US 20090111584A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2009/0111584 A1**

(43) **Pub. Date: Apr. 30, 2009**

Koplar

(54) **METHOD AND SYSTEM FOR ENCODED INFORMATION PROCESSING**

(75) Inventor: **Edward J. Koplar**, St. Louis, MO (US)

Correspondence Address:
SCHWEGMAN, LUNDBERG & WOESSNER, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402 (US)

(73) Assignee: **Koplar Interactive Systems International, L.L.C.**, St. Louis, MO (US)

(21) Appl. No.: **12/263,101**

(22) Filed: **Oct. 31, 2008**

Related U.S. Application Data

(60) Provisional application No. 60/984,248, filed on Oct. 31, 2007, provisional application No. 60/987,320, filed on Nov. 12, 2007, provisional application No. 61/029,704, filed on Feb. 19, 2008.

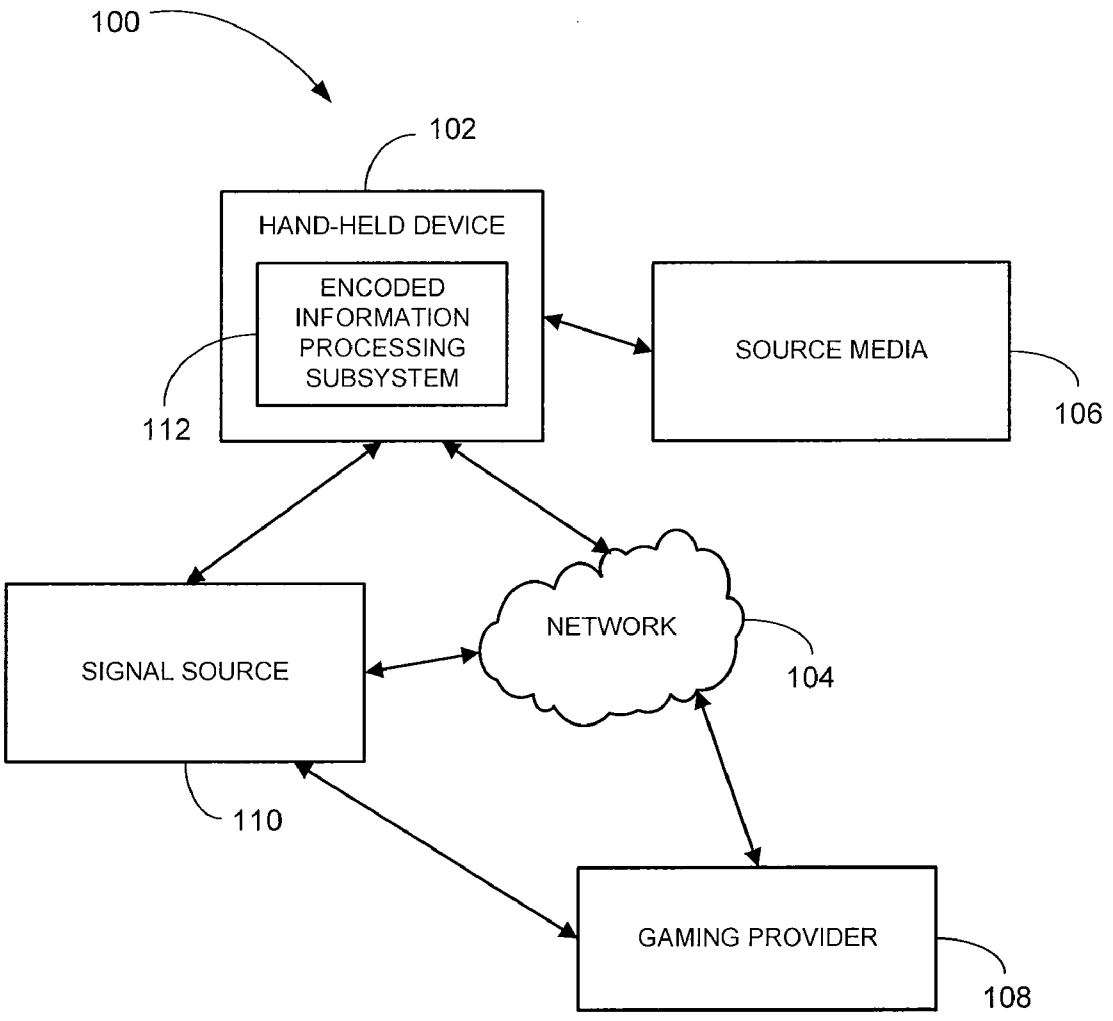
Publication Classification

(51) **Int. Cl.**
A63F 9/24 (2006.01)
G06F 19/00 (2006.01)

(52) **U.S. Cl.** **463/42**; 463/43

(57) **ABSTRACT**

Methods and system for encoded information processing are described. In one embodiment, an encoded pattern may be optically detected from source media. Gaming data and associated synchronization data may be decoded from the encoded pattern. The gaming data may be synchronized for use during gaming based on the synchronization data. Additional methods and systems are disclosed.



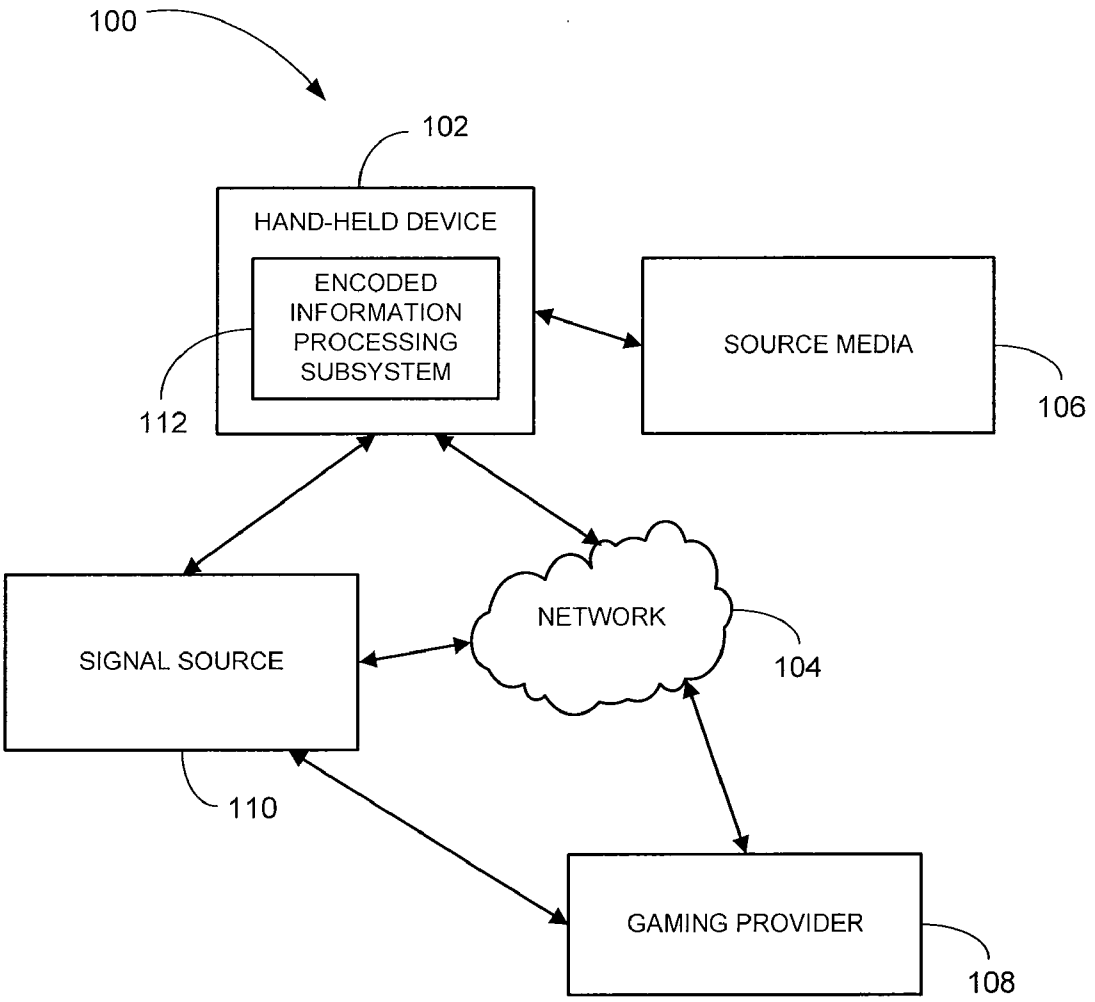

100
102
HAND-HELD DEVICE
ENCODED INFORMATION PROCESSING SUBSYSTEM
112
SOURCE MEDIA
106
NETWORK
104
SIGNAL SOURCE
110
GAMING PROVIDER
108

FIGURE 1

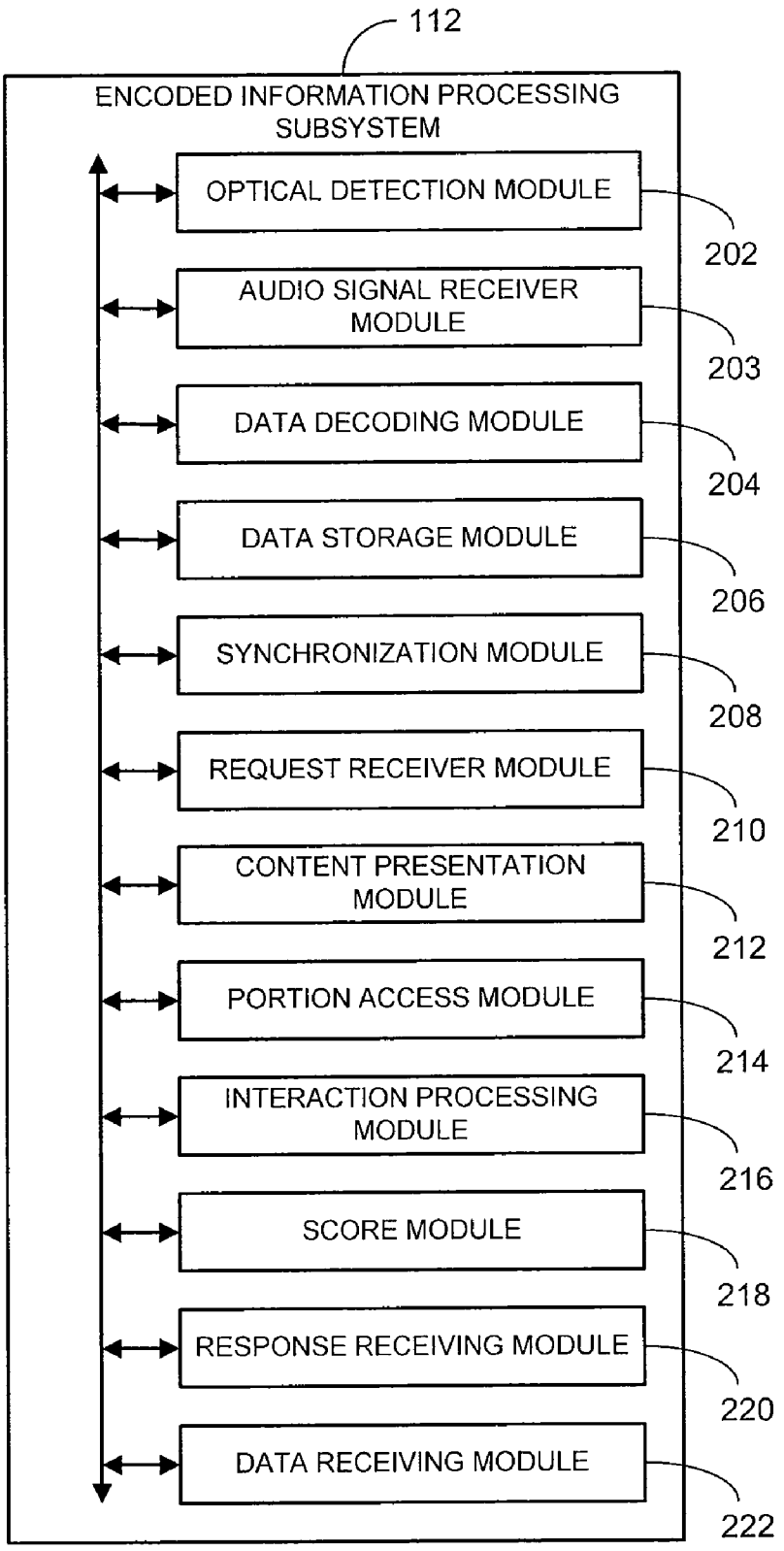

112
ENCODED INFORMATION PROCESSING SUBSYSTEM
OPTICAL DETECTION MODULE
202
AUDIO SIGNAL RECEIVER MODULE
203
DATA DECODING MODULE
204
DATA STORAGE MODULE
206
SYNCHRONIZATION MODULE
208
REQUEST RECEIVER MODULE
210
CONTENT PRESENTATION MODULE
212
PORTION ACCESS MODULE
214
INTERACTION PROCESSING MODULE
216
SCORE MODULE
218
RESPONSE RECEIVING MODULE
220
DATA RECEIVING MODULE
222

FIGURE 2

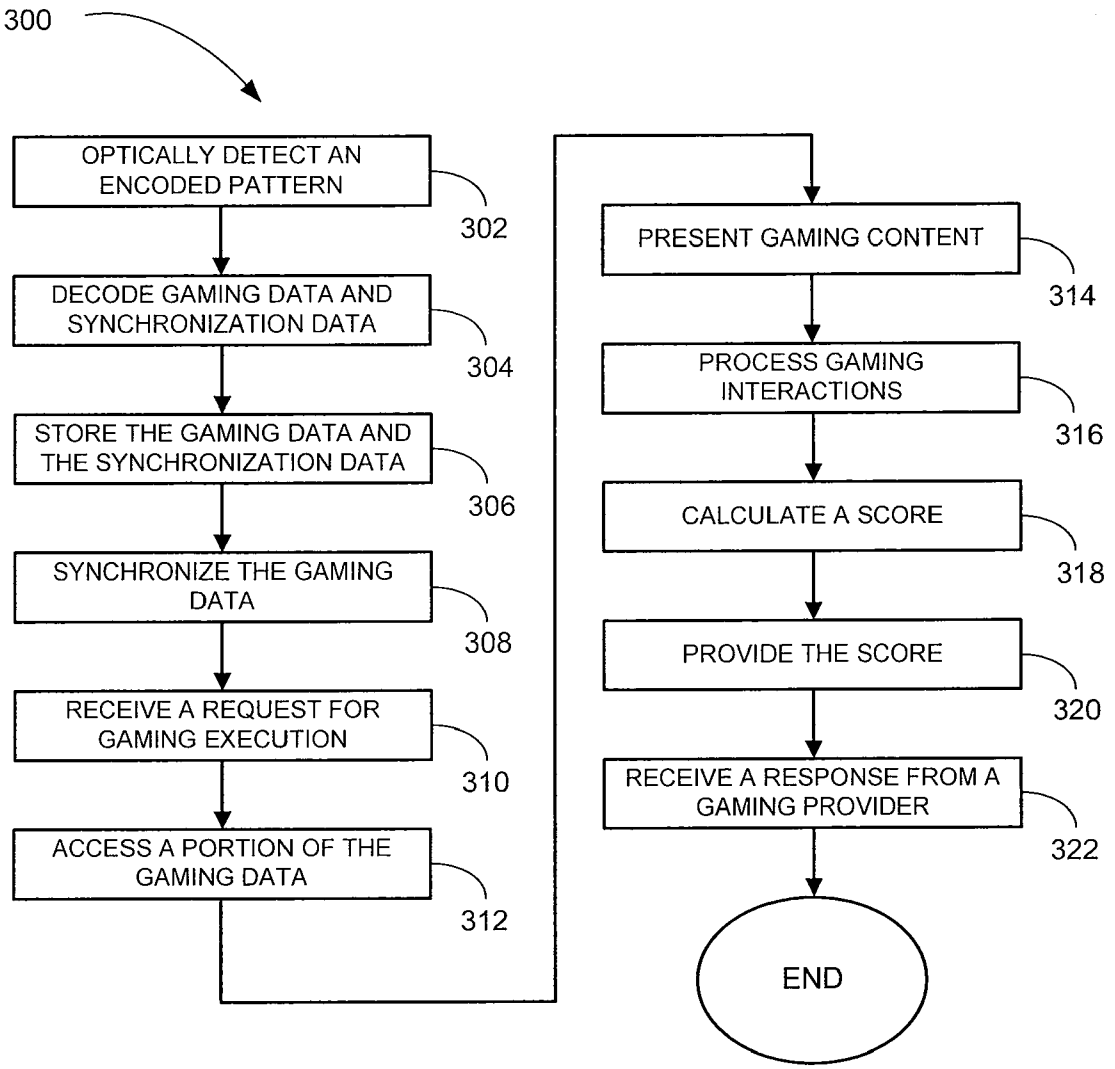

300
OPTICALLY DETECT AN ENCODED PATTERN
302
DECODE GAMING DATA AND SYNCHRONIZATION DATA
304
STORE THE GAMING DATA AND THE SYNCHRONIZATION DATA
306
SYNCHRONIZE THE GAMING DATA
308
RECEIVE A REQUEST FOR GAMING EXECUTION
310
ACCESS A PORTION OF THE GAMING DATA
312
PRESENT GAMING CONTENT
314
PROCESS GAMING INTERACTIONS
316
CALCULATE A SCORE
318
PROVIDE THE SCORE
320
RECEIVE A RESPONSE FROM A GAMING PROVIDER
322
END

FIGURE 3

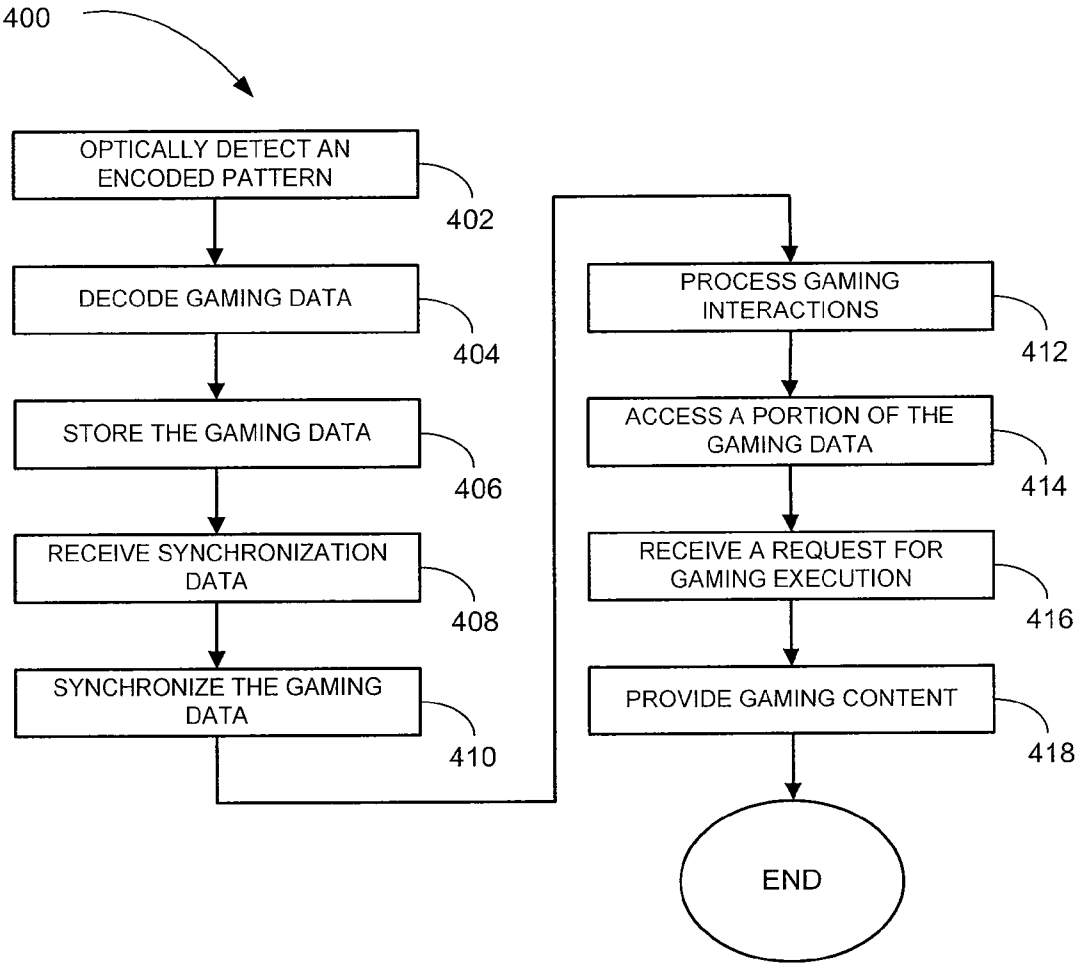

400
OPTICALLY DETECT AN ENCODED PATTERN
402
DECODE GAMING DATA
404
STORE THE GAMING DATA
406
RECEIVE SYNCHRONIZATION DATA
408
SYNCHRONIZE THE GAMING DATA
410
PROCESS GAMING INTERACTIONS
412
ACCESS A PORTION OF THE GAMING DATA
414
RECEIVE A REQUEST FOR GAMING EXECUTION
416
PROVIDE GAMING CONTENT
418
END

FIGURE 4

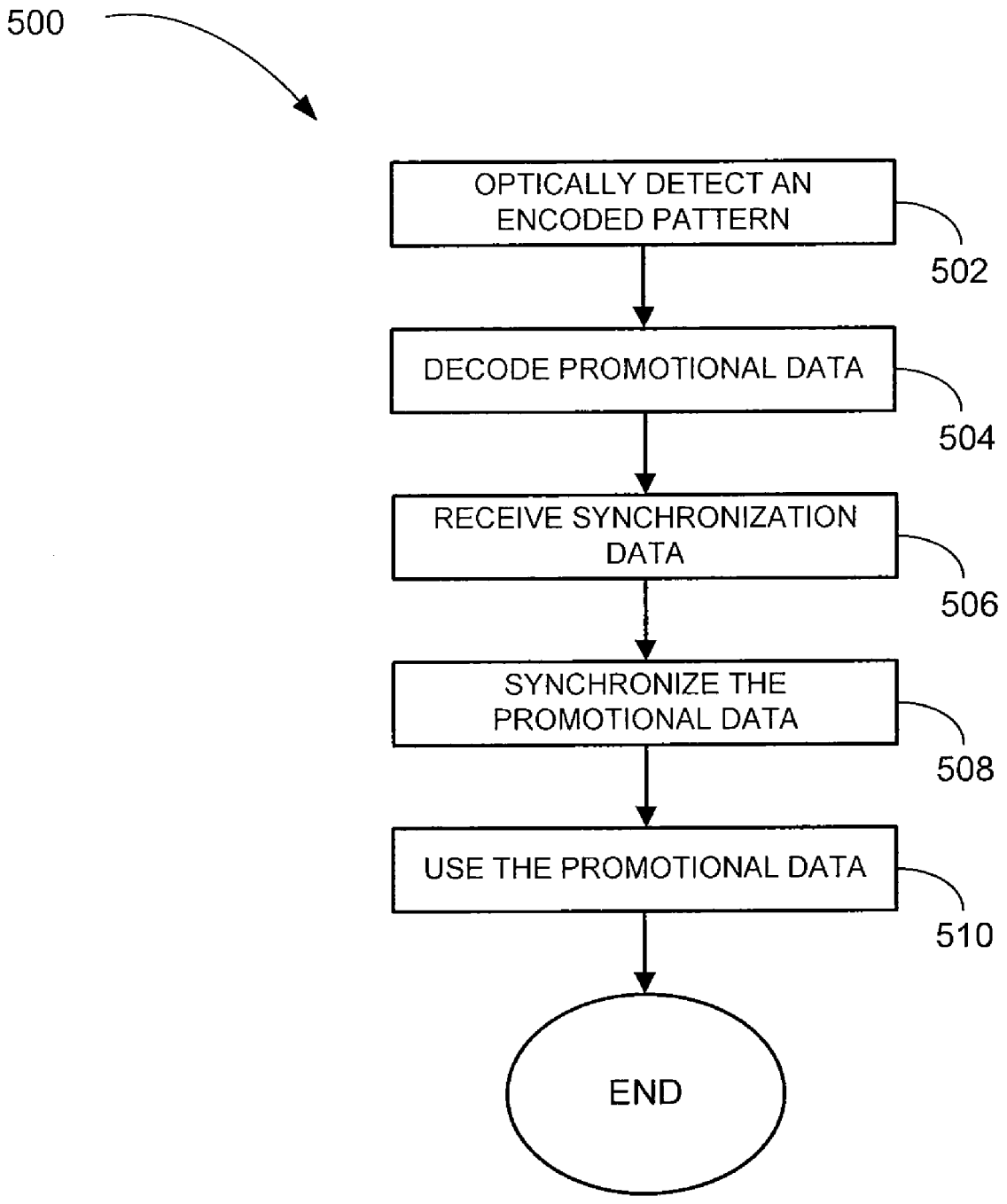

500
OPTICALLY DETECT AN ENCODED PATTERN
502
DECODE PROMOTIONAL DATA
504
RECEIVE SYNCHRONIZATION DATA
506
SYNCHRONIZE THE PROMOTIONAL DATA
508
USE THE PROMOTIONAL DATA
510
END

FIGURE 5

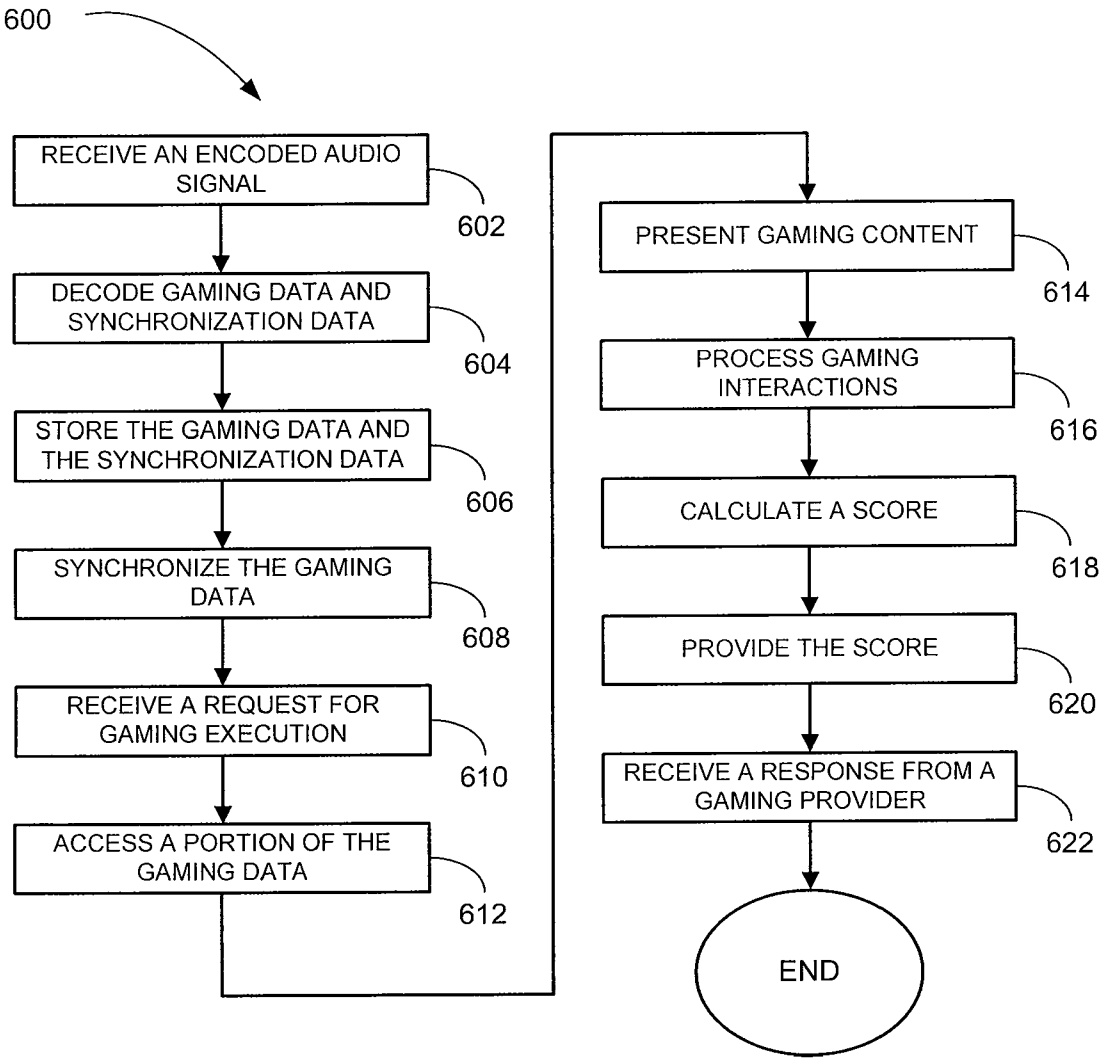

600
RECEIVE AN ENCODED AUDIO SIGNAL
602
DECODE GAMING DATA AND SYNCHRONIZATION DATA
604
STORE THE GAMING DATA AND THE SYNCHRONIZATION DATA
606
SYNCHRONIZE THE GAMING DATA
608
RECEIVE A REQUEST FOR GAMING EXECUTION
610
ACCESS A PORTION OF THE GAMING DATA
612
PRESENT GAMING CONTENT
614
PROCESS GAMING INTERACTIONS
616
CALCULATE A SCORE
618
PROVIDE THE SCORE
620
RECEIVE A RESPONSE FROM A GAMING PROVIDER
622
END

FIGURE 6

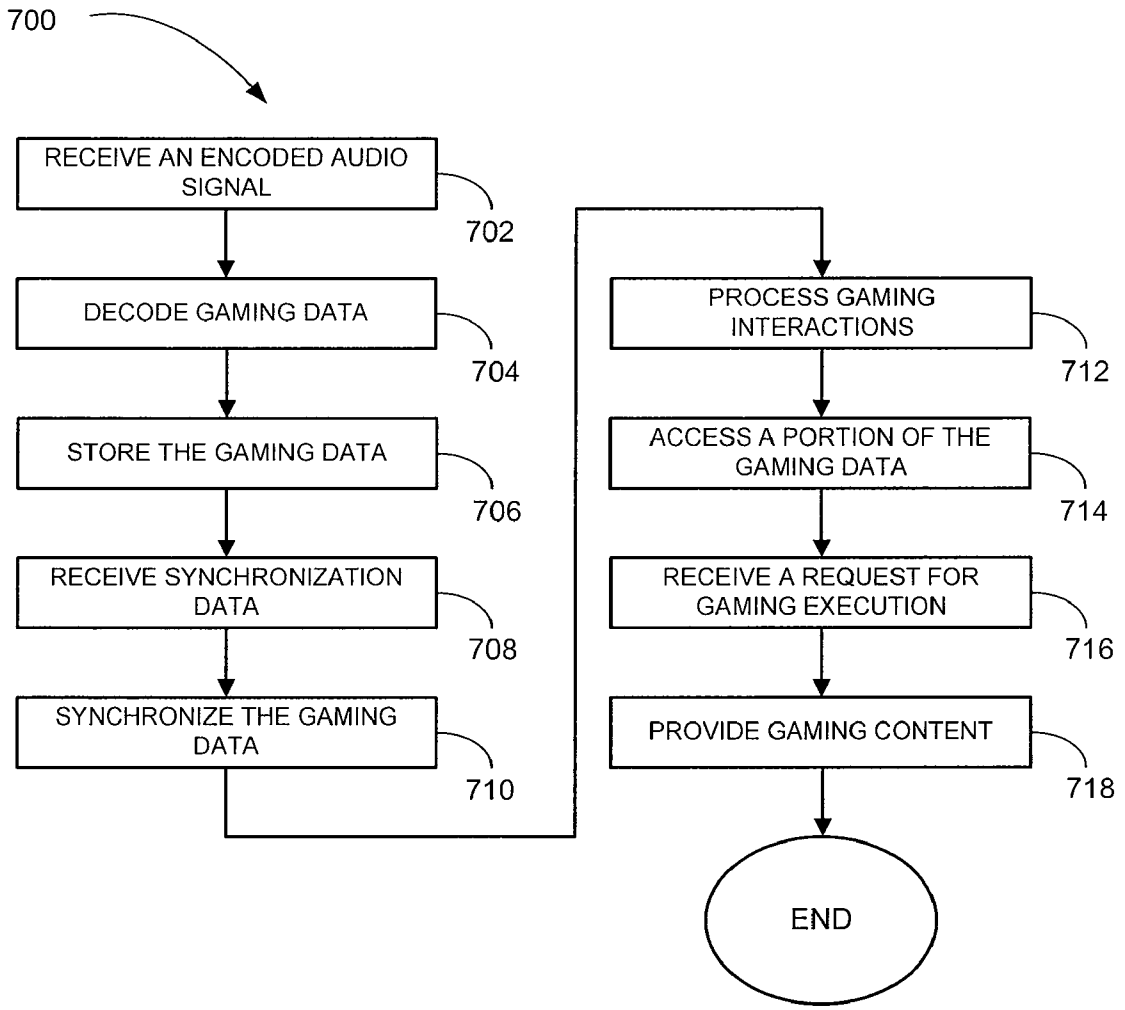

700
RECEIVE AN ENCODED AUDIO SIGNAL
702
DECODE GAMING DATA
704
STORE THE GAMING DATA
706
RECEIVE SYNCHRONIZATION DATA
708
SYNCHRONIZE THE GAMING DATA
710
PROCESS GAMING INTERACTIONS
712
ACCESS A PORTION OF THE GAMING DATA
714
RECEIVE A REQUEST FOR GAMING EXECUTION
716
PROVIDE GAMING CONTENT
718
END

FIGURE 7

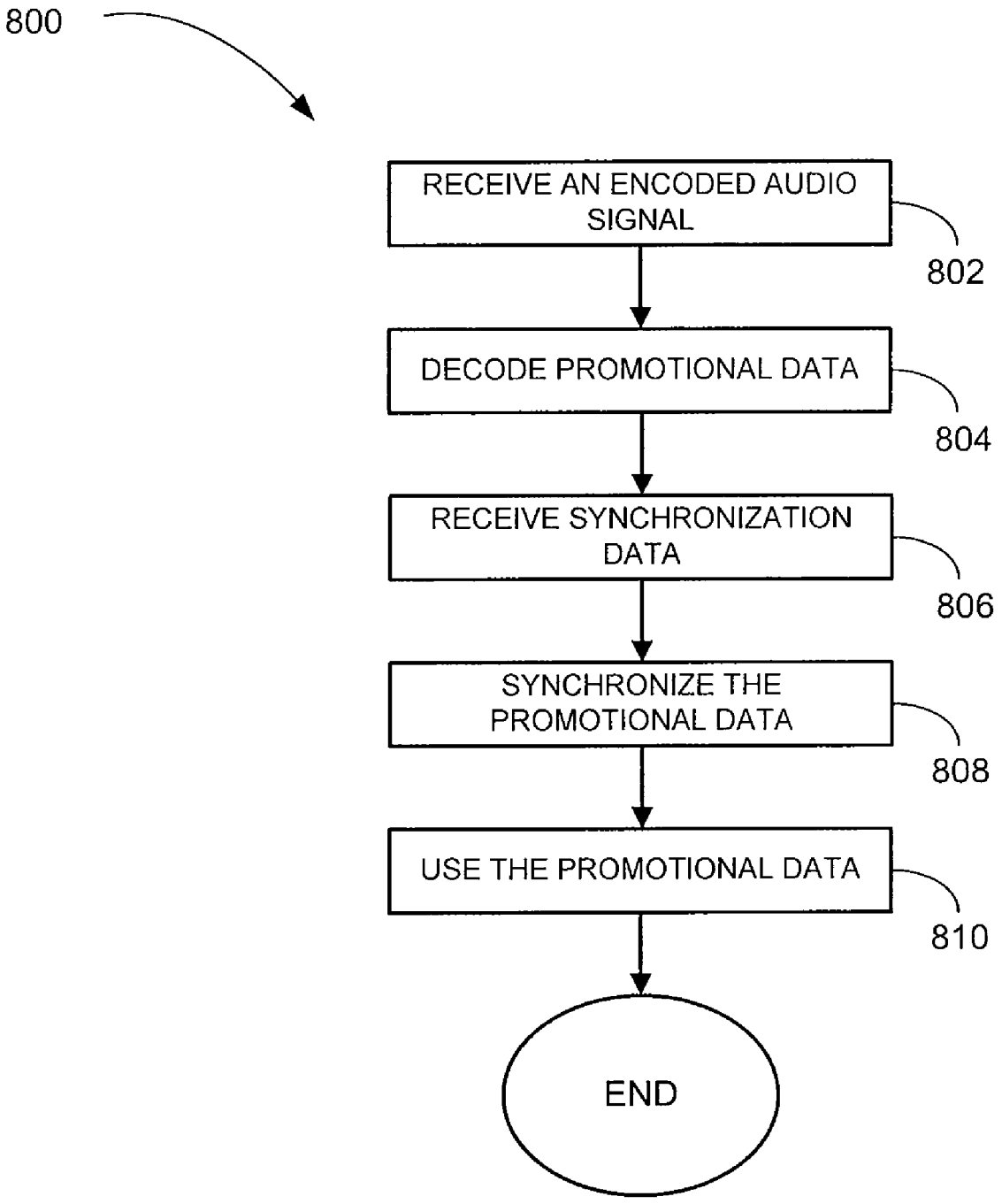

800
RECEIVE AN ENCODED AUDIO SIGNAL
802
DECODE PROMOTIONAL DATA
804
RECEIVE SYNCHRONIZATION DATA
806
SYNCHRONIZE THE PROMOTIONAL DATA
808
USE THE PROMOTIONAL DATA
810
END

FIGURE 8

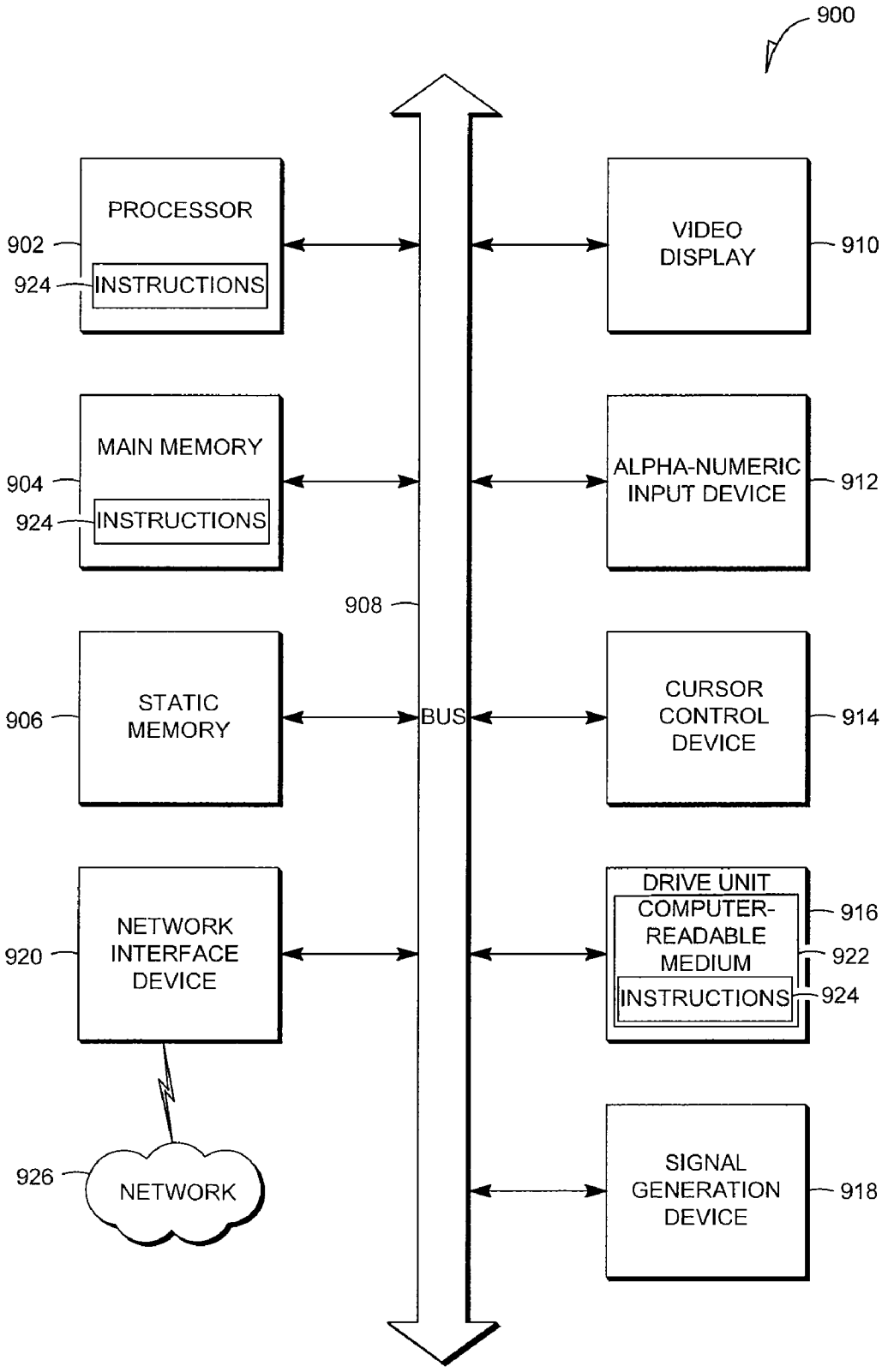

900
PROCESSOR
902
INSTRUCTIONS
924
MAIN MEMORY
904
INSTRUCTIONS
924
908
STATIC MEMORY
906
BUS
NETWORK INTERFACE DEVICE
920
926
NETWORK
VIDEO DISPLAY
910
ALPHA-NUMERIC INPUT DEVICE
912
CURSOR CONTROL DEVICE
914
DRIVE UNIT
COMPUTER-READABLE MEDIUM
916
922
INSTRUCTIONS
924
SIGNAL GENERATION DEVICE
918

FIGURE 9

METHOD AND SYSTEM FOR ENCODED INFORMATION PROCESSING

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Patent Applications entitled "Method and System for Pattern Processing", Ser. No. 60/984,248, filed 31 Oct. 2007, "Method and System for Pattern Processing", Ser. No. 60/987,320, filed 12 Nov. 2007, and "Method and System for Encoded Information Processing", Ser. No. 61/029,704, filed 19 Feb. 2008, the entire contents of the applications are herein incorporated by reference.

FIELD

[0002] The present application relates generally to the technical field of information processing. In specific examples, the present application may relate to a method and system for encoded information processing and/or a method and system for scheduling gaming data.

BACKGROUND

[0003] A user interacts with controls on a video game unit to play a video game for entertainment purposes. The user may connect with other users of a network to participate jointly in a game, or the user may be a sole participant in the game.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Some embodiments are illustrated by way of example and not limitation in the figures of the accompanying drawings in which:

[0005] FIG. **1** is a block diagram illustrating a system, according to an example embodiment;

[0006] FIG. **2** is a block diagram illustrating an example encoded information processing subsystem that may be deployed in the hand-held device of the FIG. **1**, according to an example embodiment;

[0007] FIGS. **3-8** are flowcharts illustrating methods for encoded information processing, processing according to example embodiments; and

[0008] FIG. **9** is a block diagram of a machine in the example form of a computer system within which a set of instructions for causing the machine to perform one or more of the methodologies discussed herein.

DETAILED DESCRIPTION

[0009] Example methods and systems for encoded information processing are described. In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of example embodiments. It will be evident, however, to one of ordinary skill in the art that embodiments of the invention may be practiced without these specific details.

[0010] A bar code or other another type of encoded pattern may be detected optically from printed matter or a display device (e.g., a television). Gaming data may be decoded from the encoded pattern for use during a video game. Gaming data may also be decoded from an encoded audio signal.

[0011] The gaming data may include puzzle data, map data, character data, weapon data, or any other data that may enhance or otherwise alter game play. The gaming data may not be immediately used by the video game, but rather may be used according to synchronization data. For example, a new puzzle received as a portion of the gaming data may only become available when a television show that corresponds to the puzzle is aired on a television network. The synchronization data may either also be decoded from the encoded pattern or received from a signal source.

[0012] FIG. **1** illustrates an example gaming system **100** in which a hand-held device **102** may detect an encoded pattern from source media **106** and/or receive an encoded audio signal from a signal source **110**. The encoded pattern and/or the encoded audio signal may be decoded to obtain gaming data and/or synchronization data. The gaming data and synchronization data may be used to enable a user with the hand-held device **102** to play along with a game being presented on a display device. For example, the gaming data may be puzzle data and the synchronization data may be puzzle timing data to indicate which puzzle should be presented on the hand-held device **102**.

[0013] The hand-held device **102** may be a portable gaming device, a mobile telephone, a smart card, a portable computer, or the like. Other types of hand-held devices may also be used. The source media **106** may include, by way of example, printed matter, a display device, or the like. The source media **106** may be capable of presenting an encoded pattern (e.g., a bar code) that is detectable by the hand-held device **102**. For example, the source media **106** may include printed media (e.g., a newspaper article), electronic media (e.g., a web page), and other types of visual media that are capable of visually presenting an encoded pattern. The source media **106** may, in an example embodiment, be provided by the signal source **110**.

[0014] The hand-held device **102** may include an encoded information processing subsystem **112** to obtain and use gaming data, promotional data, and/or synchronization data.

[0015] In an example embodiment, the hand-held device **102** may include a CMOS imaging sensor, a 32-bit microprocessor and external memory. For example, the hardware of the hand-held device **102** may include OEM part number: 5080SR-1212A0R by Honeywell Imaging and Mobility, a color CMOS imaging device (e.g., the Omni Vision OV7670) and a 32-bit microcontroller (e.g., the Sunplus SPG293A). The encoded pattern decoding software may be ADAPTEC from Honeywell Imaging and Mobility. However, other configurations of hardware and software may also be used.

[0016] The gaming provider **108** may interact with the hand-held device **102** over a network **104** to track scores of various users, provide electronic coupons, and the like. For example, a score or other performance indicator may be sent over the network **104** from the hand-held device **102** to the gaming provider **108**. The gaming provider **108** may be associated with the game being presented on the display device. The hand-held device **102** may redeem promotional opportunities over the network **104**, or may be physically taken into a store for redemption.

[0017] The network **104** may be a television distribution network, Global System for Mobile Communications (GSM) network, an Internet Protocol (IP) network, a Wireless Application Protocol (WAP) network, and/or a WiFi network. Other networks may also be used.

[0018] The signal source **110** may include a display device, an audio reproduction device, or the like. The signal source **110** may receive the content from a television broadcast station, over the network **104**, from a DVD, from local storage,

or may otherwise be received. The content may include an encoded audio signal, an encoded video signal, or a different type of content signal. The audio signal may be encoded with RDS or otherwise encoded. The gaming provider **108** may be affiliated with the provider of content of the signal source **110**. Promotional data may be presented on the hand-held device **102** based on a presentation being made on the signal source **110**.

[0019] One or more signal sources **110** may be used. For example, the source media **106** may be read from a first signal source **110**, and the synchronization data may received from a second signal source **110**.

[0020] FIG. **2** illustrates an example encoded information processing subsystem **112** that may be deployed in the hand-held device **102** of the system **100** (see FIG. **1**), or may be otherwise deployed. The inclusion of the subsystem **112** on the hand-held device **102** may, in an example embodiment, enable real-time play with the signal source **110**.

[0021] The encoded information processing subsystem **112** may include an optical detection module **202**, an audio signal receiver module **203**, a data decoding module **204**, a data storage module **206**, a synchronization module **208**, a request receiver module **210**, a content provider module **212**, a portion access module **214**, an interaction processing module **216**, a score module **218**, a response receiving module **220**, and/or a data receiving module **222**. Other modules may also be included. In various embodiments, the modules may be distributed so that some of the modules may be deployed in the hand-held device **102** and some of the modules may be deployed in an additional device.

[0022] The optical detection module **202** optically detects an encoded pattern from the source media **106**. The audio signal receiver module **203** receiving an encoded audio signal from the signal source **110**. The data decoding module **204** decodes gaming data, synchronization data and/or promotional data from the encoded pattern and/or the encoded audio signals. The modules **202-204** may be used to preload the hand-held device **102** with data that may be used based on receipt of synchronization data.

[0023] The data storage module **206** stores the gaming data and/or the synchronization data. The synchronization module **208** synchronizes the stored gaming data for use during gaming and/or the promotional data for use during operation of the hand-held device **102** based on the synchronization data. The synchronization may include scheduling the gaming data for use during gaming and/or the promotional data for use during operation of the hand-held device **102** based on the synchronization data. For example, the synchronization data may include a single synchronization (e.g., to act as a trigger) or multiple synchronizations (e.g., based on time codes of the content signal provided by the signal source **110**).

[0024] The request receiver module **210** receives a request for gaming execution. The content provider module **212** provides gaming content during the gaming. The gaming content may be provided by audibly presenting the gaming content through a speaker on the hand-held device **102** or an audio output of the hand-held device **102**, visibly presenting the gaming content through a display on the hand-held device **102** or a video output of the hand-held device **102**, and/or may be otherwise presented. The gaming content may be provided based on receipt of the request.

[0025] The portion access module **214** accesses a portion of the stored gaming data during the gaming in accordance with the synchronization data. The portion of the gaming data may be used during the providing of the gaming content. The interaction processing module **216** processes gaming interactions from a user during the gaming.

[0026] The score module **218** calculates and/or stores a score based on the performance of a user during the gaming. The response receiving module **220** receives an electronic coupon and/or a player ranking from the gaming provider **108**. The data receiving module **222** receives synchronization data from the presentation device **202** (see FIG. **2**).

[0027] FIG. **3** illustrates a method **300** for encoded information processing according to an example embodiment. The method **300** may be performed by the hand-held device **102** (see FIG. **1**) of the system **100**, or it may be otherwise performed. In an example embodiment, the method **300** may obtain gaming data and synchronization data from an encoded pattern.

[0028] An encoded pattern is optically detected from the source media **106** at block **302**. The encoded pattern may be a bar code or other machine readable representations of data in a visual form. The bar code may be one-dimensional such as a UPC bar code. The bar code may be multi-dimensional (e.g., two-dimensional bar codes such as an Aztec code, Data Matrix, Dataglyph, MaxiCode, PDF317, QR Code, Ultra Code or UCC RSS-2D bar code). Other types of bar codes may also be used.

[0029] Gaming data and associated synchronization data are decoded from the encoded pattern at block **304**. The gaming data may include puzzle data, map data, character data, weapon data, or any other data that may contribute or enhance game play. For example, the gaming data may be puzzles for the WHEEL OF FORTUNE game show, answers and/or questions for the JEOPARDY game show, questions from the WHO WANTS TO BE A MILLIONAIRE game show, or the like. The gaming data may provide a patch or other type of update for a video gaming operating on the hand-held device **102**.

[0030] The synchronization data may indicate when portions or the gaming data may be used by the video game. For example, puzzle start times may indicate when puzzle data will be made available for use by the video game. Adventure usage may indicate when additional levels, characters, or weapons are available to a player of the video game.

[0031] The synchronization data may enable game play along with the content (e.g., coordinated game play) being presented by the signal source **110**.

[0032] The gaming data and/or the synchronization data may be stored at block **306**. The gaming data and/or the synchronization data may be stored on the hand-held device **102**, or otherwise stored. For example, the gaming data and/or the synchronization data may be stored on a remote server available over the network **104** or a data storage device connected to the hand-held device **102**.

[0033] The gaming data may be synchronized for use during gaming based on the synchronization data at block **308**. The synchronization of the gaming data may enable the gaming to be synchronized to content provided by the signal source **110**. In an example embodiment, the synchronization of gaming data may enable enhanced video game play by allowing a user of the video game to experience additional game functionality at specified times during game play.

[0034] A request for gaming execution may be received at block **310**. The request for gaming execution may be for the video game to start or to continue play in an ongoing game. The operations performed at blocks **302-308** may occur while

the video game is being played, during a stop in play, or when the hand-held device **102** is not being used for game play.

[0035] At block **312**, a portion of the gaming data may be accessed during the gaming based on the synchronization data. The portion of the gaming data may be used during the providing of the gaming content.

[0036] Gaming content may be presented during the gaming at block **314**. The gaming content may be presented based on the receipt of the request. The presentation of the gaming content may include an audio/video presentation to which the user can interact or control based on usage of the hand-held device **102**.

[0037] Gaming interactions may be processed from a user during the gaming at block **316**. The gaming interactions may include guessing letters or the solution to a puzzle, moving a character through a maze, or the like.

[0038] A score may be calculated based on the performance of the user during the gaming at block **318**. The score may reflect a number of puzzles correctly solved, a number of monsters defeated, or the like.

[0039] The score may be provided based on the performance of the user during the gaming at block **320**. The score may be presented to the user through display on the hand-held device **102**, may be provided to the user through electronic mail, or may otherwise be maid available to the user. The score may be provided to the gaming provider **108**.

[0040] A response may be received from the gaming provider **108** at block **322**. The response may include an electronic coupon, a player ranking, or the like. The electronic coupon may reward the user for participation in the video game. The player ranking may rank the user's performance in the video game relative to other users.

[0041] FIG. **4** illustrates a method **400** for encoded information processing according to an example embodiment. The method **400** may be performed by the hand-held device **102** (see FIG. **1**) of the system **100**, or it may be otherwise performed. In an example embodiment, the method **400** may obtain gaming data from an encoded pattern and synchronization data from the signal source **110**.

[0042] An encoded pattern is optically detected from the source media **106** at block **402**. Gaming data is decoded from the encoded pattern at block **404**. The gaming data may be stored at block **406**.

[0043] Synchronization data is received from the signal source **110** at block **408**. The synchronization data may be encoded in an audio portion and/or a video portion of a content signal (e.g., a video signal) associated with the game. For example, a television show presented on the signal source **110** in the form of a display device may present an encoded content signal having the synchronization data encoded through use of dual tone multiple frequency (DTMF), luminance modulation, chrominance modulation, or the like.

[0044] The gaming data may be synchronized for use during the gaming based on the synchronization data at block **410**. Gaming interactions received from a user during the gaming may be processed at block **412**.

[0045] A portion of the gaming data is accessed based on the synchronization data at block **414**. The gaming data may be accessed based receipt of the synchronization signal, the scheduling of the gaming data, receiving of the gaming interactions, or may be otherwise accessed.

[0046] A request may be received for gaming execution at block **416**. Gaming content including the portion of the gaming data is provided during the gaming at block **418**. The gaming content may be provided in response to the receipt of the request.

[0047] In an example embodiment, the operations performed at blocks **318-322** may be performed with the method **400**.

[0048] FIG. **5** illustrates a method **500** for pattern processing according to an example embodiment. The method **500** may be performed by the hand-held device **102** of the system **100**, or it may be otherwise performed.

[0049] At block **502**, an encoded pattern is optically detected from the source media **106**. Promotional data is decoded from the encoded pattern at block **504**.

[0050] Synchronization data is received from the presentation device **202** at block **506**. In an example embodiment, the synchronization data may be received from a video signal presented on the presentation device **202** in the form of a display device. The synchronization data may be encoded within the video signal in a substantially invisible way.

[0051] At block **508**, the promotional data is synchronized for use during operation of the hand-held device **102** based on the synchronization data. The promotional data may be used based on the synchronization at block **510**. For example, the promotional data may be presented (e.g., as an advertisement or a promotion) on a display of the hand-held device **102** based on the synchronization data. The promotional data may be otherwise used.

[0052] FIG. **6** illustrates a method **600** for encoded information processing according to an example embodiment. The method **600** may be performed by the hand-held device **102** (see FIG. **1**) of the system **100**, or it may be otherwise performed. In an example embodiment, the method **600** may obtain gaming data and synchronization data from an encoded audio signal.

[0053] An encoded audio signal is audibly received from the signal source **110** at block **602**. The audio signal may be encoded through DTMF, or other methods of encoding data along with an audio signal. Gaming data and associated synchronization data are decoded from the encoded audio signal at block **604**. The gaming data and/or the synchronization data may be stored at block **606**.

[0054] The gaming data may be synchronized for use during gaming based on the synchronization data at block **608**. In an example embodiment, the synchronization of gaming data may enable enhanced video game play by allowing a user of the video game to experience additional game functionality at specified times during game play.

[0055] A request for gaming execution may be received at block **610**. The request for gaming execution may be for the video game to start or to continue play in an ongoing game. The operations performed at blocks **602-608** may occur while the video game is being played, during a stop in play, or when the hand-held device **102** is not being used for game play.

[0056] At block **612**, a portion of the gaming data may be accessed during the gaming based on the synchronization data. The portion of the gaming data may be used during the providing of the gaming content.

[0057] Gaming content may be presented during the gaming at block **614**. The gaming content may be presented based on the receipt of the request. The presentation of the gaming content may include an audio/video presentation to which the user can interact or control based on usage of the hand-held device **102**.

[0058] Gaming interactions may be processed from a user during the gaming at block **616**. The gaming interactions may include guessing letters or the solution to a puzzle, moving a character through a maze, or the like.

[0059] A score may be calculated based on the performance of the user during the gaming at block **618**. The score may reflect a number of puzzles correctly solved, a number of monsters defeated, or the like.

[0060] The score may be provided based on the performance of the user during the gaming at block **620**. The score may be presented to the user through display on the hand-held device **102**, may be provided to the user through electronic mail, or may otherwise be maid available to the user. The score may be provided to the gaming provider **108**.

[0061] A response may be received from the gaming provider **108** at block **622**. The response may include an electronic coupon, a player ranking, or the like. The electronic coupon may reward the user for participation in the video game. The player ranking may rank the user's performance in the video game relative to other users.

[0062] FIG. **7** illustrates a method **700** for encoded information processing according to an example embodiment. The method **700** may be performed by the hand-held device **102** (see FIG. **1**) of the system **100**, or it may be otherwise performed. In an example embodiment, the method **700** may obtain gaming data and synchronization data from the signal source **110**.

[0063] An encoded audio signal is received from the signal source at block **702**. Gaming data is decoded from the encoded audio signal at block **704**. The gaming data may be stored at block **706**. The gaming data may be encoded in an audio portion and/or a video portion of a content signal (e.g., a video signal) associated with the game. For example, a television show presented on the signal source **110** in the form of a display device may present an encoded content signal having the gaming data encoded through use of dual tone multiple frequency (DTMF), luminance modulation, chrominance modulation, or the like.

[0064] Synchronization data is received from the signal source **110** at block **708**. The gaming data may be synchronized for use during the gaming based on the synchronization data at block **710**. Gaming interactions received from a user during the gaming may be processed at block **712**.

[0065] A portion of the gaming data is accessed based on the synchronization data at block **714**. The gaming data may be accessed based receipt of the synchronization signal, the scheduling of the gaming data, receiving of the gaming interactions, or may be otherwise accessed.

[0066] A request may be received for gaming execution at block **716**. Gaming content including the portion of the gaming data is provided during the gaming at block **718**. The gaming content may be provided in response to the receipt of the request.

[0067] In an example embodiment, the operations performed at blocks **618**-**622** may be performed with the method **700**.

[0068] FIG. **8** illustrates a method **800** for audio signal processing according to an example embodiment. The method **800** may be performed by the hand-held device **102** (see FIG. **2**) of the system **100**, or it may be otherwise performed.

[0069] At block **802**, an encoded audio signal is received from the signal source **110**. Promotional data is decoded from the encoded audio signal at block **804**.

[0070] Synchronization data is received from the presentation device **202** at block **806**. In an example embodiment, the synchronization data may be received from a video signal presented on the display device. The synchronization data may be encoded within the video signal in a substantially invisible way.

[0071] At block **808**, the promotional data is synchronized for use during operation of the hand-held device in accordance with the synchronization data

[0072] The promotional data may be used based on the synchronized at block **810**. For example, the promotional data may be presented (e.g., as an advertisement or a promotion) on a display of the hand-held device based on a schedule. The promotional data may be otherwise used.

[0073] FIG. **9** shows a block diagram of a machine in the example form of a computer system **900** within which a set of instructions may be executed causing the machine to perform any one or more of the methods, processes, operations, or methodologies discussed herein. The source media **106**, the gaming provider **108**, and/or the signal source **110** may operate on one or more computer systems **900**. The hand-held device **92** may include the functionality of the one or more computer systems **900**.

[0074] In an example embodiment, the machine operates as a standalone device or may be connected (e.g., networked) to other machines. In a networked deployment, the machine may operate in the capacity of a server or a client machine in server-client network environment, or as a peer machine in a peer-to-peer (or distributed) network environment. The machine may be a server computer, a client computer, a personal computer (PC), a tablet PC, a set-top box (STB), a Personal Digital Assistant (PDA), a cellular telephone, a web appliance, a network router, switch or bridge, a kiosk, a point of sale (POS) device, a cash register, an Automated Teller Machine (ATM), or any machine capable of executing a set of instructions (sequential or otherwise) that specify actions to be taken by that machine. Further, while only a single machine is illustrated, the term "machine" shall also be taken to include any collection of machines that individually or jointly execute a set (or multiple sets) of instructions to perform any one or more of the methodologies discussed herein.

[0075] The example computer system **900** includes a processor **902** (e.g., a central processing unit (CPU) a graphics processing unit (GPU) or both), a main memory **904** and a static memory **906**, which communicate with each other via a bus **908**. The computer system **900** may further include a video display unit **910** (e.g., a liquid crystal display (LCD) or a cathode ray tube (CRT)). The computer system **900** also includes an alphanumeric input device **912** (e.g., a keyboard), a cursor control device **914** (e.g., a mouse), a drive unit **916**, a signal generation device **918** (e.g., a speaker) and a network interface device **920**.

[0076] The drive unit **916** includes a machine-readable medium **922** on which is stored one or more sets of instructions (e.g., software **924**) embodying any one or more of the methodologies or functions described herein. The software **924** may also reside, completely or at least partially, within the main memory **904** and/or within the processor **902** during execution thereof by the computer system **900**, the main memory **904** and the processor **902** also constituting machine-readable media.

[0077] The software **924** may further be transmitted or received over a network **926** via the network interface device **920**.

[0078] While the machine-readable medium **922** is shown in an example embodiment to be a single medium, the term "machine-readable medium" should be taken to include a single medium or multiple media (e.g., a centralized or distributed database, and/or associated caches and servers) that store the one or more sets of instructions. The term "machine-readable medium" shall also be taken to include any medium that is capable of storing, encoding or carrying a set of instructions for execution by the machine and that cause the machine to perform any one or more of the methodologies of the present invention. The term "machine-readable medium" shall accordingly be taken to include, but not be limited to, solid-state memories, optical and magnetic media, and carrier wave signals.

[0079] Certain systems, apparatus, applications or processes are described herein as including a number of modules or mechanisms. A module or a mechanism may be a unit of distinct functionality that can provide information to, and receive information from, other modules. Accordingly, the described modules may be regarded as being communicatively coupled. Modules may also initiate communication with input or output devices, and can operate on a resource (e.g., a collection of information). The modules may be implemented as hardware circuitry, optical components, single or multi-processor circuits, memory circuits, software program modules and objects, firmware, and combinations thereof, as appropriate for particular implementations of various embodiments.

[0080] In an example embodiment, an encoded pattern may be optically detected from source media. Gaming data and associated synchronization data may be decoded from the encoded pattern. The gaming data may be synchronized for use during gaming based on the synchronization data. The synchronization of the gaming data may enable the gaming to be synchronized to content provided by a signal source.

[0081] In an example embodiment, an encoded pattern may be optically detected from source media. Gaming data may be decoded from the encoded pattern. Synchronization data may be received from a signal source. A portion of the gaming data may be accessed based on the synchronization data. Gaming content including the portion of the gaming data may be provided during the gaming.

[0082] In an example embodiment, an encoded pattern may be optically detected from source media on a held-held device. Promotional data may be decoded from the encoded pattern. Synchronization data may be received on the held-held device from a presentation device. The promotional data may be schedule for use during operation of the hand-held device based on the synchronization data.

[0083] In an example embodiment, an encoded audio signal may be received from a signal source. Gaming data and associated synchronization data may be decoded from the encoded audio signal. The gaming data may be scheduled for use during gaming based on the synchronization data. The synchronization of the gaming data may enable the gaming to be synchronized to content provided by a signal source.

[0084] Thus, methods and systems for encoded information processing have been described. Although embodiments of the present invention have been described with reference to specific example embodiments, it will be evident that various modifications and changes may be made to these embodiments without departing from the broader spirit and scope of the embodiments of the invention. Accordingly, the specification and drawings are to be regarded in an illustrative rather than a restrictive sense.

[0085] The Abstract of the Disclosure is provided to comply with 37 C.F.R. §1.72(b), requiring an abstract that will allow the reader to quickly ascertain the nature of the technical disclosure. It is submitted with the understanding that it will not be used to interpret or limit the scope or meaning of the claims. In addition, in the foregoing Detailed Description, it can be seen that various features are grouped together in a single embodiment for the purpose of streamlining the disclosure. This method of disclosure is not to be interpreted as reflecting an intention that the claimed embodiments require more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive subject matter lies in less than all features of a single disclosed embodiment. Thus the following claims are hereby incorporated into the Detailed Description, with each claim standing on its own as a separate embodiment.

What is claimed is:

1. A method comprising:
optically detecting an encoded pattern from source media;
decoding gaming data and associated synchronization data from the encoded pattern; and
synchronizing the gaming data for use during gaming based on the synchronization data,
wherein the synchronizing of the gaming data enables the gaming to be synchronized to content provided by a signal source.

2. The method of claim **1**, wherein the synchronizing the gaming data comprises:
scheduling the gaming data for use during gaming based on the synchronization data,
wherein the scheduling of the gaming data enables the gaming to be synchronized to the content provided by the signal source.

3. The method of claim **1**, further comprising:
accessing a portion of the gaming data based on the scheduling of the gaming data; and
providing gaming content including the portion of the gaming data during the gaming.

4. The method of claim **1**, further comprising:
processing a plurality of gaming interactions from a user during the gaming; and
wherein the accessing of the portion of the gaming data is based on the scheduling of the gaming data and the processing of the plurality of gaming interactions.

5. The method of claim **4**, further comprising:
calculating a score in accordance with performance of the user during the gaming.

6. The method of claim **5**, further comprising:
presenting a score based on performance of the user during the gaming.

7. The method of claim **5**, further comprising:
providing the score to a gaming provider; and
receiving an electronic coupon from the gaming provider in response to the providing of the score.

8. The method of claim **5**, further comprising:
providing the score to a gaming provider; and
receiving a player ranking from the gaming provider in response to the providing of the score.

9. The method of claim **1**, wherein the source media includes at least one of printed matter, a display device, or combinations thereof.

10. The method of claim **1**, wherein the encoded pattern is a bar code.

11. A method comprising:
optically detecting an encoded pattern from source media;
decoding gaming data from the encoded pattern;
receiving synchronization data from a signal source;
accessing a portion of the gaming data based on the synchronization data; and
providing gaming content including the portion of the gaming data during the gaming.

12. The method of claim **11**, further comprising:
scheduling the gaming data for use during the gaming based on the synchronization data; and
wherein the accessing of the gaming data is based on the scheduling of the gaming data.

13. The method of claim **11**, wherein the source media includes at least one of printed matter, a display device, or combinations thereof.

14. A method comprising:
optically detecting an encoded pattern from source media on a held-held device;
decoding promotional data from the encoded pattern;
receiving synchronization data on the held-held device from a presentation device; and
synchronizing the promotional data for use during operation of the hand-held device based on the synchronization data,
wherein the synchronizing of the promotional data enables the hand-held device to be synchronized to content provided by a signal source.

15. The method of claim **14**, wherein the promotional data comprises:
scheduling the promotional data for use during operation of the hand-held device based on the synchronization data,
wherein the scheduling of the gaming data enables the hand-held device to be synchronized to the content provided by the signal source.

16. The method of claim **14**, further comprising:
using the promotional data during operation of the hand-held device based on the synchronization data.

17. The method of claim **14**, wherein the presentation device includes a display device.

18. The method of claim **14**, wherein the synchronization data is received from a video signal presented on the display device; and
wherein the synchronization data is encoded within the video signal in a substantially invisible way.

19. A method comprising:
receiving an encoded audio signal from a signal source;
decoding gaming data and associated synchronization data from the encoded audio signal; and
synchronizing the gaming data for use during gaming based on the synchronization data.
wherein the synchronizing of the gaming data enables the gaming to be synchronized to content provided by the signal source.

20. The method of claim **19**, further comprising:
accessing a portion of the gaming data based on the synchronizing of the gaming data; and
providing gaming content including the portion of the gaming data during the gaming.

21. A machine-readable medium comprising instructions, which when executed by one or more processors, cause the one or more processors to perform the following operations:
optically detect an encoded pattern from source media;
decode gaming data and associated synchronization data from the encoded pattern; and
synchronize the gaming data for use during gaming based on the synchronization data,
wherein synchronization of the gaming data enables the gaming to be synchronized to content provided by the signal source.

22. The machine-readable medium of claim **21**, wherein the encoded pattern is a bar code.

23. A machine-readable medium comprising instructions, which when executed by one or more processors, cause the one or more processors to perform the following operations:
optically detect an encoded pattern from source media;
decode gaming data from the encoded pattern;
receive synchronization data from a signal source;
access a portion of the gaming data based on the synchronization data; and
provide gaming content including the portion of the gaming data during the gaming

24. The machine-readable medium of claim **23** further comprising instructions, which when implemented by one or more processors perform the following operations:
schedule the gaming data for use during the gaming based on the synchronization data; and
wherein accessing of the gaming data is based on scheduling of the gaming data.

25. A system comprising:
an optical detection module to optically detect an encoded pattern from source media;
a data decoding module to decode gaming data and associated synchronization data from the encoded pattern detected by the optical detection module; and
a synchronization module to synchronize the gaming data for use during gaming based on the synchronization data decoded by the data decoding module,
wherein synchronization of the gaming data enables the gaming to be synchronized to content provided by a signal source.

26. The system of claim **25**, further comprising:
a portion access module to access a portion of the gaming data decoded by the data decoding module based on the scheduling of the gaming data by the synchronization module; and
a content provider module to provide gaming content including the portion of the gaming data during the gaming.

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