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(54) **WIRELESS BET WITHDRAWAL GAMING SYSTEM**

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Publication Classification

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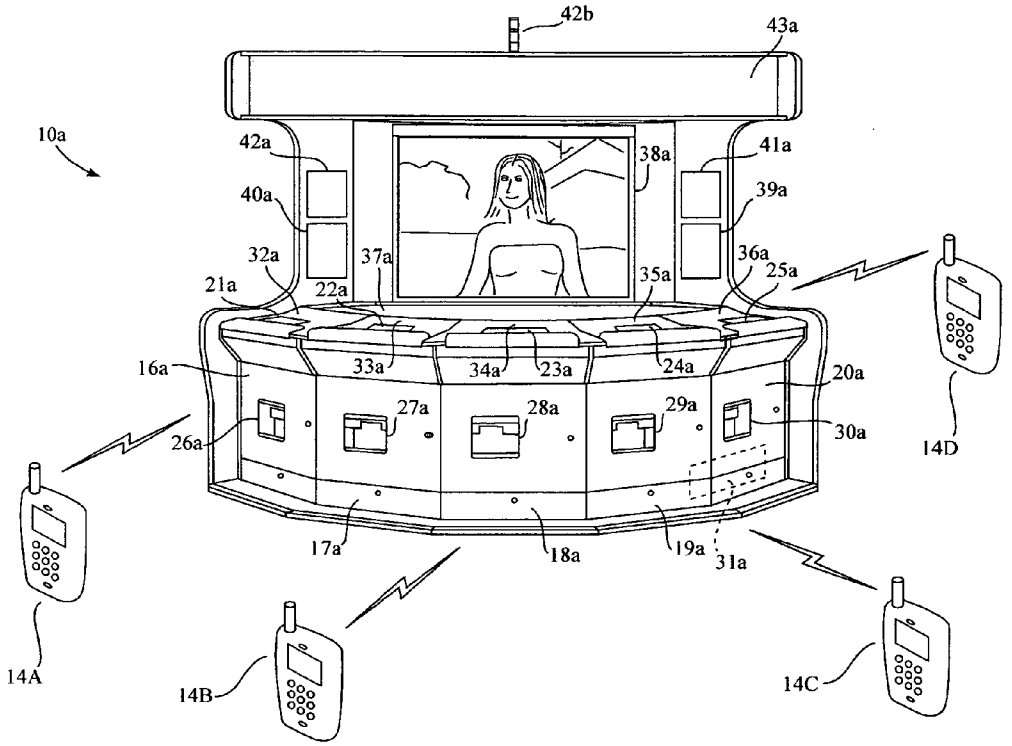
A63F 9/24 (2006.01)

(52) **U.S. Cl.** **463/25**

(57) **ABSTRACT**

A system for wireless gaming comprises a central game processor having wireless transmission and reception ability. The game processor has a device server and a local game server. Multiple user input devices having a visual display and wireless transmission and reception ability are provided. The wireless devices are used to play a game in which a player places a multiple part wager comprising at least two distinct wagers to participate in a game. At least a partial hand of cards is provided to each player, and at least one common card is provided. Players are given an opportunity to withdraw a portion of the wager after viewing the player cards. The at least one common card is revealed and play is resolved. All wagers not withdrawn by the player are resolved



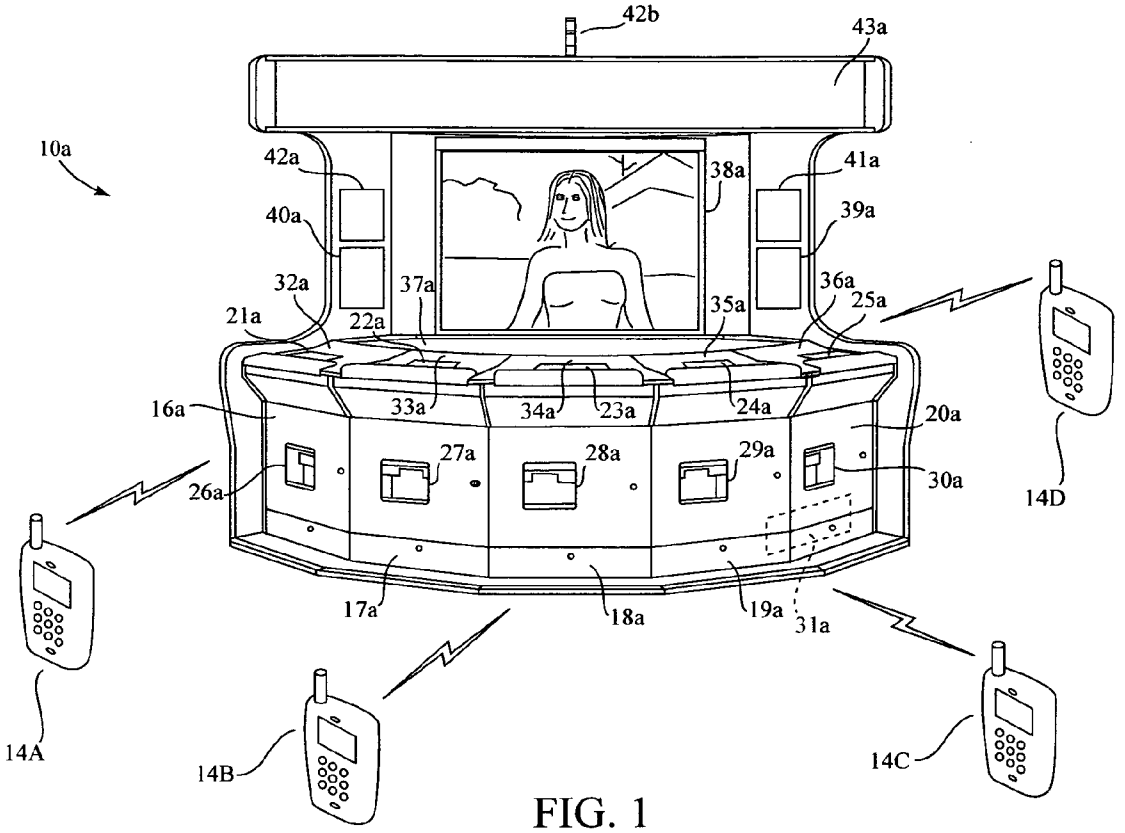

42b
43a
10a
42a
38a
41a
40a
39a
32a
37a
36a
21a
22a
35a
25a
16a
33a
34a
23a
24a
20a
27a
28a
29a
26a
30a
14D
17a
18a
19a
31a
14A
14B
14C

FIG. 1

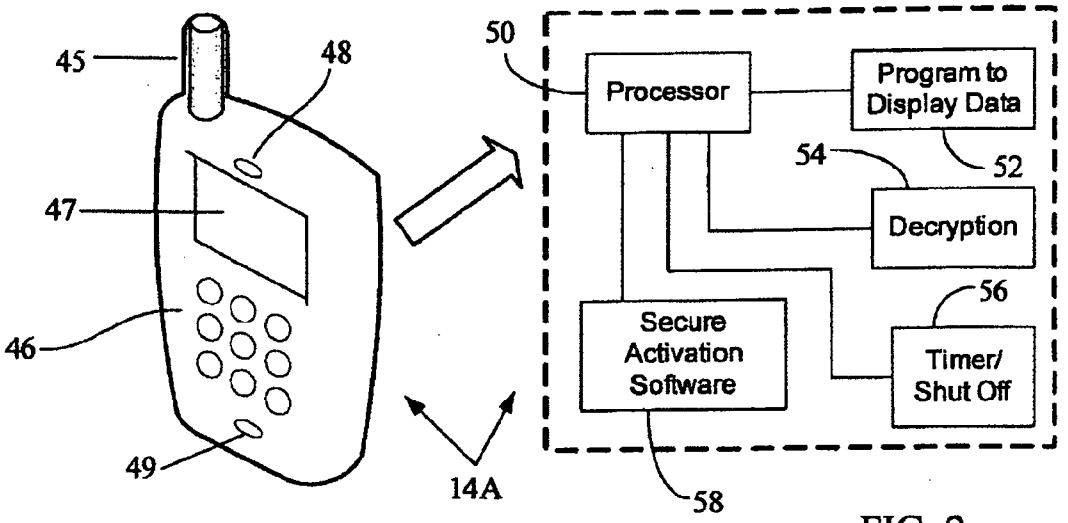

45
48
47
46
49
14A
50
Processor
Program to Display Data
52
54
Decryption
56
Secure Activation Software
Timer/ Shut Off
58

FIG. 2

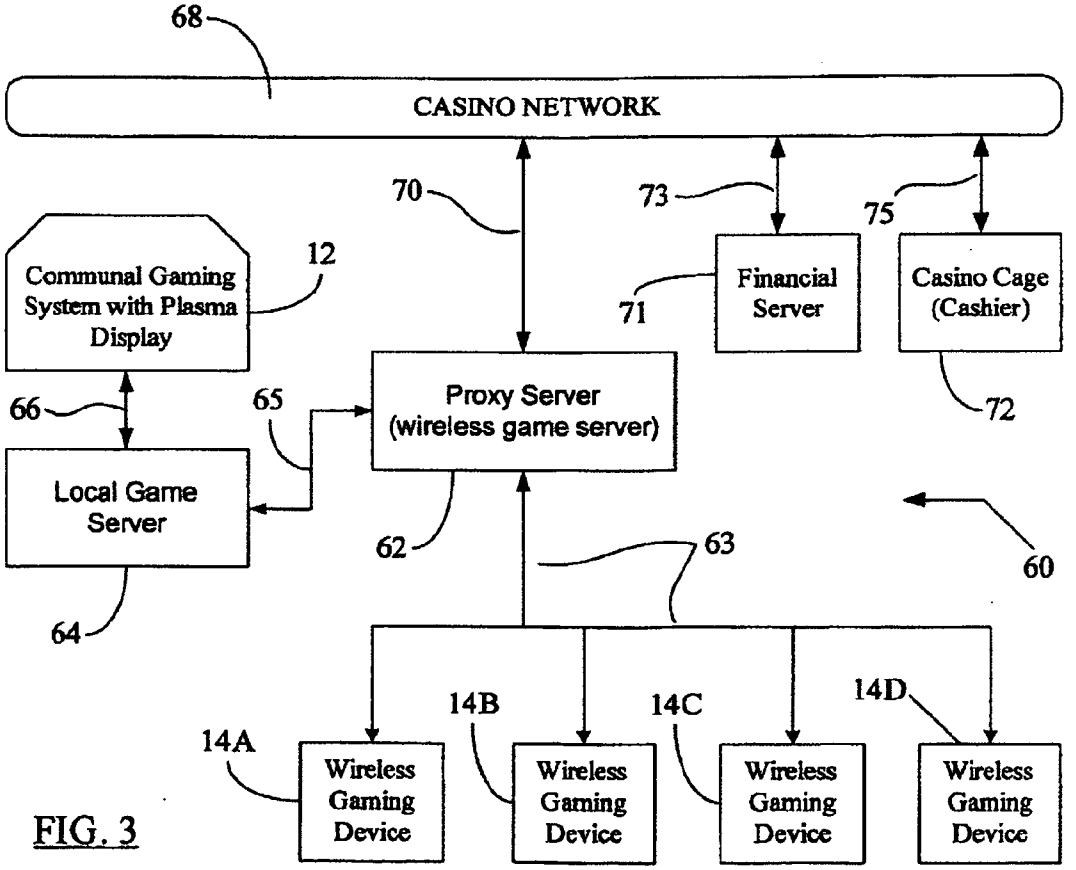

68
CASINO NETWORK
70
73
75
Communal Gaming System with Plasma Display
12
Financial Server
71
Casino Cage (Cashier)
72
66
65
Proxy Server (wireless game server)
Local Game Server
62
63
60
64
14A
14B
14C
14D
Wireless Gaming Device
Wireless Gaming Device
Wireless Gaming Device
Wireless Gaming Device

FIG. 3

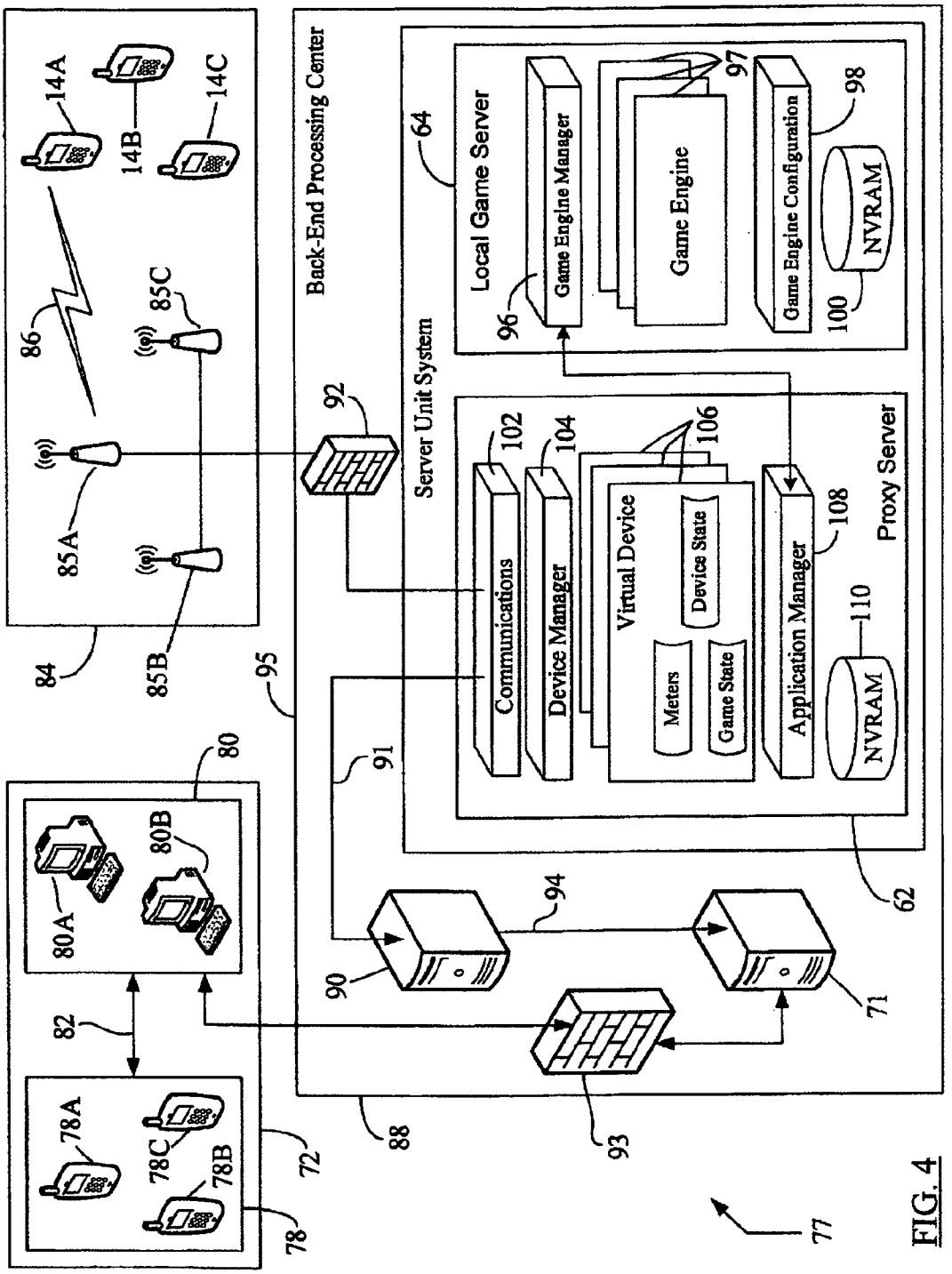
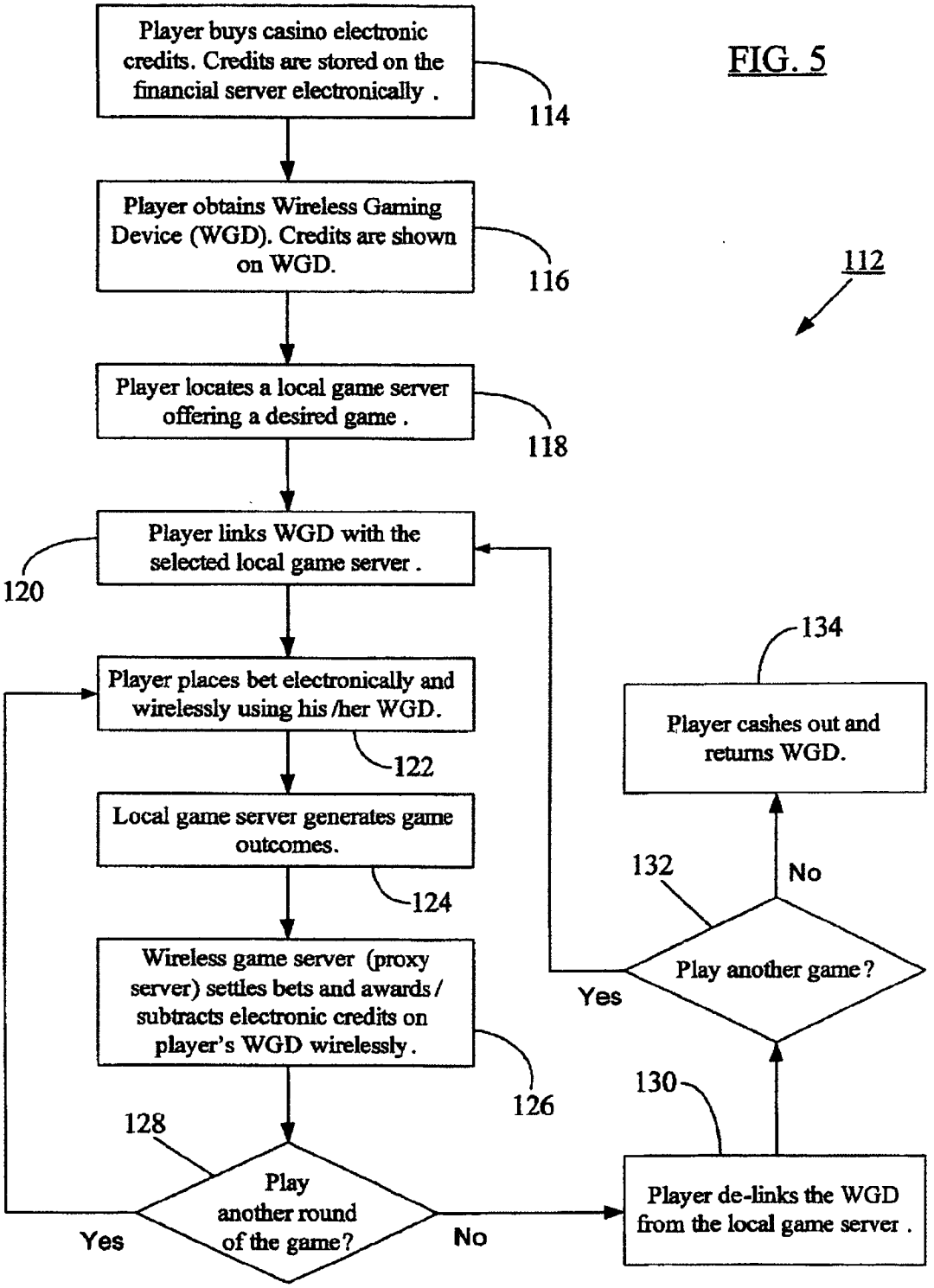

Back-End Processing Center
Server Unit System
Local Game Server
Game Engine Manager
Game Engine
Game Engine Configuration
NVRAM
Proxy Server
Communications
Device Manager
Virtual Device
Device State
Meters
Game State
Application Manager
NVRAM
14A
14B
14C
85A
85B
85C
86
84
92
95
91
90
94
71
93
88
72
78
78A
78B
78C
82
80
80A
80B
62
64
96
97
98
100
102
104
106
108
110
77

FIG. 4

FIG. 5


Player buys casino electronic credits. Credits are stored on the financial server electronically .
114
Player obtains Wireless Gaming Device (WGD). Credits are shown on WGD.
116
112
Player locates a local game server offering a desired game .
118
Player links WGD with the selected local game server .
120
Player places bet electronically and wirelessly using his /her WGD.
122
Local game server generates game outcomes.
124
Wireless game server (proxy server) settles bets and awards / subtracts electronic credits on player's WGD wirelessly .
126
128
Play another round of the game?
Yes
No
Player de-links the WGD from the local game server .
130
Play another game?
132
No
Yes
Player cashes out and returns WGD.
134

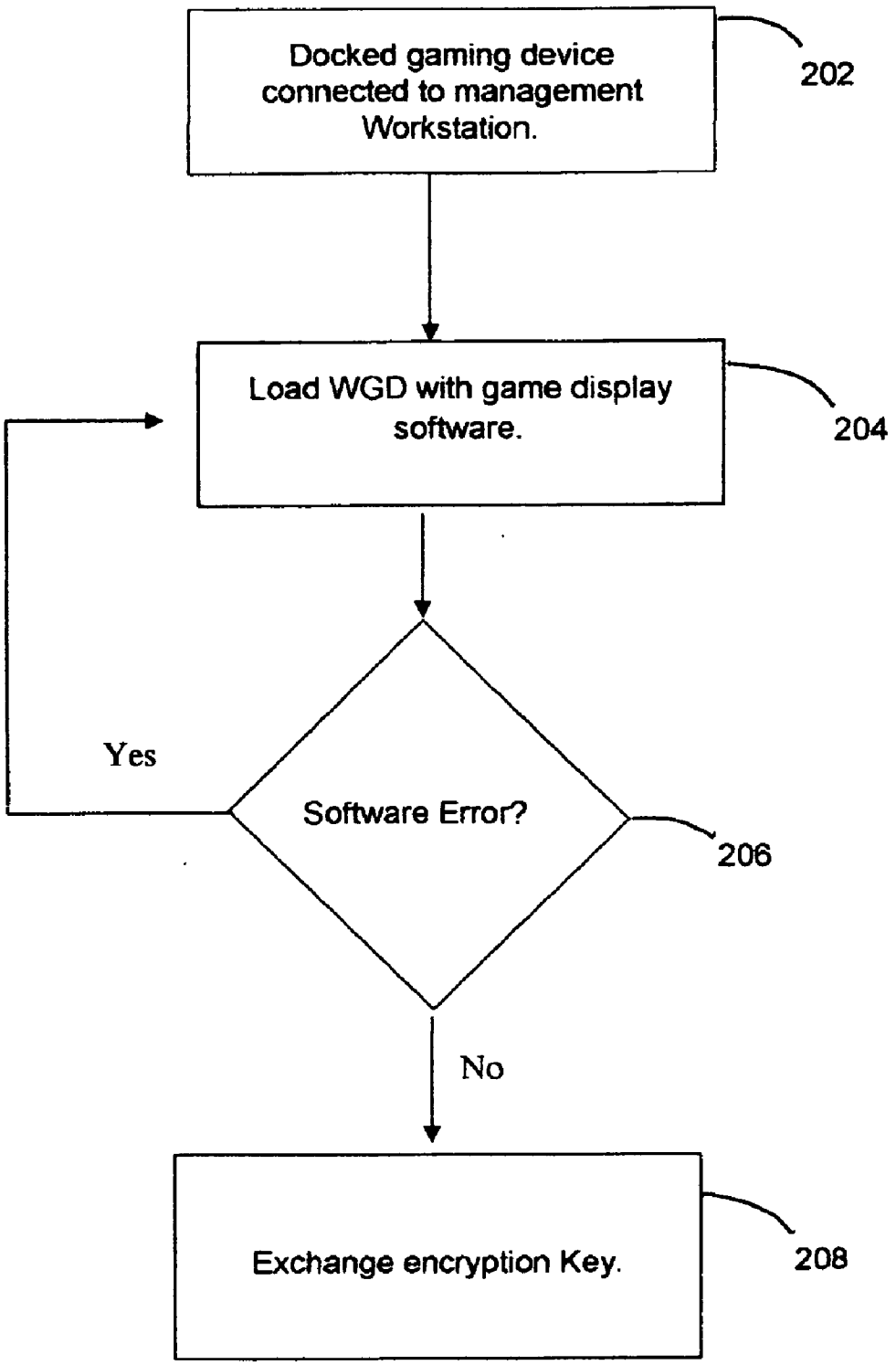

Docked gaming device connected to management Workstation.
202
Load WGD with game display software.
204
Software Error?
206
Yes
No
Exchange encryption Key.
208

FIG. 5A

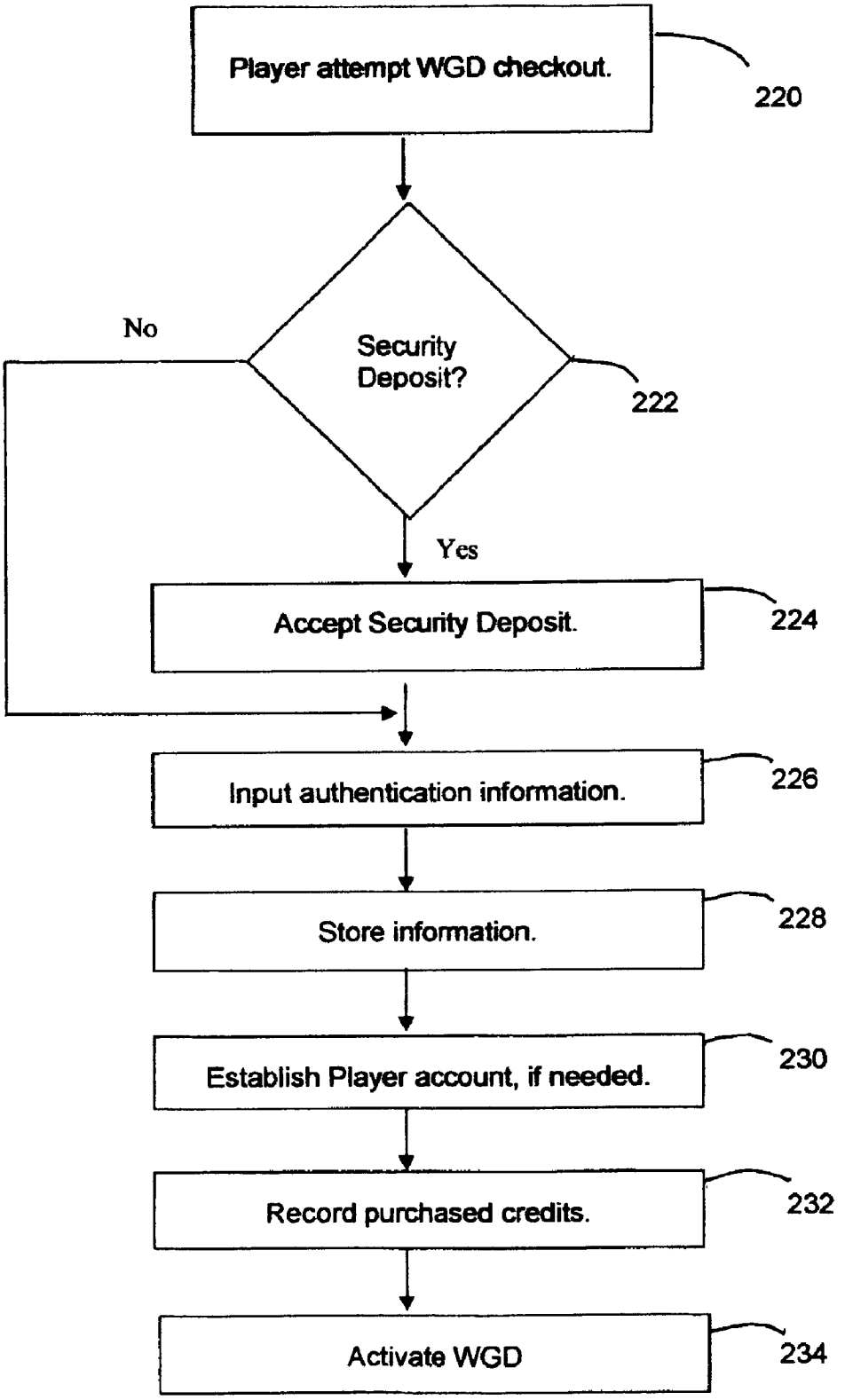

Player attempt WGD checkout.
220
Security Deposit?
222
No
Yes
Accept Security Deposit.
224
Input authentication information.
226
Store information.
228
Establish Player account, if needed.
230
Record purchased credits.
232
Activate WGD
234

FIG. 5B

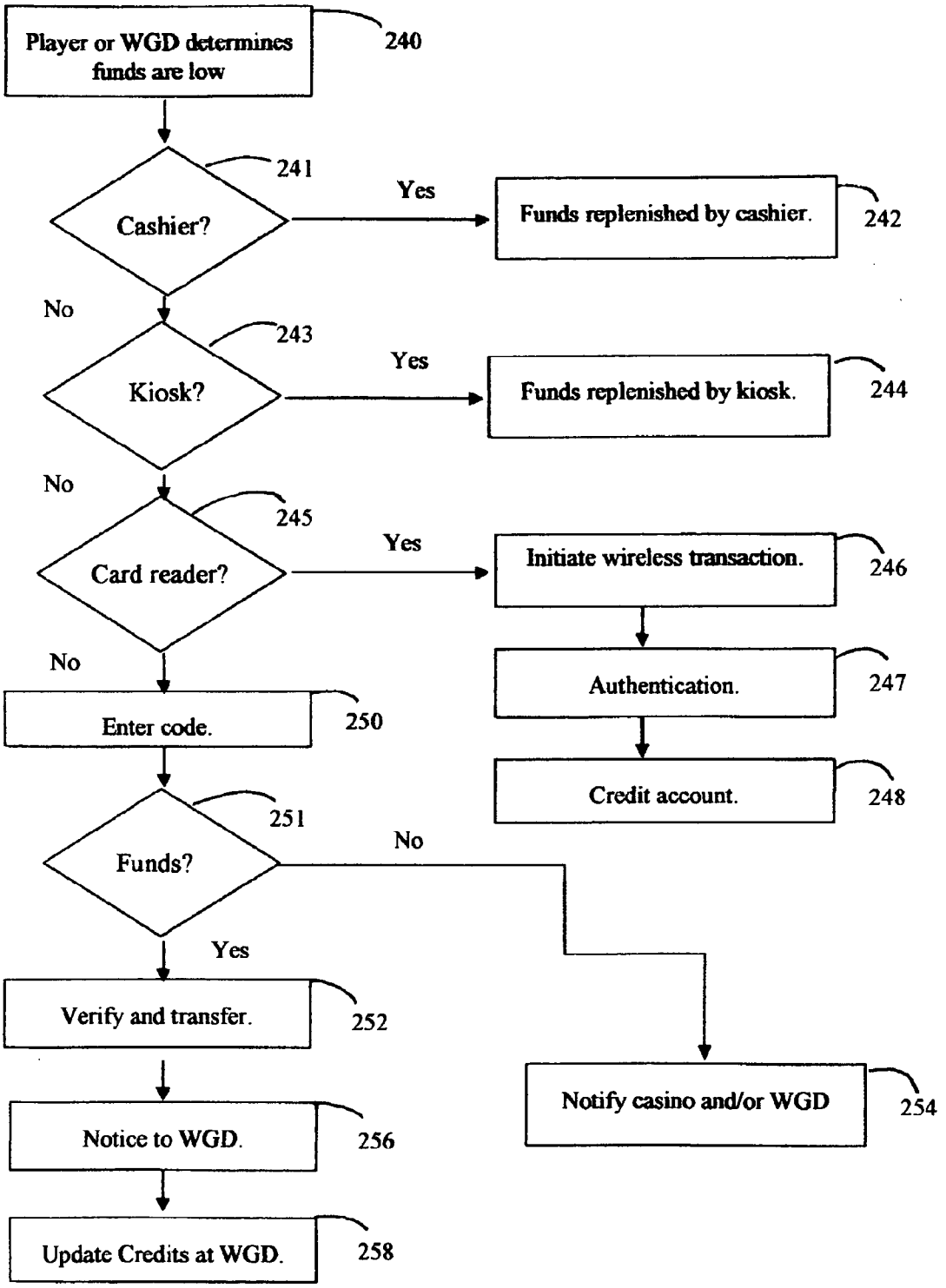

Player or WGD determines funds are low
240
Cashier?
241
Yes
Funds replenished by cashier.
242
No
Kiosk?
243
Yes
Funds replenished by kiosk.
244
No
Card reader?
245
Yes
Initiate wireless transaction.
246
Authentication.
247
Credit account.
248
No
Enter code.
250
Funds?
251
No
Yes
Verify and transfer.
252
Notify casino and/or WGD
254
Notice to WGD.
256
Update Credits at WGD.
258

FIG. 5C

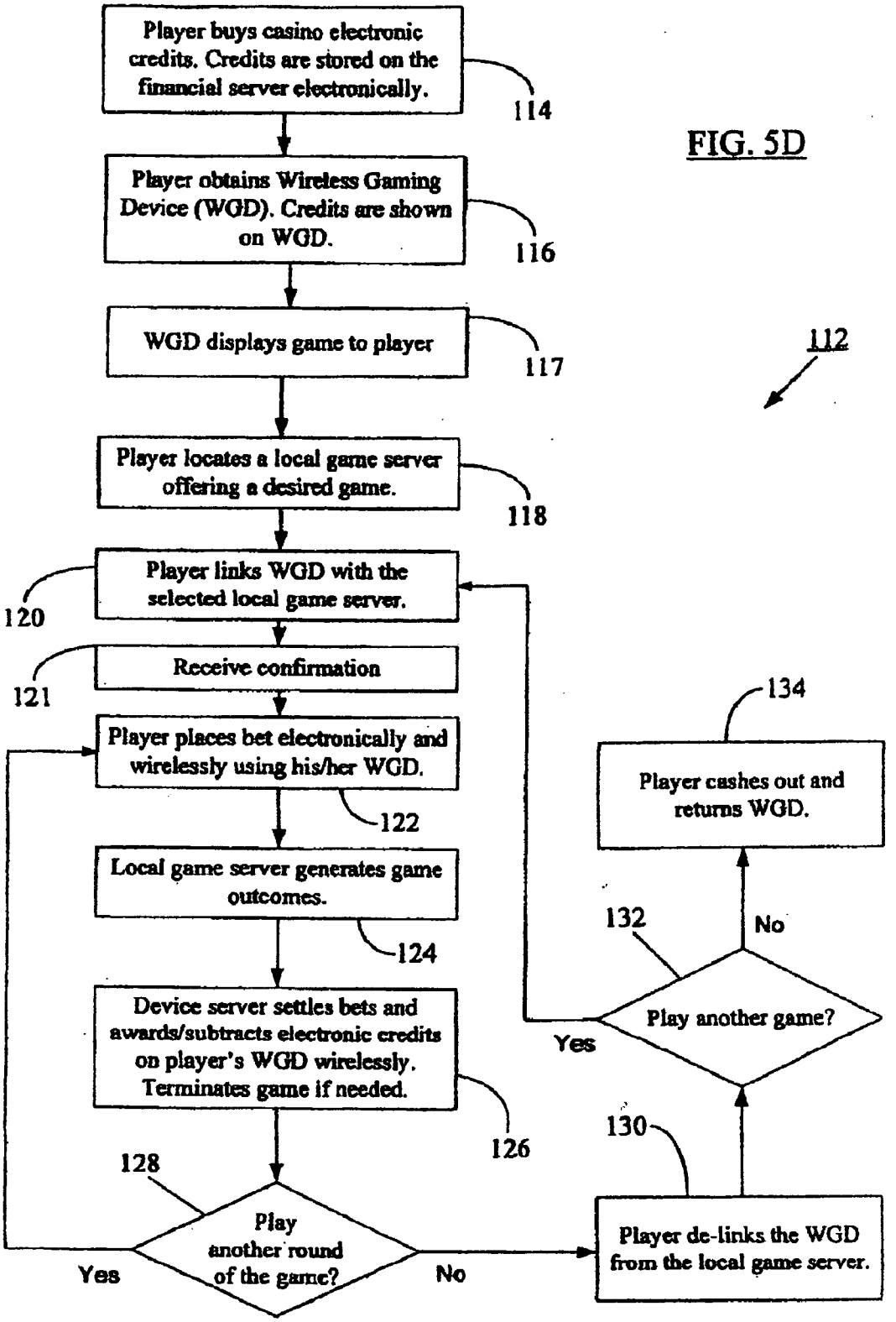

Player buys casino electronic credits. Credits are stored on the financial server electronically.
114
Player obtains Wireless Gaming Device (WGD). Credits are shown on WGD.
116
WGD displays game to player
117
112
Player locates a local game server offering a desired game.
118
Player links WGD with the selected local game server.
120
Receive confirmation
121
Player places bet electronically and wirelessly using his/her WGD.
122
Local game server generates game outcomes.
124
Device server settles bets and awards/subtracts electronic credits on player's WGD wirelessly. Terminates game if needed.
126
128
Play another round of the game?
Yes
No
Player de-links the WGD from the local game server.
130
Play another game?
132
No
Yes
Player cashes out and returns WGD.
134

FIG. 5D

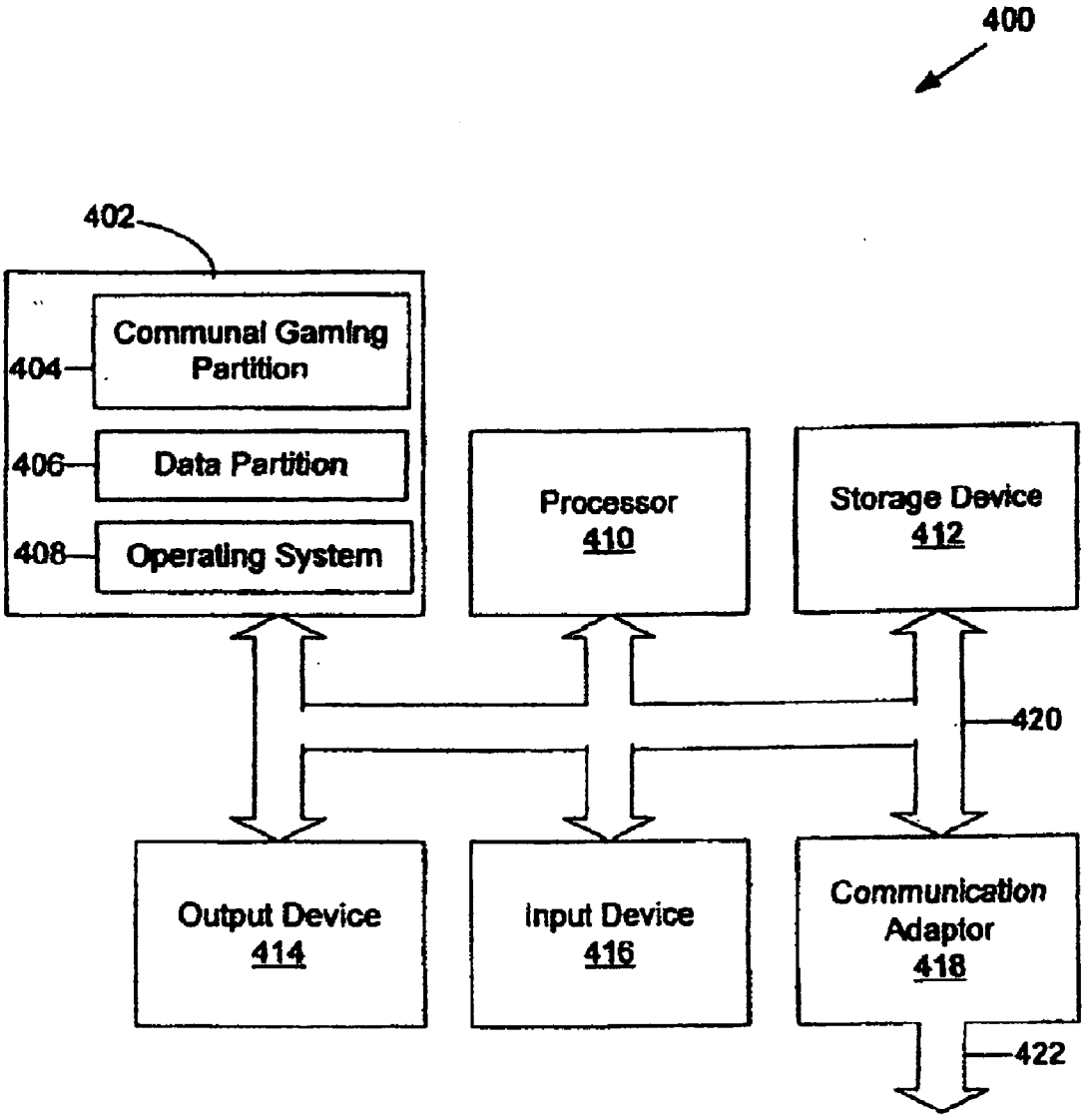

400
402
Communal Gaming Partition
404
Data Partition
406
Operating System
408
Processor
410
Storage Device
412
420
Output Device
414
Input Device
416
Communication Adaptor
418
422

Figure 6

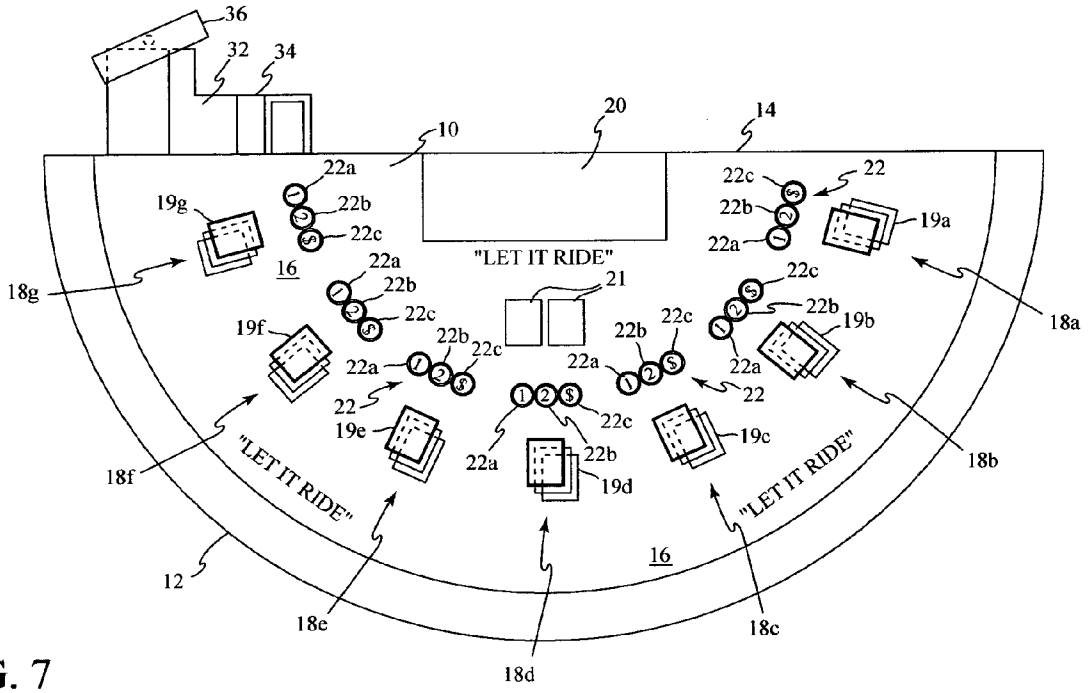

36
32
34
10
20
14
22a
22b
22c
22
19g
19a
18g
16
"LET IT RIDE"
21
18a
19f
19b
22
19e
19c
18f
18b
"LET IT RIDE"
"LET IT RIDE"
12
16
18e
18d
18c

FIG. 7

WIRELESS BET WITHDRAWAL GAMING SYSTEM

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Disclosure

[0002] The present disclosure generally relates to casino gaming machines and, more particularly, to a wireless gaming systems in which a casino wagering game can be played by means of a mobile (wireless) device, a non-mobile gaming device or both.

[0003] 2. Background of the Art

[0004] Generally, there are two types of casino table games: (i) games with a single common game outcome (referred to herein as "communal games") such as, for example, Baccarat, Roulette, Craps, and certain slot games; and (ii) games with player-specific outcomes such as, for example, poker and blackjack, and variations thereof such as Let It Ride® Stud Poker and Royal Match 21®& Blackjack. Certain casino games do not require the player to make any decisions other than placing an initial wager. Players may, however, wager on different selected outcomes in certain communal games. For example, in Baccarat, the player may choose to wager on the player hand, the dealer hand, or on a tie. Thus, while the player may wager on different outcomes such that one player may win while another loses, the outcome of the game itself is common to all players.

[0005] Other games, whether or not communal, require player decisions other than whether to place a wager and on what outcome to wager. For example, Blackjack requires the player to make decisions (hit or stand, double down or fold, etc.) and the game outcomes largely depend on the decisions players make during the game. The pace of games that require player decisions (other than placing initial wagers) is set by the player.

[0006] A majority of casino table games are ones with player-specific outcomes. One popular table game that falls into this category is Let it Ride® Stud poker and it's well-known variants (Let it Ride Bonus® and Let It Ride The Tournament®.) Each player receives a partial hand of three cards each from a single 52 card deck and each partial hand is therefore unique. Even though each player hand also includes two communal cards, the hand composition of each final hand is still unique, because each hand includes three unique cards. The game of Let it Ride® stud poker is played against a pay table. Even if two players hold a winning hand of equal poker rank (even though the card suits are different), the players both win and are paid an odds payout according to a posted pay table containing predetermined winning combinations and payout odds.

[0007] In a traditional casino environment, players play casino wagering games against a real or virtual dealer while sitting at a physical game table where the desired game is being played and those game tables have limited space for players. A substantial disadvantage to the way such games are currently presented is that a player may participate in a game in only certain specified locations within the gaming environment (e.g., a casino), and at times when seats are available. For example, in order to play Baccarat, the player may have to travel through a large hotel/casino complex to a specific gaming area where the Baccarat table is located. Additionally, the baccarat table may not have seating available. Such a restrictive gaming environment hampers players' accessibility to different casino games and reduces their opportunities to play such games.

[0008] It is therefore desirable to provide games such as Let it Ride® stud poker in alternate gaming formats in order to increase player opportunities to play the game. One such alternate gaming format is a wireless gaming platform that enables play on a hand-held device. Another gaming format is a multi-player gaming platform that communicates with a wireless gaming platform for the purposes of increasing player capacity of the multi-player gaming platform by providing wireless gaming devices.

SUMMARY OF THE INVENTION

[0009] A first embodiment of the present invention is a wireless gaming system programmed to enable play of stud poker variants such as Let It Ride® on a wireless gaming device. Players may play individual games or may participate in group play. In a group play format, each player within a predetermined group receives three unique cards and two community cards from a single deck. The total number of players in the group is limited to 16, since three cards are dealt to each player, and three cards are dealt to common card area, with one card "burned." The total number of cards (52) in the standard deck puts a limit on the number of players that can engage in group play. In group play, the community cards received by each player in the group are identical. In other embodiments, each player plays a game that is administered by the game server and is wholly independent of other games being played, i.e. the player hand and community cards are dealt from a separate deck of cards that are not shared by other players.

[0010] Regardless of whether the players select group play or individual play, players using this system establish a credit account with the entity administering the game, access a wireless game server using a wireless device, and enter play decisions on a wireless device. In a preferred form of the invention, the wireless device is a hand-held device used within a secure wireless network located in a designated area of a casino. Other embodiments include stationary wireless gaming stations. Although the secure wireless network is preferably on the casino floor under the current regulatory climate, other secure network locations are contemplated. For example, the networks may be located in multiple locations within a resort, such as in guest rooms, in restaurants and lounges as well as on the gaming floor. In yet other embodiments, and as gaming laws permit, established wireless networks such as known cell phone networks are used to transmit and receive wager and other play decisions.

[0011] Wireless gaming systems of the present invention include a device server enabling play of casino wagering games on wireless devices. A secure wireless network is in communication with the device server, enabling multiple users to enter wager and/or other play commands on a wireless device. The device server communicates with a local game server that is programmed with the game rules, and pay tables comprising predetermined winning hands and payout odds.

[0012] In a second preferred embodiment, the wireless game server is in communication with a multi-player gaming platform located on a casino floor, and data from the external game server (which is external to the wireless gaming platform but internal to the multi-player platform) is fed to the local game server and made available so wireless players can participate in the specific game being played. In this embodiment, the number of wireless players is limited because of the number of available cards, so this game format is less pre-

ferred. However, the physical structure of this system will be described in detail below, because the system includes all the components of the stand-alone wireless gaming platform, combined with an interactive multi-player gaming platform. It is to be understood that the local game server and the external game server can both be programmed to enable the play of proprietary casino games such as Let it Ride® Stud Poker. It is to be understood that by removing the multi-player platform from the system and enabling the local game server to take over game play administration that is typically managed by the external game server results in a wireless system that enables individual and/or group play of casino games with player-specific outcomes.

[0013] The second embodiment includes a gaming system that includes an interactive, multi-player electronic gaming platform that communicates with a wireless game platform with a device server. The wireless game platform also has a game server that communicates with an external game server of the electronic gaming platform. The external game server is programmed to enable the play of Let It Ride® stud poker.

[0014] The game server of the wireless game platform is programmed to executes a group game, and individual player's game, or will be overridden by the external game server to enable wireless play of the same game being conducted on the multi-player electronic gaming platform. It is to be understood that not all game functions are necessarily overridden. The randomly determined card values are determined in the external game server instead of in the local game server when the wireless game server is combined with a multi-player gaming platform.

[0015] For purposes of clarity, the discussion below relates to the embodiment wherein wireless players are participating in the same game being executed on a multi-player platform. It is to be understood that in this example, a limited number of players (a maximum of 16) including players at the multi-player platform and all wireless players can play the same game, due to the limited number (52) of cards in the deck

[0016] Other embodiments of the invention include providing cards from a pool of more than one deck to enable more players to join in group play.

[0017] The second embodiment includes a plurality of physical player stations communicating with the external game server (which in one embodiment is internal to the multi-player platform) by way of a physical connection to enable a player at each player station to play the interactive, multi-player game executed by the external game server. The external game server communicates with a device server that is capable of managing wireless gaming devices. The preferred device server is in further communication with a plurality of wireless hand-held gaming devices. In other embodiments, the wireless gaming devices are stationary. The wireless gaming devices communicate with the device server over a preferably secure wireless network located on a casino floor or elsewhere to enable a mobile player operating each corresponding wireless gaming device to play the communal game executed by the game server. The device server may operate in conjunction with one or more other servers such as the local game server discussed below.

[0018] In another embodiment, a method of playing an interactive multi-player game or individual's game of Let It Ride® poker is disclosed, wherein the multi-player game is one in which all players have a unique game outcome and in which player decisions are made in a limited amount of time as determined by the local game server, the external game server, or both, in order to maintain the flow of the game and avoid delays that might discourage players from playing the game.

[0019] In one embodiment, the time in which to make a decision to make three equal wagers or take back a wager is limited to a set time, and all participating players must make play decisions within the time limits set by the game system.

[0020] One exemplary method of the present invention comprises executing the multi-player game on a external game server; enabling a player at each of a plurality of stationary player stations to play the multi-player game executed by the external game server; and allowing a plurality of wireless gaming devices to wirelessly communicate with the external game server so as to enable a mobile player operating each corresponding wireless gaming device to play the same multi-player game executed by the game server. For purposes of this disclosure, the term "same game" refers to a game played out of the same deck or set (i.e.—multiple decks) of cards.

[0021] The present disclosure also contemplates a method of operating a wireless gaming device that includes selecting one of a first game of Let It Ride® poker having a first game executed by a local game server and a second game executed by an external game server and a multi-player gaming system. Gaming systems of the present invention may include a local (wireless) game server executing rules for a first game of Let It Ride® poker, and/or an external game server executing rules for a second game (different from Let It Ride® poker on a multi-player platform and communicating with the local game server, and a wireless gaming device communicating wirelessly with at least one of the local game server and the external game server. The wireless gaming device of the gaming system has an input with which a user of the wireless gaming device may select to play the first game executed by the local game server or the second game executed by the external game server and a display on which is displayed a result of the selected game.

[0022] Currently, multi-player electronic gaming platforms are provided as large free-standing gaming devices in a casino. These platforms take up a large amount of floor space. The win/unit of floor space can be improved by providing systems enabling wireless play on gaming platforms of this type.

[0023] Wireless play of games executed on multi-player platforms allows greater player mobility within the casino establishment and also allows a larger number of players to participate in a common game, without reducing the speed of play, and at the same time, such play increases the capacity and revenue generating ability of existing multi-player platforms. The wireless gaming approach according to one embodiment of the present disclosure may reduce or eliminate the need for the player to travel through a large hotel/casino to a specific gaming area where the desired gaming table is located.

[0024] Furthermore, the wireless gaming approach may further minimize search time for a player to search for a particular game and, potentially eliminate the wait time when a player finds that the desired game table location is occupied by another player. The wireless or mobile player may participate in a multi-player or other group game regardless of whether there is a physical player station available for use. Exemplary systems include one or more handheld gaming devices each equipped with a display, one or more (local, external or both) gaming servers configured to communicate

wirelessly with the handheld gaming devices, and one or more financial servers configured to record financial transactions for players playing communal games of chance on the handheld gaming devices.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] For the present disclosure to be easily understood and readily practiced, the present disclosure will now be described for purposes of illustration and not limitation, in connection with the following figures, wherein:

[0026] FIG. **1** shows an interactive, computer-based communal gaming platform according to one embodiment of the present disclosure;

[0027] FIG. **2** illustrates structural details of an exemplary wireless gaming device that can be used in the gaming platform of FIG. **1**;

[0028] FIG. **3** depicts an exemplary layout for a network-based implementation of the communal gaming platform of FIG. **1**;

[0029] FIG. **4** provides additional networking details showing how mobile or wireless gaming devices can be used in the communal gaming platform of FIG. **1**;

[0030] FIGS. **5**A-**5**D are flowcharts that illustrate exemplary methods for initializing, funding and playing a communal game wirelessly according to embodiments of the present disclosure;

[0031] FIG. **6** illustrates a node that may be used in any of the processor-based devices according to any embodiment of the present disclosure; and

[0032] FIG. **7** shows an exemplary game play surface for play of Let It Ride® stud poker.

DETAILED DESCRIPTION

[0033] Reference will now be made in detail to certain embodiments of the present disclosure, examples of which are illustrated in the accompanying figures. It is to be understood that the figures and descriptions of the present disclosure included herein illustrate and describe elements that are of particular relevance to the present disclosure, while eliminating, for the sake of clarity, other elements found in typical casino gaming systems.

[0034] Any reference in the specification to "one embodiment," "a certain embodiment," or any other reference to an embodiment is intended to indicate that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment and may be utilized in other embodiments as well. Moreover, the appearance of such terms in various places in the specification does not necessarily refer to the same embodiment. References to "or" are furthermore intended as inclusive so "or" may indicate one or another of the "ored" terms or more than one "ored" term.

[0035] Embodiments of the present wireless gaming system are directed to a system that executes a group game or individual's game of Let It Ride® poker that may be played by multiple players. In group game play, all players wager on individual player outcomes that cannot be altered by player decisions. Players may be required to make play decisions in group play to avoid delaying the game for other players. In individual play, the players may or may not be given time limits in which to make play decisions. Players choose only whether to place a multi-part wager and, as the game progresses, which of their wagers may be withdrawn during play of the game according to the rules of Let It Ride® stud poker.

[0036] Some casinos may choose to provide group play in an alternate format that permits an unlimited number of players to participate. In this alternate format, each participating player simultaneously receives the same hand of cards. This is a less preferred format because it makes the game much more volatile for the house. In a more preferred form of group play, each player receives a unique partial hand of three cards each and that partial hand is combined with two communal cards to arrive at a final five-card hand.

[0037] The rules of Let It Ride® poker are well known and are described according to the disclosure of U.S. Pat. No. 5,288,081 as follows in a live table format. For purposes of this disclosure, the term "live" refers to a game with a physical dealer, and physical game elements such as cards and/or chips. This live table format may be virtually reproduced or simulated on a multi-player platform such as the system described below.

[0038] Referring to FIG. **7**, the apparatus for the wagering game of the present invention includes a horizontal common display screen capable of displaying a gaming surface **10** The gaming surface **10** is shown with a curved side **12** for virtually accommodating up to seven players and a straight side **14** for accommodating the dealer. The gaming surface **10** includes seven player positions **19**A-g. Although seven playing positions or locations **18***a-g* for individual players are provided in this example, it is not essential to the game that exactly seven persons play and as many as sixteen players may participate. For strict replication of casino play, a maximum of seven players provides for a game that is easily manageable by the dealer and house, and one in which the individual players feel more involved.

[0039] In a virtual world of gaming, especially in a multi-player game format, the number of players (physical plus wireless) is limited to 16 without altering the game rules. In other embodiments, using different game rules, any number of players may participate. For example, additional players may play if multiple decks of cards are used form the set of cards from which hands are dealt. In other forms of the game, all players receive the same hand of cards, instead of distinct player hands. A house dealer position **20**, including an area suitable for displaying the dealer's cards **21**, is provided.

[0040] Each of the playing positions **18***a-g* is shown as including a wagering zone **22**, comprising three separate and distinct wagering or betting areas **22***a, b, c*. Each position **18***a-g* also includes a card area **19***a-g* for receiving and displaying virtual cards dealt to the player occupying the position. The wagering areas **22***a, b, c* are designed to receive appropriate wagering indicators or settling means such as virtual chips (not shown) or indications of amounts electronically wagered.

[0041] At one side of the dealer station **20**, the apparatus for practicing the method of the present invention may include an image of a microprocessor or computer controlled shuffling machine or delivery shoe **32** supported by a table extension **34**. The shuffling machine **32** may include a dealing module for automatically and sequentially dealing cards and also may include a display means for displaying wager amounts, the identity of winning players, or other game related information.

[0042] The initial step in playing en electronic game of the present invention is preparing or shuffling a virtual deck of

cards by activating the shuffling machine **32**, by virtually hand-shuffling a deck or by activating a random number generator to provide random partial hands of cards to each player. Before receiving any virtual cards or before the fronts of the virtual cards are revealed to the players, the players place an initial three-part virtual wager by putting equal amounts in each of the three betting areas **22***a, b, c*. Two of the parts of this initial wager, the parts placed in wagering area **22***a* and **22***b* are retrievable at the option of the player. The third portion placed in area **22***c* cannot be withdrawn under the game rules. After the placing the wagers by each player, the virtual cards are dealt, three cards being dealt face-down to each player and two cards are dealt face-down in front of the dealer. In the virtual form of the game, an interactive virtual dealer image is provided and is displayed on an upright display. The players may input a decision into a user interface to inspect or "sweat" their cards in preparation for reaching a decision on withdrawing a wager or "Letting It Ride." The players are queried by the virtual dealer about whether the first part of the initial wager, the part placed in wagering area **22***a*, should be left or whether the player wishes to withdraw that portion of the bet. Each player makes the decision by player input in the user interface on the basis of the three cards forming the player's incomplete hand at this point. Once each player has been queried and has decided whether or not to let the first portion of the bet stay in play, and those bets the player chooses to retrieve or remove are physically removed from area **22***a* and returned to the player, the dealer reveals the face of one of the face-down common or community cards. Now, each player has four cards to consider, the three cards dealt to that player originally (which may be a single set of three cards in a communal game) and the single common card showing on the table. Each player must then decide whether to let the second part of the initial wager stay in play or whether to withdraw it from the game. After each player is queried and decides what to do with regard to the second part of the bet, and those bets to be withdrawn are physically (virtually) removed from area **22***b* and returned to the player (e.g., credited to the player's account for the game). The dealer then reveals the face of the second common or community card. Each player now has a virtual five card hand comprised of the three cards each player was originally dealt plus the two revealed common cards. The third bet, the bet placed at virtual wagering area **22***c*, is not retrievable and the flow of the game proceeds to where the players show or reveal their three cards to the dealer, or since this is a virtual game, the player cards have already been completely disclosed. The virtual dealer resolves each player's bet (which includes all three parts, the second and third part or only the third part, depending on the player's choices during play of the hand) based on the five card hand and determines what payout, if any, the player is entitled to receive according to the payout schedule at the particular gaming table, game format or casino operating the virtual gaming system. Bets on non-winning hands are electronically collected by the dealer or house. Winning payouts are credited to the player's credit meter. The hand is then over and a new hand begins.

[0043] In other forms of the game, bonus side wagers may be made and players may win this bonus side bet when the player hand composition is one of a number of predetermined winning poker hands with corresponding payout odds.

[0044] The award or payoff is given for each of the bets that remain in play at the end of the hand. A typical pay table would be as follows:

Pair, Tens or Better	1-1 (even money)
Two Pairs	2-1
Three of a Kind	3-1
Straight	5-1
Flush	8-1
Full House	11-1
Four of a Kind	50-1
Straight Flush	200-1
Royal Flush	1,000-1

[0045] The bet withdrawal methods of the present invention is not limited to five card poker games, but may be applied or used in other appropriate games such as seven card poker. The method of the present invention does not require the display of a virtual shuffling machine **32**, virtual dealing module **33** or virtual chips. However, these displayed game elements provide a more realistic live game simulation add interest to the game. While the initial wager of the present invention is preferably comprised of three equal bets, the bets do not necessarily have to be equal. While equal bets are preferred for casino play, unequal bets may be used. In addition, more than or fewer than three bets may be made. For example, the game rules could allow for four equal bets wherein all but one bet may be withdrawn during the game. The wagering game of the present invention might be played with a virtual dealer or without a virtual dealer image in interactive electronic or video form with automatic coin, crediting or betting means receptacles and equivalent payout capability, wherein appropriate symbols for cards, wagers or score keeping would be displayed electronically.

[0046] General descriptions of the technology disclosed and claimed herein include a gaming system with at least:

[0047] a device server in communication with a local game server capable of managing wireless gaming devices;

[0048] a local game server in communication with the device server; and

[0049] a secure wireless network in communication with the device server; and

[0050] multiple wireless devices capable of communicating with the secure wireless network, receiving wager commands and displaying game outcomes, wherein the local game server performs game steps comprising:

[0051] each player placing a multipart wager to participate in the game;

[0052] dealing cards to each player and at least one common card, all the common cards being dealt face down;

[0053] giving each player a chance to examine the cards received by that player and to withdraw a part that is less than all of the multipart wager and the player electing to withdraw the part or not;

[0054] showing the at least one common card, thereby providing a hand for each player, each player's hand comprising the shown at least one common card and the cards each player was dealt; and

[0055] resolving each player's remaining wager from the multipart wager which was not withdrawn based on the rank of that player's hand.

[0056] The multipart wager may be at least three parts. The quantity of cards dealt to each player may be three, there may be two common cards, and the multipart wager may be in three parts and all parts of the multipart wager may be equal. In some forms of the invention, an interactive multi-player gaming platform is provided having an external game server

and multiple physical player stations. The external game server communicates with the device server. The local game server also communicates with the device server and the external game server. When the game being played on the wireless devices is the same game being played on the multi-player gaming platform, the game information from the external game server is communicated to the wireless devices over a secure wireless network that communicates with the device server.

[0057] The system may be further characterized as including at least:

[0058] a wireless gaming platform comprising a local game server, a device server, and a secure wireless network in communication with the device server, the wireless gaming platform having wireless transmission and reception ability;

[0059] multiple user input devices having visual display ability and wireless reception and wireless transmission ability;

[0060] each of the multiple user input devices (e.g., PDAs, cell phones, iPhones™ systems, laptops, specially designed hand-held gaming devices or any other wireless transmission system that can support user input and wireless communication with the wireless gaming platform) enabling user input of wagers, wager amounts and decisions made during play of a game having steps comprising:

[0061] a) a player placing a wager comprising at least two distinct wagering parts;

[0062] b) providing to the player at least a portion of the player's playing cards so that partial information or a game outcome is provided,

[0063] c) giving the player at least one opportunity, before the player's final game outcome is determined, to withdraw from engagement in the game at least one wagering part of the at least two wagering parts, but less than all of the at least two wagering parts,

[0064] d) continuing play of the game with additional playing cards used to form a hand of cards for the player are displayed to the player, and

[0065] e) resolving all wagers not withdrawn by the player from the at lest two wagering parts.

The at least a portion of the player's playing cards may be three cards, and community cards in one embodiment are used to display the additional playing cards. Preferably two community cards are used to display the additional playing cards. The multipart wager may be at least or exactly three parts. The quantity of cards dealt to each player is preferably exactly three, there are exactly two common cards, and the multipart wager comprises three parts. Preferably all parts of the multipart wager are equal and the game comprises a poker game, and awards are made for predetermined ranks of hands in the card game against a paytable, and not a dealer hand.

[0066] The system may embody steps of the game in which at least:

[0067] each player placing a wager to participate in the game;

[0068] dealing three cards to each player and two common cards face down;

[0069] giving each player the chance examine the three cards received by that player and to withdraw part of the wager;

[0070] showing only one of the common cards;

[0071] giving each player another chance to withdraw another part of the wager;

[0072] showing the second of said two common cards, thereby providing a five card hand for each player, each player's five card hand comprising the two showing common cards and the three cards each player was dealt; and

[0073] resolving each player's remaining wager, which was not withdrawn based on the poker ranking of that player's five card hand against a paytable.

The wager may be divided into three equal parts and wherein at least one of the three parts may not be withdrawn. The player cards in one embodiment may define communal cards for all players playing a single round of play, and the additional cards may be common cards.

[0074] An exemplary gaming system may also be described herein as having at least:

[0075] an interactive multi-player computer-based wagering game platform having an external game server executing a multi-player game, and a plurality of physical, stationary player stations communicating with the external game server by way of a physical connection such as a hard wired connection to enable a player at each player station to play said communal game executed by said external game server;

[0076] a local game server in communication with the external game server, and

[0077] a device server in communication with the external game server and a plurality of wireless gaming devices, the wireless gaming devices communicating with the device server over a secure wireless network to enable a mobile player operating each corresponding wireless gaming device to play said multi-player game executed by said game server, wherein the external game server performs game steps comprising:

[0078] each player placing a multipart wager to participate in the game;

[0079] dealing cards to each player and at least one common card, all the common cards being dealt face down;

[0080] giving each player a chance to examine the cards received by that player and to withdraw a part that is less than all of the multipart wager and the player electing to withdraw the part or not;

[0081] showing the at least one common card, thereby providing a hand for each player, each player's hand comprising the shown at least one common card and the cards each player was dealt; and

resolving each player's remaining wager from the multipart wager which was not withdrawn based on the rank of that player's hand.

[0082] The Let It Ride® stud poker game may be played as a communal game, wherein each participating player receives the same partial hand consisting of three cards. When the game is played in connection with play of the game on a multi-player platform, all wireless players may receive a distinct hand (and limits are placed on the number of players that can participate in each round), or all wireless players can play the same hand which may be the same hand or a separate hand from one of the players playing on the multi-player platform.

[0083] An alternative description for gaming systems and methods of play according to the generic scope of present technology includes a system for providing wireless play of a game. The system may have a) a central game processor having wireless transmission and reception ability; b) multiple user input devices selected from the group consisting of cellular phones and PDAs having visual display ability and wireless reception and wireless transmission ability to the central game processor; c) each of the multiple user input

devices enabling user input of at least one of wagers, wager amounts and decisions made during play of a game. A preferred game would include steps of:

[0084] a) a player placing a wager comprising at least three distinct wagering parts;

[0085] b) providing to the player at least a three-card portion of the player's playing cards so that partial information or a game outcome is provided,

[0086] c) giving the player at least one opportunity, before the player's final game outcome is determined with a player's final hand of playing cards, to withdraw from engagement in the game at least one wagering part of the at least three wagering parts, but less than all of the at least three wagering parts,

[0087] d) continuing play of the game with additional community playing cards used to form a hand of cards for the player are displayed to the player, and

[0088] e) resolving all wagers not withdrawn by the player from the at lest three wagering parts.

Two community cards are preferably used to display the additional playing cards, and the quantity of cards dealt to each player is exactly three, there are exactly two common cards, and the multipart wager comprises three parts, all parts of the multipart wager are equal, and the game comprises a poker game wherein awards are made for predetermined ranks of hands in the card game against a paytable. The steps of the game preferably involve 1) each player placing at least a three-part wager to participate in the game; 2) dealing three cards to each player and two common cards face down; 3) giving each player the chance examine the three card received by that player and to withdraw a first part of the wager; 4) showing only one of the common cards to the player; 5) giving each player another chance to withdraw a second part of the three-part wager; 6) showing the second of said two common cards, thereby providing a five card hand for each player, each player's five card hand comprising the two showing common cards and the three cards each player was dealt; and 7) resolving each player's remaining wager, which was not withdrawn based on the poker ranking of that player's five card hand against a paytable.

[0089] The system may also comprise multiple player terminals in which individual players enter wagers on the game. The multiple player terminals may be linked to a communal game play system and multiple players wager on a same set of three cards dealt to a player and the common cards.

[0090] The game may also be played without actual wagering of funds, but rather the at least one player may play the game with a play/practice wager and keep a non-monetary account on the wireless system. The wagers are not collectible or chargeable funds, but rather the at least one player may play the game with a play or practice charge and virtual winnings and losses are provided in a non-monetary account on the wireless system.

[0091] In this way, the game play will not violate any state or interstate limitations on gambling. The charges may be credited and debited to the phone company, wireless service company, or through a provider accessed on the wireless connection.

[0092] For purposes of illustration only, it is assumed the players on the stationary multi-player platform receive distinct hands, and all wireless players are playing the same communal hand (the 8^{th} "common" hand). The game outcome of the 8^{th} hand is therefore common to all of the wireless players. It is to be understood that there are numerous formats for playing wirelessly, and the following is just one example of a play format. Other formats would allow the players on wireless devices to play separate and individual games, or group games wherein a group of up to 16 players receive individual cards and community cards from the same deck. When wireless players play the same game as is being executed on a multi-player platform, players may play the same hand as another player, a separate "common" hand, or a completely different hand. Players may choose the play format from a menu displayed on the wireless device, or the format may be dictated by the house. The format that will be described in detail below as an example of a system of the present invention is one that provides one common game outcome to all wireless players. The players playing on the multi-player gaming platform may also play the communal game or a distinct game. Players at the hard-wired player stations may choose the play format or the format may be dictated by the house. For purposes of clarity and simplicity, a game format in which all players at hard-wired multi player stations and all players at wireless player stations wager on the same communal game outcome is described. Many other game play formats are contemplated.

[0093] Theoretically, the games with common outcomes can be played by an infinite number of players at any given time without delaying game play because the players are not dealt their own cards, etc. and also because the players cannot influence the outcome or the pace of the game in any way. Players are given a set amount of time in which to place wagers and if the time elapses, the player must wait until the next round of betting is permitted. Furthermore, increasing the number of players directly increases the revenue generated by a casino per game. The number of players playing the communal games may, however, be limited due to the size limit of the system. Certain automated systems, such as The Table Master™ platform, sold by Shuffle Master, Inc. have a defined number of player consoles. See U.S. Patent Pub. No. US 2005-0164759 A1, the disclosure of which is incorporated herein by reference. Therefore, embodiments of the wireless communal gaming system can allow many more players to participate in a communal game than is possible in the current physical gaming systems.

[0094] Also, a single deck game played in a format requiring player-specific outcomes such as Three Card Poker® could be played on an automated communal game platform, but each player would have to wait for the decisions of other players, who are not required to play in turn and game progress would be slowed. Furthermore, the number of additional players in such single deck games is dictated by the number of cards left in the deck. Thus, in a 52 card deck, only 16 players and a dealer can play the Three Card Poker® game. Because the Table Master system typically accommodates only five players, an additional 11 players could participate in the game. Thus, games with player-specific outcomes may be less suitable for play using the wireless communal gaming system (without rule modifications of the game) because there remains a limit on the number of players that can participate in the game, and game play is slowed by adding the extra players. In other embodiment, rule changes such as dealing cards from card sets formed from multiple decks can be employed to allow more players to play simultaneously.

[0095] FIG. **1** shows an interactive, computer-based, wireless communal gaming platform **10***a* that enables wireless play according to an embodiment of the present disclosure. The gaming platform **10***a* may be located on a casino floor

and may be in wireless communication with a plurality of mobile/wireless gaming devices (WGD) **14**A-**14**D. Additional details about the wireless gaming devices **14**A-**14**D are provided below, particularly with reference to FIG. **2**.

[0096] The gaming platform **10***a* includes an external game server **31***a* (shown in Phantom indicating its location within the cabinet of the platform), which may be internal or external to the platform **10***a*, but external to a back-end processing center (see FIG. **4**) or control center in a casino, for example. Individual stationary player controllers (not shown) control operation of each player station **16***a*-**20***a*. Player interfaces **21***a*-**25***a* communicate with the player controllers and may be push-button or touch-screen controls. In one embodiment, one or more player stations (e.g., station **16***a*-**20***a*) are controlled directly by the external game server **31***a*. The individual player controllers are coupled to the external game server **31***a* through hard wired connection such as cable, for example, an RS-232 cable, twisted pair, coaxial cable, or other metallic or fiber optic cable, for example. Such cable connected controllers and player stations **16***a*-**20***a* operated by such cable connected controllers are referred to herein as "hardwired" controllers and player stations **16***a*-**20***a*. The connection between the individual player controllers and the external game server **31***a* may be a direct connection from each individual player controller to the external game server **31***a* or may be through a networked, daisy-chained or other desired communication system.

[0097] The external game server **31***a* may provide functions including random number generation and virtual game element production (e.g., cards, dice, shuffler simulations, shoe simulations and the like), determination of game outcome, application of game rules, maintenance of and application of minimum and maximum permitted wagers, and maintenance of and application of pay tables, in an embodiment. The external game server **31***a*, alone or in combination with other processors, may perform gaming functionality including executing game logic, displaying a virtual dealer and any other desired video images on a virtual dealer display **38***a*, displaying virtual game play elements such as cards, dice, or other indicia that indicate the status of the game to the players at player display units **32***a*-**36***a* at one or more hardwired player stations **16***a*-**20***a*, or on a common player display **37***a*. The game server **31***a* may providing audio, which in turn produces audio output from speakers **39***a*, **40***a*, and, may be associated with the virtual dealer display **38***a*, security, and reporting game results or other data desired to be acquired from the automated casino table gaming system. The external game server **31***a* may also determine and control the sequence of events occurring in the game, including when betting is opened or closed.

[0098] The gaming system **10** may include a number of hardwired player stations (e.g., the five hardwired stations **16***a*-**20***a* in the embodiment of FIG. **1**) operated by the hardwired individual player controllers that allow users to interact with a realistic, interactive virtual dealer displayed on a display screen **38***a* in a communal gaming environment. In the embodiment of FIG. **1**, each hardwired player station **16***a*-**20***a* includes a corresponding payment (bills, coins, tickets, etc.) acceptor **26***a*-**30***a* to allow the user to place wagers on the game being played. The payment acceptors **26***a*-**30***a* may also be configured to accept payments in the form of cash (currency bills and/or coins), pre-paid vouchers available from the casino, tickets from a prior winning, a credit/debit card, or any other suitable payment means. Each hardwired player station **16***a*-**20***a* also includes a player display **32***a*-**36***a*. The display and/or the player interface **21***a*-**25***a* allows a player to place a wager, review betting history, view the communal game outcome, communicate to a casino attendant (e.g., for a service request or to report a problem with the hardwired player stations **16***a*-**20***a*, etc.), view the winning bet/amount, or perform other desired functions. Each player display **32***a*-**36***a* may include an individual display (e.g., a video display monitor or a touch-screen display) (not shown) to allow the player to view game-related information, an input device **21***a*-**25***a* (e.g., a set of push-buttons (not shown) or touch-screen buttons) and one or more audio speakers **39***a*, **40***a* to play casino music or game-related messages, announcements, or instructions. The construction, operation, and functionality of typical hardwired player stations **16***a*-**20***a* are known to one skilled in the art and, hence, additional discussion for the hardwired player stations **16***a*-**20***a* is not provided herein for the sake of brevity.

[0099] General types of gaming systems that can perform the implementation of the games described herein can be generally structured as the following, non-limiting example of a gaming system. An interactive communal computer-based wagering game platform is provided, the platform having at least an external game server and multiple physical, stationary player stations for playing the communal game. The system includes a device server in communication with the external game server for managing wireless gaming devices. Also provided is a local game server in communication with the external game server. A secure wireless network is provided and is in communication with the device server. The game could be played by multiple wireless devices capable of communicating with the secure wireless network, receiving wager and other game commands and displaying communal game outcomes. The external game server performs game steps according to the rules of play of the associated game.

[0100] In the embodiment of FIG. **1**, the gaming system **10***a* includes a common display area **37** a useful for displaying communal game elements, amounts wagered and the like. A life-like, realistic upright dealer display **38***a* is operated by the external game server **31***a*. The common display area or "table" display **37***a* may display the dealer's hand as well as wagers/bets placed by other players on the "table" (i.e., the players playing through the hardwired player stations **16***a*-**20***a*). Thus, the common display area **37***a*, typically positioned horizontally, may effectively simulate a live gaming table experience along with a realistic dealer video displayed on the upright display **38***a*. The dealer video may provide a life-like display or simulation of a human dealer conducting the game at the gaming system **10***a*. The dealer video may also serve to attract casino patrons to the gaming apparatus and encourage them to continue playing the game at the table. In one embodiment, more than one dealer video may be available to switch from one displayed dealer to the other. For example, a video of a male dealer with a casino in the background may be changed to a female dealer with palm trees and a sandy beach in the background. The gaming system **10***a* may also include additional (or ancillary) display screens **41***a* and **42***a* to display additional game-related information (game rules, game pay table, etc.) or information (e.g., current status, score card, etc.) about other casino games that may be of interest to the patrons at the physical player stations **16***a*-**20***a*. Alternatively, areas **41***a* and **42***a* might be used to display graphics, such as the game name or payout tables. In one

embodiment, all of the display screens—i.e., the displays of the hardwired player stations **16***a*-**20***a*, the common display area **37***a*, the upright dealer video display **38***a*, and the ancillary video screens **41***a*, **42***a*—in the gaming system **10***a* are projection, plasma, LCD or other large size displays.

[0101] The gaming system **10***a* may also include an indicator **42***b* at the top thereof to allow a player to draw attention of a casino employee (e.g., a maintenance person or a bar service attendant) to the hardwired player stations **16***a*-**20***a* for assistance with player's needs. The indicator **42** may illuminate when activated. In the event of any malfunction or irregularity sensed by a processor (not shown) or the controller **31***a* in the gaming system **10***a*, the indicator **42***b* may automatically illuminate to draw a casino employee's attention to the problem. In the wireless gaming platform **10***a* of FIG. **1**, the indicator **42***b* may also function as an antenna for communication with various handheld wireless devices (e.g., wireless gaming devices **14**A-**14**D) also participating in the same communal game being played at the "table" **37***a*. Further details of the wireless gaming environment according to one embodiment of the present disclosure are provided below with reference to FIGS. **3**-**4**.

[0102] It is noted here that, in one embodiment, an automated casino table gaming system such as the Table Master™ system, the Vegas Star® system, or the Rapid Roulettes system, all marketed by Shuffle Master, Inc., of Las Vegas, Nev., USA, or its affiliates may be used as the gaming system **10***a* with suitable modifications (as discussed, for example, with reference to FIG. **3** below) for wireless device support and wireless game playing options. United States Patent Publication Numbers US 2005-0164759 A1 and US 2005-0164762 A1 discuss the Table Master™ system and are incorporated herein by reference. The automated casino table gaming system **10***a* includes a virtual dealer display **38***a* and at least one common player display **37***a* driven by the external game server **31***a* and a plurality of stationary hardwired player stations **16***a*-**20***a*, with one individual player controller (not shown) located at each individual player position.

[0103] The Table Master™ system and Vegas Star® systems provide popular table games like Royal Match 21™, Blackjack, and Three Card Poker® and Let It Ride® stud poker in an automated environment (without a live dealer present). A casino operator may easily switch between games offered through the Table Master® or Vegas Star® systems by installing a compact disc (CD), or EPROM's or other media carrying the game code for the new game and suitably changing game-playing button panels, table top design, and marquee overlays **43***a* related to the new game. Such flexibility in game support is further increased by availability of a large number of "interactive" virtual dealers and background screen options for the video display **38***a*. In one embodiment, the dealers and background screens may be customized according to a casino's preference instead of requiring the casino to utilize "standard" dealer videos. Thus, a suitably modified Table Master™ or Vegas Star® system may be used to provide wireless communal gaming in addition to local gaming and, thereby, attract and accommodate more players in a communal gaming environment.

[0104] The Rapid Roulette® system as described in U.S. Pat. No. 6,659,866 to Frost et al for Automatic Table Game, (the disclosure of which is incorporated by reference) includes a physical roulette wheel and includes players wagering at a plurality of automated wagering stations. The Rapid Roulette® system may also include a camera capturing and transmitting an image of the physical roulette wheel to one or more wagering stations, whether near the physical roulette wheel or distant from the physical roulette wheel. Players may then wager on spins of the wheel at each of the locations. A Rapid Roulette® system may thus also be modified to provide wireless communal gaming in addition to local gaming and, thereby, to attract and accommodate more players in a communal gaming environment.

[0105] FIG. **2** illustrates structural details of an exemplary wireless gaming device (WGD) **14**A that can be used in the gaming platform **10***a* of FIG. **1**. The WGD **14**A in FIG. **2** is identical to the other devices **14**A-**14**D in the platform **10** and is shown in FIG. **1** as representative of wireless gaming devices that may be used in the platform **10***a*, regardless of whether shown in FIG. **1**. Hence, the discussion provided herein for the WGD **14**A in FIG. **2** equally applies to all other wireless gaming devices that may be used in the communal gaming platform **10***a* of FIG. **1**.

[0106] In one embodiment, the wireless gaming device **14**A includes an antenna **45** for wireless communication with a local game server **64** (shown in FIG. **4** and discussed below), a plurality of player controls **46**, a player-viewable display **47**, an optional audio speaker **48** and also an optional security device such as, for example, a card reader (not shown) or a fingerprint reader **49**. The details of suitable user-id verification devices is included in co-pending application Ser. No. 11/585,025, filed Oct. 23, 2006 entitled: Security Devices for Implementing Hand-Held Wagering, and assigned Attorney Docket No. PA 1464.ap.US. Although the antenna **45** is shown visible in the embodiment of FIG. **2**, it may be internally mounted in other embodiments. The card reader (not shown) may be of any type desired including, for example, a magnetic strip reader or a bar code reader. The fingerprint reader **49** or card reader may be used for secure activation of the wireless device **14**A. Any desired secure activation device or method or combination of secure activation steps may be employed. In one embodiment, the fingerprint reader **49** or card reader in combination with a player identifier and pin number entered into the wireless gaming device **14**A are required to be used periodically to assure that the proper player is using the wireless gaming device **14**A. In another embodiment, a wireless activation device (not shown) such as a wristband containing a communication circuit that activates the wireless gaming device **14**A when it is proximate via wireless communications device **14**A or when the wristband is hardwired to device **14**A, and that can be worn by a user, for example on their wrist (e.g., a wristband including a wireless transmitter), may be provided along with or in place of the fingerprint reader **49** or card reader.

[0107] The dotted box on the right-hand side in FIG. **2** illustrates internal processing for an embodiment of the WGD **14**A. As shown therein, a processor **50** resides in the WGD **14**A and executes a number of software applications including, for example, a client interface application (not shown), a data display software application **52**, a decryption (and, optionally, an encryption) software application **54**, and a secure activation software application **58**. The software applications may be resident in the processor's local memory (not shown). The processor **50** may also operate a timer/shut off switch **56** that may be implemented in hardware or software.

[0108] The client interface application may be a browser or "thin client" (i.e., client application that depends primarily on the device server **62** (FIG. **3**) for processing activities, and may translate data received at the wireless gaming device **14**A

from the device server **62** or the local game server **64** and operate in conjunction with the data display software application to display that data as appropriate for viewing by a wireless gaming device **14**A user.

[0109] As noted before, the processor **50** in the WGD **14**A may execute any or all of the following software applications: (1) a client interface software application (not shown), which is to receive and translate data received from the wireless device server **62** or local game server **64**; (2) a display software application **52**, which is provided to control the appearance of the data received from the device server **62**; (3) secure activation software 58, (4) timer shut off software **56** and (5) a decryption software application **54**, which is used to retrieve secure data sent from the device server **62** via the wireless communication link **63**.

[0110] It is observed here that various portable/mobile electronic computing devices may be used, upon suitable modifications known to one skilled in the art, as the wireless gaming device **14**A. Such portable devices may include, for example, a PDA (Personal Digital Assistant), a mobile computer, a custom-made tablet PC (personal computer) (custom made for casino gaming applications), a suitably-configured cellular phone, etc.

[0111] The following description of FIG. **2** is provided in conjunction with the network architecture illustrated in FIG. **3**, which depicts an exemplary layout **60** for a network-based implementation of the communal gaming platform **10***a* of FIG. **1** with wireless gaming devices **14**A-**14**D. During operation, a menu of game options (not shown) supported by the gaming system **10***a* or the local game server **64** may be displayed on the wireless gaming device display **47**, which may be a regular or touch-sensitive LCD (Liquid Crystal Display) screen with low power consumption. In an embodiment of the wireless communal gaming system **10***a*, game rules are executed on a processor that is part of the external game server **31***a* within the wireless communal gaming system **10***a* and state machine management for the wireless gaming devices **14**A-**14**D is performed on a processor that is part of the local game server **64**. Thus, wireless gaming device **14**A-**14**D users may select one of a plurality of wireless gaming systems **10***a* to play through the local game server **64**. Players may also select all-wireless games residing on the local game server **64**. The player can then select the game, and a server (not shown in FIG. **2**, but shown as local game server **64** in FIG. **3**). Operating the gaming system **10***a* will send (through, for example, the device server **62**, also referred to herein as a wireless game server **62**, or Proxy Server, as shown in FIG. **3**) appropriate game data to the WGD **14**A for display based on that selection. The random number generator and game rules reside on the local game server **64** in an embodiment. The wireless gaming device **14**A processor **50** does not control game functions, nor does it execute any game code. All game functions, including the random selection of game outcomes, reside on the external game server **31***a* (FIG. **1**) the local game server **64** or both, if desired. In one embodiment, the only functions of the wireless gaming device **14**A during play are to send player's game selection information, game play information, and wager information to the device server **62** and to display game information provided by the server **62**. The player enters game selection or wager information using the player control buttons **46** on the WGD **14**A or, if available, using touch inputs to the touch-screen display **47** as is known to one skilled in the art.

[0112] FIG. **3** (and FIG. **4** as is described below) illustrates servers **62** and **64** as being different servers. It should be appreciated, however, that the functions of the device and local game servers **62**, **64** may be implemented in one server, if desirable and practical. Moreover, the functions of the other servers illustrated in FIGS. **3** and **4** (e.g., financial server **71**, logging server **90**, etc.) also may be implemented in one or more servers, if desirable and practical.

[0113] Once a game is selected and during game play, the local game server **64** may perform such functions as parameter validation to assure the WGD **14**A-**14**D users are following house rules. For example, the local game server **64** may determine whether the wireless gaming device **14**A-**14**D user is attempting to wager more than the maximum wager permitted or attempting to wager less than the minimum wager permitted, and whether the wireless gaming device **14**A-**14**D user is attempting to place a wager at an inappropriate time. The local game server **64** may then prevent the wireless gaming device **14**A-**14**D user from performing any such activity falling outside the parameters and, if desired, inform the wireless gaming device **14**A-**14**D user they are attempting an improper operation and ask that the user place a wager conforming to the parameters.

[0114] It is noted that both the external game server **31***a* and the local game server **64** may both have the capability to select random numbers, convert those random numbers into game elements such as cards or dice used in game play, and execute game rules. Thus, a wireless gaming device **14**A user may select to play a game directly on the local game server **64** or may select to play a game being played at a stationary gaming system **10***a* with live players sitting or standing at the gaming system **10***a* through the local game server **64**.

[0115] In one embodiment, the WGD **14**A may be a "thin client" without any audio features. However, in the embodiment of FIG. **2**, the WGD **14**A is shown with optional audio speakers **48** to enable the player to hear game-related announcements or game background music, etc. As noted before, none of the game logic or game outcomes are stored in the WGD **14**A. Such thin client architecture avoids storage of game rules, random number generation, and the like, and also avoids the need to perform security checks of the code executed by the wireless gaming device **14**A. In one embodiment, only the data being received by the wireless gaming device **14**A is secured (as indicated, for example, by the availability of decryption software application **54** in the wireless gaming device **14**A). Any regulatory validation routines required by applicable gaming laws is stored as part of the game logic or game code in the local game server **64** (or, alternatively, in the wireless device server **62**).

[0116] Alternatively, in one embodiment, the local game server **64** may be physically part of (i.e., incorporated within the housing of) one of the hardwired player stations **16***a*-**20***a* of FIG. **1**, but protectively secured within the body of the hardwired player stations **16***a*-**20***a*. Because the regulatory validation information is typically stored in the local game server **64**, if someone hacks graphics at the wireless gaming device **14**A to make it look like a winning outcome, such tampering can be easily verified with the secure game code stored at the local game server **64** with pertinent regulatory validation. Furthermore, an encrypted or security "key" may be used in communication between the wireless gaming device **14**A and the device server **62** to avoid hacking into the local game server **64** through the device server **62** from the WGD **14**A. During game play, such security keys may be

temporarily stored in the device server **62** and the wireless gaming device **14**A in communication with the device server **62**.

[0117] Thus, in one embodiment, the wireless gaming device **14**A acts as a dummy display terminal in that it functions merely as a player/game interface. The game code, including the game logic and regulatory validation information, resides on the external game server **31***a* such that game code is not executed on the wireless gaming device **14**A. The wireless gaming device **14**A displays a graphical representation of a game based on messages coming from the device server **62**. The graphical game representation on the wireless gaming device **14**A is capable of taking user input in the form of menus or other predefined choice controls. User input to the wireless gaming device **14**A may be limited to the game choices permitted for any given game state and the game state may be controlled by the external game server **31***a* through the device server **62** and/or the local game server **64**. The display data software application **52** (in the wireless gaming device **14**A) for displaying the graphical representation of the game can be either a general purpose thin-client application (e.g., a browser capable of providing support for multiple games) or it can be an optimized code for one or more specific communal games. In any event, the wireless device server **62** provides display content information to the wireless gaming device **14**A, for example, to attract the player to place a wager or in response to input from the player.

[0118] Encryption software (shown as an optional component of the decryption application **54**) can also reside in the processor **50** to secure data being sent to the device server **62**. Encryption/decryption software may also reside on the device server **62** to secure data being sent to the WGD **14**A. In one embodiment, the messages between the device server **62** and the wireless gaming device **14**A are made secure using a strong encryption method. Optionally, the messages may be encoded to minimize the message size. The decryption software application **54** (which may be part of the graphical game representation code in the wireless gaming device **14**A) decrypts the messages and/or optionally decodes the messages. Secure activation software application **58** may be provided to power up the WGD **14**A after automatic shut-off (discussed below). The player could be required to enter a user name, a "pin" (i.e., personal identification number) number, insert a card, place a finger on an optional fingerprint reader **49**, or come into close proximity to a wireless activation device (not shown) affixed to the wrist of the player, for example, to activate the wireless gaming device **14**A. The wireless activation device **49**B (e.g., a wrist-band based wireless transmitter) could send an activation signal that would be received by the wireless gaming device **14**A upon being powered up using a short range wireless communication link **49**D. Alternately, the player may connect the wireless gaming device **14**A into a wristband activation device via a hardwire connection (not shown) or use any other desired activation device or information entry device.

[0119] The processor **50** may also operate the timer and shut off switch **56** (if in hardware) or may include a software timer to de-energize the display **47** of the wireless gaming device **14**A to preserve the batteries of the wireless gaming device **14**A. The wireless gaming device **14**A could become inactive (automatically shut-off the display or other functions) through the timer and shut off switch **56** if not used for a predetermined period of time. The timer **56** could also reside in the device server **62** and send a command to the processor **50** to shut off the wireless gaming device **14**A after a predetermined time has elapsed without play. The wireless gaming device **14**A could then be re-activated using the secure activation software **58** described above.

[0120] In one embodiment, the wireless communal game network layout **60** as shown in FIG. **3** includes a local game server **64** that executes and carries out the communal game at the physically hardwired player stations **16***a*-**20***a* in the FIG. **1** gaming system **10***a* and also supports wireless communal gaming through the device server **62**, which is wirelessly linked to various wireless gaming devices **14**A-**14**D via the wireless communication link **63**. In other embodiments, the external game controller **31***a* (i.e.—external to the wireless system) administers the communal game and contains game rules, pay tables and random number generating capability, for example. The communication over the wireless link **63** may employ any of the presently-available wireless communication protocols including, for example, IEEE 802.11a, IEEE 802.11b, IEEE 802.11x, HyperLan/2, Bluetooth, IrDA, and HomeRF. The wireless communication may utilize RF (Radio Frequency) or IR (InfraRed) signals for data transfers. In one embodiment, the wireless data transfer may employ the IEEE 802.11b compliant wireless interface utilizing 2.4 GHz Direct Sequence Spread Spectrum (DSSS) radio system with a communication range of up to 330 ft (inside a building) from any access point and data transfer rate of 11 Mbps. In one embodiment, the device server **62** and the local game server **64** both include respective serial communication ports (not shown). In that case, the communication link **65** is a serial communication link. The communication link **65** can also be a wireless link or a USB, IEEE 1394 or Ethernet link. Similarly, the communication link **66** between the local game server **64** and each individual hardwired player station **16***a*-**20***a* (FIG. **1**) in the communal gaming system **10***a* (FIG. **1**) may also be a serial communication link connecting a serial port (not shown) on each hardwired player station **16***a*-**20***a* with a serial port (not shown) on the local game server **64**. As in case of the communication link **65**, the communication between the hardwired player stations **16***a*-**20***a* in the gaming system **10***a* and the local game sever **64** may also be accomplished via a wireless, USB, IEEE 1393, or Ethernet communication link **66**.

[0121] In one embodiment, the wireless device server **62** is in communication with the overall casino data network **68** via a wireless communication link **70**, which can be operative under any of the aforementioned wireless communication protocols (e.g., IEEE 802.11b, Bluetooth, etc.). Link **70** can also be a hard wired link, if desired. The casino network **68** may link various device servers **62** operating throughout the casino (to control and manage wireless gaming through respective groups of wireless gaming devices **14**A-**14**D) with other data and account management systems in the casino operating network **68**. Such data and customer account management systems include, for example, a financial server **71** and a casino cashier's "cage" **72** with player management stations (not shown in FIG. **3**, but shown as management workstations **80**A-B in FIG. **4**). The financial server **71** may be configured to track the value of each wireless gaming transaction and securely maintain each wireless game player's account information to facilitate wireless gaming within the casino network **68**. In a large casino environment, there may be more than one financial server associated with the casino network **68**. In one embodiment, the financial server **71** may communicate with other devices operating in the

casino network **68** by a communication link **73**, which can be a wireless link (e.g., IEEE 802.11b or Bluetooth, etc.) or a hardwired link such as a serial communication link connected to a serial port (not shown) on the financial server **71**. The casino cage or cashier station **72** may include a player transaction station **80** (FIG. **4**) including a number of computer terminals (e.g., workstations **80**A-B shown in FIG. **4**) operated by casino employees and handling such routine transactions as, for example, checking out wireless gaming devices **14**A-**14**D to casino patrons, performing electronic fund transfers to a player's account, paying out winning bets, maintaining and settling a player's account, etc. The computer terminals (e.g., workstations **80**A-**80**B of FIG. **4**) in the casino cage **72** may be linked to the other devices in the casino network **68** by another communication link **75**, which can also be a wireless link (e.g., IEEE 802.11b or Bluetooth, etc.) or a hardwired link such as a serial communication link connected to various serial ports (not shown) on the computer terminals in the cashier's cage **72**.

[0122] FIG. **4** provides additional networking details showing how mobile or wireless gaming devices **14**A-**14**D can be used in the communal gaming platform **10***a* of FIG. **1**, and FIG. **5**D illustrates an exemplary operational method **112** for playing a communal game wirelessly according to one embodiment of the present disclosure. The back-end processing layout **77** in FIG. **4** provides additional details on the system-wide architectural considerations involved in implementing the wireless communal game network **60** in FIG. **3**, whereas, the method **112** in FIG. **5**D shows operational details of wireless communal gaming according to one embodiment of the present disclosure. The below discussion is provided with reference to FIGS. **4** and **5**A-**5**D, wherein structural or system aspects are discussed primarily with reference to FIG. **4**, and corresponding operational or transactional aspects are discussed primarily with reference to FIGS. **5**A-**5**D.

[0123] As shown in FIG. **4**, a back-end processing center **88** may include a secure server unit system **95** providing one or more servers for wireless communal gaming and which may also provide support for stationary, hardwired physical communal gaming. The wireless device server **62** provides secure communication with the mobile client devices or WGDs **14**A-C, tracks credit meters for each checked-out mobile client device, manages game states and updates the credit meters. The local game server **64**, on the other hand, executes the relevant game code and may provide, in combination with controller **31***a* or on its own, gaming support for stationary hardwired player stations **16***a*-**20***a* (shown in FIG. **1**) in the gaming system **10***a*.

[0124] As illustrated in FIG. **4**, the wireless gaming devices **14**A-C communicate wirelessly with the wireless device server **62**, which may, in turn, communicate with one or more other servers in the system layout **77**, such as, for example, a logging server **90** that provides logging of transactions, system events and game outcomes, as well as the financial server **71** that provides account management, reporting, workstation authentication, and limited game server management. The financial server **71** may further communicate with management workstations (e.g., workstations **80**A-B) at various locations where wireless gaming devices **78**A-**78**C are docked when unused and are not checked-out to players. The management workstations **80**A, **80**B permit the docked wireless gaming devices **78**A-**78**C to be loaded with software, verified, associated with at least one of: an account and optionally a player identification. The workstations **80**A, **80**B may also manage the account by, for example, transferring funds received from a player to the servers. The functionality described in connection with those servers **62**, **71**, **90**, etc. may alternately be divided or aggregated among servers as desired. The communication between servers **62**, **71**, **90** and wireless gaming devices **14**A-**14**C may be made secure through encryption/decryption.

[0125] Prior to commencing wireless gaming, a player may need to check out a WGD **78**A-**78**C from a cashier's cage **72**. In FIG. **4**, an exemplary wireless gaming device docking station **78** is shown containing three WGDs **78**A-**78**C. These wireless gaming devices **78**A-**78**C are identical to the devices **14**A-**14**D shown in FIGS. **1**-**3**, but are provided with different reference numerals to distinguish docked wireless gaming devices from the checked-out or issued/operational units (e.g., devices **14**A-**14**D in FIG. **1**). Three such operational wireless gaming devices **14**A-**14**C are shown operating on the casino floor **84** and in communication with various wireless access points **85**A-**85**C located throughout the casino floor **84**. The access points **85**A-**85**C comprise a portion of the secure wireless network. In one embodiment, to preserve the confidentiality and security of gaming transactions, communication between wireless gaming devices **14**A-**14**C and wireless access points **85**A-**85**C is carried out over a secure wireless channel **86**. It is noted here that the embodiment illustrated in FIG. **4** is for illustration purpose only. It should be evident to one skilled in the art that the structural layout **77** in FIG. **4** is representative in nature, and does not purport to convey all implementational details of a communal wireless gaming platform. For example, although three wireless gaming devices **78**A-**78**C are shown docked in the docking station **78**, there may be many more such devices present in an actual casino docking station **78**. Similarly, there may be many more wireless gaming devices on the casino floor **84** than the four representative devices **14**A-**14**D shown in FIG. **1**. Additionally, the wireless gaming devices on the casino floor **84** may be operating with different wireless access points (e.g., when devices are in different physical locations in the casino, or when devices are linked to different communal gaming systems **10***a*, etc.) than the three points **85**A-**85**C shown in FIG. **4**. Also, there may be more than two wireless device management workstations **80**A, **80**B in the cashier's "cage" **72**. All such additional implementational details are not shown or discussed herein for the sake of brevity.

[0126] In one embodiment, as illustrated in the flowchart of FIG. **5**A, the docked mobile devices **78**A-**78**C in the docking station **78** may be electronically connected **202** to and operatively controlled by the workstations **80**A-**80**B via one or more USB (Universal Serial Bus) links **82** carrying out data transfers between a workstation **80**A-**80**B and a corresponding wireless gaming device **78**A-**78**C (block **202**). Other suitable ways (e.g., serial ports, wireless links, etc.) to carry out such data transfers may be conveniently implemented as desired. In one embodiment, the management workstations **80**A-**80**B load **204** the wireless gaming device **78**A-**78**C with appropriate software (block **204**) to enable the WGD **78**A-**78**C to display a communal game on its display so as to allow the player to carryout interactive wireless gaming (including wagering, receiving and displaying game results and payout information, etc.). As noted above, no random number generation (RNG) or game code execution takes place at the gaming device **14**A-**14**C. Such transactions are carried out securely at the external game server **31***a*, the local game

server **64**, or elsewhere in the wireless communal gaming platform **10***a*. In one embodiment, the management work stations **80**A-**80**B may also verify **206** whether the software loaded onto the wireless gaming device **78**A-**78**C being checked-out or cradled in the docking station **78** is error-free (block **206**). If an error is detected, the management workstation **80**A-**80**B reloads **204** the appropriate software. In one embodiment, the management workstation may exchange **208** an encryption code or "key" with a docked mobile device **78**A-**78**C prior to the device being checked-out so as to prevent any misuse or tampering by the player (block **208**). Such encryption code, for example, may prevent the player from operating the WGD **14**A-**14**C on a network other than the casino network **68** or from tampering with the game results displayed on the WGD **14**A-**14**C, etc.

[0127] In operation, as shown in FIG. **5**B, the player may be required to first check out **220** a wireless gaming device (e.g., device **78**A) at a teller terminal (i.e., cashier's cage **72**) or from another secure location (e.g., an electronic device dispenser or cradle) in the casino or other establishment providing the wireless gaming experience. In case of an automated, electronic device dispenser, a security deposit **222** (e.g., a hold for a specific amount on a player's credit card) may be required before allowing the player to check-out a WGD. If a security deposit is required, it is accepted at block **224**. In one embodiment, at the time of check-out, an authentication procedure may be performed by the terminal or cage operator (not shown), whereby a player ID (for the player checking out the wireless gaming device) is inputted into the wireless device server **62** through, for example, a teller terminal or workstation (e.g., workstation **80**A or **80**B) and is associated with the device-ID number of the wireless gaming device **78**A (block **226**). This association may be stored **228** in the wireless device server **62** through its device manager unit **104** so as to, for example, enable the system **95** to track the device and its player when needed. The game data (e.g., player's wagers, winning outcomes, etc.) generated during game play and stored (by player ID, for example) in the memory (e.g., the non-volatile random access memory or NVRAM **110** in FIG. **4**) of the wireless device server **62** may later be associated with account information in the financial server **71** (which may also be organized by player ID) and the account can then be reconciled in real time or after a play session ends. All financial transactions may be reported to the financial server **71** to avoid any financial discrepancy or disputes. In this regard, the players may need to establish an account with the casino prior to checking out a wireless gaming device **78**A-**78**C (block **230**). Moreover, the plays may be on credit only.

[0128] Similar to traditional "buy-in" at a casino, a player may be required to establish a player account **230** and purchase some electronic credits (e.g., a payment of $100 may buy **100** electronic credits) that can be stored in the WGD **78**A-**78**C to be checked-out in order to activate the WGD **78**A-**78**C (block **232**). The player may authorize the cage operator to charge the player's credit card for a specific amount, which can then provide corresponding wagering credits to the player, for example. The player can also pay cash for future wagering. In any event, funds are typically associated with the wireless gaming device **78**A-**78**C being checked-out and with the player account (in the financial server **71**) at the time of device checkout so as to activate the wireless gaming device **78**A-**78**C and enable the player to participate in the gaming (block **234**).

[0129] It is observed here that the active wireless gaming device **14**A-**14**D may not directly communicate with the financial server **71**, if desired. Rather, in one embodiment, the financial server **71** may receive data for all financial transactions from the device server **62** and or from the workstations **80**A-**80**B in the casino cage **72**. Any other terminals handling financial transactions for wireless gaming devices (e.g., stand-alone kiosks discussed below) may be connected to the device server **62** through the casino network **68**. The device server **62** may then appropriately channel the transaction to the financial server **71**. The financial server **71** may also receive such financial transaction information from the local game server **64** or from other player accounting machines through, for example, secure messaging over the casino network **68** or via the device server **62** (as, for example, in the embodiment of FIG. **4**). Such player accounting machines may include credit machines where players apply currency and/or credit to an account from which play using the wireless gaming device **14**A-**14**C will be transacted with wagers deducted from the player account and winnings credited to the player account. Alternately, as noted before, teller terminals (e.g., workstations **80**A-**80**B) may be used to apply credit to a player account or withdraw credit from a player account and may report such transactions to the financial server **71**. The financial server **71** and the wireless device server **62** may both reside on the casino computer network **68** and may both store and exchange relevant information.

[0130] The device server **62** may create a data object for each player playing on the wireless gaming devices **14**A-**14**C as indicated by the virtual device objects **106** in FIG. **4**. This object **106** may include data pertaining to the player's current financial credit ("Credit") (updated based on the player wagering information received from the wireless gaming device **14**A), a player identifier ("Id") for authenticating the player, wireless gaming device **14**A-**14**C activation and operational state ("Device State"), status information obtained from tracking a device meter (not shown) in the wireless gaming device **14**A-**14**C ("Meters"), and data reflecting the current state of the game ("Game State"), among other things. The device meter in the wireless gaming device **14**A-**14**C may record numerical identifiers of the games played on the wireless gaming device **14**A-**14**C along with a numerical count of each wagering attempt by the player. The Game State information may include such information as whether the player has wagered in the most recent round of the game, has terminated the game play, has been inactive in the game play, whether the game has been concluded, etc. The device server **62** may also include an application manager unit **108** to communicate with the local game server **64** to obtain the information about the communal game that is currently being executed by the game server **64** and offered to wireless and non-wireless players. Through the application manager **108**, the device server **62** can offer the communal game to mobile players on wireless gaming devices **14**A-**14**C. As noted before, the device manager **104** in the device server **62** may provide an initial interface between the wireless gaming devices **14**A-**14**C and the device server **62** and supports communication between them. The communications unit **102** in the device server **62** implements appropriate communication protocol to facilitate secure wireless data communication between the wireless gaming devices **14**A-**14**C and the device server **62**. In one embodiment, the wireless communication may be based on the Wi-Fi standard A0211, which uses public radio bands. Further, the commu-

nication between the wireless device server **62** and the wireless gaming devices **14**A-**14**C may be accomplished through standard TCP/IP (Transmission Control Protocol/Internet Protocol) or UDP (User Datagram Protocol)/IP based server and browser applications, permitting information to be communicated to be arranged into frames at the data link layer, permitting routing of data to be determined at the network layer, and permitting division of messages into packets through TCP/IP or UDP/IP at the network and transport layers, as is standard when using browsers. The UDP/IP protocol is a packet switching network communications protocol that is similar to TCP/IP, but offers lesser services than TCP/IP. For example, UDP/IP may not provide sequencing of the packets or retransmission of unreceived packets as is typically the case with TCP/IP. In UDP, after the packets are created, the IP layer (comprising the network and transport layers discussed above) transmits the packets across a network such as the Internet. UDP finds its use primarily in applications requiring streaming media where data are transmitted and received in or nearly in real-time.

[0131] As mentioned above, various game-related data (e.g., wagering inputs, game outcomes, time-out events, missed or wrong wagers, etc.) may be stored in the memory **110** of the device server **62** for ease of later retrieval, whenever needed. The NVRAM **110** primarily stores game-related data for gaming transactions conducted by players operating wireless gaming devices **14**A-**14**C on the casino floor **84**. On the other hand, a similar NVRAM memory **100** may be provided in the local game server **64** to store game-related data for gaming transactions conducted by players operating the stationary hardwired player stations **16***a*-**20***a* in the communal gaming system **10***a* of FIG. **1**. Both of these memories **100**, **110** may be consulted in the event of any disputes or alleged discrepancies in wagering and game outcomes.

[0132] The local game server **64** may also include a game engine manager **96** that contains a random number generator (RNG) and game rules such that a wireless gaming device **14**A-**14**D user may choose to play a game directly on the local game server **64** or on a multi-player electronic game platform being played on the external game server **31***a* through the local game server **64**. Thus, the game engine manager **96** may execute an appropriate game depending on the game configuration selected (e.g., by a casino operator) through a game engine configuration unit **98**. In one embodiment, the game engine manager **96** is stateless and does not track any payment/credit information for the local game players (i.e., the players operating the hardwired player stations **16**-**20**). Such information may, instead, be sent to the device manager **104** in the device server, which can also track user accounts. The executed game code information may be sent to the device server **62** via the game engine manager **96** so that the wireless game players are also offered the same communal game as the players at hardwired player stations **16***a*-**20***a* on the casino floor **84**. The game engine manager **96** may also monitor and track game data generated by hardwired player stations **16***a*-**20***a* (FIG. **1**) and effectuate the game data storage in its memory **100**. During various game executions, respective game engine objects **97** may be generated to monitor the execution, flow, and status of the respective communal games. In an embodiment, a separate game engine object **97** exists in the local game server **64** for each communal game operating through that local game server **64**. Thus, the local game server **64** and the device server **62** may be operatively linked to offer the same communal game to mobile as well as stationary game players, thereby significantly expanding the number of players that can participate in the same game. Since the games played on the stationary terminals are communal games, an infinite number of wireless players can be managed without negatively impacting game performance or speed.

[0133] As mentioned before, the remote logging server **90** may log information related to gaming transactions (including, for example, wagers placed, winning wagers, pay table values, etc.), game outcomes, and other system events (e.g., malfunctions reported, inaccuracies detected, device failures detected, etc.) supplied to it through the device server **62**, but may not necessarily be restricted to device server-specific information (i.e., similar information related to the local game server **64** is also recorded in the remote logging server **90**). The information recorded in the logging server **90** may be useful in the event of any inquiry, dispute, or request for data verification. The communication link **94** between the logging server **90** and the financial server **71** may be a one-way (read-only) link to prevent any data corruption or loss for the data in the logging server **90** because integrity of data in the logging server **90** is not only desirable, but may be necessary to comply with a jurisdiction's gaming laws. In the embodiment of FIG. **4**, the data sent from the device server **62** to the remote logging server **90** is sent over a one-way communication link **91** to maintain the integrity of data stored in the logging sever **90**. The communication may be a two-way communication link (shown by optional link **91**A), if desired. The financial sever **71** may alternately access appropriate data from the logging server **90** to carryout player-specific account management and reporting based on the player's gaming transactions recorded in the logging server **90**.

[0134] Although the financial server **71** illustrated in FIG. **4** has a one-way communication link with the device sever **62**, in other embodiments, the financial server **71** may have a bi-directional communication with the device server **62** via the casino network **68** as illustrated in FIG. **3**. Alternatively, a one-way communication link between the financial sever **71** and the device server **62** may be implemented as desired by the casino system designer. Additionally, in the embodiment of FIG. **4**, two firewalls **92**-**93** are shown to further provide secure communication and interchange of gaming data, system information, control signals, etc. The first firewall **92** may be provided between various wireless access points **85**A-**85**C communicating with the device server **62** so as to further secure data communication from the wireless gaming devices **14**A-**14**C and preserve the integrity of gaming transactions carried out by the users of wireless gaming devices **14**A-**14**C. The second firewall **93** may be provided between the cashier's cage **72** and the financial server **71** so as to secure account/finance-related data communication between workstations **80**A-**80**B in the player transaction station **80** and the financial server **71**.

[0135] Referring now to FIG. **5**C, if a player is running low on funds (block **240**) while playing a game on the casino floor **84**, the player can replenish the player's account at that time (which is after initial check-out) by returning to the cashier's cage **72** for the addition of funds to the player's WGD **14**A-**14**C (blocks **241**, **242**). In an alternative embodiment, after initial check-out, the player can add funds to their account using pre-designated kiosks (not shown) within the casino wherein the checked-out wireless gaming device (e.g., WGD **14**A) can be inserted or docked into a cradle (not shown) and then authenticated (which may be automatically performed

by the kiosk) in a manner that was described before in connection with the wireless gaming device **14**A-**14**C initial check-out procedure (blocks **243**, **244**). In a further embodiment, wireless replenishment of player account funds may be provided (blocks **245**, **246**). In this case, if the checked-out WGD **14**A has a built-in credit card reader, then the player can swipe the player's credit card, casino card or other card to initiate a funds transfer. The swiped card data may be collected at the device manager **104** in the device server **62** and then forwarded to the financial server **71**. The financial server **71** may verify the authenticity of the card (e.g., from the player-identifying information stored therein and retrieved using the player-ID supplied from the device manager **104**) (block **247**) and establish the new credit amount requested by the player using the player control buttons **46** on the WGD **14**A (block **248**). If the WGD **14**A does not have a built-in credit card reader, the player may be provided with an access code that the player can enter using the player control buttons **46** on the WGD **14**A to access the device server **62** in a funds transfer mode (block **250**). In the funds transfer mode, a fixed, predetermined amount of credit (not under player control) may be added to the player's account. Upon receiving the player access code (and device-ID or other desired information that may be automatically transmitted by the WGD **14**A), the device manager **104** in the device server **62** may retrieve the player-ID stored therein (and associated with the device-ID assigned earlier at the time of device check-out) and supply that information to the financial server **71** with an instruction to initiate automatic funds transfer in the predetermined amount using player card information stored therein (block **252**). Upon successful transfer of new funds into the player's account, the device server **62** may send a message for the same to the corresponding WGD **14**A through the secure wireless channel **86** (block **256**). The processor **50** in the WGD **14**A may then display the new electronic credits on the device display **47** to inform the player of the new account balance (block **258**). Other ways of replenishing the player account during a game play may also be devised depending on how the wireless gaming is implemented. If additional funds cannot be successfully transferred to player's account (block **251**), the financial server **71** may notify the casino cage operator (through a message on a workstation **80**A or **80**B, for example) of the failed attempt to replenish the player account and may also send an appropriate message to the device server **62** through the casino network **68** (block **254**).

[0136] Referring now to the method **112** illustrated in FIG. **5**D, initially, as described above with reference to FIG. **5**B, when checking out a WGD **14**A-**14**C, the purchased electronic credits are stored **114** in the financial server **71** and displayed **116** on the checked-out WGD (e.g., WGD **14**A) to enable the player to keep track of the player's wagering activities (blocks **114** and **116**). In addition, the wireless gaming device **14**A-**14**D (FIG. **1**) may display the name of, or announce the name of, a game that the player may participate in (e.g., communal game) (block **117**). The wireless gaming devices (e.g., WGDs **14**A-**14**D) may be configured in such a way that when a player is in the legal gaming area and in the vicinity of a communal gaming system (e.g., the gaming system **12** in FIG. **1**), the player's wireless gaming device (e.g., WGD **14**A) displays **117** the communal game being played at the gaming system **12**. In one embodiment, the indicator **42** (FIG. **1**) on the communal gaming system **12** may continuously transmit or broadcast game signals to wireless access points (e.g., points **85**A-**85**C in FIG. **4**) in the vicinity thereof. The wireless access points, in turn, may broadcast these signals further throughout a specific casino area around the gaming system **12**. Any wireless gaming devices **14**A-**14**C in the vicinity of such wireless access points may pick up these broadcast signals announcing **117** the communal game being played at the nearby gaming system **12**. In another embodiment, the indicator **42** may itself function as one of the wireless access points to broadcast the game signals to nearby wireless gaming devices **14**A-**14**C on the casino floor. As noted before, a communal game is a casino game whose pace and outcomes are controlled by the local game server **64** and the player may choose to participate in the communal game, but may not control the outcome or pace of the game.

[0137] Once the player's WGD **14**A displays the desired game (i.e., when the WGD **14**A is in the vicinity of the gaming system **12** offering the desired game), the player may locate the gaming system **10***a* offering the game the player wishes to play (block **118**) and may "link" the WGD **14**A to the gaming system **10***a* (block **120**). In one embodiment, the player may physically place the WGD **14**A at a communication port (not shown) located on the communal gaming system **10***a* (and dedicated for "linking" of wireless gaming devices to the gaming system **10***a*) for several seconds to establish a communication link with that specific gaming system **10***a* (through the nearby wireless access points **85**A-**85**C and the device server **62**, for example). In an alternative embodiment, the player's WGD **14**A may be communicatively "linked" to the gaming system **10***a* (i.e., to the local game server **64**) via the device server **62** when the player selects that game from the game menu display on the player's WGD **14**A which is offered at the gaming system **10***a*. In yet other examples, the link is established using a proximity detector.

[0138] After receiving a confirmation **121** (e.g., from the device server **62** in communication with the local game server **64** operating the gaming system **10***a*) that the communication between the player's WGD **14**A and the gaming system (i.e., the local game server **64**) is established (block **121**), the player may start playing the game by placing bets electronically **122** and wirelessly using the player's WGD **14**A (block **122**). During the communal game play, and when the wireless player has selected the communal game for play, the local game server **64** operates to generate the game outcomes (block **124**), which are sent to the player's WGD **14**A via the wireless device server **62**. As set forth above, during game play, the local game server **64** may perform such functions as parameter validation to assure the WGD **14**A-**14**D users are following house rules. For example, the local game server **64** may determine whether the wireless gaming device **14**A-**14**D user is attempting to wager more than the maximum wager permitted or attempting to wager less than the minimum wager permitted, and whether the wireless gaming device **14**A-**14**D user is attempting to place a wager at an inappropriate time. The local game server **64** may then prevent the wireless gaming device **14**A-**14**D user from performing any such activity falling outside the house rules and, if desired, inform the wireless gaming device **14**A-**14**D user they are attempting an improper operation and ask that the user place a wager conforming to the house rules.

[0139] Based on the player's bet and game outcome, the wireless device server **62** settles the bet and awards/subtracts electronic credits on the player's WGD **14**A wirelessly (block **126**). In addition, as part of block **126**, the device server **62**

tracks the score/outcome (i.e.—game states) of the game play based on the common outcome of the game, and may terminate the play session when the player's electronic credit balance reaches "0." The player may purchase more credit to return to the game or replenish the credit balance before it reaches "0" using one of the methods discussed above. Moreover, as mentioned above, the local game server **64** may periodically require the player of a wireless gaming device **14**A-**14**D to input a player identifier such as e.g., a fingerprint from reader **49**, a code from a card swiped into the card reader (not shown) a user name and/or a personal identification number entered at the player controls **46**, or other identifier to ensure that the player using the WGD **14**A-**14**D is authorized to use the device. If it is determined that the player is not authorized, the local game server **64** may terminate the play session and alert casino personnel to the unauthorized access. The player may continue playing different rounds of the game based on the credit balance available in the player's account (as displayed on the display **47** of the WGD **14**A) as indicated by the decision loop at block **128**.

[0140] At any time when the player wishes to stop playing the specific game offered at the communal gaming system **10***a*, the player may simply walk away from the play area. The communication between the WGD **14**A and the gaming system **10***a* may be terminated when the physical distance between the two devices exceeds certain limits (depending on the wireless protocol employed, signal power levels, etc.). In other embodiments, alternative methods may be implemented to terminate the communication between the gaming system **10***a* and the player's WGD **14**A. Such methods include, for example, pressing an on/off button (not shown) on the WGD **14**A or physically placing the WGD **14**A on a communication port (not shown) on the gaming system **10***a* and selecting a de-linking option (block **130**). After de-linking the WGD **14**A from a specific communal gaming system **10***a*, the player may proceed to play a different communal game at a different gaming system by linking the WGD **14**A to that new gaming system in the manner discussed above (block **132**), or may choose to play a wireless-only game off of local game server **64**. When the player decides to conclude wireless gaming, the player may return the WGD **14**A to the cashier's cage **72** (or to a suitable kiosk designated for returning such wireless gaming devices **14**A-**14**C) and cash out the player's winnings, if any (block **134**). An operator at the cashier's cage **72** may reconcile the player's account by verifying and settling it through the financial server **71** using the workstation (e.g., the workstation **80**A) in the player transaction station **80**. In this manner, wireless communal gaming may be carried out in addition to such communal gaming at stationary hardwired player stations **16***a*-**20***a*.

[0141] FIG. **6** illustrates an embodiment of a node **400** that may be used as one or more of the wireless gaming devices **14**A-**14**D, the external game server **31***a*, the individual player controllers (not shown), the device server **62**, the local game server **64**, or any other processor-based device described herein. The node **400** illustrated in FIG. **6** includes memory **402**, a processor **410**, a storage device **412**, an output device (e.g., display or monitor) **414**, an input device (e.g., keyboard, mouse, joystick, etc.) **416**, and a communication adaptor **418**. Communication between the processor **410**, the storage device **412**, the output device **414**, the input device **416**, and the communication adaptor **418** is accomplished by way of one or more communication buses **420**. Those buses **420** may include, for example, a system bus, a peripheral component interface bus, or an Industry Standard Architecture bus. It should be recognized that the node **400** may have fewer components or more components than shown in FIG. **6**. For example, if a user interface is not desired, the input device **416** and/or output device **414** may not be included with the node **400**.

[0142] The memory **402** may, for example, include random access memory (RAM), static or dynamic RAM, and/or read only memory (ROM) (e.g., programmable ROM, erasable programmable ROM, or electronically erasable programmable ROM) and may store computer program instructions and information. The memory **402** may also be partitioned into sections including an operating system partition **408** where system operating instructions are stored, a data partition **406** in which data is stored, and a communal gaming partition **404** in which communal gaming operational instructions are stored. The communal gaming partition **404** includes circuitry or code that performs some or all of the functions described herein including, for example, game rules. The communal gaming partition **404** may store program instructions and allow execution by the processor **410** of those program instructions. The data partition **406** may furthermore store data such as, for example, cards associated with random numbers generated during game play.

[0143] The processor **410** may, for example, be an Intel® Pentium® type processor or another processor manufactured by, for example Motorola®, Compaq®, AMD®, or Sun Microsystems®. The processor **410** may furthermore execute the program instructions and process the data stored in the memory **402**. In one embodiment, the instructions are stored in memory **402** in a compressed and/or encrypted format. As used herein the phrase, "executed by a processor" is intended to encompass instructions stored in a compressed and/or encrypted format, as well as instructions that may be compiled or installed by an installer before being executed by the processor **410**.

[0144] The storage device **412** may, for example, be non-volatile battery backed RAM, a magnetic disk (e.g., floppy disk and hard drive), optical disk (e.g., CD-ROM or DVD) EPROM flash memory or any other device or signal that can store digital information. The communication adaptor **418** permits communication between the node **400** and other devices coupled to the communication adaptor **418** at the communication adaptor port **422** including, for example, a chip valuation device (not shown) and a chip sorter (not shown). The communication adaptor **418** may be a network interface or, alternately or in addition, may be coupled directly to one or more other devices through one or more input/output adaptors (not shown).

[0145] The input device **416** may include a card reader, keyboard, mouse, bar code scanner or any combination of input devices desired. The output device **414** may include a monitor, printer, or any combination of output devices desired. It will be recognized, however, that the node **400** does not necessarily need to have an input device **416** or an output device **414** to operate. Moreover, the storage device **412** may also not be necessary for operation of the node **400** as data required or desired for wireless communal gaming operation may be stored in memory, for example.

[0146] The foregoing describes various embodiments of a system and method for wireless communal gaming in a casino environment. As mentioned hereinbefore, currently, communal games are generally presented on large free-standing gaming devices (e.g., slot machines) or as table games

(e.g., Baccarat or Roulette) in a casino. A substantial disadvantage to the way such games are currently presented is that a player may participate in a game in only certain specified locations within the gaming environment (e.g., a casino). For example, in order to play Baccarat, the player may have to travel through a large hotel/casino complex to a specific gaming area where the Baccarat table is located. Such a restrictive gaming environment hampers players' accessibility to different communal games and reduces their opportunities to play such games. The present disclosure thus relates to a system and method for playing communal wagering games in a casino environment in a wireless manner, allowing greater player mobility within the casino establishment and also allowing a large number of players (players playing wirelessly as well as players playing traditionally at a hardwired player station **16***a*-**20***a*) to participate in a common game, thereby increasing the capacity of existing communal game tables. The wireless gaming approach according to one embodiment of the present disclosure may reduce or eliminate the need for the player to travel through a large hotel/casino to a specific gaming area where the desired gaming table is located. Furthermore, the wireless gaming approach may further minimize search time for a player to search for a particular game and, potentially eliminate the wait time when a player finds that the desired game table location is occupied by another player. The wireless or mobile player may participate in the communal game regardless of whether there is a hardwired player station **16***a*-**20***a* available. The system of the present disclosure includes one or more wireless gaming device each equipped with a display, one or more gaming servers configured to communicate wirelessly with the wireless gaming devices and hardwired player stations **16***a*-**20***a*, and one or more financial servers configured to record financial transactions for players playing communal games of chance on the handheld gaming devices.

[0147] While the disclosure has been described in detail and with reference to specific embodiments thereof, it will be apparent to one skilled in the art that various changes and modifications can be made therein without departing from the spirit and scope of the embodiments. Thus, it is intended that the present disclosure cover the modifications and variations of this disclosure provided they come within the scope of the appended claims and their equivalents.

1. A gaming system, comprising:
- an interactive multi-player computer-based wagering game platform, the platform comprising an external game server and multiple physical player stations for playing the multi-player game;
- multiple wireless devices capable of communicating with the secure wireless network, receiving wager commands and displaying communal game outcomes, wherein the external game server performs game steps comprising:
- each player placing a multipart wager to participate in the game;
- dealing cards to each player and at least one common card, all the common cards being dealt face down;
- giving each player a chance to examine the cards received by that player and to withdraw a part that is less than all of the multipart wager and the player electing to withdraw the part or not;
- showing the at least one common card, thereby providing a hand for each player, each player's hand comprising the shown at least one common card and the cards each player was dealt; and
- resolving each player's remaining wager from the multipart wager which was not withdrawn based on the rank of that player's hand.

2. The system of claim **1** wherein the multipart wager comprises at least three parts.

3. The system of claim **2** wherein the quantity of cards dealt to each player is three, there are two common cards, and the multipart wager comprises three parts.

4. The system of claim **3** wherein all parts of the multipart wager are equal.

5. A system for providing wireless play of a game comprising:
- a central game processor having wireless transmission and reception ability;
- multiple user input devices having visual display ability and wireless reception and wireless transmission ability to the central game processor;
- each of the multiple user input devices enabling user input of at least one of wagers, wager amounts and decisions made during play of a game having steps comprising:
- a) a player placing a wager comprising at least two distinct wagering parts;
- b) providing to the player at least a portion of the player's playing cards so that partial information or a game outcome is provided,
- c) giving the player at least one opportunity, before the player's final game outcome is determined with a player's final hand of playing cards, to withdraw from engagement in the game at least one wagering part of the at least two wagering parts, but less than all of the at least two wagering parts,
- d) continuing play of the game with additional playing cards used to form a hand of cards for the player are displayed to the player, and
- e) resolving all wagers not withdrawn by the player from the at lest two wagering parts.

6. The system of claim **5** wherein the at least a portion of the player's playing cards comprises three cards.

7. The system of claim **6** wherein community cards are used to display the additional playing cards.

8. The system of claim **7** wherein two community cards are used to display the additional playing cards.

9. The system of claim **8** wherein the multipart wager comprises at least three parts.

10. The system of claim **8** wherein the quantity of cards dealt to each player is exactly three, there are exactly two common cards, and the multipart wager comprises three parts.

11. The system of claim **10** wherein all parts of the multipart wager are equal.

12. The system of claim **10** wherein the game comprises a poker game.

13. The system of claim **12** wherein awards are made for predetermined ranks of hands in the card game against a paytable.

14. The system of claim **5** wherein the steps of the game comprise:
- each player placing a wager to participate in the game;
- dealing three cards to each player and two common cards face down;
- giving each player the chance examine the three card received by that player and to withdraw part of the wager;
- showing only one of the common cards;

giving each player another chance to withdraw another part of the wager;

showing the second of said two common cards, thereby providing a five card hand for each player, each player's five card hand comprising the two showing common cards and the three cards each player was dealt; and

resolving each player's remaining wager, which was not withdrawn based on the poker ranking of that player's five card hand against a paytable.

15. The system of claim **14** wherein the wager is divided into three equal parts and wherein at least one of the three parts may not be withdrawn.

16. The system of claim **15** wherein player cards are communal cards for all players playing a single round of play.

17. (canceled)

18. A gaming system, comprising:

an interactive communal computer-based wagering game platform having an external game server executing a communal game, and a plurality of player stations communicating with the external game server to enable a player at each player station to play said communal game executed by said external game server; and

the wireless gaming devices communicating over a secure wireless network to enable a mobile player operating each corresponding wireless gaming device to play said communal game executed by said game server,

wherein the external game server performs game steps comprising:

each player placing a multipart wager to participate in the game;

dealing cards to each player and at least one common card, all the common cards being dealt face down;

giving each player a chance to examine the cards received by that player and to withdraw a part that is less than all of the multipart wager and the player electing to withdraw the part or not;

showing the at least one common card, thereby providing a hand for each player, each player's hand comprising the shown at least one common card and the cards each player was dealt; and

resolving each player's remaining wager from the multipart wager which was not withdrawn based on the rank of that player's hand.

19. A method of playing an interactive communal game on the system of claim **5**, wherein the communal game is one in which all players wager on a common outcome and in which player decisions are limited to selecting and placing a wager in a predetermined time period that is fixed for all players playing the communal game, said method comprising:

executing said communal game on a game server;

enabling a player at each of a plurality of stationary player stations to play said communal game executed by said game server; and

allowing a plurality of wireless gaming devices to wirelessly communicate with said game server so as to enable a mobile player operating each corresponding wireless gaming device to play said communal game executed by said game server and also played by players at said stationary player stations.

20. The system of claim **5** wherein the input devices are selected from the group consisting of a wireless hand-held gaming device, a cell phone, a PDA, a blackberry and iPhone and a laptop computer.

21. A system for providing wireless play of a game comprising:

a central game processor having wireless transmission and reception ability;

multiple user input devices selected from the group consisting of cellular phones and PDAs having visual display ability and wireless reception and wireless transmission ability to the central game processor;

each of the multiple user input devices enabling user input of at least one of wagers, wager amounts and decisions made during play of a game having steps comprising:

a) a player placing a wager comprising at least three distinct wagering parts;

b) providing to the player at least a three-card portion of the player's playing cards so that partial information or a game outcome is provided,

c) giving the player at least one opportunity, before the player's final game outcome is determined with a player's final hand of playing cards, to withdraw from engagement in the game at least one wagering part of the at least three wagering parts, but less than all of the at least three wagering parts,

d) continuing play of the game with additional community playing cards used to form a hand of cards for the player are displayed to the player, and

e) resolving all wagers not withdrawn by the player from the at lest three wagering parts.

22. The system of claim **21** wherein two community cards are used to display the additional playing cards.

23. The system of claim **22** wherein the quantity of cards dealt to each player is exactly three, there are exactly two common cards, and the multipart wager comprises three parts, all parts of the multipart wager are equal, and the game comprises a poker game wherein awards are made for predetermined ranks of hands in the card game against a paytable.

24. The system of claim **21** wherein the steps of the game comprise:

each player placing at least a three-part wager to participate in the game;

dealing three cards to each player and two common cards face down;

giving each player the chance examine the three card received by that player and to withdraw a first part of the wager;

showing only one of the common cards to the player;

giving each player another chance to withdraw a second part of the three-part wager;

showing the second of said two common cards, thereby providing a five card hand for each player, each player's five card hand comprising the two showing common cards and the three cards each player was dealt; and

resolving each player's remaining wager, which was not withdrawn based on the poker ranking of that player's five card hand against a paytable.

25. The system of claim **24** wherein the system also comprises multiple player terminals in which individual players enter wagers on the game.

26. The system of claim **25** wherein the multiple player terminals are linked to a communal game play system and multiple players wager on a same set of three cards dealt to a player and the common cards.

27. A method for playing a wagering game with wireless player input comprising:

providing at least one player with a wireless communication input device that can communicate with a central game processor, the multiple user input devices selected from the group consisting of cellular phones and PDAs having visual display ability;

a central game processor receiving information from a wireless transmission from the at least one player wireless communication input device;

at least one player inputting at least one of wagers, wager amounts and decisions made during play of a game, the game having steps received and/or performed on the central game processor comprising:

a) the at least one player placing a wager comprising at least three distinct wagering parts;

b) providing to the player at least a virtual three-card portion of the player's playing cards so that partial information or a game outcome is provided,

c) giving the player at least one opportunity, before the player's final game outcome is determined with a player's final hand of playing cards, to withdraw from engagement in the game at least one wagering part of the at least three wagering parts, but less than all of the at least three wagering parts,

d) continuing play of the game with additional virtual community playing cards used to form a hand of cards for the player are displayed to the player, and

e) resolving all wagers not withdrawn by the player from the at lest three wagering parts.

28. The method of claim **27** wherein two virtual community cards are used to display the additional playing cards.

29. The method of claim **28** wherein the quantity of virtual cards dealt to each player is exactly three, there are exactly two common cards, and the multipart wager comprises three parts, all parts of the multipart wager are equal, and the game comprises a poker game wherein awards are made for predetermined ranks of hands in the card game against a paytable.

30. The method of claim **28** wherein the wagers are not collectible or chargeable funds, but rather the at least one player may play the game with a play or practice charge and virtual winnings and losses are provided in a non-monetary account on the wireless system.

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