Exhibit 2005
Zynga, Inc. v. Personalized Media Communications, LLC
Case IPR2013-00164 (SCM)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the *Inter Partes* Review of U.S. Patent No. 7,908,638

Trial No.: Not Yet Assigned

Issued: March 15, 2011

Filed: June 7, 1995

Inventors: John Christopher Harvey, *et al.*

Assignee: Personalized Media Communications LLC

Title: SIGNAL PROCESSING APPARATUS AND METHODS

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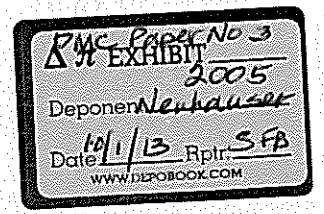
PETITION FOR *INTER PARTES* REVIEW UNDER 37 C.F.R. § 42.100

On behalf of Zynga Inc. ("Zynga" or "Petitioner") and in accordance with 35 U.S.C. § 311 and 37 C.F.R. § 42.100, *inter partes* review is respectfully requested for claims 1, 2, 3, 6, 11, 12, 13, and 15 of U.S. Patent No. 7,908,638 ("the Harvey '638 patent"), attached hereto as Exhibit 1001.

The undersigned representative of Petitioner authorizes the Patent Office to charge the $27,200 Petition Fee, along with any additional fees, to Deposit Account 501432, ref: 479204-620004. Eight claims are being reviewed, so no excess claim fees are required.



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I. Introduction

The Harvey '638 patent is currently being wielded by the patent owner, Personalized Media Communications, LLC ("PMC"), in an attempt to cover long-known computer programming and networking techniques that are far afield from the alleged invention described in the patent. (*See Personalized Media Communications, LLC v. Zynga Inc.,* U.S. District Court for the Eastern District of Texas, Civil Action No. 2:12-cv-68-JRG.) PMC's aggressive litigation campaign is made possible by an overly-expansive claim scope that results from a long and tortured prosecution history dating back to an original filing in November 1981, and includes approximately 300 related applications filed in 1995 in an effort to extend the patent term well beyond what is justifiable.

Most of the near 300 applications filed in 1995, including the application that matured into the Harvey '638 patent, were directed to television and radio technology, as described in the specification of the Harvey '638 patent. Also related to television and radio technology were most of the thousands of prior art references cited by the patent owner during prosecution, including a single IDS citing over 700 references.

The allowed claims, first added by amendment nearly five years after the Harvey '638 patent was filed in 1995 and almost 13 years after its 1987 priority date (*see* Ex. 1002, '638 File History, Supplemental Amendment dated May 23, 2000, at 1-13), are being asserted against online computer gaming technology in a way that extends far

beyond the television technology disclosed in the specification of the Harvey '638 patent and the prior art considered by the Patent Office. (*See, e.g.,* PMC Infringement Contentions against Zynga, attached as Ex. 1003.) This type of computer technology was well known before the 1987 priority date of the Harvey '638 patent, however, as demonstrated by the teachings of the Sitrick, Bakula, and Higgins references cited herein. Petitioner submits that had these more-relevant references been considered by the Patent Office during prosecution, at least claims 1, 2, 3, 6, 11, 12, 13, and 15 of the Harvey '638 patent would not have issued, and therefore this petition for *inter partes* review should be granted.

II. Grounds for Standing Pursuant to 37 C.F.R. § 42.104(a)

Petitioner certifies that the Harvey '638 patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting *inter partes* review challenging the patent claims on the grounds identified herein.

III. Background Information for the Harvey '638 Patent

A. Overview of the Harvey '638 Patent and Prosecution History

The Harvey '638 patent was filed on June 7, 1995, and issued on March 15, 2011. The Harvey '638 patent claims priority to a series of continuation and continuation-in-part applications dating back to November 3, 1981, but, as detailed below, is entitled to an effective filing date no earlier than September 11, 1987 (the filing date of U.S. Patent No. 4,965,825).

The Harvey '638 patent includes 290 columns of specification, all detailing various examples of a system for adding personalized content to a television or radio broadcast. (*See, e.g.*, Harvey '638 patent at col. 241, line 25 to col. 265, line 23, describing "Exotic Meals of India" television program; *see also id.* at col. 13, line 53 to col. 14, line 17, describing "Wall Street Week" television program.)

Similarly, the claims that were originally filed with the Harvey '638 patent in 1995 were also directed to television and radio broadcast technology. It was not until the addition of claims 18-55 by amendment in 2000 that claims bearing resemblance to the issued claims were first introduced in the application. (*See* Ex. 1002, '638 File History, Supplemental Amendment dated May 23, 2000, at 1-13.) More than ten years later, a Notice of Allowance and Examiner's Amendment were issued on October 18, 2010, allowing claims 18-20, 27-30, 32-36, 38, 39, 41, 42, and 47-54, and cancelling the remaining claims. (*See* Ex. 1004, '638 File History, Notice of Allowance.) The allowed claims were then renumbered and issued as claims 1-24 of the '638 patent.

B. The Earliest Possible Priority Date for Claims 1, 2, 3, 6, 11, 12, 13, and 15 of the Harvey '638 Patent Is September 11, 1987

PMC has conceded that the Harvey '638 patent is only entitled to priority to U.S. Application No. 07/096,096 (Patent No. 4,965,825) filed as a continuation-in-part on September 11, 1987, and not to the earlier priority date of November 3, 1981. Specifically, in documents filed in the related litigation, *Personalized Media Communications, LLC v. Zynga Inc.,* U.S. District Court for the Eastern District of

Texas, Civil Action No. 2:12-cv-68-JRG, PMC has admitted that the priority date for the claims at-issue can be no earlier than September 11, 1987. (Ex. 1005, Plaintiff's Disclosure of Asserted Claims and Infringement Contentions, at 3.) Accordingly, there is no dispute that claims 1, 2, 3, 6, 11, 12, 13, and 15 of the Harvey '638 patent should be afforded a priority date no earlier than September 11, 1987.

The September 11, 1987 priority date is also supported by patent owner admissions made during prosecution of the Harvey '638 patent. Specifically, in an Office Action dated September 5, 2002, the claims at issue were rejected under 35 U.S.C. § 112, ¶ 1, for failure to provide adequate written description support. (Ex. 1006, '638 File History, Office Action dated September 5, 2002, at 42-49.) To overcome this rejection, in a subsequent response, Applicants provided an Appendix B, which allegedly provided written description support by citing to pages 469-511 of the specification and the "Exotic Meals of India" example contained therein. (Ex. 1007, Amendment dated March 5, 2003, at Appendix B.) This portion of the specification was not included in any of the applications filed prior to the 1987 application. The Applicants acknowledged this, stating that "applicants have demonstrated specification support below only with respect to the 1987 specification." (*Id.* at 13.)

Further, counsel for Petitioner has reviewed the specifications of the Harvey applications filed prior to September 11, 1987, and these earlier specifications do not support the claims of the Harvey '638 patent. For example, the 1986 and 1981

specifications do not provide support for at least the following elements of independent claim 1: "storing first data which are subscriber specific data at said subscriber station," "computing second data at said subscriber station by processing said first data in accordance with said one or more instruct signals," and "transferring said portion of second data from said subscriber station to said one or more remote stations based on said subscriber input."

For at least these reasons, the Harvey '638 patent should be afforded a priority date no earlier than September 11, 1987.

IV. Identification of Challenge Pursuant to 37 C.F.R. § 42.104(b)

A. 37 C.F.R. § 42.104(b)(1): Claims for Which *Inter Partes* Review Is Requested

Inter Partes review is requested for claims 1, 2, 3, 6, 11, 12, 13, and 15 of the Harvey '638 patent.

B. 37 C.F.R. § 42.104(b)(2): The Prior Art and Specific Grounds on Which the Challenge to the Claims Is Based

Inter Partes review is requested in view of the following prior art references, none of which were considered during the prosecution of the Harvey '638 patent:

- U.S. Patent No. 4,572,509 to Sitrick ("Sitrick") (Exhibit 1008). Sitrick was filed on September 30, 1982, and issued on February 25, 1986. Sitrick is therefore prior art to the Harvey '638 patent under 35 U.S.C. § 102(b).

- U.S. Patent No. 4,204,206 to Bakula ("Bakula") (Exhibit 1009). Bakula was filed on August 30, 1977, and issued on May 20, 1980. Bakula is therefore prior art to the Harvey '638 patent under 35 U.S.C. § 102(b).
- U.S. Patent No. 5,270,922 to Higgins ("Higgins") (Exhibit 1010). Higgins was filed on June 27, 1991, claiming priority as a continuation of U.S. Application No. 06/626,339, filed on June 29, 1984. Higgins is therefore prior art to the Harvey '638 patent under 35 U.S.C. § 102(e).

The specific statutory grounds on which the challenge to the claims is based and the patents relied upon for each ground are as follows:

a) Claims 1, 2, 3, 6, 11, 12, 13, and 15 are anticipated by Sitrick under 35 U.S.C. § 102(b);

b) Claims 1, 2, 3, 6, 11, and 12 are anticipated by Bakula under 35 U.S.C. § 102(b);

c) Claims 1, 2, 3, 6, 11, 12, and 13 are anticipated by Higgins under 35 U.S.C. § 102(e);

d) Claims 2, 3, 13, and 15 are unpatentable under 35 U.S.C. § 103(a) over Sitrick in view of Bakula;

e) Claims 1, 2, 3, 6, 11, 12, 13, and 15 are unpatentable under 35 U.S.C. § 103(a) over Higgins in view of Sitrick; and

f) Claims 2, 3, 13, and 15 are unpatentable under 35 U.S.C. § 103(a) over Higgins in view of Sitrick and Bakula.

C. 37 C.F.R. § 42.104(b)(3): Claim Construction

Pursuant to 37 C.F.R. § 42.100(b), and solely for the purposes of this review, Petitioner construes the claim language such that the claims are given their broadest reasonable interpretation in light of the specification. Petitioner expressly reserves the right to argue a different claim construction in litigation for any term of the Harvey '638 patent as appropriate in that proceeding.

D. 37 C.F.R. § 42.104(b)(4): How the Construed Claims are Unpatentable

A detailed explanation of how claims 1, 2, 3, 6, 11, 12, 13, and 15 are unpatentable is set forth below at Section V.

E. 37 C.F.R. § 42.104(b)(5): Supporting Evidence

An Appendix of Exhibits supporting this Petition is attached. Included at Exhibit 1011 is a Declaration of Charles J. Neuhauser, Ph.D., under 37 C.F.R. § 1.68.

V. There Is a Reasonable Likelihood That at Least One Claim of the Harvey '638 Patent Is Unpatentable

A. Claims 1, 2, 3, 6, 11, 12, 13, and 15 Are Anticipated by Sitrick (U.S. Patent No. 4,572,509)

1. Claim 1

The Sitrick patent discloses a distributed game system including a plurality of video game consoles that are networked to enable a synchronized, global gaming

environment. (Sitrick at Abstract.) As recited in claim 1, Sitrick discloses storing first "subscriber specific data" at a "subscriber station" (*i.e.*, a user console.) The first subscriber specific data includes an image, color, or shape used to represent a user of the console in the global gaming environment. (*Id.* at col. 1, lines 45-49.)

Sitrick discloses an information transmission of game data (*i.e.*, "one or more instruct signals") received from another user terminal of the network (*i.e.*, "from said one or more remote stations") to the subscriber station. (*Id.* at col. 8, lines 15-29.) The game data are instruct signals that are processed at the subscriber station in order to synchronize the game data at the subscriber station with that of the other user terminals of the network. (*Id.*)

Sitrick further discloses "computing second data at said subscriber station by processing said first data in accordance with said one or more instruct signals." For example, the second data may include data used to form the overall image that is displayed at the subscriber station, which includes the user's image, color, or shape within the global gaming environment (*i.e.*, the first subscriber specific data processed in accordance with game data from other consoles). (*Id.* at col. 5, lines 24-44.)

Sitrick also discloses "processing said one or more instruct signals" (*i.e.*, the instruct signals of the game data) "to cause at least a portion of a combined medium presentation to be outputted at an output device at said subscriber station, wherein said outputted portion of combined medium presentation includes (i) at least one of an

image and a sound received at said subscriber station from a remote transmitter station and (ii) a portion of said second data," as recited in claim 1. For example, the combined medium presentation can include multiple elements, including (1) the image, color, or shape associated with the user within the global game environment (*i.e.*, the second user-specific data), and (2) an image received from a remote transmitter station that is applicable to all users (*e.g.*, an image of a racetrack received from a master controller or another user console). (*Id.* at col. 11, lines 16-51.) The instruct signals thus enable a combined medium presentation that includes personalized elements integrated into images applicable to all users.

Sitrick further discloses "receiving a subscriber input in response to said outputted portion of a combined medium presentation." The input may be, for example, an input at a joystick of the subscriber station intended to cause the image, color, or shape associated with the user to move across the screen. (*Id.* at col. 8, lines 15-29.) Based on the input, signals including game data, game type, game ID, game visuals, and game score are transferred to other consoles. (*Id.*) The transferred signal may include "change data" related to the movement of the user's personalized image, color, or shape within the global game environment, and thus includes a portion of the second data used to form the combined medium presentation. (*See, e.g.*, Sitrick at col. 16, lines 38-46.) Sitrick thus also discloses "transferring said portion of second data

from said subscriber station to said one or more remote stations based on said subscriber input."

The claim chart below demonstrates in detail how Sitrick anticipates the method recited in claim 1.

1. A method of communicating subscriber station information from a subscriber station to one or more remote stations
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 230-233.) "Each individual game console can communicate with all others, by any of the above described communications schemes, or other communications schemes." (*See, e.g.*, 8:15-29.)
(1) storing first data which are subscriber specific data at said subscriber station;
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 234-235.) "*The video game system has a video image input means, 200 of FIG. 1B, which provides the necessary hardware to input and digitize a visual image of the user of the individual game apparatus 1000.* This mode may be selected either by the switch 105 or by input from the keyboard 110, and positioning of the video image input means 200 can be controlled via means of the joy stick 100 with the video image output being displayed on the display screen 140 to provide visual feedback to the user of the individual game apparatus of the image being digitized. *When the desired image has been digitized and fed back for display to the user, the user can provide an input stimulus, either from the keyboard or via the switch 105, to cause the storage in the memory of the apparatus 1000 of the visual image of the user.* Alternatively, the individual game apparatus 1000 can have the necessary visual recognition intelligence to automatically scan the video image input means across the user and select a video image for storage. Alternatively, the user can create images via the video input image means and/or the inputs of the keyboard 110, joy stick 100, and switch 105, which can then be selectively associated with one of a plurality of predetermined imagery identifier segments, to create an audiovisual display. The user created visual display, either of the user or of the user created visual imagery, can then represent that user in the video game audiovisual presentation, either for the stand-alone game, or for a multiuser video game. *Thus, the user can create his or her own spacecraft, race car, or other preselected character functions (e.g., subimage identifier segments) which can then be incorporated into the overall video game*

audiovisual presentation in combination with a predefined set of complimentary audiovisual imagery segments according to a predefined set of game rules." (*See, e.g.*, 11:16-51, emphasis added.)
(2) receiving and detecting at said subscriber station, in an information transmission received from said one or more remote stations, one or more instruct signals;
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 236-237.) "In another embodiment, each game individual console has its own computer and communications management controller. *Each game individual console then periodically communicates signals representing, for example, game I.D., game type, game data, etc., representing changes to its I/O structure affecting game visuals, score, game play, etc.* Each individual game console can communicate with all others, by any of the above described communications schemes, or other communications schemes. Thus, all games individual consoles simultaneously adapt to the changed data, and the need for a master controller can be functionally distributed back to each of the individual game consoles." (*See, e.g.*, 8:15-29, emphasis added.)
(3) computing second data at said subscriber station by processing said first data in accordance with said one or more instruct signals;
Sitrick discloses this claim element. *See* Sitrick at 8:15-29, reproduced above for step (2) of claim 1, and *see* Ex. 1011, ¶¶ 238-240. "The display apparatus 1200 can include a controller apparatus for coordinating data received from the plurality of user stations interconnected thereto. Alternatively, each of the user consoles 1000 can contain control circuitry for coordinating global action, and the display apparatus 1200 can contain only a minimum of interface circuitry." (*See, e.g.*, 4:39-45.) "Communication can be bidirectional, such that each game can provide data back to the master controller 3200A, and such that each game can request special viewing, such as quadrant, exploded, global, local, etc." (*See, e.g.*, 8:6-10.)
(4) processing said one or more instruct signals to cause at least a portion of a combined medium presentation to be displayed at an output device at said subscriber station, wherein said displayed portion of combined medium presentation includes (i) at least one of an image and a sound received at said subscriber station from a remote transmitter station and (ii) a portion of said second data;
Sitrick discloses these claim elements. (*See* Ex. 1011, ¶¶ 241-244.) "The user created visual display, either of the user or of the user created visual imagery, can then represent that user in the video game audiovisual presentation, either for the stand-alone game, or for a multiuser video game. *Thus, the user can create his*

or her own spacecraft, race car, or other preselected character functions (e.g., subimage identifier segments) which can then be incorporated into the overall video game audiovisual presentation in combination with a predefined set of complimentary audiovisual imagery segments according to a predefined set of game rules." (*See, e.g.*, 11:16-51, emphasis added.) "As a single identity game system, each display, or the master display, is capable of displaying the composite display resulting from the totality of peer game interaction. In an alternate embodiment, the display is also capable of displaying individual peer game information. Means are provided for intercommunicating individual peer game information, either globally or individually to selected one(s) of the peer games. Means are provided for generating global and individual peer game displays to the selected display device(s)." (*See, e.g.*, 1:34-43.) "As illustrated, the communication switch 105 allows for bidirectional voice communication via the speaker/microphone 130 to other selected user stations and consoles. The keyboard 110 may be utilized for providing user coordinate data, communications identification data, and other user input data for communications to the game system electronics." (*See, e.g.*, 3:10-16.)
(5) receiving a subscriber input in response to said outputted portion of a combined medium presentation; and
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 245-246.) "The keyboard 110 may be utilized for providing user coordinate data, communications identification data, and other user input data for communications to the game system electronics." (*See, e.g.*, 3:10-16.)
(6) transferring said portion of second data from said subscriber station to said one or more remote stations based on said subscriber input.
Sitrick discloses this claim element. *See* Sitrick at 8:15-29, reproduced above for step (2) of claim 1, and *see* Ex. 1011, ¶¶ 247-248. "In operation, the operating system provides a master game executive/monitor. The master game executive/monitor provides numerous functions, including processing individual consoles inputs into identifying data packets, coordinating all individual game user actions into global equivalent action data, mapping global equivalent action into global mapping space, updating game action display according to one of a plurality of predetermined response sequences responsive to the data packets and mapping space, and outputting display information to individual displays or to the one master display." (*See, e.g.*, 9:67-10:12.) "The system as in claim 40 further characterized in that all selected ones of said

plurality of individual game apparatus bidirectionally communicate, and wherein said data coupled among said selected ones of said game apparatus represents change data responsive to variations in the status of game play for a selected one of said individual game apparatus as compared to the others of said selected individual game apparatus, wherein said data coupled among the selected ones of said game apparatus is comprised of change data only." (*See, e.g.*, 16:38-46.)

2. Claim 2

As recited in claim 2, Sitrick discloses "wherein said detected one or more instruct signals include one or more of a software module and a data module, said method further comprises the steps of: receiving and storing said one or more of a software module and a data module; and subsequently presenting a combined or sequential output of mass medium programming and one or more of data generated in accordance with said software module and data included in said data module." A subscriber station receives and stores one or more instruct signals including game data (*i.e.*, a data module) and audiovisual works that define the presentation of information on the video display unit VDU (*i.e.*, a software module). (Sitrick at col. 8, lines 15-29, and col. 5, lines 24-44.) The second data is generated at the subscriber station by processing the first user-specific data in accordance with the data module and the software module. (*Id.* at col. 8, line 15-29.) The generated second data is included in the combined medium presentation, as described above with respect to claim 1.

The combined medium presentation also includes mass medium programming. Sitrick discloses a "distributed system of video games" that links users at various remote locations. (*Id.* at col. 1, line 5, and col. 10, lines 34-53.) Thus, for example, the

non-user-specific images of the combined medium presentation (*e.g.*, the racetrack image applicable to all users) are mass medium programming intended to reach a large number of remote consoles.

The claim chart below demonstrates in detail how Sitrick anticipates the method recited in claim 2.

2. The method of claim 1, wherein said detected one or more instruct signals include one or more of a software module and a data module, said method further comprising the steps of: receiving and storing said one or more of a software module and a data module; and
Sitrick discloses this claim element. *See* Sitrick at 8:15-29, reproduced above for step (2) of claim 1, and *see* Ex. 1011, ¶¶ 249-253.) "The master controller 3000 additionally comprises a memory for providing a data output, *and means for sequencing through one of a plurality of predetermined audiovisual works responsive to the data output and the plurality of user control signals from the user game apparatus inputs of V.G.l to V.G.N. The master controller can provide unique user activated selection of audiovisual imagery responsive to the users selected control signals.* For example, means can be provided for displaying a radar function for tracking other selected users movements and actions, or alternatively for providing an exploded view of a selected quadrant or subquadrant of previously or presently displayed imagery." (*See, e.g.*, 5:24-44.) "Means are provided for intercommunicating individual peer game information, either globally or individually to selected one(s) of the peer games. Means are provided for generating global and individual peer game displays to the selected display device(s)." (*See, e.g.*, 1:39-41.)
subsequently presenting a combined or sequential output of mass medium programming and one or more of data generated in accordance with said software module and data included in said data module.
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 254-256.) "As a single identity game system, each display, or the master display, can display the composite display resulting from the totality of peer game interaction. Alternatively, the display can provide individual peer game information. Individual peer game information can be communicated either globally or individually to and from selected

one of the peer games." (*See, e.g.*, Abstract.)

"Alternatively, the present invention can be utilized to provide or interactive game play as to allow an individual player apparatus console to remotely participate in a multiuser video game network. *Thus, for example, a person with a modern input apparatus and an audiovisual cable link-up could tap into a centrally located game center data base.* Any practical means of communication can be utilized. *For example, satellite (or microwave) communications linkage can provide the necessary broad bandwidth to allow totally digital communications to provide for the use of digital video transmission. More conventionally, analog video transmission (carrier modulated) communications can be utilized in conjunction with cable or air-wave broadcast medium to link the audiovisual presentation to the remote player.* The remote player user apparatus can be linked via any practical medium to the master controller." (*See, e.g.*, 10:34-53, emphasis added.)

"Thus, the user can create his or her own spacecraft, race car, or other preselected character functions (e.g., subimage identifier segments) which can then be incorporated into the overall video game audiovisual presentation in combination with a predefined set of complimentary audiovisual imagery segments according to a predefined set of game rules." (*See, e.g.*, 11:41-51.)

3. Claim 3

As recited in claim 3, Sitrick discloses "identifying at least one or more of a software module and a data module in said one or more instruct signals." For example, the signals communicated among user consoles and between user consoles and the master controller represent "instruct signals." Software modules and data modules are identified because in some embodiments of Sitrick, the master controller 3100 transfers requested audio visual works and related data from the master controller to the connected consoles based on the instruct signals. (*Id.* at col. 5, lines 8-14.)

Sitrick further discloses "initiating communications with at least one of said one or more remote stations in accordance with said one or more of a software module and a

data module." As explained above, aspects of the combined medium presentation are generated by processing the first user-specific data in accordance with the data module and the software module. In response to the combined medium presentation, an input from the user is received at the subscriber station, where the input is effective to initiate communications and transfer the second data from the subscriber station to the one or more remote stations. (*Id.* at col. 3, lines 10-16.) The communications are thus in accordance with the game's display that is enabled by the one or more of a software module and a data module.

The claim chart below demonstrates in detail how Sitrick anticipates the method recited in claim 3.

3. The method of claim 2, further having at least one step from the group consisting of: identifying at least one of said one or more of a software module and a data module in said one or more instruct signals; initiating communications with at least one of said one or more remote stations in accordance with said one or more of a software module and a data module; and performing at least some portion of said step of transferring in accordance with said software module if said software module is included in said detected one or more instruct signals.
Sitrick discloses the limitations of claim 3, as explained below and above in Section V.A.1 (Claim 1) and Section V.A.2 (Claim 2). *See* Ex. 1011, ¶¶ 257-264. "The master controller 3000 provides means for controlling the displayed visuals of selected game apparatus on the video display unit responsive to respective user responsive inputs of the selected game apparatus V.G.1 to V.G.N., and according to one of a plurality of predetermined logical sequences." (*See, e.g.,* 5:8-14.) "The master controller can provide unique user activated selection of audiovisual imagery responsive to the users selected control signals. For example, means can be

provided for displaying a radar function for tracking other selected users movements and actions, or alternatively for providing an exploded view of a selected quadrant or subquadrant of previously or presently displayed imagery." (*See, e.g.,* 5:34-44.)

4. Claim 6

Claim 6 includes limitations similar to those of claim 1 and is anticipated by Sitrick for reasons similar to those detailed above for claim 1. The claim chart below demonstrates in detail how Sitrick anticipates the method recited in claim 6.

6. A method of communicating subscriber station information from a subscriber station to one or more remote stations, comprising the steps of:
Sitrick discloses the preamble of claim 6, as explained above in Section V.A.1 (Claim 1, Preamble). (*See* Ex. 1011, ¶¶ 265-268.)
receiving an information transmission at a transmission station, wherein said transmission station comprises a programmable controller, a switch, a computer, a memory, a receiver and a transmitter;
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 269-270.) "As illustrated, the communication switch 105 allows for bidirectional voice communication via the speaker/microphone 130 to other selected user stations and consoles. The keyboard 110 may be utilized for providing user coordinate data, communications identification data, and other user input data for communications to the game system electronics." (*See, e.g.*, 3:10-16.) "The following functional description of each of the layers is general, applicable to both the individual console units 3100 and the master controller 3200. The bottom layer of each unit (3001 [3201]) comprises the *central processing unit, memory, and various support logic circuitry. Nonvolatile memory and/or magnetic storage medium may also be provided at this layer. The operating system (3010 or 3210) functionally maps the hardware to function translation, and provides an executive program, and monitor program, for overall coordination of the unit (3100 or 3200).* The communications management layer (3020, 3220) performs information format translation, packing and unpacking of data, error correction and checking, and *other utility functions necessary to support communications*. As illustrated, the communications management unit communicates with the operating system and data management layers adjacent to it, as well as communicating with the communications management units of other consoles. The data management layer (3030 or 3230)

performs the functions of file management, data base management, disk access and decode management, and can alternatively or additionally perform other disk access and data management functions. A local storage area (3040 and 3240) provides a data buffer for temporarily storing data for communications to adjacent layers, and in the case of the master controller 3200 for communications to the disk 3110. *The next layer is an applications program layer (3060 in the individual consoles, and 3260 in the master controller 3200) which performs the function of game logic definition, data input and output manipulation and translation, and video output generation.*" (*See, e.g.*, 6:42-7:6, emphasis added.) "The hardware 3300 is comprised of a central processing unit, memory manager, memory, storage means such as disk or tape, user control input/output interface, a display controller and coordinator, and can include from one to a plurality of display apparatus." (*See, e.g.*, 9:5-9.) "A master controller 3200 such as that in FIG. 3, having an associated disk drive 3110, is illustrated coupling to a gateway multiplexer 3800 which selectively couples the signal output from the master controller 3200 to each of the remote video game consoles 3100, V.G.1 to V.G.N., as illustrated in FIG. 7." (*See, e.g.*, 9:13-19.) "Communication can be bidirectional, such that each game can provide data back to the master controller 3200A, and such that each game can request special viewing, such as quadrant, exploded, global, local, etc." (*See, e.g.*, 8:6-10.)
generating one or more instruct signals at said transmission station, said one or more instruct signals being effective to cause said subscriber station to compute second subscriber specific data by processing first subscriber specific data stored at said subscriber station and transfer said second subscriber specific data to said one or more remote stations based on a subscriber response to a combined medium presentation output at an output device at said subscriber station, said combined medium presentation including (i) at least one of an image and a sound received at said subscriber station from a remote source and (ii) a portion of said second subscriber specific data; and
Sitrick discloses these limitations of claim 6, as explained above in Section V.A.1 (Claim 1, steps (1) – (6)). *See also* Ex. 1011, ¶¶ 271-278.
transmitting said information transmission and said one or more instruct signals from said transmission station to said subscriber station.
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 279-281.) "Each game individual console then periodically communicates signals representing, for example, game I.D., game type, game data, etc., representing changes to its I/O

structure affecting game visuals, score, game play, etc." (*See, e.g.*, 8:16-27; *see also* 3:10-16, reproduced above for "receiving . . ." claim limitation.)

5. Claim 11

As recited in claim 11, Sitrick discloses "receiving generally applicable information in respect of said combined medium presentation at said transmission station." Specifically, Sitrick discloses a combined medium presentation including personalized, user-specific images and non-user-specific images. (Sitrick at col. 11, lines 16-51.) The non-user-specific images displayed in the combined medium presentation include generally applicable information, *e.g.*, personalized player images from other consoles (*e.g.*, the colors or shapes that represent the other players). The generally applicable information further includes the audiovisual works used as the basis for game play. (*Id.* at col. 5, lines 24-44.)

Sitrick further discloses "processing a first portion of said generally applicable information in order to generate or assemble at least some of said one or more instruct signals at said transmission station." This first portion includes the player images from other consoles. For example, the master controller (or individual consoles in a fully distributed system) processes the player images together with other signals received from consoles to produce "global equivalent action data." (*Id.* at col. 9, line 67 to col. 10, line 12.) The results of the processing by the master controller are signals sent to synchronize the play at consoles (*i.e.*, instruct signals).

Sitrick also discloses "transmitting a second portion of said generally applicable information from said transmission station to said subscriber station." For example, the audiovisual works that form the basis for game play at all consoles is a second portion of the generally applicable information that is transmitted from the transmission station to the subscriber station. (*Id.* at col. 5, lines 31-44.)

The claim chart below demonstrates in detail how Sitrick anticipates the method recited in claim 11.

11. The method of claim 6, further comprising the steps of: receiving generally applicable information in respect of said combined medium presentation at said transmission station; processing a first portion of said generally applicable information in order to generate or assemble at least some of said one or more instruct signals at said transmission station; and transmitting a second portion of said generally applicable information from said transmission station to said subscriber station.
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 282-292.) "For example, color, size or shape can be used to distinguish users. In one embodiment a digitized image of each user's face is used as the distinguishable representation." (*See, e.g.*, 1:45-49.) "The user created visual display, either of the user or of the user created visual imagery, can then represent that user in the video game audiovisual presentation, either for the stand-alone game, or for a multiuser video game. Thus, the user can create his or her own spacecraft, race car, or other preselected character functions (e.g., subimage identifier segments) which can then be incorporated into the overall video game audiovisual presentation in combination with a predefined set of complimentary audiovisual imagery segments according to a predefined set of game rules." (*See, e.g.*, 11:15-51.) "The master game executive/monitor provides numerous functions, including processing individual consoles inputs into identifying data packets, *coordinating all individual game user actions into global equivalent action data, mapping global*

equivalent action into global mapping space, updating game action display according to one of a plurality of predetermined response sequences responsive to the data packets and mapping space, and outputting display information to individual displays or to the one master display." (*See, e.g.*, 9:67-10:10, emphasis added.)

"The master controller 3000 additionally comprises a memory for providing a data output, and means for sequencing through one of a plurality of predetermined audiovisual works responsive to the data output and the plurality of user control signals from the user game apparatus inputs of V.G.1 to V.G.N. The master controller can provide unique user activated selection of audiovisual imagery responsive to the users selected control signals. For example, means can be provided for displaying a radar function for tracking other selected users movements and actions, or alternatively for providing an exploded view of a selected quadrant or subquadrant of previously or presently displayed imagery." (*See, e.g.*, 5:31-44.)

"Referring to FIG. 3, a video game system is illustrated comprising a plurality of user consoles V.G.1 to V.G.N., a display apparatus, or a plurality of display apparatus (V.D.U.'s), a memory, and logical sequencing means. The user consoles are as described above with reference to FIGS. 1A-1C, and can provide at least one user control for providing signals responsive to activation by the user of the user control. The display apparatus, V.D.U., are as described above with reference to FIGS. 2A-2D, and provide means for producing game imagery representative of at least some of the user control signals and responsive to the logical sequencing means. As shown in FIG. 3, the logical sequencing means is distributed between the master controller and the game apparatus user consoles V.G.1 to V.G.N. The amount of centralized or distributed allocation of this function is again a design variable. The logical sequencing means sequences through one of a plurality of audiovisual works responsive to the data output of the memory and to the plurality of user control signals, thereby producing game action on the display apparatus according to a predetermined set of game rules as stored in the memory." (*See, e.g.*, 6:3-25.)

6. Claim 12

Claim 12 includes limitations similar to those of claim 2 and is anticipated by Sitrick for reasons similar to those detailed above for claim 2.

12. The method of claim 6, further comprising the step of transmitting mass medium programming from said transmission station to said subscriber station to serve as a basis for outputting said combined medium presentation.

Sitrick discloses the limitations of claim 12, as explained above in Section V.A.2 (Claim 2). *See also* Ex. 1011, ¶¶ 293-295.

7. Claim 13

As recited in claim 13, Sitrick discloses "wherein said one or more instruct signals include one or more of a software module and a data module." *See supra* at Section V.A.2. Sitrick further discloses "modifying said one or more of a software module and a data module at said transmission station by incorporating data that serves as a basis for outputting said combined medium presentation at said subscriber station; and transmitting the modified one or more of a software module and a data module to said subscriber station." For example, Sitrick discloses embodiments where a master controller 3200 calculates "global game change data" based on inputs received from networked user consoles. (*See, e.g.*, Sitrick at col. 8, lines 2-6.) This information is combined with the audiovisual work (*i.e.*, the software module) and is provided to the user consoles (*i.e.*, is transmitted to said subscriber station) as a basis for the combined medium presentation. One example of information that a master controller might combine with the audiovisual work is the distinguishable representation unique to each individual player. (*Id.* at col. 11, lines 16-51.) Thus, the software module or data module is modified at the transmission station by incorporating data that serves as a basis for outputting the combined medium presentation.

The claim chart below demonstrates in detail how Sitrick anticipates the method recited in claim 13.

13. The method of claim 6, wherein said one or more instruct signals include one or more of a software module and a data module,
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 296-299.) Sitrick discloses this limitation of claim 13, as explained above in Section V.A.2 (Claim 2).
said method further comprising the steps of: modifying said one or more of a software module and a data module at said transmission station by incorporating data that serve as a basis for outputting said combined medium presentation at said subscriber station; and transmitting the modified one or more of a software module and a data module to said subscriber station.
Sitrick discloses these claim elements. (*See* Ex. 1011, ¶¶ 300-304.) "For example, video management layer 3260 of the master controller 3200 can act as a display composer performing global and special functions while leaving local display composing functions to the local video management layers 3060 of the consoles 3100." (*See, e.g.*, 7:11-16.) "In operation, the operating system provides a master game executive/monitor. The master game executive/monitor provides numerous functions, including processing individual consoles inputs into identifying data packets, coordinating all individual game user actions into global equivalent action data, mapping global equivalent action into global mapping space, updating game action display according to one of a plurality of predetermined response sequences responsive to the data packets and mapping space, and outputting display information to individual displays or to the one master display." (*See, e.g.,* 9:67-10:12.) "The user created visual display, either of the user or of the user created visual imagery, can then represent that user in the video game audiovisual presentation, either for the stand-alone game, or for a multiuser video game. Thus, the user can create his or her own spacecraft, race car, or other preselected character functions (e.g., subimage identifier segments) which can then be incorporated into the overall video game audiovisual presentation in combination with a predefined set of complimentary audiovisual imagery segments according to a predefined set of game rules." (*See, e.g.*, 11:41-51.) "The communications management layer (3020, 3220) performs information format translation, packing and unpacking of data, error correction and checking, and other utility functions necessary to support communications. As illustrated, the communications management unit communicates with the operating system and data

management layers adjacent to it, as well as communicating with the communications management units of other consoles." (*See, e.g.,* 6:52-61.)

8. Claim 15

As recited in claim 15, Sitrick discloses "incorporating into the modified one or more of a software module and a data module an identifier which enables said subscriber station to initiate communications with at least one of said one or more remote stations associated with said identifier." Specifically, Sitrick discloses that the master controller 3200 incorporates an "identifier" into communications sent to consoles. (Sitrick at col. 10, lines 28-33.) This identifier includes at least the identification necessary for consoles to communicate with the master controller and other consoles. (*Id.* at col. 3, lines 10-16.) For example, the communications layer (CAM) 3020, 3220 is able to pass messages between the master controller and the consoles. (*Id.* at col. 6, lines 52-61.)

The claim chart below demonstrates in detail how Sitrick anticipates the method recited in claim 15.

15. The method of claim 13, further comprising the step of incorporating into the modified one or more of a software module and a data module an identifier which enables said subscriber station to initiate communications with at least one of said one or more remote stations associated with said identifier.
Sitrick discloses this claim element. (*See* Ex. 1011, ¶¶ 305-307.) "As illustrated, the communication switch 105 allows for bidirectional voice communication via the speaker/microphone 130 to other selected user stations and consoles. The keyboard 110 may be utilized for providing user coordinate data, communications identification data, and other user input data for communications to

the game system electronics." (*See, e.g.,* 3:10-16.)

"The communications management layer (3020, 3220) performs information format translation, packing and unpacking of data, error correction and checking, and other utility functions necessary to support communications. As illustrated, the communications management unit communicates with the operating system and data management layers adjacent to it, as well as communicating with the communications management units of other consoles." (*See, e.g.,* 6:52-61.)

"The communications manager can provide the functions of interfacing between individual games and the master controller, providing bidirectional communications of user control, I/D, and status signals, packing and unpacking data to and from transmission, etc." (*See, e.g.*, 10:28-33.)

B. Claims 1, 2, 3, 6, 11, and 12 Are Anticipated by Bakula (U.S. Patent No. 4,204,206)

1. Claim 1

Bakula discloses a video display system including a dual screen mode for displaying multiple elements from one or more input sources simultaneously. As recited in claim 1, Bakula discloses storing first "subscriber specific data" at an editor terminal (*i.e.*, "at said subscriber station.") The first user-specific data includes a news story originated at the editor terminal. (Bakula at col. 1, lines 19-23.)

Bakula further discloses "receiving and detecting at said subscriber station, in an information transmission received from said one or more remote stations, one or more instruct signals." Bakula describes a transmission of a terminal control program from a host computer (*i.e.*, a remote station) to the editor terminal. (*Id.* at col. 5, lines 10-14.) The terminal control program includes instruct signals and data that are used to program the editor terminal, thus enabling text editing and display features at the terminal. (*Id.*)

Bakula also discloses "computing second data at said subscriber station by processing said first data in accordance with said one or more instruct signals." Second data is computed at the editor terminal by processing the first subscriber specific data in accordance with the text editing and display features enabled via the terminal control program. For example, the first user-specific data may be a news story originated at the editor terminal, and the second data may be an edited version of the news story, where the edits are made using the text-editing and display features enabled by the terminal control program. (*Id.* at col. 4, lines 10-13.)

Bakula further discloses "processing said one or more instruct signals to cause at least a portion of a combined medium presentation to be outputted at an output device at said subscriber station, wherein said outputted portion of combined medium presentation includes (i) at least one of an image and a sound received at said subscriber station from a remote transmitter station and (ii) a portion of said second data." For example, the combined medium presentation in Bakula can include two news stories: (1) the edited version of the news story originated at the editor terminal (*i.e.*, the second data), and (2) a news story received at the editor terminal from a remote transmitter station (*e.g.*, a news story received from Associated Press or United Press International news sources). (*Id.* at col. 1, lines 50-68.) The instruct signals and data of the terminal control program thus enable a dual screen mode, such that a writer can edit a first news

story displayed on a first portion of the display screen while simultaneously viewing a second news story on a second portion of the display screen. (*Id.*)

Bakula further discloses "receiving a subscriber input in response to said outputted portion of a combined medium presentation; and transferring said portion of second data from said subscriber station to said one or more remote stations based on said subscriber input." The input is an activation of a "Send" key at the editor terminal, which causes the edited version of the news story included in the combined medium presentation (*i.e.*, the second data) to be transferred to the host computer. (*Id.* at col. 4, lines 13-14.)

The claim chart below demonstrates in detail how Bakula anticipates the method recited in claim 1.

1. A method of communicating subscriber station information from a subscriber station to one or more remote stations, said method comprising the steps of:
Bakula discloses this claim element. (*See* Ex. 1011, ¶¶ 143-147.) "Once the writer is satisfied with the story, he will actuate a send key and coded data representative of the story will be supplied through the system multiplexer MX to the host computer HC which will then store the story in a particular storage location at the data base storage DBS for subsequent retrieval." (*See, e.g.*, 3:62-67.)
(1) storing first data which are subscriber specific data at said subscriber station;
Bakula discloses this claim element. (*See* Ex. 1011, ¶¶ 148-150.) "These terminals may be employed by writers who originate stories by entering text through the terminal's keyboard." (*See, e.g.*, 1:19-23.) "The video generator receives and stores character data obtained from the main memory M and accesses this data and converts it to a time sequence of CRT unblinking pulses." (*See, e.g.*, 20:55-58.)
(2) receiving and detecting at said subscriber station, in an information transmission

received from said one or more remote stations, one or more instruct signals;
Bakula discloses this claim element. (*See* Ex. 1011, ¶¶ 151-153.) "The host computer will now download program instructions to the terminal for storage in the main memory M. The terminal is now programmed to perform its intended operation, i.e., such as a sports editor terminal." (*See, e.g.*, 5:3-14.) "The bootstrap memory BS includes a programmable read only memory (PROM). This is a non-volatile storage of a bootstrap program which, when executed by the CPU during the power-up sequence of the terminal, causes transmission of a message by way of the data bus DB to the host computer HC requesting a download of the terminal control program. The downloaded program is stored in the terminal's main memory M which includes storage capacity for the text data to be displayed on the CRT as well as working memory for use by the CPU. The main memory M may take the form of a 16K 8 bit word random access memory." (*See, e.g.*, 5:55-66.)
(3) computing second data at said subscriber station by processing said first data in accordance with said one or more instruct signals;
Bakula discloses this claim element. (*See* Ex. 1011, ¶¶ 154-156.) "The editor will now view the story on his display screen and make whatever editing corrections he requires, using the proper editing controls on the keyboard." (*See, e.g.*, 4:10-13.) "In such case, the editor will now employ the keyboard KB for transmitting a code to the host computer to ask for a particular story. Under the program control, the information provided by the keyboard KB will appear on the data bus line and then be transmitted by way of the input output control IO to the host computer. The host computer will then retrieve the requested story from the data base storage DBS and supply the story to the terminal. Under program control, the terminal will route the story for storage in the main memory M. At this point, the main memory M will store both program instructions for internal operation of the processor as well as the data representing the text to be displayed on the CRT. The data characters stored in main memory are read and routed to the character generator where the data characters are decoded to obtain the proper video dot pattern for display on the CRT screen. The main memory is accessed under the control of a direct memory access control circuit DMA. This circuit operates in response to control signals from the character generator CG and fetches data from the memory with the data then being supplied to the character generator by way of a data bus DB. The data received by the character generator is then employed to provide video patterns representative of data characters for display on the cathode ray tube CRT." (*See, e.g.*,

5:14-40.)
(4) processing said one or more instruct signals to cause at least a portion of a combined medium presentation to be displayed at an output device at said subscriber station, wherein said displayed portion of combined medium presentation includes (i) at least one of an image and a sound received at said subscriber station from a remote transmitter station and (ii) a portion of said second data;
Bakula discloses these claim elements. (*See* Ex. 1011, ¶¶ 157-160.) "A more desirable editing mode of operation would be for the editor to have the facilities at his display terminal to simultaneously display the two stories on different areas of a common display screen. This then would provide a dual screen or dual column mode of operation. *It would further be desirable in such a dual screen mode of operation that the editor have the facilities at the terminal to scroll or otherwise edit one of the stories without acting upon the other story. In this way then the editor could use one of the stories as a base and then modify it in accordance with what he likes about the other story or the editor might modify both stories.*" (*See, e.g.*, 1:50-61, emphasis added.) "[T]he terminal has in addition to the full screen mode, a dual screen and a dual column mode. In these latter two modes, the screen is divided in half so that as shown in FIG. 7, the left half of the screen includes 35 characters for each line a two character blank spacing and then 35 additional characters on the right half of the screen. Thus, the screen may be considered as divided into a left column 202 and a right column 204, separated by a two character space 206. In the dual screen mode of operation, two different stories from different data sources may be displayed." (*See, e.g.*, 15:17-33.)
(5) receiving a subscriber input in response to said outputted portion of a combined medium presentation; and
Bakula discloses this claim element. *See* Bakula at 3:62-67, reproduced above for "Preamble" claim element, and *see* Ex. 1011, ¶¶ 161-162.
(6) transferring said portion of second data from said subscriber station to said one or more remote stations based on said subscriber input.
Bakula discloses this element of claim 1. (*See, e.g.*, *supra* at element (5).) *See also* Ex. 1011, ¶¶ 163-165.

2. Claim 2

As recited in claim 2, Bakula discloses "wherein said detected one or more instruct signals include one or more of a software module and a data module, said

method further comprising the steps of: receiving and storing said one or more of a software module and a data module; and subsequently presenting a combined or sequential output of mass medium programming and one or more of data generated in accordance with said software module and data included in said data module." Specifically, Bakula discloses that an editor terminal receives and stores one or more instruct signals including the terminal control program used to program the editor terminal, which includes program instructions (*i.e.*, a software module) and various data required to operate the terminal (*i.e.*, a data module). (Bakula at col. 4, line 66 to col. 5, line 14; col. 22, lines 30-36; and col. 5, lines 10-12.) Furthermore, news stories are downloaded from the host computer to the RAM M of the editing terminal (*i.e.*, a data module). (*Id.* at col. 5, lines 20-22.) The second data is generated at the editor terminal by processing the first user-specific data in accordance with the terminal control program and the various data required to operate the terminal. (*Id.* at col. 4, lines 10-13.) The generated second data is included in the combined medium presentation, as described above for claim 1. (*Id.* at col. 15, lines 17-33.)

The combined medium presentation also includes mass medium programming. Bakula discloses a distributed network system used to link a host computer and editor terminals at various remote locations. (*See id.* at Fig. 1.) Thus, for example, generally applicable information included in the combined medium presentation (*e.g.*, news stories received from Associated Press and United Press International sources) is mass

medium programming intended to reach a large number of remote editor terminals. (*Id.* at col. 1, lines 47-51.)

The claim chart below demonstrates in detail how Bakula anticipates the method recited in claim 2.

2. The method of claim 1, wherein said detected one or more instruct signals include one or more of a software module and a data module, said method further comprising the steps of: receiving and storing said one or more of a software module and a data module; and
Bakula discloses this claim element. (*See* Ex. 1011, ¶¶ 166-170.) "Facilities are provided so that each editing terminal may on power-up communicate with the host computer which then downloads a control program into the terminal and is stored in the terminal's main memory such as read/write random access memory (RAM)." (See, e.g., Abstract) "These data input sources provide stories and the like which may be inputted under the control of the host computer HC by way a system multiplexer MX for storage in the appropriate file at the data base storage DBS." (See, e.g., 3:52-56.) "An editor, through the use of his editing terminal, may call up a story entered into the data base storage from either one of his writers or from one of the data input sources DIS. In this case, the proper keys on the terminal's keyboard will be actuated and the story will be retrieved from the data base storage and supplied under the control of the host computer HC to the terminal requesting the story. The editor will now view the story on his display screen and make whatever editing corrections he requires, using the proper editing controls on the keyboard." (See, e.g., 4:3-13. "The host computer will then retrieve the requested story from the data base storage DBS and supply the story to the terminal." (See, e.g., 5:20-22.) "The terminal identification is supplied by the data bus DB to the host computer HC by way of the input/output control IO. The host computer will now download program instructions to the terminal for storage in the main memory M. The terminal is now programmed to perform its intended operation, i.e., such as a sports editor terminal. In such case, the editor will now employ the keyboard KB for transmitting a code to the host computer to ask for a particular story. Under the program control, the information provided by the keyboard KB will appear on the data bus line and then be transmitted

by way of the input output control IO to the host computer. The host computer will then retrieve the requested story from the data base storage DBS and supply the story to the terminal. Under program control, the terminal will route the story for storage in the main memory M. At this point, the main memory M will store both program instructions for internal operation of the processor as well as the data representing the text to be displayed on the CRT." (*See, e.g.*, 5:8-27.)
subsequently presenting a combined or sequential output of mass medium programming and one or more of data generated in accordance with said software module and data included in said data module.
Bakula discloses this claim element. (*See* Ex. 1011, ¶¶ 171-174.) "The system disclosed in FIG. 1 also includes data input sources DIS which may include, for example, wire lines from which UPI and AP stories are obtained. Other input sources may include a paper tape source or an optical (OCR) reader or a modem." (*See, e.g.*, 1:47-51.) "The data characters stored in main memory are read and routed to the character generator where the data characters are decoded to obtain the proper video dot pattern for display on the CRT screen. The main memory is accessed under the control of a direct memory access control circuit DMA. This circuit operates in response to control signals from the character generator CG and fetches data from the memory with the data then being supplied to the character generator by way of a data bus DB. The data received by the character generator is then employed to provide video patterns representative of data characters for display on the cathode ray tube CRT." (*See, e.g.*, 5:28-40.)

3. Claim 3

As recited in claim 3, Bakula discloses "identifying at least one of said one or more of a software module and a data module in said one or more instruct signals." The data module and the software module are identified at the subscriber station in order to enable the text editing and display features of the editor terminal. (Bakula at col. 5, lines 10-14; *id.* at col. 22, lines 30-36.)

Bakula further discloses "initiating communications with at least one of said one or more remote stations in accordance with said one or more of a software module and a data module." As explained above, aspects of the combined medium presentation are generated by processing the first user-specific data in accordance with the terminal control program and the various data of the software module and the data module, respectively. (*Id.* at col. 4, lines 10-13.) In response to the combined medium presentation, an input from the user is received at the editor terminal, where the input is effective to initiate communications and transfer the second data from the subscriber station to the one or more remote stations. (*Id.* at col. 4, lines 13-14.) The initiation of communications and transferring of data are thus in accordance with aspects of the editor terminal's visual display enabled by the one or more of a software module and a data module.

The claim chart below demonstrates in detail how Bakula anticipates the method recited in claim 3.

3. The method of claim 2, further having at least one step from the group consisting of: identifying at least one of said one or more of a software module and a data module in said one or more instruct signals; initiating communications with at least one of said one or more remote stations in accordance with said one or more of a software module and a data module; and performing at least some portion of said step of transferring in accordance with said software module if said software module is included in said detected one or more instruct signals.
Bakula discloses these claim elements. *See* Bakula at 3:62-67, reproduced above for

"Preamble" claim element of claim 1, and *see* Ex. 1011, ¶¶ 175-182.) "Facilities are provided so that each editing terminal may on power-up communicate with the host computer which then downloads a control program into the terminal and is stored in the terminal's main memory such as read/write random access memory (RAM)." (See, e.g., Abstract.) "This causes, under program control, an interrogation of the bootstrap memory BS which then supplies to the data bus DB some data in the form of a terminal identification. The bootstrap memory is a programmable read only memory or other non-volatile storage facility. The terminal identification is supplied by the data bus DB to the host computer HC by way of the input/output control IO. The host computer will now download program instructions to the terminal for storage in the main memory M. The terminal is now programmed to perform its intended operation, i.e., such as a sports editor terminal. In such case, the editor will now employ the keyboard KB for transmitting a code to the host computer to ask for a particular story. Under the program control, the information provided by the keyboard KB will appear on the data bus line and then be transmitted by way of the input output control IO to the host computer. The host computer will then retrieve the requested story from the data base storage DBS and supply the story to the terminal. Under program control, the terminal will route the story for storage in the main memory M. At this point, the main memory M will store both program instructions for internal operation of the processor as well as the data representing the text to be displayed on the CRT." (*See, e.g.*, 5:3-27.) "All normal text and function keyboarding done by the editor is in the active take. Additional command keys include a send command key 52 which is used to initiate transmission of data to the host computer HC." (*See, e.g.*, 8:31-33.)

4. Claim 6

Claim 6 includes limitations similar to those of claim 1 and is anticipated by Bakula for reasons similar to those detailed above for claim 1. The claim chart below demonstrates in detail how Bakula anticipates the method recited in claim 6.

6. A method of communicating subscriber station information from a subscriber station to one or more remote stations, comprising the steps of:
Bakula discloses the preamble of claim 6, as explained above in Section V.B.1 (Claim 1, Preamble). *See also* Ex. 1011, ¶¶ 183-186.
receiving an information transmission at a transmission station, wherein said

transmission station comprises a programmable controller, a switch, a computer, a memory, a receiver and a transmitter;
Bakula discloses this claim element. (*See* Ex. 1011, ¶¶ 187-189.) "The host computer will then retrieve the requested story from the data base storage DBS and supply the story to the terminal." (*See, e.g.*, 5:20-22.) "The system disclosed in FIG. 1 also includes data input sources DIS which may include, for example, wire lines from which UPI and AP stories are obtained. Other input sources may include a paper tape source or an optical (OCR) reader or a modem." (*See, e.g.*, 1:47-51.) "FIG. 1 is a generalized block diagram illustrating a system to which the present invention applies. *Here there is illustrated a host computer HC which, for example, may take the form of a PDP-11/35 computer with 64K words of memory obtained from Digital Equipment Corporation.* Associated with the host computer is a large data base storage DBS and which may take the form of disc files, such as two 2.4 million byte moving head discs. The system disclosed in FIG. 1 also includes data input sources DIS which may include, for example, wire lines from which UPI and AP stories are obtained. Other input sources may include a paper tape source or an optical (OCR) reader or a modem. These data input sources provide stories and the like which may be inputted under the control of the host computer HC by way a *system multiplexer MX* for storage in the appropriate file at the data base storage DBS. Also associated with the system is a plurality of editing terminals T1, T2, through TN. Each editing terminal takes the form of a processor driven video display terminal having a keyboard and a display screen. With such a system, a news writer may use an editing terminal to create a story which is displayed on the display screen. Once the writer is satisfied with the story, he will actuate a send key and coded data representative of the story will be supplied through the system multiplexer MX to the host computer HC which will then store the story in a particular storage location at the data base storage DBS for subsequent retrieval. Other stories may be obtained from the data input sources DIS and routed by host computer HC for storage in the data base storage DBS." (*See, e.g.*, 3:39-4:2, emphasis added.)
generating one or more instruct signals at said transmission station, said one or more instruct signals being effective to cause said subscriber station to compute second subscriber specific data by processing first subscriber specific data stored at said subscriber station and transfer said second subscriber specific data to said one or more remote stations based on a subscriber response to a combined medium presentation output at an output device at said subscriber station, said combined medium

presentation including (i) at least one of an image and a sound received at said subscriber station from a remote source and (ii) a portion of said second subscriber specific data; and
Bakula discloses these elements of claim 6, as explained above in Section V.B.1 (Claim 1, steps (1) – (6)). *See also* Ex. 1011, ¶¶ 190-195.
transmitting said information transmission and said one or more instruct signals from said transmission station to said subscriber station.
Bakula discloses this claim element. (*See* Ex. 1011, ¶¶ 196-199.) "This causes, under program control, an interrogation of the bootstrap memory BS which then supplies to the data bus DB some data in the form of a terminal identification. The bootstrap memory is a programmable read only memory or other non-volatile storage facility. The terminal identification is supplied by the data bus DB to the host computer HC by way of the input/output control IO. The host computer will now download program instructions to the terminal for storage in the main memory M. The terminal is now programmed to perform its intended operation, i.e., such as a sports editor terminal. In such case, the editor will now employ the keyboard KB for transmitting a code to the host computer to ask for a particular story. Under the program control, the information provided by the keyboard KB will appear on the data bus line and then be transmitted by way of the input output control IO to the host computer. The host computer will then retrieve the requested story from the data base storage DBS and supply the story to the terminal. Under program control, the terminal will route the story for storage in the main memory M. At this point, the main memory M will store both program instructions for internal operation of the processor as well as the data representing the text to be displayed on the CRT." (*See, e.g.*, 5:3-27.) "An editor, through the use of his editing terminal, may call up a story entered into the data base storage from either one of his writers or from one of the data input sources DIS. In this case, the proper keys on the terminal's keyboard will be actuated and the story will be retrieved from the data base storage and supplied under the control of the host computer HC to the terminal requesting the story. The editor will now view the story on his display screen and make whatever editing corrections he requires, using the proper editing controls on the keyboard." (See, e.g., 4:3-13.)

5. Claim 11

As recited in claim 11, Bakula discloses "receiving generally applicable information in respect of said combined medium presentation at said transmission

station." For example, a combined medium presentation is disclosed that includes a news story originated by a user at the editor terminal and a news story from the Associated Press or United Press International sources. (Bakula at col. 3, lines 47-50.) The news story from the Associated Press or United Press International sources displayed in the combined medium presentation includes generally applicable information that is received at the transmission station from "data input sources (DIS) which may include, for example, wire lines." (*Id.* at col. 3, lines 48-51.) Further generally applicable information received at the transmission station includes the program instructions and data of the terminal control program, which can be used to program any of the editor terminals. (*Id.* at col. 5, lines 10-14; col. 22, lines 30-36.)

Bakula further discloses "processing a first portion of said generally applicable information in order to generate or assemble at least some of said one or more instruct signals at said transmission station." For example, the processing of the first portion may relate to processing by the host computer necessary to transfer the terminal program from the data base system DBS to the system multiplexer MX and finally to the editing terminal. (*See id.* at col. 5, lines 8-14.)

Bakula also discloses "transmitting a second portion of said generally applicable information from said transmission station to said subscriber station." For example, news stories from the Associated Press are transmitted from the host computer (*i.e.*, transmission station) to the editor terminal. (*Id.* at col. 4, lines 3-13.)

The claim chart below demonstrates in detail how Bakula anticipates the method recited in claim 11.

11. The method of claim 6, further comprising the steps of: receiving generally applicable information in respect of said combined medium presentation at said transmission station; processing a first portion of said generally applicable information in order to generate or assemble at least some of said one or more instruct signals at said transmission station; and transmitting a second portion of said generally applicable information from said transmission station to said subscriber station.
Bakula discloses these claim elements. (*See* Ex. 1011, ¶¶ 200-207.) "The system disclosed in FIG. 1 also includes data input sources DIS which may include, for example, wire lines from which UPI and AP stories are obtained. Other input sources may include a paper tape source or an optical (OCR) reader or a modem." (*See, e.g.*, 1:47-51.) "An editor, through the use of his editing terminal, may call up a story entered into the data base storage from either one of his writers or from one of the data input sources DIS. In this case, the proper keys on the terminal's keyboard will be actuated and the story will be retrieved from the data base storage and supplied under the control of the host computer HC to the terminal requesting the story. The editor will now view the story on his display screen and make whatever editing corrections he requires, using the proper editing controls on the keyboard." (See, e.g., 4:3-13.) "The terminal identification is supplied by the data bus DB to the host computer HC by way of the input/output control IO. The host computer will now download program instructions to the terminal for storage in the main memory M. The terminal is now programmed to perform its intended operation, i.e., such as a sports editor terminal." (*See, e.g.*, 5:3-27.)

6. Claim 12

Claim 12 includes limitations similar to those of claim 2 and is anticipated by Bakula for reasons similar to those detailed above for claim 2.

12. The method of claim 6, further comprising the step of transmitting mass medium

programming from said transmission station to said subscriber station to serve as a basis for outputting said combined medium presentation.
Bakula discloses the limitations of claim 12, as explained above in Section V.A.2 (Claim 2). *See also* Ex. 1011, ¶¶ 208-211.

C. Claims 1, 2, 3, 6, 11, 12, and 13 Are Anticipated by Higgins (U.S. Patent No. 5,270,922)

1. Claim 1

The Higgins patent discloses "[a] data processing and communication system [that] distributes and displays financial market ticker" information at a plurality of subscriber work stations. (Higgins at Abstract.) As recited in claim 1, Higgins discloses "storing first data which are subscriber specific data at said subscriber station." The first subscriber specific data includes a list of securities (*i.e.*, stock symbols) of interest to a user and a list of "upside and downside limits" specified by the user. (*Id.* at col. 4, line 34 to col. 5, line 36, and col. 5, lines 11-15.)

Higgins further discloses "receiving and detecting at said subscriber station, in an information transmission received from said one or more remote stations," (*i.e.*, an area-serving computer or a branch computer), "one or more instruct signals." The one or more instruct signals include "stock symbol, price, volume and related information." (*Id.* at col. 8, lines 39-43.)

Higgins also discloses "computing second data at said subscriber station by processing said first data in accordance with said one or more instruct signals." For example, a stock trade execution received at the subscriber work station (*i.e.*, an instruct

signal) may cause an update of tickers 142 and 147, limit 151, monitor 154, and quick-quote 157 fields of a display device at the subscriber work station, where the updated information used to form the display is the second data. (*Id.* at col. 5, line 5 to col. 6, lines 13-15.) For example, upon receipt of the instruct signal, the limit 151 portion of the display is updated with a stock symbol and price for a security that was above or below a user-specified limit. (*Id.*) Thus, the second data may include stock symbols, prices, and other information used to form the display at the work station.

Higgins further discloses "processing said one or more instruct signals to cause at least a portion of a combined medium presentation to be outputted at an output device at said subscriber station, wherein said outputted portion of combined medium presentation includes (i) at least one of an image and a sound received at said subscriber station from a remote transmitter station and (ii) a portion of said second data." The stock symbol, price, volume, and related information of the one or more instruct signals in Higgins enable a combined medium presentation to be outputted on the display device of the subscriber work station. For example, the combined medium presentation can include multiple types of stock information received in the one or more instruct signals, including: (1) the stock symbol, updated price information, and limit information for the securities of interest to the user (*i.e.*, the second data), and (2) a non-user specific stock ticker, *e.g.*, the complete New York Stock Exchange (NYSE) ticker, received from a remote transmitter station (*e.g.*, a remote ticker plant). (*Id.* at col. 4,

line 34 to col. 5, line 36.) The updated information of the one or more instruct signals thus enable a multi-window display that includes both personalized, user-specific data and general, non-user-specific data.

Higgins also discloses "receiving a subscriber input in response to said outputted portion of a combined medium presentation; and transferring said portion of second data from said subscriber station to said one or more remote stations based on said subscriber input." For example, the user views the combined medium presentation and may wish to receive historical price information for a stock included in the display (*i.e.*, a "full quote"). (*Id.* at col. 3, line 67 to col. 4, line 2.) At a keyboard of the subscriber work station, the user inputs a stock symbol for the security of interest, which causes the stock symbol included in the combined medium presentation (*e.g.*, a portion of the second data) to be transferred to an area-serving or branch computer. (*Id.* at col. 6, lines 46-52.)

The claim chart below demonstrates in detail how Higgins anticipates the method recited in claim 1.

1. A method of communicating subscriber station information from a subscriber station to one or more remote stations
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 67-69.) "As a matter of overall system philosophy, when a work station $110_{i,j,k}$ seeks current price information for a security not then within its memory 111, it seeks such information from its associated branch computer $90_{j,k}$. If the information is not available at the branch level, the branch computer $90_{j,k}$ inquires of the area computer 50_k via connecting modems 91 and 52 and communications link 83." (*See, e.g.*, 3:48-55.)

(1) storing first data which are subscriber specific data at said subscriber station;
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 70-71.) "As alluded to above, it is one of the offices of the instant invention to store within each work station $110_{i,j,k}$ and in particular in the RAM memory 111 there located, information characterizing the securities of interest to that broker or other work station user. *To that end, the stored computer program automatically stores in the variable content RAM memory 111 of the subject work station securities identification and price data corresponding to a limited, predetermined number (e.g., 300 for purposes of specificity only) of securities whose price information was last requested at that work station.*" (*See, e.g.*, 5:48-59, emphasis added.) "A display field 149 forms a scrolling presentation of the news reported via the source 24; and a field 151 in the particular display format shown contains limit-exceeding information. The entry illustrated in FIG. 2 identifies a security (MNO) which has last traded (255/8) outside (lower) a bound (257/8) stored in RAM 111. Upside and downside limits are often used by brokers and investors as buy or sell conditions and are of interest both to the broker and to his customers owning those securities." (*See, e.g.*, 5:5-40.)
(2) receiving and detecting at said subscriber station, in an information transmission received from said one or more remote stations, one or more instruct signals;
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 72-73.) "As new trades in the monitored 300 security population are reported via the ticker plant 35, communications link receiver 98, demultiplexer 105 and work station central processor 103 automatically change the stored price information in RAM 111." (*See, e.g.*, 5:65-6:8.) "Examining the flow chart of FIG. 4, the first step 301 reads into the computer CPU the next incoming stock symbol, price, volume and related information (ticker message) originated by ticker plant 35, and furnished to the work station $110_{i,j,k}$ via its corresponding branch apparatus 70,80,81 via cable 103 and demultiplexer 105." (*See, e.g.*, 8:38-63.)
(3) computing second data at said subscriber station by processing said first data in accordance with said one or more instruct signals;
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 74-75.) "As new trades in the monitored 300 security population are reported via the ticker plant 35, communications link receiver 98, demultiplexer 105 and work station central processor 103 automatically change the stored price information in RAM 111." (*See,*

e.g., 5:65-6:8.)

"The stored security price information also automatically changes the price presentation for the respective securities wherever a security appears in any of the multiple windows (fields) of the display 107. That is, new price information for any particular stock will change in each window in which that security appears. For example, a price change in the price of the equity whose symbol is assumed to be ABC for the illustrative display of FIG. 2 causes changes in at least the MONITOR field 153, the NYSE Ticker 142, and in the QUICK-QUOTE field 157 all of which derive their refreshed information from the work station data base in RAM 111. If the last trade exceeded a limit, an appropriate message would be generated as well in field 151." (*See, e.g.*, 6:1-15.)

"Assuming the stock to be one maintained in the limit table (supporting display field 151 of FIG. 2), test 312 determines whether the trade being reported exceeds any limit bound. If it does not (N.0. output of test 312), system control passes to test 320 for ticker processing. If a limit is exceeded (YES output of test 312), a limit-exceeding message appears in the field 151 of FIG. 2 advising the user of the appropriate circumstances. It will be readily apparent that a price may be tested against upper and/or lower bounds as desired for the investment strategy of the user, or of the customers of the user." (*See, e.g.*, 8:64-9:7.)

(4) processing said one or more instruct signals to cause at least a portion of a combined medium presentation to be displayed at an output device at said subscriber station, wherein said displayed portion of combined medium presentation includes (i) at least one of an image and a sound received at said subscriber station from a remote transmitter station and (ii) a portion of said second data;

Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 76-78.)

"The composite presentation has a first field 142 which simply comprises the complete New York Stock Exchange ticker (a series of stock transaction messages for stock executions on that exchange). The field includes a sequence of messages each formed of a stock symbol 143 followed by the volume (in hundreds of shares) 144 and the trade price 145. The price 145 may have its first digit deleted, and volume may be omitted on reasonably busy days to obviate undue ticker delays. Examining, for example, the first trade constituent in the ticker data field 142 in display 107, one viewing the ticker would know that 5,000 shares of the security having an exchange symbol ABC traded at a price of 90(3/4).

The multiple window display format chosen by the user via keyboard 112 includes a second ticker ('TICKER-2') specified under the user control. In accordance with varying aspects of the present invention, the user may format his own personal ticker

by establishing criteria which a trade message from ticker plant 35 must satisfy to pass to the TICKER-2 window field 147 for viewing. The criteria, stored in RAM 111, may specify trades in only a specific enumerated list of securities, trades from specific exchange(s), and/or so forth." (*See, e.g.*, 4:47-5:1.)

"[A] field 151 in the particular display format shown contains limit-exceeding information. The entry illustrated in FIG. 2 identifies a security (MNO) which has last traded (255/8) outside (lower) a bound (257/8) stored in RAM 111. Upside and downside limits are often used by brokers and investors as buy or sell conditions and are of interest both to the broker and to his customers owning those securities." (*See, e.g.*, 5:5-40.)

(5) receiving a subscriber input in response to said outputted portion of a combined medium presentation; and

Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 79-80.)

"To illustrate specific operation of the dynamic storage reallocation algorithm, assume that a broker or other user at the work station $110_{i,j,k}$ illustrated in FIG. 1B wishes a quotation on any desired security. He enters the corresponding symbol for the security as by his signal entry keyboard 112 (functional step 201 in FIG. 3)." (*See, e.g.*, 6:46-52.)

"To illustrate specific operation of the dynamic storage reallocation algorithm, assume that a broker or other user at the work station $110_{i,j,k}$ illustrated in FIG. 1B wishes a quotation on any desired security. He enters the corresponding symbol for the security as by his signal entry keyboard 112 (functional step 201 in FIG. 3). Test 205 then examines the LRU table to determine whether the newly entered stock symbol is already in the LRU list. If it is (YES output of test 205), test 206 examines the command message entered through keyboard 112 to determine whether the user wishes a full quote (e.g., including historical and derived (e.g., price-earnings ratio) information not locally available at the work station 110 or the more common so-called quick quote price and volume information which is locally available. If a full quote is desired, the work station 110 obtains the historical information from the historical information memory 95 in the branch computer $90_{j,k}$ via the communicating demultiplexer 105. If desired, historical information of varying levels of detail may be distributed between the branch and area RAMs 95 and 60." (*See, e.g.*, 6:46-67.)

(6) transferring said portion of second data from said subscriber station to said one or more remote stations based on said subscriber input.

Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 81-83.)

"As a matter of overall system philosophy, when a work station $110_{i,j,k}$ seeks current

price information for a security not then within its memory 111, it seeks such information from its associated branch computer $90_{j,k}$. If the information is not available at the branch level, the branch computer $90_{j,k}$ inquires of the area computer 50_k via connecting modems 91 and 52 and communications link 83." (*See, e.g.*, 3:48-55.)

"To illustrate specific operation of the dynamic storage reallocation algorithm, assume that a broker or other user at the work station $110_{i,j,k}$ illustrated in FIG. 1B wishes a quotation on any desired security. He enters the corresponding symbol for the security as by his signal entry keyboard 112 (functional step 201 in FIG. 3)." (*See, e.g.*, 6:46-52.)

2. Claim 2

As recited in claim 2, Higgins discloses "wherein said detected one or more instruct signals include one or more of a software module and a data module, said method further comprising the steps of: receiving and storing said one or more of a software module and a data module; and subsequently presenting a combined or sequential output of mass medium programming and one or more of data generated in accordance with said software module and data included in said data module." Higgins discloses that a subscriber work station receives and stores one or more instruct signals including a data module (*e.g.*, "stock symbol, price, volume, and related information"). (Higgins at col. 8, lines 39-41; *id.* at col. 5, line 67 to col. 6, line 1.) The second data is generated at the subscriber work station by processing the first user-specific data in accordance with the stock symbol, price, volume, and related information of the data module. (*Id.*) The generated second data is included in the combined medium presentation, as described above with respect to claim 1.

The combined medium presentation also includes mass medium programming. Higgins discloses a hierarchy of networked computers that includes "a potentially large number of subscriber work stations." (*Id.* at col. 2, line 12.) Thus, for example, the generally applicable stock information in the combined medium presentation (*e.g.*, the NYSE ticker) is mass medium programming intended to reach a large number of subscriber work stations.

The claim chart below demonstrates in detail how Higgins anticipates the method recited in claim 2.

2. The method of claim 1, wherein said detected one or more instruct signals include one or more of a software module and a data module, said method further comprising the steps of: receiving and storing said one or more of a software module and a data module; and
Higgins discloses these claim elements. (*See* Ex. 1011, ¶¶ 85-86.) "As new trades in the monitored 300 security population are reported via the ticker plant 35, communications link receiver 98, demultiplexer 105 and work station central processor 103 automatically change the stored price information in RAM 111." (*See, e.g.*, 5:65-6:8.) "Examining the flow chart of FIG. 4, the first step 301 reads into the computer CPU the next incoming stock symbol, price, volume and related information (ticker message) originated by ticker plant 35, and furnished to the work station $110_{i,j,k}$ via its corresponding branch apparatus 70,80,81 via cable 103 and demultiplexer 105." (*See, e.g.*, 8:38-43.) "RAM 111 may also contain programs or program portions." (*See, e.g.*, 2:25-26.) "More specifically, it is an object of the present invention to provide apparatus and methodology to communicate and display information useful for securities brokers, investors, and others concerned with financial markets; to provide multiple viewing windows to display diverse and/or related ticker and other market information; and which permits interactive user control at system microprocessor governed work stations." (*See, e.g.*, 1:17-25.)

subsequently presenting a combined or sequential output of mass medium programming and one or more of data generated in accordance with said software module and data included in said data module.
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 87-89.) "In particular, trading information (e.g., execution prices and volume, and quotations) are supplied by the New York Stock Exchange 28 to a ticker plant 35. Also supplied to ticker plant 35 is comparable trading information from the several so-called regional exchanges 30_1 through 30_n. Other, domestic and worldwide information may be included as well. The output of the ticker plant is information characterizing stock trade executions at the respective exchanges, as well as bid and asked quotation information." (*See, e.g.*, 2:44-53.) "As a final source of information for the system of FIG. 1, one or more source level 10 news wire source(s) 24 supply financial news via land lines 25 to the various area and branch computers 50 and 90 and, via the branch computers, to the various work stations 110. Illustrative of currently available news wire sources are those provided by Dow Jones and Reuters. Alternatively, the news information furnished by source 24 can be multiplexed and radiated with the output of ticker plant 35 for distribution to area, branch and work station computers." (*See, e.g.*, 4:10-20.)

3. Claim 3

As recited in claim 3, Higgins discloses "identifying at least one of said one or more of a software module and a data module in said one or more instruct signals." Higgins discloses that an instruct signal received at the subscriber work station includes a data module including a stock symbol, price, and volume. (Higgins at col. 8, lines 39-41.) The data module is identified at the work station in order to update the price information stored at the work station, such that the combined medium presentation can include up-to-date price information. (*Id.* at col. 5, line 65 to col. 6, line 13.)

Higgins further discloses "initiating communications with at least one of said one or more remote stations in accordance with the data module." Aspects of the combined

medium presentation are generated by processing the first user-specific data in accordance with the stock symbol, price, volume, and related information of the data module. (*Id.*) In response to the combined medium presentation, an input from the user is received at the subscriber work station, where the input is effective to initiate communications and transfer the user-specific data from the work station to one or more remote stations. (*Id.* at col. 3, line 67 to col. 4, line 2; col. 6, lines 46-52.) The communications are in accordance with the display that is enabled by the data module.

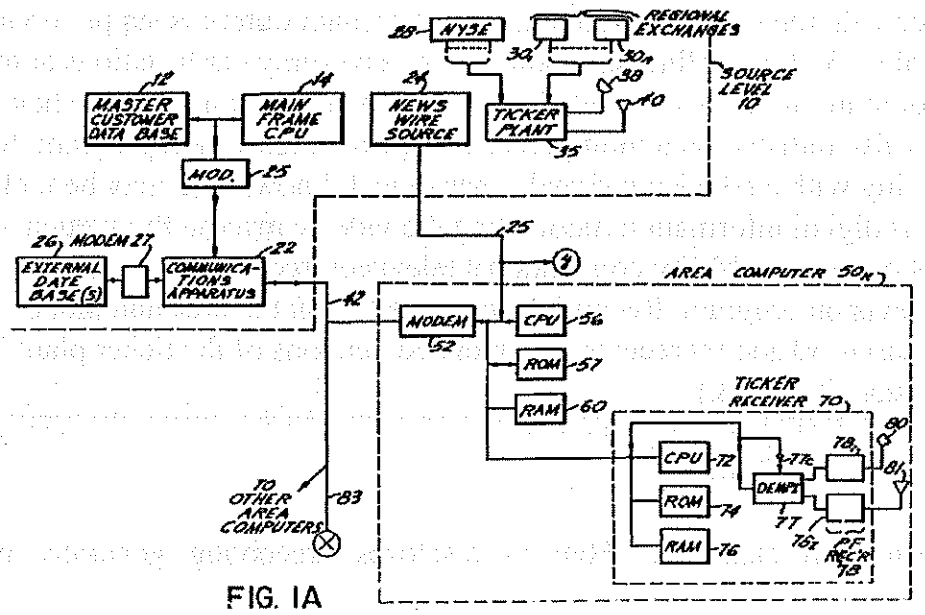
The claim chart below demonstrates in detail how Higgins anticipates the method recited in claim 3.

3. The method of claim 2, further having at least one step from the group consisting of: identifying at least one of said one or more of a software module and a data module in said one or more instruct signals; initiating communications with at least one of said one or more remote stations in accordance with said one or more of a software module and a data module; and performing at least some portion of said step of transferring in accordance with said software module if said software module is included in said detected one or more instruct signals.
Higgins discloses these limitations of claim 3, as explained above in Section V.C.1 (Claim 1, step (6)) and Section V.C.2 (Claim 2). *See also* Ex. 1011, ¶¶ 91-96.

4. Claim 6

Claim 6 includes limitations similar to those of claim 1 and is anticipated by Higgins for reasons similar to those detailed above for claim 1. The claim chart below demonstrates in detail how Higgins anticipates the method recited in claim 6.

6. A method of communicating subscriber station information from a subscriber

station to one or more remote stations, comprising the steps of:
Higgins discloses the preamble of claim 6, as explained above in Section V.C.1 (Claim 1, Preamble). *See also* Ex. 1011, ¶¶ 98-99.
receiving an information transmission at a transmission station, wherein said transmission station comprises a programmable controller, a switch, a computer, a memory, a receiver and a transmitter;
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 100-102.) "[T]he ticker plant output is supplied via a microwave uplink 38 for satellite distribution to receive-only earth stations at the area and branch computer locations 50 and 90." (See, e.g., 2:48-61.)      FIG. 1A "The work station $110_{i,j,k}$ also includes a program containing memory 109, e.g., a read only (ROM) device and variable content memory 111, e.g., a random access (RAM) unit." (*See, e.g.*, 2:18-21.)
generating one or more instruct signals at said transmission station, said one or more instruct signals being effective to cause said subscriber station to compute second subscriber specific data by processing first subscriber specific data stored at said subscriber station and transfer said second subscriber specific data to said one or more remote stations based on a subscriber response to a combined medium presentation output at an output device at said subscriber station, said combined medium presentation including (i) at least one of an image and a sound received at said subscriber station from a remote source and (ii) a portion of said second subscriber

specific data; and
Higgins discloses these limitations of claim 6, as explained above in Section V.C.1 (Claim 1, steps (1) – (6)). *See also* Ex. 1011, ¶¶ 103-107.
transmitting said information transmission and said one or more instruct signals from said transmission station to said subscriber station.
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 108-110.) "As new trades in the monitored 300 security population are reported via the ticker plant 35, communications link receiver 98, demultiplexer 105 and work station central processor 103 automatically change the stored price information in RAM 111." (See, e.g., 5:65-6:1.) "In accordance with the present invention, the ticker plant output is supplied via a microwave uplink 38 for satellite distribution to receive-only earth stations at the area and branch computer locations 50 and 90. For redundant transmission, the ticker information is also radiated on a multiplexed basis with a television program. Such data multiplexing with a television signal is per se well known and may be included, for example, as digital information modulating the video carrier in the vertical retrace interval to not be recoverable by conventional television receivers tuned to the underlying television program. Receiving equipment 70 at the area and branch computer locations 50 and 90 receives the radiated versions of the ticker plant 35 output." (See, e.g., 2:58-3:3.)

5. Claim 11

As recited in claim 11, Higgins discloses "receiving generally applicable information in respect of said combined medium presentation at said transmission station." Higgins describes a combined medium presentation including personalized, user-specific stock information and non-user-specific stock information. The non-user-specific stock information included in the combined medium presentation includes generally applicable information (*e.g.*, "the complete New York Stock Exchange ticker" and news from wire sources 24). (Higgins at col. 4, lines 48-49; *id.* at col. 4, lines 10-20.) The generally applicable information further includes a stock symbol, price,

volume, and related information for any particular stock. (*Id.* at col. 8, lines 39-41.) The generally applicable information is received at an area-serving computer or branch computer (*i.e.*, a transmission station) from a ticker plant 35 or a news wire source 24. (*Id.* at col. 2, lines 58-61.)

Higgins also discloses "processing a first portion of said generally applicable information in order to generate or assemble at least some of said one or more instruct signals at said transmission station." For example, Higgins discloses that the branch computer processes data from the ticker plant to provide stock trade execution and trade information to the work stations. (*Id.* at col. 8, lines 38-43.)

Higgins further discloses "transmitting a second portion of said generally applicable information from said transmission station to said subscriber station" (*e.g.*, financial news from wire lines is passed to work stations from branch computers). (*Id.* at col. 4, lines 10-20.)

The claim chart below demonstrates in detail how Higgins anticipates the method recited in claim 11.

11. The method of claim 6, further comprising the steps of: receiving generally applicable information in respect of said combined medium presentation at said transmission station;
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 112-113.) "Stock trade executions, quotations and other ticker plant information is communicated in parallel to a hierarchy of system data processing terminals, e.g., those located at area, branch and individual work station locations. Storage media at the several system data processing levels extracts and stores data base information of differing purport and completeness for the disseminated data to support the system

work station users." (See, e.g., 1:37-45.) "As a final source of information for the system of FIG. 1, one or more source level 10 news wire source(s) 24 supply financial news via land lines 25 to the various area and branch computers 50 and 90 and, via the branch computers, to the various work stations 110. Illustrative of currently available news wire sources are those provided by Dow Jones and Reuters. Alternatively, the news information furnished by source 24 can be multiplexed and radiated with the output of ticker plant 35 for distribution to area, branch and work station computers." (*See, e.g.*, 4:10-20.)
processing a first portion of said generally applicable information in order to generate or assemble at least some of said one or more instruct signals at said transmission station; and
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 114-115.) "Examining the flow chart of FIG. 4, the first step 301 reads into the computer CPU the next incoming stock symbol, price, volume and related information (ticker message) originated by ticker plant 35, and furnished to the work station 110i,j,k via its corresponding branch apparatus 70,80,81 via cable 103 and demultiplexer 105." (See, e.g., 8:38-43.)
transmitting a second portion of said generally applicable information from said transmission station to said subscriber station.
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 116-118.) "As a final source of information for the system of FIG. 1, one or more source level 10 news wire source(s) 24 supply financial news via land lines 25 to the various area and branch computers 50 and 90 and, via the branch computers, to the various work stations 110. Illustrative of currently available news wire sources are those provided by Dow Jones and Reuters. Alternatively, the news information furnished by source 24 can be multiplexed and radiated with the output of ticker plant 35 for distribution to area, branch and work station computers." (4:10-20.)

6. Claim 12

Claim 12 includes limitations similar to those of claim 2 and is anticipated by Higgins for reasons similar to those detailed above for claim 2.

12. The method of claim 6, further comprising the step of transmitting mass medium programming from said transmission station to said subscriber station to serve as a basis for outputting said combined medium presentation.

Higgins discloses the limitations of claim 12, as explained above in Section V.A.2 (Claim 2). *See also* Ex. 1011, ¶¶ 120-122.

7. Claim 13

As recited in claim 13, Higgins discloses "wherein said one or more instruct signals include one or more of a software module and a data module" *See supra* at Section V.C.2. Higgins further discloses "modifying said one or more of a software module and a data module at said transmission station by incorporating data that serves as a basis for outputting said combined medium presentation at said subscriber station; and transmitting the modified one or more of a software module and a data module to said subscriber station." For instance, Higgins discloses that a branch computer (*i.e.*, a transmission station) includes a receiver 70 that receives transmissions from ticker plant 35 via antennas 80 and 81. A CPU 72 selects between the two signals received at the antennas 80 and 81 based on which of the two signals has the least amount of noise. (Higgins at col. 3, lines 3-23.) This process of receiving signals from ticker plant 35, selecting among the signals, and formatting the results for transmission to the work station 110 is a modifying of the data module, where the data incorporated into the data module is the signal having the least amount of noise. Both stock trade executions and news wire stories form a basis for a combined medium presentation, as outlined with respect to claims 1 and 6 above. Thus, the software module or data module is modified at the transmission station by incorporating data that serves as a basis for outputting the combined medium presentation.

The claim chart below demonstrates in detail how Higgins anticipates the method recited in claim 13.

13. The method of claim 6, wherein said one or more instruct signals include one or more of a software module and a data module,
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 123-125.) Higgins discloses this limitation of claim 13, as explained above in Section V.C.2 (Claim 2).
said method further comprising the steps of: modifying said one or more of a software module and a data module at said transmission station by incorporating data that serve as a basis for outputting said combined medium presentation at said subscriber station; and transmitting the modified one or more of a software module and a data module to said subscriber station.
Higgins discloses this claim element. (*See* Ex. 1011, ¶¶ 126-131.) "Advantageously for market information continuity assurance, the receiving location apparatus 70 includes antennas 80 and 81 for respectively receiving each of the satellite and television radiated signals. Examining the receiving equipment shown in FIG. 1A for area computer 50_k, illustrative of all such apparatus, the satellite and VHF or UHF television-multiplexed signals are respectively received at antennas 80 or 81 and detected by RF receivers 78_1 and 78_2. Antenna surrogates, such as cable television delivery systems, may be employed. A demultiplexer 77 selects the base band data stream output of one or the other of radio receiver/detectors 78_1 or 78_2 under control of central processor 72 in accordance with any appropriate algorithm stored in a ROM memory 74. Thus, for example, the CPU can receive and temporarily store in a RAM 76 the data stream outputs of both receivers 78_1 and 78_2 and select that one exhibiting the lower error rate. Other selection algorithms will be readily apparent to those skilled in the art." (*See, e.g.*, 3:3-23.) "As a final source of information for the system of FIG. 1, one or more source level 10 news wire source(s) 24 supply financial news via land lines 25 to the various area and branch computers 50 and 90 and, via the branch computers, to the various work stations 110. Illustrative of currently available news wire sources are those provided by Dow Jones and Reuters. Alternatively, the news information furnished by source 24 can be multiplexed and radiated with the output of ticker plant 35 for distribution to area, branch and work station computers." (*See, e.g.*, 4:10-20.)

D. Claims 2, 3, 13, and 15 Are Rendered Obvious by Sitrick in View of Bakula

As explained above, Sitrick discloses all limitations of claims 2, 3, 13, and 15. To the extent it could be argued that any further disclosure may be required with respect to the recited "software module" feature of these claims, Bakula provides such further disclosure. *See supra* at Sections V.B.2 and 3.

A POSITA[1] would have been motivated to combine the distributed game system of Sitrick with Bakula's teaching of a software module because both Sitrick and Bakula disclose distributed network systems including multiple user terminals linked to a central computer. (*See* Ex. 1011, ¶¶ 308-311.) The POSITA would be motivated to supplement Sitrick's network gaming system with Bakula's teaching of downloading a software module from a remote station to a user console, because this would allow new game content to be delivered remotely to the subscriber station of Sitrick or would allow updates to existing game content to implemented remotely. Modifying Sitrick in this manner would involve a combining of well known prior art elements to achieve a predictable result.

[1] All references to "POSITA" are to a person of ordinary skill in the art at the time of the claimed invention.

E. Claims 1, 2, 3, 6, 11, 12, 13, and 15 Are Rendered Obvious by Higgins in View of Sitrick

1. Claims 1, 2, 3, 6, 11, 12, and 13

As explained above, Higgins discloses all limitations of claims 1, 2, 3, 6, 11, and 12, and 13. To the extent it could be argued that any further disclosure may be required with respect to the "at least one of an image and a sound" feature of these claims, Sitrick provides such further disclosure. *See supra* at Sections V.A.1 and V.A.4.

A POSITA would have been motivated to combine the networked computer hierarchy of Higgins with Sitrick's teaching of a combined medium presentation including an image from a remote transmitter station, because both Higgins and Sitrick disclose distributed network systems including multiple user terminals linked to a central computer. (*See* Ex. 1011, ¶ 312.) As another example, the POSITA would be motivated to supplement Higgins's networked computer hierarchy with Sitrick's teaching of a combined medium presentation including an image from a remote transmitter station, because this would allow the multi-window display of Higgins to deliver a more rich viewing experience by including graphics. Modifying Higgins's system in this manner would involve a combining of well known prior art elements to achieve a predictable result.

2. Claim 15

Claim 15 depends from claim 13. As explained above, claim 13 is anticipated by Higgins and rendered obvious by Higgins in view of Sitrick. To the extent it could be

argued that any further disclosure may be required with respect to claim 15, Sitrick provides such further disclosure. *See supra* at Section V.A.8, discussing claim 15.

It would be obvious for the POSITA to make use of the teachings of Sitrick with respect to the use of an identifier in the transmission of game change data to enhance the system of Higgins. (*See* Ex. 1011, ¶¶ 313-315.) Both Higgins and Sitrick disclose distributed network systems, and the overall structure of Higgins is very similar to certain preferred embodiments of Sitrick (*e.g.*, Sitrick discloses that the user consoles may be subordinate to a master controller, and Higgins similarly discloses that subscriber work stations are subordinate to a branch computer). As another example, the POSITA would be motivated to supplement Higgins's system with Sitrick's teaching of the use of an identifier because it would provide a structured approach to the communications between the work stations, branch computer, and area computer of Higgins. For example, the communications identification data of Sitrick could be a basis for supporting error checking and correction in Higgins because it would allow a work station to identify an erroneous transmission and request its retransmission from a particular source that provided it, such as a branch computer or area computer. Modifying Higgins's system in this manner would involve a combining of well known prior art elements to achieve a predictable result.

F. Claims 2, 3, 13, and 15 Are Rendered Obvious by Higgins in View of Sitrick and Bakula

As explained above, claims 2, 3, 13, and 15 are rendered obvious by Higgins in view of Sitrick. To the extent it could be argued that any further disclosure may be required with respect to the "software module" feature of these claims, Bakula provides such further disclosure. *See supra* at Sections V.B.2, 3.

A POSITA would have been motivated to combine the networked computer hierarchy of Higgins with Bakula's teaching of a software module because both Higgins and Bakula disclose distributed network systems including multiple user terminals linked to a central computer. (*See* Ex. 1011, ¶¶ 316-319.) As another example, the POSITA would be motivated to supplement Higgins's networked computer hierarchy with Bakula's teaching of downloading a software module from a remote station to a user console, because this would allow stock ticker display programs to be delivered remotely to the subscriber work station of Higgins or would allow updates to existing stock ticker display programs to implemented remotely. Modifying Higgins's system in this manner would involve a combining of well known prior art elements to achieve a predictable result.

VI. Mandatory Notices Pursuant to 37 C.F.R. § 42.8(a)(1)

Pursuant to 37 C.F.R. § 42.8(a)(1), the mandatory notices identified in 37 C.F.R. § 42.8(b) are provided below as part of this Petition.

A. C.F.R. § 42.8(b)(a): Real Party-In-Interest

Zynga Inc. is the Petitioner and real party-in-interest.

B. C.F.R. § 42.8(b)(2): Related Matters

The Harvey '638 Patent is currently the subject of a patent infringement lawsuit brought by the assignee of the Harvey '638 Patent, Personal Media Communications, LLC ("PMC") against Zynga, captioned *Personalized Media Communications, LLC v. Zynga Inc.,* U.S. District Court for the Eastern District of Texas, Civil Action No. 2:12-cv-68-JRG ("PMC v. Zynga"). This judicial matter may affect, or be affected by, decisions made in this proceeding.

C. C.F.R. § 42.8(b)(3) and (4): Lead and Back-up Counsel and Service Information

Zynga provides the following designation of counsel:

Lead Counsel	Back-up Counsel
David B. Cochran Reg. No. 39,142 JONES DAY 901 Lakeside Avenue Cleveland, Ohio 44114 (216) 586-7029 dcochran@jonesday.com	Joseph M. Sauer Reg. No. 47,919 JONES DAY 901 Lakeside Avenue Cleveland, Ohio 44114 (216) 586-7506 jmsauer@jonesday.com

Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney accompanies this Petition. Please address all correspondence to lead and back-up counsel at the address above. Zynga also consents to electronic service by email at the email addresses listed above.

VII. Conclusion

For the reasons set forth above, Petitioner has established a reasonable likelihood of prevailing with respect to at least one claim of the Harvey '638 Patent. PMC took advantage of the Patent Office rules to obtain an overly-expansive claim scope that is far removed from the alleged invention described in its original patent application filed more than two decades earlier. Petitioner has demonstrated that the claims of the Harvey '638 Patent, now being asserted against online computer gaming technology, cover technology that was well known before the 1987 priority date of the patent. Petitioner therefore requests that the Patent Office order an *Inter Partes Review* trial and then proceed to cancel claims 1, 2, 3, 6, 11, 12, 13, and 15.

Respectfully submitted,

Date: February 26, 2013

By: _____

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APPENDIX OF EXHIBITS

EXHIBIT NO.	TITLE
1001	U.S. Patent No. 7,908,638 ("the Harvey '638 Patent")
1002	Excerpt from the file history of the Harvey '638 Patent: May 23, 2000 Supplemental Amendment
1003	PMC Infringement Contention Claim Charts against Zynga for the Harvey '638 Patent, Personalized Media Communications, LLC v. Zynga, Inc., Civil Action No. 2:12-cv-68 (E.D. Texas)
1004	Excerpt from the file history of the Harvey '638 Patent: Notice of Allowance dated October 18, 2010
1005	Plaintiff's Disclosure of Asserted Claims and Infringement Contentions, *Personalized Media Communications, LLC v. Zynga, Inc.*, Civil Action No. 2:12-cv-68 (E.D. Texas)
1006	Excerpt from the file history of the Harvey '638 Patent: September 5, 2002 Office Action
1007	Excerpt from the file history of the Harvey '638 Patent: March 5, 2003 Amendment
1008	U.S. Patent No. 4,572,509 ("Sitrick)
1009	U.S. Patent No. 4,204,206 ("Bakula")
1010	U.S. Patent No. 5,270,922 ("Higgins")

1011	Declaration of Dr. Charles J. Neuhauser Under 37 C.F.R. § 1.68 in Support of Petition for *Inter Partes* Review of U.S. Patent No. 7,908,638
1012	Appendix to the Declaration of Dr. Charles J. Neuhauser: Dr. Neuhauser's current *curriculum vitae*

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,908,638

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 7,908,638, along with all exhibits supporting and filed with the Petition, were served on February 26, 2013 via Express Mail delivery directed to the attorney of record for the patent at the following address:

Thomas J. Scott
Goodwin Procter LLP
901 New York Avenue, N.W.
Washington, DC 20001

Date: February 26, 2013

Joseph M. Sauer