] Comparison (identical language highlighted in yellow)

Petition (pp. 27-31)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 67-71)
	are discussed below) within 30 seconds, or else are scored as getting the problem incorrect. For that reason, and in order to prevent any unfair advantages, the problem preferably is presented within a 3-second window to all or substantially all of the participating players under normal circumstances. Of course, player device failures and other physical limitations at least sometimes will preclude delivery within such a 3-second window to 100% of the player devices.”), [79] (“An exemplary user interface 190 providing such a problem is illustrated in FIG. 8. As shown, user interface 190 includes a multiple-choice question 191, a plurality of potential answers 193, and a count-down timer 195 which indicates the time remaining in which to provide a response. Because a timer internal to application 80 preferably is used, the participant can be given the full response time (e.g., 30 seconds) from the time that the problem initially is delivered (or displayed), even if there are slight differences (e.g., a second or two) among the various player devices as to when the problem is delivered in absolute time.”), FIG. 8.)  FIG. 8

Ground 1, Limitation [1.e] Comparison (identical language highlighted in yellow)

Petition (pp. 27-31)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 67-71)
(<i>Id.</i>, FIG. 8.) In view of Feeney's incorporation of the '179 Application, Feeney discloses that the problems are delivered to each player device (e.g., 21-24) ("presenting a series of test questions to the contestant processing devices of the individual contestants"). In particular, the multiple questions and/or problems can be delivered on the user interface 300, e.g., by incorporating the '179 application's alert-based client application therein. (<i>Id.</i>, 13:62-14:6.)	(<i>Id.</i>, FIG. 8.) 68. In view of Feeney's incorporation of the '179 Application, Feeney discloses that the problems are delivered to the user interface 300 of each player device (e.g., 21-24). This is further confirmed by Feeney's disclosure that multiple questions and/or problems can be delivered on the user interface 300, e.g., by incorporating the '179 applications' alert-based client application. (Ex. 1005, 13:62-14:6 ("Depending upon the particular contest being implemented, an additional player application, such as the alert-based client discussed in the '179 Application, sometimes is provided on the player device 21, e.g., for the purpose of delivering questions and/or problems to the various players. Otherwise, the players generally can access contest information, make strategic decisions, change settings, contact other players and the like through user interface 300. In other embodiments, the alert-based client discussed in the '179 Application is incorporated into application 160 and/or user interface 300.")) Feeney thus discloses or suggests "presenting a series of test questions to the contestant processing devices of the individual contestants."

Ground 1, Limitation [1.e] Comparison (identical language highlighted in yellow)

Petition (pp. 27-31)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 67-71)
As noted above, Feeney defined a time frame (e.g., 1-month) for the contest. (<i>Id.</i>, 20:18-25, 24:14-15 (“[A]fter a problem has been delivered, the players are given indications as to how much time is left to respond.”).) Feeney thus discloses or suggests that the questions are presented “for response in a time frame allocated for the academic competition.”¹¹ To the extent Patent Owner incorrectly contends that Feeney does not disclose the “time frame allocated for the academic competition,” then Feeney in combination with Rogers discloses or suggests including a timer mechanism in Feeney that shows the total time remaining to answer the entire series of questions. (<i>Infra</i> Section IX.A.1.vii.) Such a timer mechanism discloses a “time frame allocated for the academic competition.”	69. As noted above, Feeney defined a time frame (e.g., 1-month) for the contest. (<i>Id.</i>, 20:18-25, 24:14-15 (“[A]fter a problem has been delivered, the players are given indications as to how much time is left to respond.”).) Feeney thus discloses or suggests that the questions are presented “for response in a time frame allocated for the academic competition.”⁹ To the extent Patent Owner incorrectly contends that Feeney does not disclose the “time frame allocated for the academic competition,” then Feeney in combination with Rogers discloses or suggests including a timer mechanism in Feeney that shows the total time remaining to answer the entire series of questions. (<i>Infra</i> Section IX.A.1.vii.) Such a timer mechanism discloses a “time frame allocated for the academic competition.”

Ground 1, Limitation [1.e] Comparison (identical language highlighted in yellow)

Feeney further discloses that the individual players “can compete as part of a team” (Ex. 1005, 21:51-62), where the teams “receive questions as a group” (*id.*, 22:15-22). Even when receiving questions as a team, a POSA would have understood that the questions are delivered to *each* player device in a given team for the following reasons. (Ex. 1002, ¶70.)¹² First, Feeney does not require that the players in a team use a single device to answer questions. Rather, each player is described having their own player device. (Ex. 1005, 3:39-54 (disclosing a “plurality” of player devices 21-24, where “[e]ach such player device 21-24 typically has a player associated with it (e.g., player 31 for device 21 and player 32 for device 22).”, 3:64-4:2, 4:6-13.) Second, Feeney explains that when a team receives questions as a group, the team earns points (referred to as “Dallions”) “based on average accuracy percentage across the ring.” (*Id.*, 22:15-18; *see also id.*, 20:29-32.) An average accuracy percentage *across* the ring means an average of the accuracy of the answers by the players of the ring, which indicates that each player in the ring provides an answer, and their individual accuracies are tallied and averaged to determine the average accuracy percentage across the ring. (Ex. 1002, ¶70.) Third, Feeney explains that the summary area 330 in user interface 300 shows the “aggregate number of points of everyone within the player’s ring.” (Ex. 1005, 13:6-7.) This again indicates that *each* member of a ring answers questions and their points are aggregated by the system. (Ex. 1002, ¶70.) For at least the above reasons, Feeney further discloses “presenting a series of test questions to the contestant processing devices of the individual contestants of competing teams.”

70. Feeney further discloses that the individual players “can compete as part of a team” (Ex. 1005, 21:51-62), where the teams “receive questions as a group” (*id.*, 22:15-22) (“In certain embodiments (e.g., the team-ring embodiments), the rings receive questions as a group and thus have the chance to earn (and lose) Dallions as a group (e.g., based on average accuracy percentage across the ring). In certain embodiments, the RingMaster can decide how long the Ring will last before being disbanded (e.g., 2 days or 1 week) and/or what the accuracy percentage should be (ex. 80%, 10%).”). Even when receiving questions as a team, a POSITA would have understood that the questions are delivered to *each* player device in a given team for the following reasons. First, Feeney does not require that the players in a team use a single device to answer questions. Rather, each player is described having their own player device. (*Id.*, 3:39-54 (“Many of the techniques of the present invention contemplate participation in a contest (or other kind of game) by a large number of geographically dispersed individuals or devices (e.g., spread across different cities, states or even countries). FIG. 1 illustrates an overview of a system 10 for achieving this goal, according to a representative embodiment of the present invention. Generally speaking, a central server 12 manages and runs the contest in real time, communicating with a plurality of different player devices (e.g., devices 21-24). Each such player device 21-24 typically has a player associated with it (e.g., player 31 for device 21 and player 32 for device 22). In some cases, a single player (e.g., player 33) has two or more player devices (e.g., devices 23 and 24) that can be used to communicate with server 12 and, therefore, through which the player can participate in the contest.”), 3:64-4:2 (“It is noted that although only six player devices 21-24 are illustrated in FIG. 1, this is for ease of illustration only. Typically,

Ground 1, Limitation [1.e] Comparison (identical language highlighted in yellow)

Petition (pp. 27-31)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 67-71)
	there will be many more player devices that are used to participate in the contest, such as more than 50, 100, 500, 1,000 or even 10,000 such devices (as well as a similar number of players).”), 4:6-13 (“Each of the players 31-33 preferably will have pre-registered with server 12 for the contest, and may also have designated the device(s) which such player 31-33 will be using to participate in the contest. In the preferred embodiments, the players 31-33 will have installed a contest interface application on the devices 21-24 that they will be using, an example of such an interface application being described in greater detail below.”).) Second, Feeney explains that when a team receives questions as a group, the team earns points (referred to as “Dallions”) “based on average accuracy percentage across the ring.” (<i>Id.</i>, 22:15-18; <i>see also id.</i>, 20:29-32.) An average accuracy percentage <i>across</i> the ring means an average of the accuracy of the answers by the players of the ring, which indicates that each player in the ring provides an answer, and their individual accuracies are tallied and averaged to determine the average accuracy percentage across the ring. Third, Feeney explains that the summary area 330 in user interface 300 shows the “aggregate number of points of everyone within the player’s ring.” (<i>Id.</i>, 13:6-7.) This again indicates that <i>each</i> member of a ring answers questions and their points are aggregated by the system. For at least the above reasons, Feeney further discloses “presenting a series of test questions to the contestant processing devices of the individual contestants <u>of competing teams.</u>”

Ground 1, Limitation [1.e] Comparison (identical language highlighted in yellow)

Petition (pp. 27-31)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 67-71)
A POSA would have understood that the functionality of limitation [1.e] is provided by server 12 (and by extension the processor implementing contest administration system 80, <i>supra</i> Section IX.A.1.iii) because the user interface 300 can be “provided entirely by server 12.” (Ex. 1005, 11:62-12:3, 10:54-11:62 (describing user interface 300), FIG. 5.) System 80 implemented by server 12 includes a player interface 88 that “handles the details of the actual delivery of questions and/or problems” to the players. (<i>Id.</i>, 5:25-37.)	71. A POSITA would have understood that the functionality of limitation [1.e] is provided by server 12 (and by extension the processor implementing contest administration system 80, <i>supra</i> Section IX.A.1.iii) because the user interface 300 can be “provided entirely by server 12.” (Ex. 1005, 11:62-12:3, 10:54-11:62 (describing user interface 300), FIG. 5.) System 80 implemented by server 12 includes a player interface 88 that “handles the details of the actual delivery of questions and/or problems” to the players. (<i>Id.</i>, 5:25-37.)

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Petition (pp. 31-42)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)
vii) [1.f] “providing a real time scoreboard with time clock to each contestant processing device that displays an individual contestant's progress with respect to both the time frame for answering questions and questions answered correctly while answering the series of questions during an academic competition, where each correctly answered question contributes on the real time scoreboard to at least one of (1) an individual score of the individual contestant and (2) a team score of the individual contestant's team; and” This limitation is analyzed in two parts. Petitioner first explains how Feeney alone discloses or suggests this limitation. Petitioner then explains how Feeney in combination with Rogers discloses or suggests this limitation. (Ex. 1002, ¶¶72-88.)	vii. [1.f] “providing a real time scoreboard with time clock to each contestant processing device that displays an individual contestant's progress with respect to both the time frame for answering questions and questions answered correctly while answering the series of questions during an academic competition, where each correctly answered question contributes on the real time scoreboard to at least one of (1) an individual score of the individual contestant and (2) a team score of the individual contestant's team; and” 72. This limitation is analyzed in two parts. I first explain how Feeney alone discloses or suggests this limitation. I then explain how Feeney in combination with Rogers discloses or suggests this limitation.

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Petition (pp. 31-42)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)
(a) Feeney alone discloses or suggests limitation [1.f] under Patent Owner's interpretation Feeney discloses that the interface 300 for each player device includes a player-status summary area 330 for "continuously" displaying statistics regarding a player or the player's team's performance in the contest (e.g., team rank, player's own rank, total number of points won, etc.). (Ex. 1005, 12:55-13:24.)¹³ Performance statistics (e.g., "percentage(s) or score(s)") "are updated on a regular basis." (<i>Id.</i>, 21:42-45.) Thus, Feeney discloses "providing a real time scoreboard . . . to each contestant device." [footnote] ¹³ Feeney's description of interface 300 applies to <i>each</i> player device. (Ex. 1005, 4:9-14 ("In the preferred embodiments, the players 31-33 will have installed a contest interface application on the devices 21-24 that they will be using, an example of such an interface application being described in greater detail below.")) As described and disclosed in Feeney, a POSA would have understood that the description of interface 300 is generic and applies to other player devices as well. (Ex. 1002, ¶73.) Indeed, Feeney describes interface 300 with respect to player device 21 (Ex. 1005, 11:66-12:3), and explains that the reference to player device 21 refers to each player device 21-24 (<i>id.</i>, 11:2-5).	(a) Feeney alone discloses or suggests limitation [1.f] under Patent Owner's interpretation 73. Feeney discloses that the interface 300 for each player device includes a player-status summary area 330 for "continuously" displaying statistics regarding a player or the player's team's performance in the contest (e.g., team rank, player's own rank, total number of points won, etc.). (Ex. 1005, 12:55-13:24.) The statistics are updated. (<i>Id.</i>, 21:42-45 ("In any event, such percentage(s) or score(s) preferably are updated on a regular basis and provided to the players through one or more user interfaces (e.g., such as interface 300, 310 or 380).")) Thus, Feeney discloses "providing a real time scoreboard . . . to each contestant device." Feeney's description of interface 300 applies to <i>each</i> player device. (Ex. 1005, 4:9-14 ("In the preferred embodiments, the players 31-33 will have installed a contest interface application on the devices 21-24 that they will be using, an example of such an interface application being described in greater detail below.")) That is, the description of interface 300 is generic and applies across other player devices as well. While Feeney describes interface 300 with respect to player device 21 (<i>id.</i>, 11:66-12:3), it states that the reference to device 21 refers to each player device 21-24 (<i>id.</i>, 11:2-5).

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Feeney further discloses that “after a problem has been delivered, the players are given indications as to how much time is left to respond.” (<i>Id.</i>, 24:14-15.) Such indication can be in the form of a “clock.” (<i>Id.</i>, 24:14-26.) A POSA would have understood that such a clock would have been provided in the user interface 300 because, in Feeney, “game-based information and functionality is available through a single user interface 300.” (<i>Id.</i>, 13:61-63; Ex. 1002, ¶74.) A POSA would have	74. Feeney further discloses that “after a problem has been delivered, the players are given indications as to how much time is left to respond.” (<i>Id.</i>, 24:14-15.) Such indication can be in the form of a “clock.” (<i>Id.</i>, 24:14-26 (“Preferably, after a problem has been delivered, the players are given indications as to how much time is left to respond. Such indications may be in the form of a digital countdown clock, an analog clock where the time is up when an indicator hand (e.g., configured as the contest’s logo) makes a full rotation, as a bar that changes color from left to right or bottom to top, or anything similar. Also, rather than indicating the amount of time remaining, the indication may be the amount of Dallions that will be won (e.g., declining over time) if the player submits a correct response at that point. In certain embodiments, after each problem the players are able to see who was the fastest to answer it correctly, e.g., with an ordered list of the fastest players and their
---	---

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Petition (pp. 31-42)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)
been motivated to include the clock in the player-status summary area 330 because area 330 displays other performance indicia for the player (e.g., score, rank) that is updated on a regular basis, as discussed above. (Ex. 1002, ¶74.) Providing the clock in the player-status summary area 330 would have been desirable because it would have allowed a player to visually monitor their performance (e.g., score and time remaining) using indicators provided in one place without having to flip between multiple interfaces. (<i>Id.</i>, 13:61-63 (“game-based information and functionality is available through a <i>single</i> user interface 300”) (emphasis added).) A POSA would have a reasonable expectation of success in providing such a clock in area 330 because Feeney provides a settings page 321 through which the user can customize the parameters displayed in area 330. (Ex. 1002, ¶74; Ex. 1005, 12:55-63.) Thus, a POSITA would have found it obvious to provide a clock in the player-status summary area 330. (Ex. 1002, ¶74.) <i>Adapt Pharma Operations Ltd v. Teva Pharms. USA, Inc.</i>, 25 F.4th 1354, 1365 (Fed. Cir. 2022) (“A determination of obviousness ‘requires finding that a person of ordinary skill in the art would have been motivated to combine or modify the teachings in the prior art and would have had a reasonable expectation of success in doing so.’”) (internal citation omitted). Feeney thus discloses or at least suggests “providing a real time scoreboard <u>with time clock</u> to each contestant processing device.”	times.”.) A POSITA would have understood that such a clock would have been provided in the user interface 300 because, in Feeney, “game-based information and functionality is available through a single user interface 300.” (<i>Id.</i>, 13:61-63.) A POSITA would have been motivated to include the clock in the player-status summary area 330 because area 330 displays other performance indicia for the player (e.g., score, rank) that is updated on a regular basis, as discussed above. Providing the clock in the player-status summary area 330 would have been desirable because it would have allowed a player to visually monitor their performance (e.g., score and time remaining) using indicators provided in one place without having to flip between multiple interfaces. (<i>Id.</i>, 13:61-63 (“game-based information and functionality is available through a <i>single</i> user interface 300”) (emphasis added).) Providing such a clock in area 330 would also have been feasible in Feeney because Feeney provides a settings page 321 through which the user can customize the parameters displayed in area 330. (<i>Id.</i>, 12:55-63.) Thus, Feeney discloses or at least suggests “providing a real time scoreboard <u>with time clock</u> to each contestant processing device.”

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Petition (pp. 31-42)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)
Feeney further discloses that “after a problem has been delivered, the players are given indications as to how much time is left to respond.” (<i>Id.</i>, 24:14-15.) Under Patent Owner’s interpretation of [1.f], as evidenced by its infringement allegations in the related district court litigation (<i>see</i> Ex. 1013, 9), Feeney discloses displaying “an individual contestant’s progress with respect to [] the time frame for answering questions.”¹⁴ Petitioner disagrees with Patent Owner’s interpretation because the claim requires indicating how much time is remaining or how much of an allotted time has elapsed for the <i>entire</i> series of questions in a contest, not just how much time is remaining to answer a single individual question. (<i>Supra</i> Section VIII.) However, to the extent the Board adopts Patent Owner’s construction, Feeney discloses the limitation at issue.	75. Feeney further discloses that “after a problem has been delivered, the players are given indications as to how much time is left to respond.” (<i>Id.</i>, 24:14-15.) Under an interpretation of [1.f] under which the claim is satisfied by indicating how much time is remaining to answer a single individual question and the claim does not require indicating how much time is remaining or how much of an allotted time has elapsed for the <i>entire</i> series of questions in a contest, Feeney discloses displaying “an individual contestant’s progress with respect to [] the time frame for answering questions.” I disagree with this interpretation, but to the extent it is adopted, Feeney discloses this limitation.

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Feeney discloses displaying performance statistics, including scores for answering questions correctly. For example, Feeney discloses that correctly answering questions contributes to the number of points (called "Dallions") earned by the player during the contest. (Ex. 1005, 12:63-13:24, 20:29-32, 22:15-18, 22:56-63, 23:3-5, 23:65-24:2.) The summary area 330 displays the player's score (e.g., accumulated number of Dallions) during the contest. (*Id.*, 12:55-13:24, FIG. 5.) Feeney states that the "score(s)" are "updated on a regular basis. (*Id.*, 21:42-45.) Feeney thus discloses or suggests that the summary area 330 "displays an individual contestant's progress with respect to . . . questions answered correctly while answering the series of questions during an academic competition." The number of Dallions earned by the player is an "individual score of the individual contestant." Feeney, therefore, also discloses "where each correctly answered question contributes on the real time scoreboard to at least one of (1) an individual score of the individual contestant and (2) a team score of the individual contestant's team."

76. Feeney discloses displaying performance statistics, including scores for answering questions correctly. For example, Feeney discloses that correctly answering questions contributes to the number of points (called "Dallions") earned by the player during the contest. (Ex. 1005, 12:63-13:24, 20:29-32 ("While the various players are participating in different contests, the same kinds of points (typically called 'Dallions' herein) preferably are earned across all contests and, in some cases, are capable of being earned independent of any contest."), 22:15-18, 22:56-63 ("More generally, 'bidder' questions may be made available periodically or on a pseudorandom basis, giving all of the players the opportunity to bid a number of Dallions before they answer (e.g., double or nothing). In certain embodiments, this feature is only made available to players that have achieved some milestone (such as reaching a specified number of Dallions or having answered a specified number of problems)."), 23:3-5 ("As indicated above, different problems might have different levels of difficulty, with easier problems rewarding correct responses with fewer Dallions than medium or difficult ones."), 23:65-24:2 ("As with the contest described in the '179 Application, the number of Dallions awarded for answering a problem correctly preferably declines the time, and no Dallions are awarded for any response submitted after a maximum specified time period.")) The summary area 330 displays the player's score (e.g., number of accumulated Dallions) during the contest. (*Id.*, 12:55-13:24, FIG. 5.) Feeney states that the "scores" are "updated on a regular basis. (*Id.*, 21:42-45.) Feeney thus discloses or suggests that the summary area 330 "displays an individual contestant's progress with respect to . . . questions answered correctly while answering the series of questions during an academic competition." The number of Dallions earned by the player is an "individual score of the individual contestant." Feeney, therefore, also discloses "where each correctly answered question contributes on the real time scoreboard to at least one of (1) an individual score of the individual contestant and (2) a team score of the individual contestant's team."

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Feeney discloses display of “an individual contestant’s progress with respect to...questions answered correctly” in additional ways. For example, Feeney discloses displaying the player’s progress with concentric rings that light up as the players answer problems correctly. (Ex. 1005, 24:64-25:7.) Correctly answering a first problem causes an outer ring to light up, while correctly answering a second problem causes an inner ring to light up. (*Id.*) In yet another example, Feeney discloses displaying player icons that move along a track based on whether the players answers problems correctly or incorrectly. (*Id.*, 25:28-34.) Again, a POSA would have understood that each of the above-identified visuals would have been provided in the user interface 300 because, in Feeney, “game-based information and functionality is available through a single user interface 300.” (*Id.*, 13:61-63; Ex. 1002, ¶77.) And they would have been provided more specifically in the summary area 330, for reasons discussed above.

77. Feeney discloses display of “an individual contestant’s progress with respect to...questions answered correctly” in additional ways. For example, Feeney discloses displaying the player’s progress with concentric rings that light up as the players answer problems correctly. (Ex. 1005, 24:64-25:7 (“In one contest (or portion of a contest), the player’s progress is visually displayed through a series of concentric rings. Correctly answering a first problem lights up the outer ring, correctly answering the second problem lights up the first inner ring, and if the player correctly answers the third problem in a row then the most inner ring lights up, e.g., placing the player’s symbol in the Center Dot/Ring, which earns the player bonus Dallions (e.g., triple the accumulated Dallions) plus a chance to earn a bonus prize if the fourth and final problem is answered both correctly in the shortest amount of time among all then-remaining players.”).) Correctly answering a first problem causes an outer ring to light up, while correctly answering a second problem causes an inner ring to light up. (*Id.*) In another example, Feeney discloses displaying player icons that move along a track based on whether the players answers problems correctly or incorrectly. (*Id.*, 25:28-34 (“Another example is the carnival-style rangle, in which icons representing the players move along a track, advancing for each problem answered correctly (e.g., with the distance being based on difficulty of the problem and/or speed in answering it correctly) and potentially moving backward for each problem answered incorrectly, and the first icon to reach the finish line is the winner.”).) Again, a POSITA would have understood that each of the above-identified visuals would have been provided in the user interface 300 because, in Feeney, “game-based information and functionality is available through a single user interface 300.” (*Id.*, 13:61-63.) And they would have been provided more specifically in the summary area 330, for reasons discussed above.

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Petition (pp. 31-42)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)
(b) Feeney in combination with Rogers discloses or suggests limitation [1.f] under Petitioner's interpretation As discussed above, Feeney discloses a time clock and discloses limitation [1.f] under Patent Owner's construction. Feeney expressly discloses indicators that show "how much time is left to respond," such as a digital countdown clock or an analog clock where the time is up when an indicator hand makes a full rotation. (Ex. 1005, 24:14-26; <i>supra</i> Section IX.A.1.vii(a).) Feeney does not expressly state whether the time "left to respond" refers to the time remaining for an individual question or the time remaining for the entire series of questions in a contest. Feeney also discloses or suggests that the time clock is located within the user interface 300 (<i>supra</i> Section IX.A.1.vii(a)) but does not expressly state where the time clock is positioned within the user interface 300. Rogers expressly discloses such aspects.	<u>(b) Feeney in combination with Rogers discloses or suggests limitation [1.f] under Petitioner's interpretation</u> 78. As discussed above, Feeney discloses a time clock and discloses limitation [1.f] under one interpretation of [1.f] (<i>supra</i> Section VII). Feeney expressly discloses indicators that show "how much time is left to respond," such as a digital countdown clock or an analog clock where the time is up when an indicator hand makes a full rotation. (Ex. 1005, 24:14-26; <i>supra</i> Section IX.A.1.vii(a).) Feeney does not expressly state whether the time "left to respond" refers to the time remaining for an individual question or the time remaining for the entire series of questions in a contest. Feeney also discloses or suggests that the time clock is located within the user interface 300 (<i>supra</i> Section IX.A.1.vii(a)) but does not expressly state where the time clock is positioned within the user interface 300. Rogers expressly discloses such aspects.

Petition (pp. 31-42)

Rogers discloses “an online test platform” (Ex. 1006, 7:60-61) that “may facilitate the development, delivery, and management of educational tests” for “students, teachers, proctors, and administrators.” (*Id.*, 7:22-25.) Rogers discloses providing a test with a series of questions to be answered within a certain time. (*Id.*, 19:15-20, FIG. 8.) FIG. 8 illustrates an introductory screen of the test:

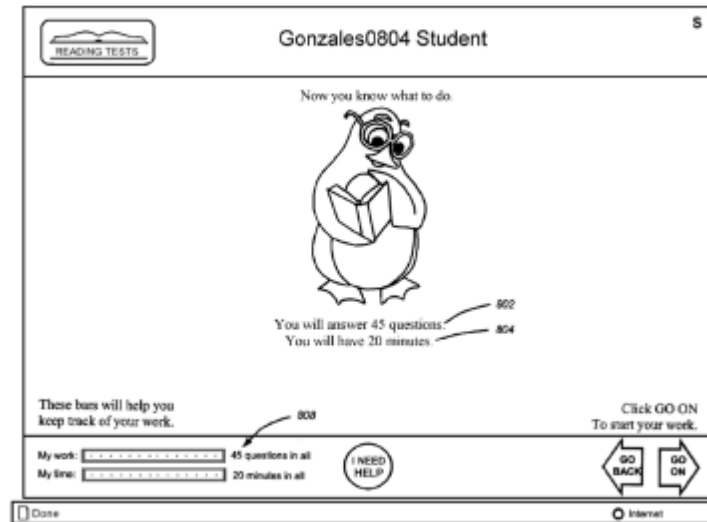


FIG. 8

(*Id.*)

Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)

79. Rogers discloses “an online test platform” (Ex. 1006, 7:60-61) that “may facilitate the development, delivery, and management of educational tests” for “students, teachers, proctors, and administrators.” (*Id.*, 7:22-25.) Rogers discloses providing a test with a series of questions to be answered within a certain time. (*Id.*, 19:15-20 (“FIG. 8 depicts the introductory screen. The introductory screen indicates the number of questions to answer 802, the number of minutes 804, and progress indicators 808 for time used and questions completed. Note that the progress indicators 808 are present and active for all subsequent test screens.”), FIG. 8.) FIG. 8 illustrates an introductory screen of the test:

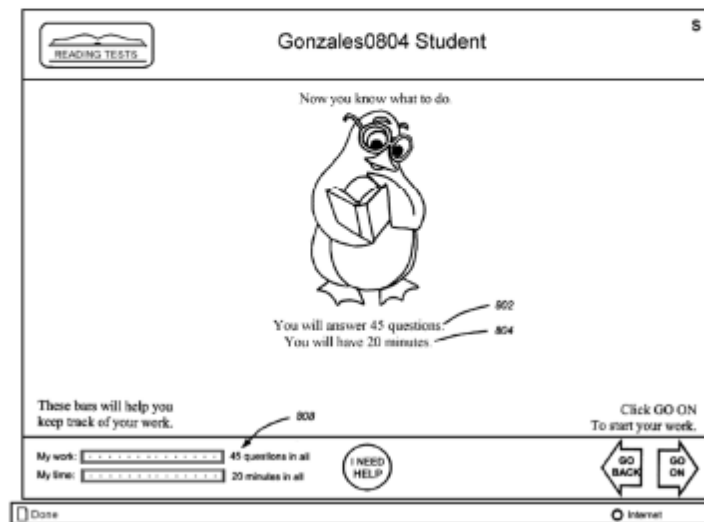


FIG. 8

(*Id.*)

Petition (pp. 31-42)

FIG. 9 illustrates a test screen:

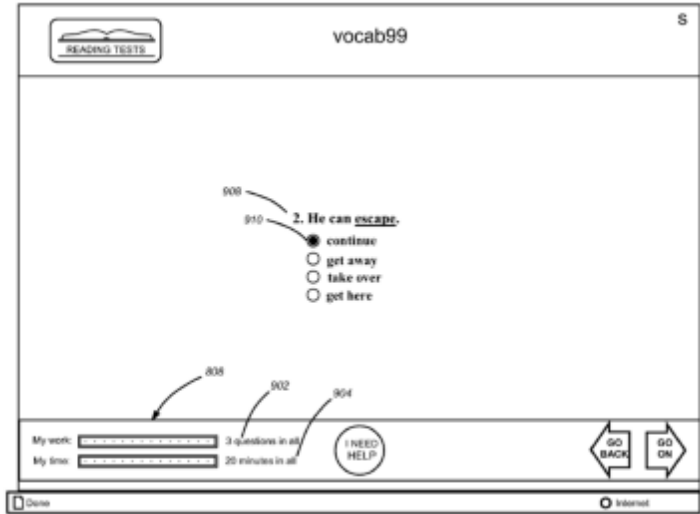


FIG. 9

Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)

80. FIG. 9 illustrates a test screen:

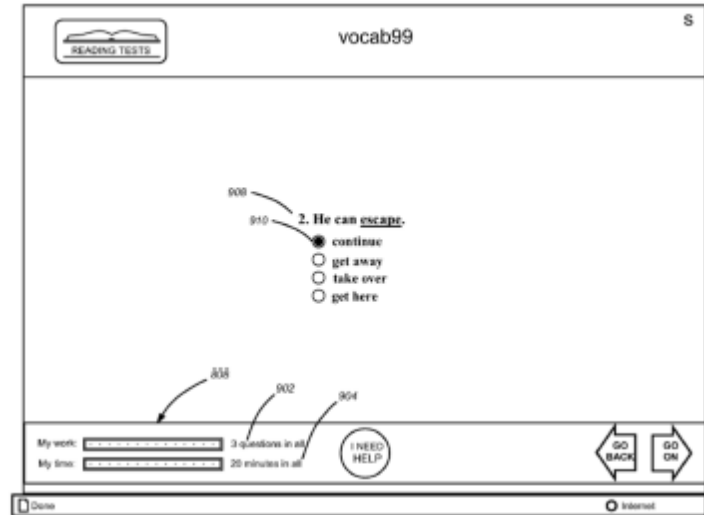


FIG. 9

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

(*Id.*, FIG. 9, 19:23-24.) Figure 9 illustrates that as the user progresses through the test, the progress indicators 808 indicate progress towards the total count of questions 902 and the total time allowed 904. (*Id.*, 19:56-20:15.) Examples of indications include a progress bar, a pie chart, a count, a clock, and a digital timer. (*Id.*) For example, a user can assess how many of the total questions have been answered and how much time has been used up based on the amount of the progress bar that is filled in. (*Id.*) Figures 10-12 illustrate how the progress indicators 808 indicate progression through the tests. (*Id.*, 20:42-21:16.)

(*Id.*, FIG. 9, 19:23-24.)

81. Figure 9 illustrates that as the user progresses through the test, the progress indicators 808 indicate progress towards the total count of questions 902 and the total time allowed 904. (*Id.*, 19:56-20:15 (“The test screen may display a status indicator such as a completion status bar that provides indication of relative progress toward completion of the test questions. At least a portion of the indicator may change to a different color based on a ratio of the number of answers provided to the total number to be presented in the session. The test screen may also provide a time indicator, representing a ratio of time used in the session to a total time allowed to complete the session. In an example, FIG. 9 shows a question progress bar indicating that approximately a very small number of the questions to be presented have been completed. FIG. 9 also shows a time indicator bar indicating the amount of time used of the total of 30 minutes allowed to complete the session. Other indication forms such as a pie chart, a count, a clock, a digital timer, and the like may alternatively represent the test completion status and the time used status. The test question and time used indicators may be useful to a user in allocating test time to questions. It may also be useful to indicate to users how many more questions they have to answer, including questions they may have chosen to initially skip. The progress indicators 808 may include a total count of questions 902 and a total time allowed 904. These may facilitate a user assessing how many of the total questions 902 have been answered by comparing the amount of the progress bar 808 consumed to the total number of questions. The time progress bar 808 may facilitate similar user assessment of the time of the test.”).) Examples of indications include a progress bar, a pie chart, a count, a clock, and a digital timer. (*Id.*) For example, a user can assess how many of the total questions have been answered and how much time has been used up based on the amount of the progress bar that is filled in. (*Id.*) Figures 10-12 illustrate how the progress indicators 808 indicate progression through the tests. (*Id.*, 20:42-21:16.)

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Petition (pp. 31-42)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)
Rogers thus expressly discloses a “real-time scoreboard with a time clock” that shows “an individual contestant’s progress with respect to . . . the time frame for answering questions . . . while answering the series of questions during an academic competition.” Rogers does so under Petitioner’s interpretation (<i>supra</i> Section VIII) because it indicates both how much time has elapsed and how much of the allotted time is remaining to answer the <i>entire</i> series of questions.	82. Rogers thus expressly discloses a “real-time scoreboard with a time clock” that shows “an individual contestant’s progress with respect to . . . the time frame for answering questions . . . while answering the series of questions during an academic competition.” Rogers does so under the interpretation I set forth above in Section VIII because it indicates both how much time has elapsed and how much of the allotted time is remaining to answer the entire series of questions.
A POSA would have found it obvious to combine the teachings of Feeney and Rogers to apply Rogers’s timed tests and progress indicators to Feeney’s user interface 300 so that the user interface 300 includes a time clock that shows how much of the allotted time has elapsed and how much is remaining to answer the stream of multiple problems (e.g., multiple-choice questions) in Feeney. (Ex. 1002, ¶83.) A POSA would have looked to Rogers to refine Feeney’s interface because both Rogers and Feeney disclose delivery of problems for a user to answer over a network, and a user interface for displaying indicia (e.g., time remaining) for a test or quiz. (Ex. 1002, ¶83.) Both Feeney and Rogers disclose interface elements associated with a scoreboard, time clock, time for answering questions, and questions answered correctly: Feeney discloses a summary area 330, visuals, concentric rings, countdowns, icons, time, clock indicator, and number of Dallions (<i>see e.g.</i>, Ex. 1005, 13:61-14:6, 24:14-26, FIGs. 5-7); and Rogers discloses indicators with a progress bar, a pie chart, a count, a clock, and a digital timer (<i>see e.g.</i>, Ex. 1006, 19:56-20:15, FIGs 8-12).	83. A POSITA would have been motivated to combine the teachings of Feeney and Rogers to apply Rogers’s timed tests and progress indicators to Feeney’s user interface 300 so that the user interface 300 includes a time clock that shows how much time has elapsed and how much allotted time is remaining to answer the stream of multiple problems (e.g., multiple-choice questions) in Feeney. A POSITA would have looked to Rogers to refine Feeney’s interface because both Rogers and Feeney disclose delivery of problems for a user to answer over a network, and a user interface for displaying indicia (e.g., time remaining) for a test or quiz. Both Feeney and Rogers disclose interface elements associated with a scoreboard, time clock, time for answering questions, and questions answered correctly: Feeney discloses a summary area 330, visuals, concentric rings, countdowns, icons, time, clock indicator, and number of Dallions (<i>see e.g.</i>, Ex. 1005, 13:61-14:6, 24:14-26, FIGs. 5-7); and Rogers discloses indicators with a progress bar, a pie chart, a count, a clock, and a digital timer (<i>see e.g.</i>, Ex. 1006, 19:56-20:15, FIGs 8-12).

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Petition (pp. 31-42)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)
Having looked to Rogers, a POSA would have been motivated to combine the teachings of Rogers and Feeney to provide an indication of how much time is remaining to answer the series of questions or how much of the allotted time for answering the series of questions has elapsed. (Ex. 1002, ¶84.) Addition of such a feature in Feeney would have enhanced the applicability of Feeney's interface to other types of games (e.g., those involving a speed round). (<i>Id.</i>; Ex. 1009, 3:40-5:25 (describing a game with a speed round in which "multiple contestants on one team will have the opportunity to answer as many questions as they can in the time allotted in the speed round").) In a game involving a speed round, contestants would find it useful to know how much time is left in the speed round. (Ex. 1002, ¶84.) Feeney supports such a combination because it discloses that its disclosure applies to "any kind of game in which the players compete against each other." (Ex. 1005, 3:31-37.)	84. Having looked to Rogers, a POSITA would have been motivated to combine the teachings of Rogers and Feeney to provide an indication of total time remaining to answer the series of questions or how much of the allotted time for answering the series of questions has elapsed. Addition of such a feature in Feeney would have enhanced the applicability of Feeney's interface to other types of games (e.g., those involving a speed round). (<i>Id.</i>; Ex. 1009, 3:40-5:25 (describing a game with a speed round in which "multiple contestants on one team will have the opportunity to answer as many questions as they can in the time allotted in the speed round").) In a game involving a speed round, contestants would find it useful to know how much time is left in the speed round. Feeney supports such a combination because it discloses that its disclosure applies to "any kind of game in which the players compete against each other." (Ex. 1005, 3:31-37.)

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Petition (pp. 31-42)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)
A POSA would have had a reasonable expectation of success in combining the teachings of Feeney and Rogers because, as discussed above, both disclose similar software concepts for presenting questions and handling answers in a graphical user interface. (Ex. 1002, ¶85; Ex. 1005, 3:39-48; Ex. 1006, 7:22-25.) Indeed, it would take no more than basic software coding to combine the expressly disclosed features of Rogers' clock with Feeney's clock to indicate the total remaining time for an entire series of questions in a contest. (Ex. 1002, ¶85.) Thus, it would have been obvious to combine the teachings of Feeney and Rogers, as discussed above. <i>Adapt Pharma</i>, 25 F.4th at 1365. Indeed, providing a clock like Rogers' in a system like Feeney would have been obvious because it involves the predictable application of a known technique (Roger's clock that shows the total time remaining to answer all of the questions) to a known system (Feeney's user interface), where the combination merely provides a predictable outcome (display of total time remaining to answer Feeney's series of questions). <i>KSR Int'l Co. v. Teleflex Inc.</i>, 550 U.S. 398, 417 (2007); Ex. 1002, ¶86.	85. A POSITA would have had a reasonable expectation of success in combining the teachings of Feeney and Rogers because, as discussed above, both disclose similar software concepts for presenting questions and handling answers in a graphical user interface. (<i>Id.</i>, 3:39-48; Ex. 1006, 7:22-25.) Indeed, it would take no more than basic software coding to combine the expressly disclosed features of Rogers' clock with Feeney's clock to indicate the total remaining time for an entire series of questions in a contest. 86. Providing a clock like Rogers' in a system like Feeney would have involved the predictable application of a known technique (Roger's clock that shows the total time remaining to answer all of the questions) to a known system (Feeney's user interface), where the combination merely provides a predictable outcome (display of total time remaining to answer Feeney's series of questions).
For the above reasons, Feeney in combination with Rogers discloses or suggests limitation [1.f]. The remaining aspects of Feeney (e.g., the display of the individual Dallions earned) is not affected by the combination with Rogers.	87. For the above reasons, Feeney in combination with Rogers discloses or suggests limitation [1.f]. The remaining aspects of Feeney (e.g., the display of the individual Dallions earned) is not affected by the combination with Rogers.

Ground 1, Limitation [1.f] Comparison (identical language highlighted in yellow)

Petition (pp. 31-42)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 72-88)
A POSA would have understood that the functionality of [1.f] is enabled by server 12 in Feeney (and by extension the processor implementing contest administration system 80, <i>supra</i> Section IX.A.1.iii) because the user interface 300 can be “provided entirely by server 12.” (Ex. 1005., 11:62-12:3, 10:54-11:62 (describing user interface 300), FIG. 5.) System 80 implemented by server 12 includes a contest management component 86 that calculates Dallions to be awarded to a player and further includes a player interface 88 that “display[s] to the respective players various player-specific contest-environment information.” (<i>Id.</i>, 5:25-37.) A player’s score and time remaining in the contests would be understood to be examples of “player-specific contest-environment information” as they are specific to a player. (Ex. 1002, ¶88.)	88. A POSITA would have understood that the functionality of [1.f] is enabled by server 12 in Feeney (and by extension the processor implementing contest administration system 80, <i>supra</i> Section IX.A.1.iii) because the user interface 300 can be “provided entirely by server 12.” (Ex. 1005., 11:62-12:3, 10:54-11:62 (describing user interface 300), FIG. 5.) System 80 implemented by server 12 includes a contest management component 86 that calculates Dallions to be awarded to a player and further includes a player interface 88 that “display[s] to the respective players various player-specific contest-environment information.” (<i>Id.</i>, 5:25-37.) A player’s score and time remaining in the contests would be understood to be examples of “player-specific contest-environment information” as they are specific to a player.

Ground 4 Comparison (identical language highlighted in yellow)

Petition (pp. 62-65)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 132-136)
1. “Academic Competition” To the extent Patent Owner argues that Feeney does not disclose an “academic competition,” Panetta discloses such a feature. Panetta discloses “a method of practicing educational exercises” in which “teams of students [] compete against each other.” (Ex. 1012, Abs.) For example, “questions are posed to competing teams of students who compete against each other in a baseball game format.” (<i>Id.</i>, [0022].) A teacher “establishes teams of students” and “each player logs in with their password.” (<i>Id.</i>, [0033].) The players from opposing teams take turns answering questions. (<i>Id.</i>, [0044].)	1. Academic Competition 132. I have considered a scenario in which Patent Owner argues that Feeney does not disclose or suggest that its system is configured for handling an “academic competition.” While such an argument would be incorrect, Panetta discloses such a feature. Panetta discloses “a method of practicing educational exercises” in which “teams of students [] compete against each other.” (Ex. 1012, Abs.) For example, “questions are posed to competing teams of students who compete against each other in a baseball game format.” (<i>Id.</i>, [0022].) A teacher “establishes teams of students” and “each player logs in with their password.” (<i>Id.</i>, [0033].) The players from opposing teams take turns answering questions. (<i>Id.</i>, [0044].) (“The premise is simple. Students answer the questions correctly, make hits and score runs. Correctness and speed are a must, with the emphasis on being correct. In an exemplary embodiment, a series of seven questions are posed each inning, each progressively harder, each in perfect compliment with the teaching syllabus.”.)

Ground 4 Comparison (identical language highlighted in yellow)

Petition (pp. 62-65)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 132-136)
A POSA would have looked to Panetta because like Feeney and Rogers, Panetta involves a competition or test where questions are provided to the user. (Ex. 1002, ¶133.) Having looked to Panetta, a POSA would have recognized that academic competitions involving teams of students can be useful as a learning aid. (Ex. 1012, [0003]-[0004].) Given Feeney's teachings of a comprehensive system for hosting contests, where the contest can be "any kind of game in which the players compete against each other" (Ex. 1005, 3:31-37), a POSA would have been motivated to combine the teachings of Panetta with Feeney and Rogers to allow the Feeney-Rogers combined system to be utilized for academic competitions. (Ex. 1002, ¶133.) Doing so would have expanded the applicability of the Feeney-Rogers combined system. (<i>Id.</i>) For example, a POSA would have been motivated to configure Feeney's system such that teachers can serve as administrators to create academic contests with students as the players. (<i>Id.</i>) This would have allowed teachers and students the ability to take advantage of the vast number of contest features presented by Feeney. (<i>Id.</i>)	133. A POSITA would have looked to Panetta because like Feeney and Rogers, Panetta involves a competition or test where questions are provided to the user. Having looked to Panetta, a POSITA would have recognized that academic competitions involving teams of students can be useful as a learning aid. (Ex. 1012, [0003]-[0004].) Given Feeney's teachings of a comprehensive system for hosting contests, where the contest can be "any kind of game in which the players compete against each other" (Ex. 1005, 3:31-37), a POSITA would have been motivated to combine the teachings of Panetta with Feeney and Rogers to allow the Feeney-Rogers combined system to be utilized for academic competitions. Doing so would have expanded the applicability of the Feeney-Rogers combined system. For example, a POSITA would have been motivated to configure Feeney's system such that schoolteachers can serve as administrators to create academic contests with students as the players. This would have allowed teachers and students the ability to take advantage of the vast number of contest features presented by Feeney.
Configuring the Feeney-Rogers combined system to allow an academic competition would have been within ordinary skill and would not have required much (if any) change to the underlying system configuration. (Ex. 1002, ¶134.) This is supported by Feeney, which states that the contest can be "any kind of game in which the players compete against each other." (Ex. 1005, 3:31-37.) Thus, combining Panetta's teachings with Feeney and Rogers, as discussed above, would have been obvious. <i>Adapt Pharma</i>, 25 F.4th at 1365.	134. Configuring the Feeney-Rogers combined system to allow an academic competition would have been within ordinary skill and would not have required much (if any) change to the underlying system configuration. This is supported by Feeney, which states that the contest can be "any kind of game in which the players compete against each other." (Ex. 1005, 3:31-37.)

Ground 4 Comparison (identical language highlighted in yellow)

Petition (pp. 62-65)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 132-136)
2. “enabling a user, through a user interface connected to said database, to perform at least one of the following: . . . (3) divide a team into multiple teams for an intra-team academic competition” As discussed above in Section IX.A.1.v, Feeney discloses one of the three options listed in limitation [1.d]. Maurseth additionally discloses the third option: dividing a team into multiple teams for an intra-team academic competition. Maurseth discloses a method of playing an educational game in which an organization is divided into aggregate teams, which are then further divided into “mini-teams.” (Ex. 1007, Abs., [0033].) “Each mini-team plays [] the educational game with other mini-teams from the same team.” (<i>Id.</i>, [0039].)	2. “enabling a user, through a user interface connected to said database, to perform at least one of the following: . . . (3) divide a team into multiple teams for an intra-team academic competition” 135. As discussed above in Section IX.A.1.v, Feeney discloses one of the three options listed in limitation [1.d]. Maurseth additionally discloses the third option: dividing a team into multiple teams for an intra-team academic competition. Maurseth discloses a method of playing an educational game in which an organization is divided into aggregate teams, which are then further divided into “mini-teams.” (Ex. 1007, Abs., [0033].) (“FIG. 2 is a diagram of a separation of an organization into associated teams in accordance with an exemplary embodiment of the present invention. An organization 110, is divided into aggregate teams, 112 and 114. In this embodiment, the organization is divided into two aggregate teams. In other embodiments, there may be two or more aggregate teams as exemplified by aggregate team 115. Each aggregate team is then divided into teams, such as aggregate team 112 into teams 116 and 118. In this embodiment, the aggregate team is divided into two teams. In other embodiments, there may be two or more teams as exemplified by team 119. Finally, each team is divided into mini-teams, such as team 116 into mini-teams 120 and 122. Finally, each mini-team is composed of one or more mini-team members 124.”.) “Each mini-team plays [] the educational game with other mini-teams from the same team.” (<i>Id.</i>, [0039].)

Ground 4 Comparison (identical language highlighted in yellow)

Petition (pp. 62-65)	Dr. Abowd Declaration (Ex. 1002, ¶¶ 132-136)
A POSA would have looked to Maurseth because it relates to games involving teams like Feeney. (Ex. 1002, ¶136.) Having looked to Maurseth, a POSA would have recognized that contest administrators need the flexibility to be able to divide teams into mini-teams depending on the needs of a contest. (<i>Id.</i>) For example, if teams get too large, the administrator could need the ability to divide the teams into sub-teams and host the competition between the sub-teams. (<i>Id.</i>) Thus, a POSA would have been motivated to configure the Feeney-Rogers system to provide the ability for the administrator to divide teams through Feeney's user interface 84. (<i>Id.</i>) And a POSA would have a reasonable expectation of success in providing such a feature in the Feeney-Rogers system. (<i>Id.</i>) Indeed, providing such a feature would take no more than basic software coding. (<i>Id.</i>) Thus, combining Maurseth's teachings with Feeney and Rogers, as discussed above, would have been obvious. <i>Adapt Pharma</i>, 25 F.4th at 1365.	136. A POSITA would have looked to Maurseth because it relates to games involving teams like Feeney. Having looked to Maurseth, a POSITA would have recognized that contest administrators need the flexibility to be able to divide teams into mini-teams depending on the needs of a contest. For example, if teams get too large, the administrator could need the ability to divide the teams into sub-teams and host the competition between the sub-teams. Thus, a POSITA would have been motivated to configure the Feeney-Rogers system to provide the ability for the administrator to divide teams through Feeney's user interface 84. (Ex. 1005, 5:7-10 (user interface 84 allows contest administrator to "manage the hosted contest(s).").) And a POSITA would have a reasonable expectation of success in providing such a feature in the Feeney-Rogers system. Indeed, providing such a feature would take no more than basic software coding.