(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 June 2013 (13.06.2013)

WIPO | PCT

(51) International Patent Classification:
G06Q 30/06 (2012.01)

(21) International Application Number:
PCT/EP2012/005085

(22) International Filing Date:
8 December 2012 (08.12.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
GB1 12121 1.5   9 December 201 1 (09. 12.201 1)   GB

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available):* AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available):* ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.1 7(H))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.1 7(in))*

— *of inventorship (Rule 4.17(iv))*

[Continued on next page]

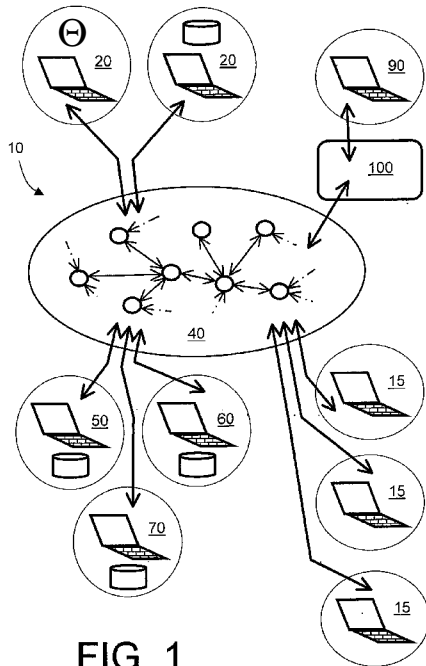**(54) Title:** INTERFACE SYSTEM AND METHOD

FIG. 1

(57) Abstract: An interface system (10) includes one or more users (15), one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70) which are mutually coupled in communication via a host system (100). The host system (100) is operable to provide an integrated shopping experience for the one or more users (15) by employing one or more interfacing apparatus (200) to function as one or more proxy agents interfacing between the host system (100) and the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70).

WO 2013/083288 A1

WO 2013/083288 A1

INTERFACE SYSTEM AND METHOD

Field of the invention

The present invention relates to interface systems for providing a primary integrated portal for user interaction, wherein interactive data streams from a plurality of secondary web-pages are controlled via the primary integrated portal, for example where one or more of the secondary web-pages correspond to web-pages at which products and/or services are purchasable. Moreover, the present invention concerns methods of providing a primary integrated portal for user interaction, wherein the method includes providing control via the primary integrated portal to a plurality of secondary web-pages, for example where one or more of the secondary web-pages correspond to web-pages at which products and/or services are purchasable. Furthermore, the present invention relates to software products recorded on machine-readable data storage media, wherein the software products are executable upon computing hardware for implementing aforementioned methods.

Background of the invention

The Internet is a well known communication system in which users are able to use primary search engines, for example contemporary Google and Yahoo *("Google"* and *"Yahoo"* are registered trademarks), to search for Internet web-pages based upon keyword search terms submitted to the primary search engines. Moreover, the primary search engines employ "searching robots", namely crawlers, amongst other techniques to collate data regarding web-pages to provide a database which is searchable using the search terms. When a search is implemented in response to one or more search terms entered by a given user into a primary search engine, the primary search engine provides a list of web-pages whose characteristics match in some manner with the search terms. The given user is then able to mouse-click in elements in the list, whereafter the given user is redirected to a given web-page corresponding to a corresponding mouse-click selected element in the list. In an event that the given user interacts with the given web-page, for example for purchasing an item from the web-page, financial interactions occur directly between the user and the given web-page, or an associated web-page, optionally with assistance of a payment service, for example contemporary PayPal *("PayPaf* is a registered trademark). Many granted patents pertain to data interactions and system

- 2 -

configurations which are necessary to enable such web-page-based purchasing to be executed in response to the user's instructions.

In a granted United States patent no. US7,197,475 *("Multi-vendor Internet commerce*
5   *system for e-commerce applications and methods thereof,* Applicant - ShopCom), there is described multi-vendor Internet commerce systems which include a centrally-implemented multi-vendor central processing unit acting cooperatively with a centrally-implemented multivendor-shared data store. Moreover, in a published United States patent application no. US2006/0041485 *("Universal shopping cart and*
10 *order injection system"),* there is provided a universal shopping cart (USC) having a common user interface. Furthermore, in a published United States patent application no. US2012/0173385A1 *("Method and system for a cloud-based online commerce and listing service for items providers"),* a system is described which enables listing of items providers via a service hosted in a cloud-computing environment.

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Thus, it is known that there are different retailers that offer items for sale over the Internet using sales-specific web-pages. These web-pages often offer a user an ability to search for items to purchase. Such searching may be based upon a specific item, or may be based on a general specification of an item, such that many
20 results are found during a search and displayed to a user, for enabling the user to make a selection. For example, if the user wants to purchase a television, the user may initially have an exact model of television in mind. Alternatively, the user may know that he/she wants to purchase a television with a 102 cm diagonally-sized screen that is capable of displaying high-definition (HD) images. Therefore, a user
25 could employ the terms "television", "102" and "HD" as search criteria and be provided with search results that fulfil these search criteria. The user then selects a preferred search result which directs the user to a single seller's web-page. At the single seller's web-page, the user then selects a desired item for purchase and is prompted to provide personal information, for example delivery address, billing
30 address, quantity required, delivery data, as well as payment information, for example credit card number, security code. Such personal information and payment information is provided via a graphical interface include a plurality of user-input fields that the user is required to complete to perform a purchase transaction.

- 3 -

Although primary search engines, such as aforementioned Google and Yahoo, are known, there have more recently appeared secondary comparison web-pages which can be listed in search results generated using aforesaid primary search engines. These secondary comparison web-pages allow a user to search for products and/or services for sale as defined by search criteria, such that the search generates search results will include a list of possible suppliers or sellers of the searched products and/or services fulfilling the search criteria. In such a scenario, the comparison web-page may typically have a link to each of the seller's web-page to allow a selected item to be purchased. Such a form of transaction is more typically encountered in comparison web-pages for purchasing holidays, for arranging vehicle hire and for making hotel reservations. In an event that the secondary comparison web-page allows the user to make a purchase of an item directly from the search results, it requires an operator of the comparison web-page to have established a pre-arranged relationship with a retailer, such that the comparison web-page is acting as an agent for the retailer. Often, the operator of the comparison web-page makes revenue via an affiliate relationship with retailers of products and/or services, for example based on a percentage of sales or a fixed price for items sold.

Major e-commerce companies, for example E-bay *("E-bay"* is a registered trademark), provide users with a large range of stock to purchase, either directly managed by the companies or via third-party sellers. A typical practice for a user purchasing a product from such an e-commerce company via a third party platform is for a provider of the platform to collect the user's revenue and pass this to the third party providing the product, while keeping a margin for attracting the user and providing the platform. Responsibility for fulfilment of delivery of the product lies with the third party.

It is known, before beginning to search for one or more items to purchase, that a given user may research different items on a manufacturer's web-page. This searching allows the given user to be more informed about purchase options available and differences between various available models, before proceeding to search on a seller's web-page or an aforementioned comparison-type web-page. In certain situations, a manufacturer may provide a list of preferred suppliers or retailers from which the given user can select to purchase the one or more items. Optionally,

- 4 -

the list of preferred suppliers or retailers may also include hyperlinks to web-pages of the preferred suppliers or retailers.

5   A problem arising is that manufacturers are often interested in knowing what happens after a given user has enquired regarding one or more of their products and/or services. When a given user surfs amongst many different web-pages via a primary search engine, the manufacturer loses control of information relating the given user, for example sales and customer information which can be useful in respect of future targeted marketing.

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Summary of the invention

The present invention seeks to provide an interface system which provides a integrated shopping experience for users, wherein interaction complexity arising between the users and one or more data servers is simplified from a perspective of

15   the users.

Moreover, the present invention seeks to provide a method of providing users with an integrated shopping experience, wherein interaction complexity arising between the users and one or more data servers is simplified from a perspective of the users.

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Furthermore, the present invention seeks to provide an interface system which provides users with an integrated shopping experience, wherein the interface system is operable to collate user interaction data with the interface system for providing aggregated results regarding user-purchases.

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According to a first aspect of the present invention, there is provided an interface system as defined in appended claim 1: there is provided an interface system including one or more users, one or more retailers' data servers and/or manufacturers' data servers which are mutually coupled in communication via a host

30   system, characterized in that the host system is operable to provide an integrated shopping experience for the one or more users by employing one or more interfacing apparatus to function as one or more proxy agents interfacing between the host system and the one or more retailers' data servers and/or manufacturers' data servers.

The invention is of advantage in that use of the proxy agents enables the one or more users to be provided with an integrated portal through which all transactions can be implemented.

Optionally, in the interface system, the host system includes a configurator apparatus for use in generating the one or more interfacing apparatus which are operable to receive purchase input field data from the one or more users and to translate the input field data into a form suitable for entering into data fields associated with web-pages hosted at the one or more retailers' data servers and/or manufacturers' data servers.

Optionally, in the interface system, the one or more interfacing apparatus comprises a common interfacing module which is adapted via an adaptor module to interface to individual web-pages hosted at the one or more retailers' data servers and/or manufacturers' data servers.

Optionally, in the interface system, the one or more interfacing apparatus are generated in a semi-automatic manner or fully-automatic manner, for example optionally using machine learning algorithms,, based upon on analysis, for example executed by the host system, of code employed for rendering one or more web-pages hosted by the one or more retailers' data servers and/or manufacturers' data servers.

Optionally, in the interface system, the host system includes:

(a)   a receiving unit for receiving a first message from a first web-page viewed by a user via a web browser of the user, wherein the first message comprises data relating to performing a transaction for one or more items selected on the first web-page;

(b)   an instructing unit for instructing a remote web browser apparatus to open a second web-page based on data in the first message;

- 6 -

(c)   a data-arranging unit for generating a second message for performing the transaction on the second web-page, wherein the second message comprises data from the first message; and

5   (d)   a sending unit for sending the second message to the remote web browser apparatus to perform the transaction on the second web-page.

Optionally, in the interface system, the host system includes a data generating unit for generating data for the second message, wherein the data arranging unit is

10   operable to combine the data generated from the data generating unit with data from the first message to generate the second message.

Optionally, in the interface system, the data arranging unit is operable to map the data from the first message to input fields on the second web-page, and to arrange

15   the mapped-data in the second web-page.

Optionally, in the interface system, the receiving unit is operable to receive a third message from the second web-page relating to completion of the transaction, wherein the data-arranging unit is operable to generate a fourth message comprising

20   data from the third message, and wherein the sending unit is operable to send the fourth message to the first web-page.

Optionally, in the interface system, the first message comprises data input by the user on the first web-page and data on an item whose image is displayed on the first

25   web-page that has been selected by the user to purchase.

According to a second aspect of the invention, there is provided a method of providing an integrated shopping experience for one or more users using an interface system pursuant to the first aspect of the invention, wherein the interface system

30   includes one or more retailers' data servers and/or manufacturers' data servers which are mutually coupled in communication via a host system, characterized in that the method includes:

- 7 -

(i)   providing product information on the one or more retailers' data servers and/or manufacturers' data servers; and

(i)   using the host system to provide an integrated shopping experience for the one or more users by employing one or more interfacing apparatus to function as one or more proxy agents interfacing between the host system and the one or more retailers' data servers and/or manufacturers' data servers for assisting in selecting and purchasing one or more products presented in the product information to the one or more users.

Optionally, the method includes using a configurator apparatus of the host system for generating the one or more interfacing apparatus which are operable to receive purchase input field data from the one or more users and to translate the input field data into a form suitable for entering into data fields associated with web-pages hosted at the one or more retailers' data servers and/or manufacturers' data servers.

Optionally, the method includes using a common interfacing module for the one or more interfacing apparatus, wherein the common interfacing module is adapted via an adaptor module to interface to individual web-pages hosted at the one or more retailers' data servers and/or manufacturers' data servers.

Optionally, the method includes generating the one or more interface apparatus in a semi-automatic manner or fully-automatic manner, for example optionally using machine learning algorithms,, based upon on analysis, for example executed by the host system, of code employed for rendering one or more web-pages hosted by the one or more retailers' data servers and/or manufacturers' data servers.

Optionally, the method includes:
(a)   using a receiving unit for receiving a first message from a first web-page viewed by a user via a web browser of the user, wherein the first message comprises data relating to performing a transaction for an item selected on the first web-page;

(b)   using an instructing unit for instructing a remote web browser apparatus to open a second web-page based on data in the first message;

- 8 -

(c)   using a data-arranging unit for generating a second message for performing the transaction on the second web-page, wherein the second message comprises data from the first message; and

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(d)   using a sending unit for sending the second message to the remote web browser apparatus to perform the transaction on the second web-page.

Optionally, the method includes using a data generating unit for generating data for
10 the second message, wherein the data arranging unit is operable to combine the data generated from the data generating unit with data from the first message to generate the second message.

Optionally, the method includes using the data arranging unit to map the data from
15 the first message to input fields on the second web-page, and to arrange the mapped-data in the second web-page.

Optionally, the method includes using the receiving unit to receive a third message from the second web-page relating to completion of the transaction, wherein the
20 data-arranging unit is operable to generate a fourth message comprising data from the third message, and wherein the sending unit is operable to send the fourth message to the first web-page.

Optionally, in the method, the first message comprises data input by the user on the
25 first web-page and data on an item whose image is displayed on the first web-page that has been selected by the user to purchase.

According to a third aspect of the invention, there is provided a software product recorded on machine-readable data storage media, characterized in that the software
30 product is executable upon computing hardware for implementing a method pursuant to the second aspect of the invention.

It will be appreciated that features of the invention are susceptible to being combined in various combinations without departing from the scope of the invention as defined by the appended claims.

5   **Description of the diagrams**

Embodiments of the present invention will now be described, by way of example only, with reference to the following diagrams wherein:

FIG. 1   is an illustration of an embodiment of an interface system pursuant to the present invention;

10   FIG. 2A, FIG. 2B and FIG. 2C are illustrations of web-pages presented to a user of the interface system of FIG.1 when seeking to purchase a product via the interface system; and

FIG. 3   is an alternative illustration of an embodiment of an interface system pursuant to the present invention, wherein a host system for implementing

15   the interface system is shown in greater detail.

In the accompanying diagrams, an underlined number is employed to represent an item over which the underlined number is positioned or an item to which the underlined number is adjacent. A non-underlined number relates to an item identified by a line linking the non-underlined number to the item. When a number is non-

20   underlined and accompanied by an associated arrow, the non-underlined number is used to identify a general item at which the arrow is pointing.

Description of embodiments of the invention

In overview, the present invention is concerned with an interface system which

25   provides a given user with an integrated portal through which secondary web-pages can be controlled, including arranging for payment of products and/or services, thereby avoiding the given user being redirected to the secondary web-pages. This provides the given user with a simpler and more manageable interaction, wherein multiple products and/or services from a plurality of secondary web-pages can be

30   implemented via a single financial transaction with the interface system. Optionally, the system employs software applications which translate between the secondary web-pages and the portal. More optionally, the software applications which perform such translation are semi-automatically or fully-automatically generated by analysing web-page code corresponding to the secondary web-sites which causes the

secondary web-sites to appear in a user-understandable manner via a web browser. Such an implementation, for example, avoids a need for an operator of the interface system providing the portal to have pre-arrangements with operators of the secondary web-pages, thereby enabling a potentially larger selection of

5   manufacturers' products and/or service to be offered to the given user via the portal than is possible using aforesaid known e-commerce companies.

It will be appreciated that embodiments of the present invention will be described in a context of the Internet and web-pages provided thereby. However, the present

10   invention is not limited to implementation via the Internet and its associated web-pages, and can be alternatively implemented on proprietary communication networks, for example mobile telephone and cell phone communication networks which potentially may not conform to Internet protocols. Moreover, embodiments of the present invention are optionally employed within contemporary communication

15   and software platforms, for example *iOS* and *Android,* as well as native applications, for example *Mac OS* and *Windows; "iOS", "Android', "Mac OS"* and *"Windows"* are registered trademarks. Furthermore, embodiments of the invention will be described below by way of user interaction with graphical user interfaces (GUI), although it will be appreciated that alternative implementations of user interaction are within the

20   scope of the present invention, for example voice-recognition control, audio presentation of products for purchase, audio acknowledgements and so forth, for example to interface to users who are less familiar with computing technology, for example elderly customers.

25   It will be appreciated in certain embodiments of the invention that there is substantially little distinction between retailers and manufacturers, for example especially where manufacturers both sell directly to the public as well as via a sales distribution network. In certain embodiments, the retailers and manufacturers are represented by third parties, and users are not brought into contact with the retailers

30   and manufacturers. The third parties can be, for example, purchasing syndicates, wherein embodiments of the present invention are implemented as a Web API that can be used by such third parties.

- 11 -

In FIG. 1, there is shown an embodiment of an interface system pursuant to the present invention; the interface system is indicated generally by **10.** The interface system **10** is, for example, conveniently implemented using the Internet, although other types of communication networks are optionally employed for implementing the

5   present invention, for example telecoms wireless communication networks. The interface system **10** includes in practice hardware such as user-computers, servers and communication infrastructure, for example wireless-based-communication infrastructure and/or optical-fiber-based communication infrastructure. Moreover, the system **10** is operable to execute one or more software products recorded on

10   machine-readable data storage media, wherein the software products are executable upon computing hardware for enabling the interface system **10** to operate as will be described in more detail later.

In FIG. 1, the interface system **10** includes one or more user workstations **15,** for

15   example implemented using general purpose computers and/or mobile wireless communication devices including computing hardware; for example, one or more workstations **15** are conveniently implemented using one or more of: mobile telephones (US: cell phones), tablet computers, televisions and personal computers (PC). The one or more workstations **15** are connected to a communication network

20   **40,** for example implemented at least in part via the Internet; the one or more workstations **15** are operable to communicate to the communication network **40** via a communication protocol, for example known TCP/IP. One or more retailers **20** are connected to the communication network **40.** In FIG. 1, the retailers **20** are illustrated as being data servers that have been configured by their respective retailers to

25   provide web-pages via the communication network **40,** which may be viewed on any one of the general purpose computers **15** using a suitable web browser loaded onto the general purpose computers **15.** Beneficially, for updating and maintaining content of their web-pages, the retailers are able to access their data servers **20;** for example, a retailer may periodically update stock information or price. Such updating

30   is conveniently achieved via one of the general purpose computers **15** via the communication network **40,** or may be performed by directly accessing the data servers from a local area network (LAN) (not shown) associated with the data servers. The data servers **20** include one or more storage areas (not shown) for

- 12 -

storing the content that is to be displayed on various web-pages to be delivered by the system **10.**

A plurality of manufacturers are represented in FIG. 1 as individual data servers **50,**

5   **60, 70** connected to the communication network **40.** For example, the manufacturers are illustrated as being represented by data servers that have been configured by their respective manufacturer to provide web-pages via the communication network **40,** which may be viewed via any one of the general purpose computers **15.** The manufacturers may periodically access the servers **50, 60, 70** for maintaining and

10   updating model information, product specifications and similar information. Such updating is beneficially achieved using one of the general purpose computers **15** via the communication network **40,** or may be performed by directly accessing the data server from a local area network (LAN) (not shown) associated with the data server. The data servers **50, 60, 70** include one or more storage areas (not shown) for

15   storing the content that will be displayed on various web-pages provided via the communication network **40.**

In FIG. 1, a server or host system **100** is illustrated which provides, amongst other technical functions, an interface apparatus. The server **100** is connected to the

20   communication network **40** by employing a communication protocol, for example TCP/IP. Moreover, the host system **100** is also connected to a general purpose computer **90** which is operable to function as a configurator apparatus for allowing a user, for example an operator responsible for the host system **100,** to program the host system **100.** The general purpose computer **90** is illustrated, for example, as

25   being connected directly to the host system **100** using a local area network (LAN).

In FIG. 1, the servers **50, 60, 70** are optionally implemented using third party applications and/or facilities, for example based upon Internet Web, mobile infrastructure, native infrastructure and similar offering descriptions of products and

30   services that could be purchased through retailers. In such a scenario, the host system **100** can be implemented through a public API which is available via the communication network **40.** Moreover, the system **10** is beneficially implemented to employ the Internet, such that HTTP cookies and HTTP headers can be employed when providing services via the system **10.**

In FIG. 2A, there is shown an illustration of a web-page **102** that is displayed to a user on a graphical screen of the one or more general purpose computers **15** via a suitable web browser. In this example, the user wishes to purchase a television, wherein the user decides to purchase a television from one of the manufacturers whose data servers are illustrated in FIG. 1. The user employs the browser to retrieve the manufacture's web-page and selects a model of television which he/she wishes to purchase therefrom. Optionally, the selection of model of television is based on a direct selection of a known model, or may have been based on prior searches of various similar items before a selection is made by the user.

The web-page **102** illustrated in FIG. 2A has been simplified for ease of explanation; it well be appreciated that various other information will be displayed on the web-page **102,** and other functionalities will be available. The web-page **102** is illustrated with an image area **104** in which there is provided an image, for example capture via an imaging device such as a digital camera, of the item that has been selected by the user wishing to purchase a television. Moreover, there is a product description area **106** shown on the web-page **102** that provides a text description of the item. In this example, the text description of the item may include specifications, key features and similar supporting information. However, the product description area **106** does not include pricing or purchase information. In this example, the web-page **102** is provided and maintained by one of the manufacturer's data servers **50, 60, 70** as aforementioned, for example the data server **50** so that the web-page **102** is hosted and stored in the data server **50.**

The web-page **102** also includes a buying icon **108** that may be selected by the user if the user wishes to purchase the displayed model of television. When the user clicks a pointing device, for example a computer mouse or tracker ball, on the icon **108** by moving a cursor presented on the web-page **102** over the icon **108** and then clicking on the icon **108** using a button of the pointing device, a new window is displayed to the user. However, embodiments of the present invention are not limited to pointing devices, and optionally accommodates user-input via other channels, for example touch, voice and gesture interactions; example of such other channels include touch-screens, computer-based voice recognition and image

analysis based on images captured by one or more cameras. In FIG. 2B, there is provided an illustration of the web-page including the new window denoted by **110.** The new window **110** is optionally presented to the user as a pop-up window that can be moved or closed independently of the web-page **102.** To allow the user to see the

5   new window **110** concurrently with the image area **104** and the product description area **106,** the areas **104, 106** are optionally resized as illustrated.   It will be appreciated that other techniques for displaying the new window **110** are also envisaged according to embodiments of the invention.

10   The new window **110** is generated and thereby provided by the host system **100** in FIG. 1, namely the manufacturer's web-page does not host or provide functionality provided via the new window **110.** For example, when the user selects the icon **108** in FIG. 2A, this causes the host system **110** to generate a new web-page. The new web-page integrates previously displayed product information in areas **104, 106** with

15   the new window **110.** Therefore, for example, once the buy icon **108** is selected, a new web-page is displayed to the user that is provided by the host system **100.** To achieve this, the web-page provided by the manufacturer's server **50** may include a link to a web-page provided by the host system **100,** optionally, this link is implemented as a uniform resource identifier (URI) to a new web-page hosted by the

20   host system **100.** Thus, when the new web-page illustrated in FIG. 2A is displayed to the user via the web browser, the user will be unaware that he/she has been directed to a new web-page, namely it will appear that the user that he/she is still viewing the web-page provided by the manufacture, but with additional content added.

25   The new window **110** includes a list of possible retailers from which the user can select to purchase the model of television chosen by the user in this example.   For each retailer, there is also provided in the new window **110** at least a cost of purchasing the selected item. There may also be provided information pertaining to cost of postage, stock information and possible delivery time.   Other information

30   relating to purchase of the selected item may also be provided for each of the retailers listed in the new window **110.** Once the user has decided from which retailer to purchase the model of television, the user will select one of the retailers in a normal manner using the pointing device; for example, for each of the retailers

- 15 -

listed, there is included a link, such that when the user selects one of the retailers in the list, the new window **110** changes to allow the user to enter purchase information.

In FIG. 2C, there is provided an illustration of the new window **112** that is displayed on the web-page **102** when the user selects one of the retailers. The new window **112** includes a plurality of input fields that allow the user to provide details to allow a transaction of the selected item to be completed. The new window **112** includes user-input fields which include Name **114,** Address **116,** Email address **118,** Credit or Debit card number **120** and Card expiry date **122;** additional fields for one or more security codes and passwords are optionally provided in the new window **112.** It will be appreciated that this is an example, and more or fewer input fields are optionally included in the new window **112.** Moreover, it will also be appreciated that if the user already has an existing account with the selected retailer, the user can suffice with only completing username and password input fields included in the new window **112.** In FIG. 2C, optional input fields include Username **124** and Password **126.** These optional fields are optionally completed by the user. For example, if the user selects a retailer with whom he/she already has an account, the user can enter the username and password for that retailer. Thus, optionally, the user need not input other information such as name and address, since this information is typically recorded in a user's profile by a retailer. If the user does not have an existing account with the selected retailer, the username and password fields may be left blank and the host system **100** will generate a username and password. Data entered by the user into the other fields may be used by the host system **100** to register the user to the retailer's web-page and generate a username and password to make purchase easier with the retailer is respect of future purchases to be executed by the user. In other words, the host system **100** is operable to function as a form of agent for the user by interfacing to the retailer's data server **50,** wherein the agent is operable to translate information provided by the user via the new window **112** to provide corresponding data by proxy that the host system **100** enters into pertinent web-pages generated by the data server **50** which are not necessarily presented to the user. For example, the host system **100** may use the user's email address as a username and the user's postcode as a password. If the host system **100** generates a username and password on behalf of the user, this is optionally communicated in a separate email to the user from the host system **100** to the user

- 16 -

following completion of a purchase transaction; for example, an email may be sent to the user from the host system **100** identifying the name of the retailer with a message to indicate details of a new account generated on behalf of the user.

5   Once the user-input fields have been completed by the user, the user selects one of icons shown with a double line around, wherein the double line indicates that the icon is actionable. The actionable icons illustrated include "Buy now" **128** and "Add to basket" **130.** The new window **112** optionally may not concurrently include both "Buy now" and "Add to basket" icons, and may include further icons, for example "Register

10 with retailer" may be provided to allow the user, separately on another occasion, to register with a retailer using the manufacturer's web-page before performing a purchase transaction.

    When the "Buy now" icon **128** is selected by the user, the information provided via

15 the new window **112** is provided via the host system **100** to the retailer selected by the user; the host system **100** thus functions as a proxy agent or "go between" on behalf of the user and the retailer, when the host system **100,** if required, performs necessary information translation functions so that information provided to the retailer is compatible with the retailer's web-pages. If the "Add to basket" icon **130** is

20 selected, this allows the user to continue shopping for other items on the manufacturer's web-page, but no transaction is completed at this stage of user activities. For example, if the "Add to basket" icon **130** is selected by the user, the new window **112** may be replaced by an acknowledgement that the items selected by the user have been added to a virtual shopping basket provided by the system **10,**

25 and the user may be taken back to the first web-page **102** as shown in FIG. 2A on the manufacturer's web-page provided by the manufacturer's server **50,** to enable the user to continue shopping. With the "Add to basket" icon **130** being used, the item selected by the user is placed in their virtual shopping basket for the selected retailer, so that the next time the user visits the selected retailer's web-page and goes into

30 their account, the selected item will be in the virtual basket ready for purchase.

    As described in further detail below, the host system **100** uses the information provided by the user to complete the transaction on the selected retailer's web-page, or the system **100** adds the selected items to the user's virtual shopping basket.

- 17 -

Such operations are executed without the user having to visit the retailer's web-page. Once the transaction is complete, the host system **100** will provide details of the completed transaction back to the user via the web-page **102,** namely in the new window **110,** or the user will be informed that the selected item has been placed in
5   their virtual shopping basket of the selected retailer. At this stage, the user may be given an option to close the new window **110** or **112,** and the displayed web-page may revert back to the web-page illustrated in FIG. 2A. The user also receives an order confirmation, for example in a standard type of format, from the retailer, as if the user had purchased the item directly from the retailer's web-page.

10

There may also be other fields that are required by the retailer that will also be completed by the host system **100;** the other fields may not be communicated to the user and are attended to automatically by the host system **100.** For example, a retailer's web-page may include a field for gender and age group. The host system
15   **100** may select one of the available options at random to allow the transaction to be completed without a need to revert back to the user for further information, thereby avoiding burdening the user with unnecessary data input which can be stressful or confusing for the user. For example, the host system **100** may select female as the user's gender at random.

20

In FIG. 3, there is shown a schematic illustration of the host system **100** in an environment used to describe an embodiment of the invention. In FIG. 3, only a single retailer data server **20** and a single manufacturer data server **50** are illustrated, but other retailers and manufacturers may be used, for example as illustrated in
25   **FIG. 1.**

The host system **100** will now be described by way of functional blocks or units which cooperate together to provide the functionality of the host system **100,** for example as described in the foregoing with reference to FIG. 2A to FIG. 2C. However, it will be
30   appreciated that each of the functional blocks or units may be performed on a single general purpose computer or server. A software product bearing machine-readable instructions for the host system **100** is herewith disclosed. A computer loaded with and operable to execute such machine-readable instructions for the host system **100** is disclosed. However, the host system **100** is optionally implemented, at least in

- 18 -

part, using hardwired digital circuits, for example application specific integrated circuits (ASICs) configured to access data memory (RAM).

In FIG. 3, the host system **100** is illustrated coupled in communication with the retailer server **20** and the manufacturer's server **50** via the communication network **40,** for example the Internet. A workstation **15** operated by a given user is also shown coupled in communication with the host system **100** and the manufacturer's data server **50.** For purposes of describing an embodiment of the present invention, the workstation **15** does not communicate directly with the retailer's data server **20.** Optionally, all communication links between the host system **100** in communication with the retailer's data server **20** and the manufacturer's data server **50** are performed via the Internet using TCP/IP communication protocol.

In FIG. 3, the host system **100** includes an interface apparatus represented by a block **200,** a web browser apparatus represented by a block **202,** a web-server apparatus represented by a block **204** and a database represented by a block **206.** The interface apparatus **200** is in communication with each of the web browser apparatus **202,** the web-server apparatus **204** and the database **206.** Moreover, each of the web-browser apparatus **202** and the web-server apparatus **204** are coupled in communication with the database **206.** The web browser **202** is described as being "remote" from the given user, because the given user is unable to access or view the remote web browser **202;** in other words, the host system **100** functions as a "go between" or a "proxy agent" on behalf of the given user in respect of the remote web browser **202.** Optionally, the web browser **202** is implemented by way of any software that can simulate a user's interaction with a Web page, for example implemented as a "headless" browser, for example implemented via a software-driven browser.

In advance of allowing the given user to purchase a selected item from a retailer via a manufacturer's web-page, data pertaining to items which are available to purchase from various retailers web-pages are collected from the retailers' data servers. This data includes items' descriptions, prices, availability, delivery costs and so forth. Moreover, a database for each retailer is generated and maintained at the host system **100,** for example using tools such as WebCrawler's Application Programming

- 19 -

Interface (API) or feeds. Each item record, namely product record, will also include the URL of retailers' web-pages where the item, namely product, can be purchased. The database is populated using the configurator apparatus implemented as the general purpose computer 90; the configurator apparatus, as aforementioned, is coupled in communication with the host system 100. Generation of the database is optionally implemented in a semi-manual manner. Alternatively, generation of the database is optionally implemented using automatic techniques, for example using neural network algorithms to identify web-page code which defines data input fields and a nature of the input fields, as well as spatial clustering of the input fields within a corresponding displayed web-page. Yet alternatively, the database is generated remotely from the host system 100 and then imported into the database 206 of the host system 100.

In a similar manner to the retailers' servers 20, the manufacturers' servers 50 are also interrogated to obtain and store product information pertaining to items that can be viewed when accessing a manufacturer's web-page. However, unless the manufacturer is selling directly to users, no pricing information is obtained from the manufacturer's web-page, namely only product information. In some examples, the manufacturer is selling directly to consumers. If the manufacturer is selling a given item directly, one of the available retailers displayed by the interface system 10 to the user would then be the manufacturer. Such functionality enables the given user to compare a price offered by the manufacturer with prices of other retailers.

An interface apparatus 200 is beneficially configured for each retailer to enable a purchase transaction to be performed using the interface system 10. Thus, there may be a selection module (not shown) that receives in operation a message to perform a purchase from the web-server apparatus 204 that selects the selected retailer interface apparatus. The message may include a header that includes the selected retailer's name, such that all interface apparatus 200 receive the message from the web-server apparatus 204, but only the appropriate interface apparatus 200 acts upon data included in the message. Optionally, as aforementioned, the interface apparatus 200 is configured by a developer based upon a set of predetermined rules to allow the browser apparatus 202 to enter data onto a web-page offered by a retailer to affect a transaction. Optionally, as an alternative to

- 20 -

employing a developer, machine-learning software running on a computer is used to automate configuring of the browser apparatus 202 to enter data onto the web-page offered by the retailer to affect the transaction; optionally, the software is based upon a combination of machine-learning algorithms and rule-based algorithms, wherein the

5   machine-learning algorithms are trained on browser apparatus 202 which have been configured by a developer.   Moreover, the interface apparatus 200 is configured together with the configurator apparatus 90 implemented using a general purpose computer.   Optionally, the configurator apparatus 90 is presented to developers as an integrated development environment (IDE) or as script libraries available for

10   customization. The interface apparatus 200 may also be configured using a general purpose computer via the communication network 40, for example via the Internet.

It will be appreciated that although an interface apparatus 200 is configured for each retailer, each interface apparatus 200 represents in practice a software module.   For

15   enabling the software modules to be generated in an efficient manner, either by manual input from a developer or generated automatically using machine-learning software, each interface apparatus 200 may be based upon a core software module that is incorporated into each interface apparatus 200, wherein any additional functionality or difference in functionality between retailers web-pages may be

20   accommodated by using additional interfacing software modules specific to the retailer's web-page, and wherein the additional interfacing software module is used in combination with the core software module.   In other words, multiple stages of translation for implementing the aforesaid "proxy agent" are optionally provided in the interface apparatus 200 as a combination of standard software modules and

25   customized interfacing modules.

Identification of the data and fields required to perform a transaction on a retailer's web-page are fully customisable on the interface system 10, based on requirements of the developer, product manufacturer, user and retailer's web-page. Once created,

30   each interface apparatus 200, for example implemented via an API or plug-in, is stored in the host system 100 and operates when executed upon computing hardware in cooperation with the web browser apparatus 202.   Updating each interface apparatus 200 is conducted using the configurator apparatus 90, for example manually, semi-automatically or fully automatically as aforementioned.

- 21 -

The embodiment of the present invention described in the foregoing in conjunction with FIG. 2A, FIG. 2B and FIG. 2C will now be described again, but using apparatus of the host system **100** as illustrated in FIG. 3.

5

A given user interacting with a workstation **15** visits a manufacturer's web-page hosted on a data server **50** associated with the manufacturer. The given user identifies an item that he/she wishes to purchase, based on product information provided on the web-page hosted on the manufacturer's server **50.** The web-page provided by the manufacturer includes a buy icon that the given user can select to purchase the item selected by the given user. The buy icon forms a part of the manufacturer's web-page, and includes a link to a web-page or pop-up provided by the web-server apparatus **204.** When the buy icon is selected by the user, the user's web browser is taken to a new web-page that duplicates the selected product information, as illustrated in FIG. 2B, but also includes a list of retailers that are able to supply the item selected by the given user. Alternatively, the product information may still be provided by the manufacturer's web-page, and the retailer information may be provided in a separate pop-up window overlaid onto, or integrated with, the manufacturer's web-page and be provided by the web-server apparatus **204.** The data for the retailer's web-page and the manufacturer's web-page that is provided by the web-server apparatus **204** is derived from the previously populated database **206** as aforementioned. The list of retailers displayed to the given user includes at least an indication of the retailer and price of the selected item as demanded by the retailer. The displayed list optionally includes postal charges, stock information and estimated delivery times.

Thereafter, the given user makes a selection from the list of retailers. The web¬ server apparatus **204** then provides a user-input window **112** as aforementioned which is displayed on the web-page on the web browser of the workstation **15** of the given user. The input window **112** includes a plurality of input fields as aforementioned, that are to be completed by the given user to enable a transaction between the given user and the selected retailer to be executed and thereby completed; an example input window **112** is illustrated in FIG. 2C and described in the foregoing. Once the given user has completed the input fields in the input

window **112,** the user completes the transaction by selecting either a "Buy now" icon **128** or an "Add to basket" icon **130** illustrated on the input window **112.** The completed information is then sent from the web-server apparatus **204** to the interface apparatus **200** of the selected retailer in a form of a message. The

5   message includes the name of the retailer, details pertaining to the given user, and any purchase information. The format of this message is a string including all relevant information, for example in a form of a URL.

The appropriate interface apparatus **200** receives the message from the web-server

10   apparatus **204** via a receiving unit **212** and instructs the web browser apparatus **202** to open a web-page via an instructing unit **210** provided by the selected retailer hosted on the retailer's server **20.** As described above, each retailer will have an interface apparatus **200** and appropriate implementation of the interface apparatus **200** may be determined based on all the interface apparatus receiving the message,

15   and only the interface for the selected retailer acting upon the message. The URL of the web-page is provided by the interface apparatus **200,** but is optionally obtained from the database **206** based upon a look-up table using the identity of the selected retailer. Optionally, the URL is for a web-page for purchasing the selected item in a conventional manner; in other words, the web browser opens the retailer's web-page,

20   adds the selected item in a shopping basket and then proceeds to the check out. Thus, the web browser apparatus **202** presents itself to the retailer's data server **20** as a normal conventional browser; in other words, the web browser apparatus **202** functions as a purchasing agent acting on behalf of the given user in substitution for the given user interacting directly with the retailer's data server **20,** namely function in

25   a proxy manner. However, this browser is not controlled directly by the given user.

A data-arranging unit **208** within the interface apparatus **200** maps the data in the received message to the required data for the retailer's web-page. This mapping is based on predetermined information from the retailer's web-page that has been

30   previously configured within the interface apparatus **200** for the respective retailer, for example the predetermined information is derived by a developer executing manual inspection of code generating the retailer's web-page, or by semi-automated or by fully automated analysis of the code generating the retailer's web-page using algorithms, for example machine-learning and/or rule-based algorithms identifying

keywords by heuristic analysis and relative spatial location of input fields present in the code. Optionally, the machine-learning algorithms are programmed using previous examples of retailers' web-pages which have been configured manually by the developer for use in the interface system 10. In an event that there is any

5   information that is required by the retailer's web-page to complete the transaction that is not included in the received message, a data generating unit 218 generates this data. For example, making a user-registration on a retailer's web-page quicker by supplying dummy data to the retailer's web-page, for example age or gender information.

10

In an event that a retailer's web-page requires user-registration prior to making a purchase of an item therefrom, the data generating unit 218 optionally generates a username and a password required for this registration for the retailer's web-page. For example, in a case there the given user does not have an existing account with

15   the selected retailer, the data generating unit 218 is optionally operated to use an existing account with the selected retailer, wherein the data generating unit 218 optionally uses the email address as the username and a postcode as a password. If a username and password is provided to the retailer's web-page, the given user is informed of this by the interface apparatus 200 via the web-server apparatus 204.

20   Alternatively, the given user is optionally informed of the username and the password via an email triggered by the interface apparatus 200.

The data arranging unit 208 then constructs a message containing the mapped data, with any generated data, and sends the message to the web browser 202 via a

25   sending unit 214.

The web browser apparatus 202 then executes steps of performing a transaction as if the given user were performing the transaction on a web browser. This is performed by the web browser apparatus 202 using a message that is in the form of

30   a string or URL. Multiple URL's may be required before the user's information is required to be entered. However, once a user input is required on the retailer's web-page, contemporary POST methods are used as are known in the Hypertext Markup Language (HTML) programming language using Hyper Text Transfer Protocol Secure (HTTPS) or Hyper Text Transfer Protocol (HTTP). Beneficially, the POST

- 24 -

methods are employed to complete the empty input fields that would normally be completed by the given user. It will be appreciated that the nature of the required URL's and POST methods depends upon a structure of the retailer's web-page, and optionally any related web-pages when purchasing requires navigation between a plurality of web-pages. Therefore, for each action, the interface apparatus 200 provides a message to the web-browser apparatus 202. For example, a first message will be to open a web-page at the selected retailer's web-page, which could be just a URL for the retailer's web-page. Subsequent messages after the first message sent from the interface apparatus 200 to the web browser 202 are concerned with locating a selected item, adding the selected item to the virtual basket and proceeding to the check-out. Each of these steps of sending messages will be performed using one or more specific messages that are provided from the interface apparatus 200 on behalf of the given user. In some examples, the database 206 optionally stores a URL that allows direct access to a page of the selected item on the retailer's web-page to reduce the number of steps require for executing a single transaction.

Once the transaction has been completed, the web browser apparatus 202 sends a message containing data recording the completed transaction to the interface apparatus 200 via the receiving unit 212. The data arranging unit 208 generates a message which is sent to the web-server apparatus 204 via the sending unit 214 to be displayed on the web-server apparatus 204 for the given user to view via his/her workstation 15.

The given user is optionally provided with an option to allow the interface apparatus 200 to store personal user data on the database 206 for future transactions. Optionally, these personal user data may be in the form of a "yes/no" or a tick-box facility which is addressed by the given user before the given user is returned to the manufacturer's web-page.

The embodiment of the invention described in the foregoing is based on a one-step flow of information between the given user, namely consumer, and a retailer's web-page, or group of related web-pages. However, it will be appreciated that, in some cases, a user may have multiple delivery addresses, or may wish to enter a different

delivery and billing address. Therefore, in this case, the interface apparatus 200 may generate a further message that is sent to the web-server apparatus 204 to obtain further information in the same manner as described in the foregoing for obtaining initial information from the given user. For example, the web-server apparatus 204

5   generates a further input screen that is displayed to the given user for entering further information. A further example is where the given user enters incorrect details that are not valid for allowing the transaction to be performed; for example, an incorrect credit card number is entered by the given user in an input field generated by the interface system 10. Therefore, in such a situation, it is optionally necessary

10   for the interface apparatus 200 to generate a message to be sent to the web-server apparatus 204 to obtain further information from the given user, for example an further opportunity to input details in a correct manner.

Embodiments of the invention described in the foregoing pertain to data entered by

15   the given user to manage purchase of one or more items with a single retailer. However, in some cases, the given user may desire to purchase multiple products from different retailers, for example from the manufacturer's web-page as hosted by the manufacturer's data server 50. In such a scenario, the data submitted by the given user is transferred by the interface apparatus 200 to other interface apparatus

20   200.

All data transferred in the interface system 10 is optionally implemented via Internet Protocol (IP), and can be of a secured or unsecured nature, depending upon developers' requirements, manufacturers' requirements, and/or retailers'

25   requirements. All data transferred is beneficially stored in the database 206. Optionally, areas of the database 206 are made available to one or more of the manufacturers, for example either in a raw format or via an analytics engine to present stored information in a more user-friendly manner. Optionally, the data stored in the database 206 is aggregated, so that personal details regarding given

30   users are not individually discernable from the aggregated data. Optionally, analysis of the aggregated data is provided as professional sales and marketing reports which are provided by the interface system 10 in return for payment, thereby providing a business model for supporting the cost of hosting the interface system 10. Beneficially, analyses of the aggregated data are provided in real time to enable

- 26 -

manufacturers to plan production in anticipation of future user demand, for example in preparation for festivals such as Christmas. Optionally, data provided from the database 206 includes personal information such as email address, name, sales information by channel (for example personal computer, mobile telephone and social network), retailer, product line, or currency conversion rates.

Data stored in the database 206 may also be used for future transactions, for example future transactions executed by the given user. For example, if a consumer having no pre-existing relationship with a first retailer makes a purchase from the first retailer, the data stored in the database 206 could be used if the same consumer makes a purchase from a different retailer in future. Such functionality is optionally achieved by the interface apparatus 200 recognizing the consumer's name and address details for example, and extracting the relevant data from the database 206, wherein the relevant data would be added to a message generated by the data generating unit 218 and sent to the web browser apparatus 202 by the data generating unit 218.

By understanding the experience, when rendered, and the structure of the retailer's one or more web-pages, from code which generates the one or more web-pages when rendered, a developer is capable of generating and/or configuring the interfacing apparatus 200 which controls the web browser apparatus 202 based on actions of a user and predetermined events and thereby, in effect, building a custom API; optionally, the developer is assisted in a semi-automated or fully automated manner in generation of such API's as described in the foregoing. For example, heuristics analysis can be employed to identify words and phrases which identify fragments of code which are concerned with data input. Such a heuristics approach is especially advantageous when the retailers' web-pages are in mutually different languages. The configurator apparatus 90 makes it convenient for developers to create the aforesaid interface modules by parsing and analysing the retailers' web-pages and providing tools to assist building logic to control the web browser apparatus 202, the web-server apparatus 204 and the database 206, and associated dataflow therebetween. Thus, as described in the foregoing, the interface apparatus 200 is operable to manage a two-way dialogue that is programmed based on an understanding of the retailers' web-pages and/or web-site; in other words, the

- 27 -

interface apparatus 200 is operable to function as a proxy, namely an agent, on behalf of the given user, such that the given user is provided with an integrated product purchasing experience, and the interface apparatus 200 generated by the developers via the configurator apparatus 90 is operable to handle complexity

5 associated with interfacing to various retailers' and manufacturers' web-sites hosted in data servers of the interface system 10. In other words, the interface apparatus 200 are generated by looking at a source code side in respect of the retailers' and/or manufacturers' data servers 20, 50, 60, 70, wherein the developer is looking for GET/POST strings, and then using a server to mimic such strings.

10

Generation of the interfacing apparatus 200 is very different to operation of a crawler, in that a crawler can only render web-pages with absolute URL's, for example as employed for collecting data for contemporary primary search engines; if a web-page content changes, or a structure of a corresponding web-site changes, a conventional

15 crawler is thereby greatly challenged. The developer employing the configurator apparatus 90 beneficially employs a contemporary *"headless browser" engine* which can handle script execution and transactional work;. However, generation of the interface apparatus 200 involves constructing a suitable URL on the server side to communicate appropriately with the retailers' and manufacturers' servers 20, 50, 60,

20 70.

Referring to an example of using the "Buy now" icon 128 option as described in the foregoing, if the given user selects the "Add to basket" icon 130 option, a similar type of operation is performed by the interfacing apparatus 200, with an exception that the

25 interface apparatus 200 does not complete the transaction, rather stops when the selected item has been placed in the virtual shopping basket. A confirmation is optionally still used to inform the given user that the selected item has been placed in the virtual shopping basket, for example for providing a log of shopping activities executed by the given user in preparation for completing a transaction.

30

The interface system 10 is employed, amongst other functions, to convey photographic images of products to customers in processed form for the customers to take various actions and to search through the images when selecting products for purchase. Systems for capturing images, processing the images for presentation to

users have been the subject of numerous granted patents both in Europe and the USA. For example, the famous VICOM decision at the European Patent Office (EPO) T 0208/84 upheld a patent which was concerned with a solution for faster processing of an image data, even when the solution resides in a computer program.

5   The interface system **10** as described in the foregoing enables the given user to search and select images of products in a more convenient and efficient manner, by reducing a complexity of information presented to the given user; the host system **100** is thus capable of functioning as a form of data filter.

10   In an alternative embodiment, the manufacturers' data servers **50, 60, 70** may host and manage the web-page for purchasing the item selected by the given user. In such a scenario, the manufacturers' web-pages and/or data servers optionally communicate directly with the interface apparatus **200** without a need to pass via the web-server apparatus **204.**

15

In embodiments of the invention described in the foregoing, a single manufacturer's web-page is described. However, it is envisaged that a multi-product or multi-brand store may be provided via the interface system **10** to the given user, wherein the interface system **10** employs the same techniques to purchase selected items

20   presented in a multi-product store from multiple product manufacturers across multiple retailers. For example it would be possible to access web-pages of e.g. Amazon, Tesco, GAME, or E-Bay from a social media platform such as Facebook, Twitter, or Youtube, which Youtube video clip could be embedded through the interface system **10** in e.g. a person's Facebook page, to execute purchases without

25   the user experiencing that they have left the social media platform. Further, it could be an advertisement campaign, film, music video, game, which allows the user to do purchases directly from the viewed media in a secure and easy way via the interface system **10.** In another embodiment it could be a computer or multimedia game that is accessed and played via the interface system **10** in the social media platform, the

30   game or mobile application is so called embedded in the webpage via the interface system **10** allowing users to log on and access and use it through their personal profile even if the game or mobile application is on another webpage or even on another device.

- 29 -

Modifications to embodiments of the invention described in the foregoing are possible without departing from the scope of the invention as defined by the accompanying claims. Expressions such as "including", "comprising", "incorporating", "consisting of, "have", "is" used to describe and claim the present invention are intended to be construed in a non-exclusive manner, namely allowing for items, components or elements not explicitly described also to be present. Reference to the singular is also to be construed to relate to the plural. Numerals included within parentheses in the accompanying claims are intended to assist understanding of the claims and should not be construed in any way to limit subject matter claimed by these claims.

- 30 -

CLAIMS

1.   An interface system (10) including one or more users (15), one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70) which are mutually coupled in communication via a host system (100), characterized in that

the host system (100) is operable to provide an integrated shopping experience for the one or more users (15) by employing one or more interfacing apparatus (200) to function as one or more proxy agents interfacing between the host system (100) and the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70).

2.   An interface system (10) as claimed in claim 1, characterized in that the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70) are accessed via one or more third party facilities.

3.   An interface system (10) as claimed in claim 1, characterized in that the host system (100) includes a configurator apparatus (90) for use in generating the one or more interfacing apparatus (200) which are operable to receive purchase input field data from the one or more users (15) and to translate the input field data into a form suitable for entering into data fields associated with web-pages hosted at the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70).

4.   An interface system (10) as claimed in claim 1, 2 or 3, characterized in that one or more interfacing apparatus (200) comprise a common interfacing module which is adapted via an adaptor module to interface to individual web-pages hosted at the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70).

5.   An interface system (10) as claimed in any one of claims 1 to 4, characterized in that the one or more interfacing apparatus (200) are generated in a semi-automatic manner or fully-automatic manner using one or more types of machine-learning algorithms, based upon on analysis of code employed for rendering one or more

- 31 -

web-pages hosted by the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70).

6.   An interface system (10) as claimed in any one of the preceding claims, characterized in that the host system (100) includes:

(a)   a receiving unit for receiving a first message from a first web-page (102) viewed by a user via a web browser of the user, wherein the first message comprises data relating to performing a transaction for an item selected on the first web-page (102);

(b)   an instructing unit for instructing a remote web browser apparatus to open a second web-page (110, 112) based on data in the first message;

(c)   a data-arranging unit for generating a second message for performing the transaction on the second web-page (110, 112), wherein the second message comprises data from the first message; and

(d)   a sending unit for sending the second message to the remote web browser apparatus to perform the transaction on the second web-page (112).

7.   An interface system (10) as claimed in claim 6, characterized in that the host system (100) includes a data generating unit for generating data for the second message, wherein the data arranging unit is operable to combine the data generated from the data generating unit with data from the first message to generate the second message.

8.   An interface system (10) as claimed in claim 7, characterized in that the data arranging unit is operable to map the data from the first message to input fields on the second web-page (112), and to arrange the mapped-data in the second web-page (112).

9.   An interface system (10) as claimed in claim 6, characterized in that the receiving unit is operable to receive a third message from the second web-page (112) relating to completion of the transaction, wherein the data-arranging unit is

operable to generate a fourth message comprising data from the third message, and wherein the sending unit is operable to send the fourth message to the first web-page (102).

5   10.   An interface system (10) as claimed in claim 6, characterized in that the first message comprises data input by the user on the first web-page (102) and data on an item whose image is displayed on the first web-page that has been selected by the user to purchase.

10   11.   A method of providing an integrated shopping experience for one or more users using an interface system (10) as claimed in claim 1, wherein the interface system (10) includes one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70) which are mutually coupled in communication via a host system (100), characterized in that the method includes:

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(i)   providing product information on the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70); and

(ii)   using the host system (100) to provide an integrated shopping experience for
20   the one or more users (15) by employing one or more interfacing apparatus (200) to function as one or more proxy agents interfacing between the host system (100) and the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70) for assisting in selecting and purchasing one or more products presented in the product information to the one or more users.

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12.   A method as claimed in claim 11, characterized in that the method includes accessing the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70) via one or more third party facilities.

30   13.   A method as claimed in claim 11 or 12, characterized in that the method includes using a configurator apparatus (90) of the host system (100) for generating the one or more interfacing apparatus (200) which are operable to receive purchase input field data from the one or more users (15) and to translate the input field data into a form suitable for entering into data fields associated with web-pages hosted at

the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70).

14.   A method as claimed in claim 11, 12 or 13, characterized in that the method includes using a common interfacing module for the one or more interfacing apparatus (200), wherein the common interfacing module is adapted via an adaptor module to interface to individual web-pages hosted at the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70).

15.   A method as claimed in any one of claims 11 to 14, characterized in that the method includes generating the one or more interfacing apparatus (200) in a semi-automatic manner or fully-automatic manner using one or more types of machine-learning algorithms, based upon on analysis of code employed for rendering one or more web-pages hosted by the one or more retailers' data servers (20) and/or manufacturers' data servers (50, 60, 70).

16.   A method as claimed in any one of claims 11 to 15, characterized in that the method includes:
(a)   using a receiving unit for receiving a first message from a first web-page (102) viewed by a user via a web browser of the user, wherein the first message comprises data relating to performing a transaction for an item selected on the first web-page (102);

(b)   using an instructing unit for instructing a remote web browser apparatus to open a second web-page (110, 112) based on data in the first message;

(c)   using a data-arranging unit for generating a second message for performing the transaction on the second web-page (110, 112), wherein the second message comprises data from the first message; and

(d)   using a sending unit for sending the second message to the remote web browser apparatus to perform the transaction on the second web-page (112).

- 34 -

17.   A method as claimed in claim 16, characterized in that the method includes using a data generating unit for generating data for the second message, wherein the data arranging unit is operable to combine the data generated from the data generating unit with data from the first message to generate the second message.

18.   A method as claimed in claim 17, characterized in that the method includes using the data arranging unit to map the data from the first message to input fields on the second web-page (112), and to arrange the mapped-data in the second web-page (112).

19.   A method as claimed in claim 16, characterized in that the method includes using the receiving unit to receive a third message from the second web-page (112) relating to completion of the transaction, wherein the data-arranging unit is operable to generate a fourth message comprising data from the third message, and wherein the sending unit is operable to send the fourth message to the first web-page (102).

20   A method as claimed in claim 16, characterized in that the first message comprises data input by the user on the first web-page (102) and data on an item whose image is displayed on the first web-page that has been selected by the user to purchase.

21.   A software product recorded on machine-readable data storage media, characterized in that the software product is executable upon computing hardware (100) for implementing a method as claimed in any one of claims 11 to 20.
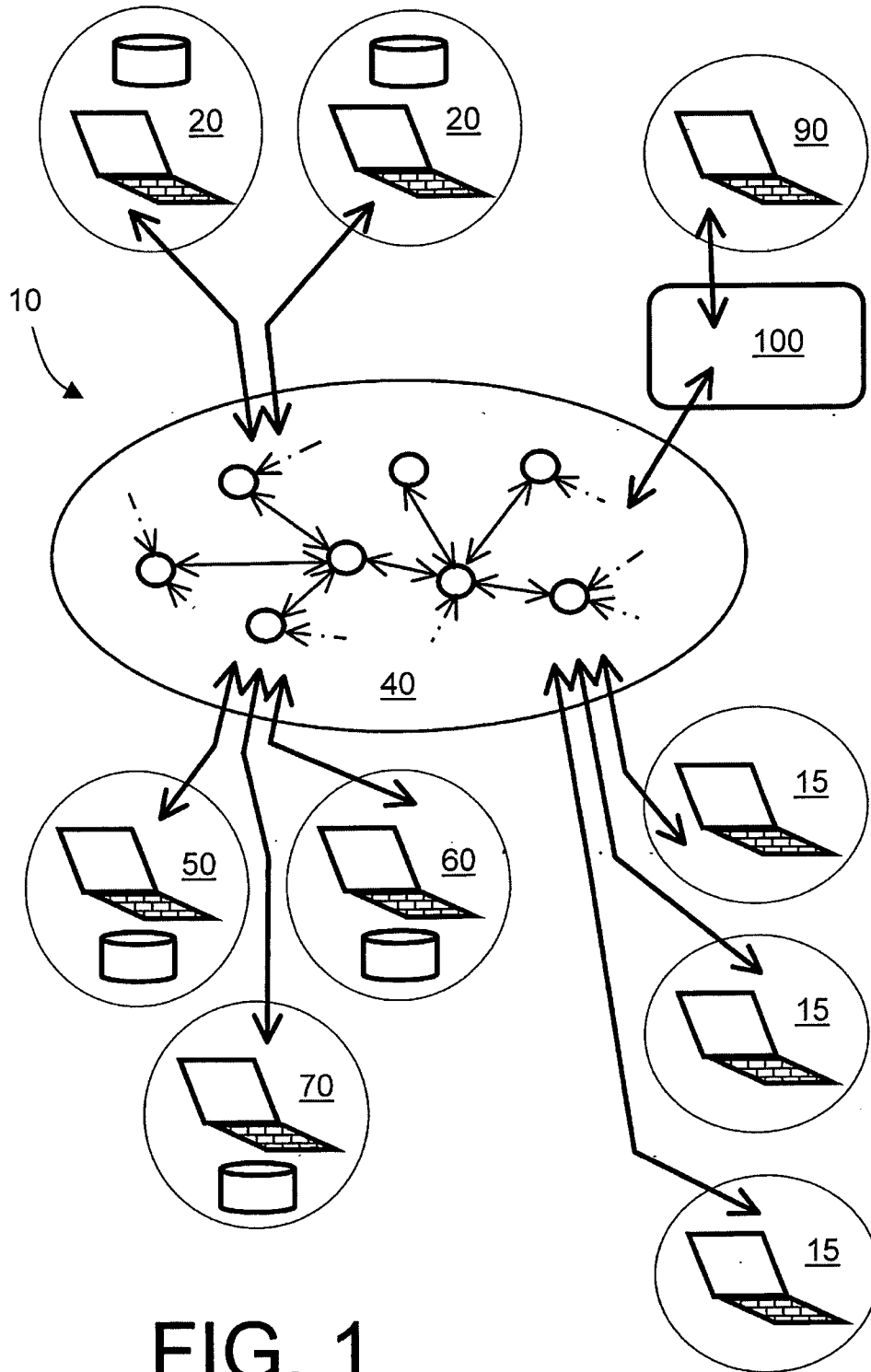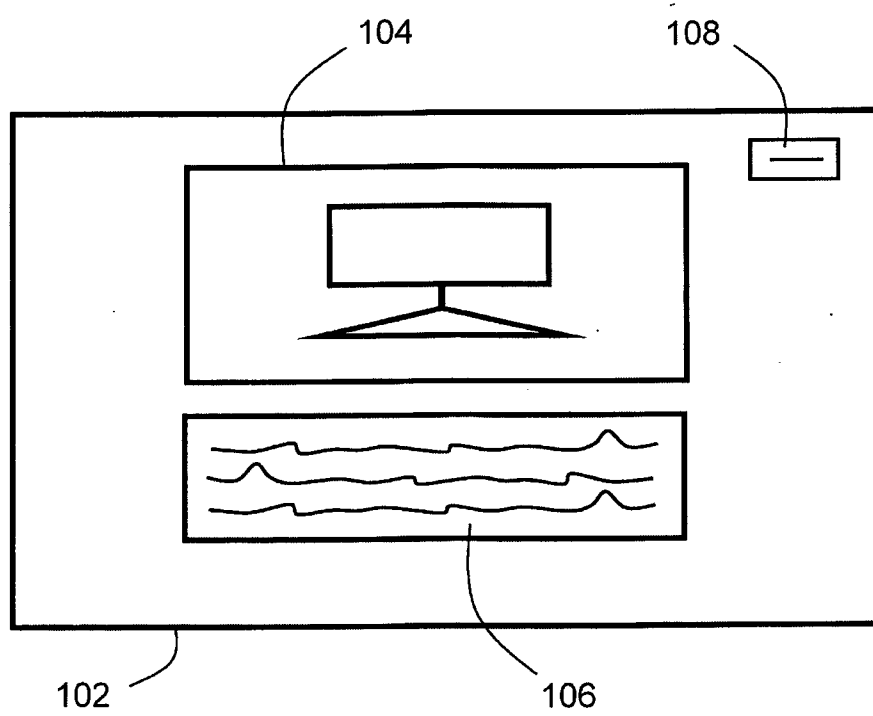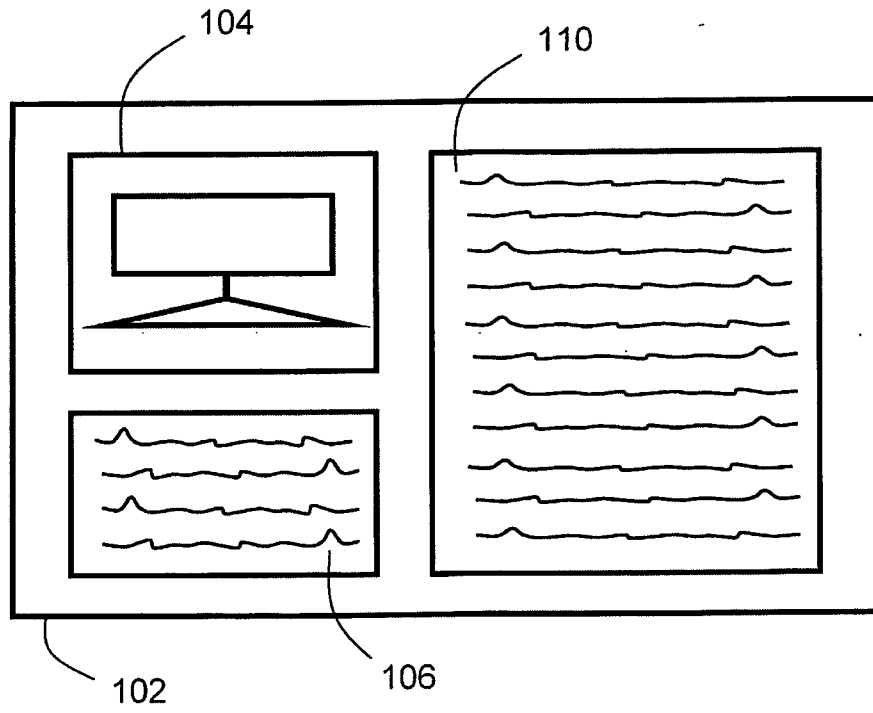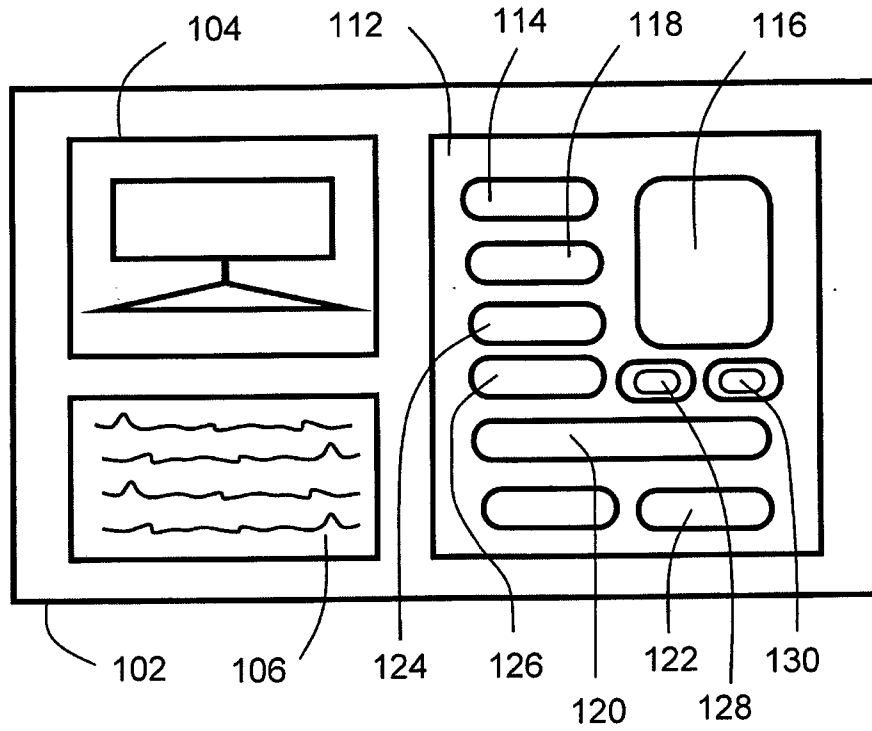
1/5

FIG. 1

FIG. 2A

3/5

FIG. 2B

4/5

FIG. 2C

5/5
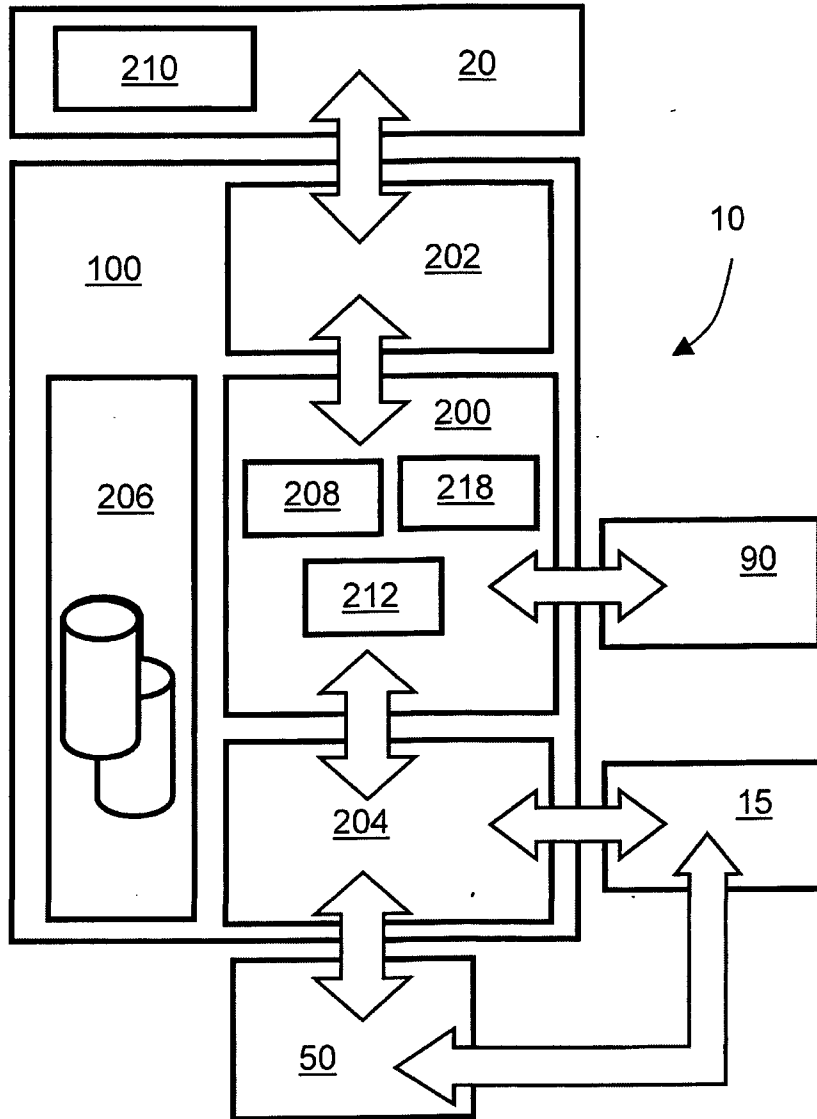

FIG. 3

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

INV. G06Q30/06
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
L	EPO: "Mitteilung des Europaischen Patentamts vom 1. Oktober 2007 Liber Geschaftsmethoden = Notice from the European Patent Office dated 1 October 2007 concerning business methods = Communiqué de 1'Office européen des brevets ,en date du ler octobre 2007, concernant les methodes dans le domaine des activitGs", JOURNAL OFFICIEL DE L'OFFICE EUROPEEN DES BREVETS. OFFICIAL JOURNAL OF THE EUROPEAN PATENT OFFICE. AMTSBLATTT DES EUROPAEISCHEN PATENTAMTS, 0EB, MUNCHEN, DE, vol. 30, no. 11, 1 November 2007 (2007-11-01) , pages 592-593 , XP007905525 , ISSN: 0170-9291 Statement in accordance with the Notice from the European Patent Office dated 1 October 2007 concerning business methods	1-21

[X] Further documents are listed in the continuation of Box C.

[ ] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" documentwhich may throw doubts on priority claim(s) orwhich is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
5 April 2013	24/04/2013

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Tiago Pinheiro

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1

INTERNATIONAL SEARCH REPORT

C(Continuation).   DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	(OJ 11/2007 ; p592f) The claimed subject matter, with due regard to the description and drawings, relates to processes comprised in the list of subject matter and activities for which no search is required under Rule 39 PCT. The applicant is advised that in accordance with the established practice of the EPO, no search need be performed in respect of those aspects of the claimed invention. The only identifiable technical aspects of the claimed invention relate to the use of conventional, general-purpose data processing technology for processing data of an inherently non-technical nature. The information technology employed is considered to have been generally known as it was widely available to everyone at the date of filing/priority of the present application. The notoriety of such prior art cannot reasonably be contested. No documentary evidence is therefore considered required. - - - - -	

Form PCT/ISA/210 (continuation of second sheet) (April 2005)