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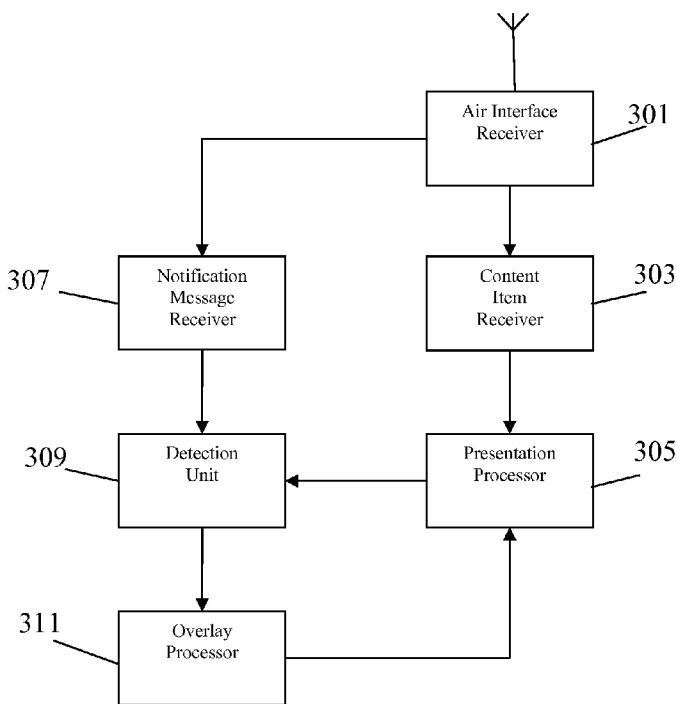
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(54) Title: CONTENT ITEM DISTRIBUTION



(57) Abstract: A content item distribution system comprises a distribution unit (105) which transmits content items, such as television programmes and adverts. The distribution unit (105) comprises functionality for selecting a user associated identity from a plurality of user associated identities and for selecting a content item. The distribution unit (105) transmits a notification message to a presentation unit (103). The notification message comprises an identification of the selected content item. The presentation unit (103) receives the content items and the notification message. A presentation processor (305) presents the content items and a detection unit (309) detects if the selected content item is presented. If so, an overlay processor (311) generates a user notification which is presented to the user. The invention may provide a television broadcast system allowing biasing of user behaviour towards the selected content item by automatically providing a reward if the user views the selected content item.

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CONTENT ITEM DISTRIBUTION**Field of the invention**

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The invention relates to content item distribution and in particular, but not exclusively, to distribution of programmes and advertisements in a television broadcast system.

10

Background of the Invention

In recent years, the availability and provision of
15 multimedia and entertainment content has increased substantially. For example, the number of available television and radio channels has grown considerably and the popularity of the Internet has provided new content distribution means. Consequently, users are increasingly
20 provided with a plethora of different types of content from different sources.

In addition to the increase in the availability of content, the devices used to access, process and present
25 content are also becoming increasingly complex with more features and enhanced functionality. For example, Personal Video Recorders (PVRs) have been introduced which provide a range of features including the ability to automatically record TV programs, easily fast forward
30 through adverts and programme breaks, recommend TV programs etc.

As a consequence, broadcasters and content providers have increasingly reduced control and influence over what programs are likely to be selected by the user. For example, users are less likely to watch adverts during a television programme resulting in reduced advertising revenue for the broadcaster.

Accordingly a content item distribution system comprising functionality allowing a distributor to efficiently and/or securely bias the user perception and/or consumption of content items would be advantageous.

Summary of the Invention

15

Accordingly, the Invention seeks to preferably mitigate, alleviate or eliminate one or more of the above mentioned disadvantages singly or in any combination.

20 According to a first aspect of the invention there is provided a content item distribution system comprising: a distribution unit comprising: first transmitting means for transmitting a plurality of content items, selection means for selecting a user associated identity from a plurality of user associated identities, means for selecting a selected content item from the plurality of content items, and second transmitting means for transmitting a notification message to a presentation unit, the notification message comprising an identification of the selected content item, and the presentation unit comprising: means for receiving the plurality of content items, means for presenting content items to a user, receiving means for receiving the

notification message, detection means for generating a detection indication in response to detecting that the selected content item is presented, and presenting means for presenting a user notification to the user in
5 response to the detection indication.

The invention may provide an improved content item distribution system which may allow a distributor (e.g. a content provider or broadcaster) to efficiently and/or
10 securely provide incentives biasing user behaviour towards specific content items.

The content item distribution system may for example be a television or radio broadcast system. The user associated
15 identity may be a direct or indirect identity of a user or subscriber. For example, the user associated identity may be an identity for a specific user, such as a specific subscriber identity, and/or an identity of the presentation unit. The content items may be transmitted
20 as a continuous stream of content items such as in a broadcast of sequential television or radio programmes.

The presentation unit may itself comprise user interface means, such as a display or a loudspeaker, for presenting
25 the content items and/or may present the content items by feeding these to a suitable external presentation device such as a television or radio. Specifically, the presentation unit may be a Set Top Box (STB) such as a receiver unit for digital television.

30

According to an optional feature of the invention, the first selection means is arranged to randomly select the

user associated identity from the plurality of user associated identities.

The system may allow an efficient random incentive to
5 provide an encouragement to users to select a specific content item.

According to an optional feature of the invention, the second transmitting means is arranged to broadcast the
10 notification message to a plurality of presentation units, the notification message comprising an identity indication for the selected user associated identity, and the presentation unit is further arranged to determine if the notification message is intended for the presentation
15 unit in response to the identity indication.

This may allow improved and/or facilitated communication in many embodiments and/or may allow increased reliability of the user bias functionality.
20

The notification message may be transmitted using the same communication or distribution means used for the content items. The user notification is presented only if the notification message is intended for the presentation
25 unit.

According to an optional feature of the invention, the presentation unit further comprises means for transmitting a message to a remote processor in response
30 to the detection indication, the message indicating that the user notification is presented to the users.

This may allow a remote processor to detect that a selected content item has been presented to a selected user thereby allowing appropriate action. For example, the remote processor may belong to the

5 distributor/broadcaster and the message can be used by the distributor/broadcaster to initiate an issuance of a reward to the selected user.

According to an optional feature of the invention, the

10 content item distribution system further comprises user input means for receiving a user input and wherein the detection means is further arranged to generate the detection indication in response to receiving a user input during the presentation of the selected content

15 item.

This may provide improved performance and may in particular allow e.g. rewards to be issued if the selected content item is actively consumed by a user who

20 can perform a user action in response to detecting the user notification.

According to an optional feature of the invention, the second transmitting means is arranged to encrypt the

25 notification message and the receiving means is arranged to decrypt the notification message.

This may allow improved performance and may in particular allow a more reliable and/or secure system for biasing

30 user consumption towards selected content items.

According to another aspect of the invention, there is provided a distribution unit for a content item

distribution system comprising: means for transmitting a plurality of content items; selection means for selecting a user associated identity from a plurality of user associated identities; means for selecting a selected
5 content item out of the plurality of content items; and transmitting means for transmitting a notification message to a presentation unit, the notification message comprising an identification of the selected content item.

10

According to another aspect of the invention, there is provided a presentation unit for a content item distribution system comprising: means for receiving a plurality of content items; means for presenting content
15 items to a user; receiving means for receiving a notification message, the notification message comprising an identification of a selected content item of the plurality of content items; detection means for generating a detection indication in response to
20 detecting that the selected content item is presented; and presenting means for presenting a user notification to the user in response to the detection indication.

According to another aspect of the invention, there is
25 provided a method of content item distribution, the method comprising: a distribution unit performing the steps of: transmitting a plurality of content items, selecting a user associated identity from a plurality of user associated identities, selecting a selected content
30 item from the plurality of content items, and transmitting a notification message to a presentation unit, the notification message comprising an identification of the selected content item, and the

presentation unit performing the steps of: receiving the plurality of content items, presenting content items to a user, receiving the notification message, generating a detection indication in response to detecting that the
5 selected content item is presented, and presenting a user notification to the user in response to the detection indication.

These and other aspects, features and advantages of the
10 invention will be apparent from and elucidated with reference to the embodiment(s) described hereinafter.

Brief Description of the Drawings

15

Embodiments of the invention will be described, by way of example only, with reference to the drawings, in which

FIG. 1 illustrates an example of a television broadcast
20 system in accordance with some embodiments of the invention;

FIG. 2 illustrates an example of a distribution unit in accordance with some embodiments of the invention;

25

FIG. 3 illustrates an example of a television receiver in accordance with some embodiments of the invention;

FIG. 4 illustrates an example of a method of operation of
30 a distribution unit in accordance with some embodiments of the invention; and

FIG. 5 illustrates an example of a method of operation of a presentation unit in accordance with some embodiments of the invention.

5

Detailed Description of Some Embodiments of the Invention

The following description focuses on embodiments of the invention applicable to a television broadcasting system.

10 However, it will be appreciated that the invention is not limited to this application but may be applied to many other systems such as for example radio broadcasts or Internet based content distribution systems (e.g. online real time radio or video transmissions).

15

FIG. 1 illustrates an example of a television broadcast system in accordance with some embodiments of the invention. In the example, a TV broadcast transmitter 101 transmits digital TV signals to a plurality of
20 presentation units in the form of TV receivers 103. The TV receivers 103 can for example be televisions or set-top boxes like digital TV receivers, PVRs etc.

In the system, the TV broadcast transmitter 101 is
25 coupled to a content server 105 which provides a stream of television content items that are transmitted as a single digital TV channel. The programme stream received from the content server 105 comprises TV programmes interspersed with adverts. In addition, various programme
30 information and linking content items can be present between the individual TV programmes.

In current TV broadcast systems, advertisers and
broadcasters are confronted by the growing problem that
more and more of their customers are ignoring many
content items, such as adverts, for example by switching
5 channels or fast-forwarding through recorded TV programme
breaks.

However, the television broadcast systems of FIG. 1
includes functionality that allows the broadcaster not
10 only to distribute TV broadcast for the user to select
between but also comprises functionality for securely and
effectively implementing a distributed incentive system
that may bias users towards desired content items.

15 The distribution system specifically comprises
functionality that allows broadcasters to automatically
provide a reward to users for watching specific content
items. For example, the distribution system provides the
technical means that allows (e.g. randomly) selected
20 users to be rewarded if it is detected that they are
presented with a specific content item.

As a specific example, the distribution system allows an
incentive scheme similar to a lottery to be provided. The
25 system allows an automatic rewarding of randomly selected
users based on low complexity and secure interactions
between the TV broadcast transmitter 101/ content server
115 and the individual TV receivers 103. The TV receivers
103 comprise functionality that allows the distributed
30 incentive scheme to be automatically implemented without
the user needing to evaluate whether he has been selected
for the reward.

In the example, at least one user is randomly selected as a potential recipient of a reward but the reward is conditional on the user viewing a specific content item, such as a specific advert. The TV receiver 103 of the
5 selected user receives a message indicating the selected content item and the potential reward. The TV receiver 103 then proceeds to detect whether the specified content item is actually presented to the user or whether the
10 user skips the content item e.g. by fast forwarding or switching channels. If the content item is presented to the user, the TV receiver 103 generates a user notification which is presented to the user, for example by presenting a message on the TV display.

15 Accordingly, the user is presented with no information of the selection of the content item or that he has been selected for the reward. Rather, the user experiences that by watching a specific advert he has won a prize. Accordingly, users are biased towards watching typical
20 content items for which they know that prizes may possibly be won. For example, the viewers may be informed that prizes are randomly awarded to users viewing adverts (but e.g. without being informed which adverts). Accordingly, the users are much more likely to watch the
25 adverts rather than to fast forward through these. Furthermore, as the individual user has no information of who has been pre-selected or of which specific content item will trigger the reward, a general bias towards a specific type of content items rather than for the
30 specific content item can be achieved.

FIG. 2 illustrates the content server 105 in more detail. The content server 105 comprises a content stream

processor 201 which generates a continuous stream of content items. For example, the content stream processor 201 can generate a TV channel by sequentially combining content items corresponding to television programmes, 5 adverts etc.

The content stream processor 201 is coupled to a first transmit controller 203 which receives the stream of content items corresponding to the television channel 10 that is to be transmitted. The first transmit controller 203 causes the stream of content items to be transmitted. Specifically the first transmit controller 203 is coupled to a transmit interface 205 which is further coupled to the TV broadcast transmitter 101. The first transmit 15 controller 203 schedules the stream of content items and feeds it to the TV broadcast transmitter 101 which broadcasts the signal to the TV receivers 103.

The content server 105 furthermore comprises a content 20 item selection unit 207 which is arranged to select one or more specific content items from the stream of content items that are fed to the first transmit controller 203 by the content stream processor 201. The content item selection unit 207 specifically receives information from 25 the content stream processor 201 indicating which content items are included in the stream. For example, the constant stream processor 201 can provide information of which adverts are (or will be) included in the generated TV programme.

30

The content item selection unit 207 proceeds to select one (or more) of the content items, such as one (or more) adverts.

The content server 105 furthermore comprises a subscriber selection unit 209 which is arranged to selecting a user associated identity from a plurality of user associated
5 identities. The user associated identity may in some embodiments be a direct identity of a user such as a user number or name. However, in many embodiments the user associated identity is an indirect identity which does not directly identify the user but rather identifies
10 receiving equipment associated with the user, such as the identity of a specific TV receiver 103 of FIG. 1. Thus, the user associated identity may typically be an identity of a set-top box, such as a digital TV receiver or PVR, or indeed an identity of a television.

15

Thus, in the example of the content server 105 comprises information of which TV receivers 103 belong to the system. It will be appreciated, that in many applications television distribution systems inherently have
20 information relating to the identity of the subscribers. For example, in many cable or satellite television distribution systems subscribers and associated subscriber identities (such as identities of equipment associated with the subscriber) are centrally recorded
25 and stored for e.g. billing purposes. In such embodiments, this information may be provided to the content server 105 by the operator of the system. Furthermore, in embodiments where no explicit subscription is required, users may voluntarily register with the
30 content server 105 in order to be eligible for the reward and the subscriber selection unit 209 may select a user associated identity between the registered identities.

Thus, in some embodiments only some of the users may be registered for the scheme.

In the specific example, the television broadcast system
5 is a subscription based system. For each subscription, a TV receiver 103 with an associated subscriber identity has been assigned and registered by the content server. Thus, for the purposes of the described scheme, the subscription and subscriber identity is in this case
10 linked directly to the TV receiver 103 rather than to the user as such. In the example the subscriber selection unit 209 selects the user associated identity by selecting a subscriber identity of a TV receiver 103.

15

In many embodiments, the subscriber identity is selected completely at random between the registered subscriber identities. In other embodiments, a more deterministic approach may be used wherein for example subscriber
20 identities are sequentially selected in order to provide a reward within a certain duration for every user. In some embodiments, a combination of a stochastic and deterministic approach may be used for example by modifying the probability for a given subscriber identity
25 to be selected depending on the number of previous rewards that have been allocated to that identity. In some systems, the exact selection criterion may not be known to the users and accordingly even substantially deterministic selection criteria may result in the
30 appearance of a substantially random allocation of rewards.

The content item selection unit 207 and the subscriber selection unit 209 are coupled to a second transmit controller 211. The second transmit controller 211 is arranged to generate a notification message which
5 includes an indication of the content item that has been selected. The second transmit controller 211 is coupled to the transmitter interface 205 and is arranged to transmit the notification message to the selected subscriber identity using the TV broadcast transmitter
10 101.

It will be appreciated, that any suitable means can be used for the transmission of the notification message to the selected subscriber identity.

15

For example, the notification message can be communicated using the traditional broadcast channel, along with other programmes. This can be for instance on a dedicated channel or overnight when fewer programmes are broadcast.
20 In such cases, the notification message can be transmitted repeatedly to maximise the chance for the TV receiver 103 to be available and to receive it. As another example, the notification message may also be broadcast along with the associated content item each
25 time this is broadcast.

As another example, the notification message may be transmitted through completely different communication means than for the transmission of the content items. For
30 example if the TV receivers 103 are connected to the Internet, the notification message may be communicated as a unicast/multicast connection using Internet communication techniques.

Thus, the notification message may be transmitted to the selected TV receiver 103 using a broadcast communication channel shared by many TV receivers 103 and/or may be
5 transmitted using a dedicated communication channel for the selected TV receiver 103. In the former case, the notification message may typically also comprise an identification of the selected TV receiver 103.

10 Specifically, the second transmit controller 211 can include the selected subscriber identity in the notification message. In such cases, each individual TV receiver 103 can monitor the broadcast channel and can for each transmitted notification message evaluate
15 whether the notification message is addressed to that specific TV receiver 103, i.e. whether it includes the subscriber identity of the TV receiver 103. If this is not the case, the received notification message is simply ignored.

20

It will also be appreciated, that any suitable means of identifying the selected content item may be used by the notification message. For example, in some embodiments the selected content item can be identified by an
25 indication of a specific transmission time for the content item. For example, the notification message can simply indicate that the selected content item is a TV programme being transmitted from time instant A to time instant B.

30

In some embodiments, the stream of content items generated by the content stream processor 201 may further comprise a content item indicator which indicates when a

new content item starts and identifies the specific content item. For example, an MPEG stream may be generated which includes dedicated tags for each content item, e.g. each content item may have a unique
5 identifying number which is inserted in the metadata placeholder of the MPEG stream. In such embodiments, the notification message may simply comprise an identification of the appropriate content item indicator such as the unique identifying number.

10

This may provide improved performance in many embodiments and may in particular provide reduced sensitivity to schedule variations and broadcast delays.

15 FIG. 3 illustrates one of the TV receivers 103 in more detail.

The TV receiver 103 comprises an air interface receiver 301 which receives the content stream transmissions from
20 the broadcast transmitter 101.

The air interface receiver 301 is coupled to a content item receiver 303 which receives the stream of content items transmitted from the TV broadcast transmitter 101.
25 The content item receiver 303 is coupled to presentation processor 305 which is arranged present the received stream of content items to a user. For example, in the case where the TV receiver 103 is a digital TV receiver, the presentation processor 305 may be arranged to
30 generate a video output signal which is fed to a suitable display, such as a monitor or television. Thus, the TV receiver 103 receives the transmitted TV channels and presents these to the user. As will be appreciated, the

user can furthermore control the TV receiver 103 to switch between different television channels, fast forward through recorded material etc depending on the specific features and capabilities of the specific TV
5 receiver 103.

The TV receiver 103 comprises a notification message receiver 307 which is coupled to the air interface receiver 301 and which receives the notification message
10 transmitted by the second transmit controller 211 of the content server 105.

In the specific example, the notification message is transmitted using this same broadcast communication
15 medium as used for the stream of content items and may specifically be transmitted as part of this broadcast. Accordingly, the notification message may be extracted from the broadcast transmission by the notification message receiver 307.

20 It will be appreciated that in other embodiments other communication means for communicating the notification message may be used and accordingly the notification message receiver 307 may comprise the required
25 functionality for receiving the notification message via such communication means. For example, the notification message may in some embodiments be communicated through the Internet and the notification message receiver 307 may comprise the required functionality for connecting to
30 the Internet and for receiving messages via the Internet.

Furthermore, in some embodiments, the notification message is a dedicated message transmitted only to the

selected TV receiver 103. However in other embodiments the notification message may be a broadcast message transmitted to a plurality of TV receivers. In this case, the notification message receiver 307 may monitor the
5 broadcast communication means on which the notification message is transmitted. Furthermore, for each received notification message it may extract subscriber identity information and compare this to the subscriber identity of the TV receiver 103. If the subscriber identities
10 match, the notification message is considered to be addressed to the TV receiver 103 and is processed further. Otherwise, the notification message is simply ignored by the TV receiver 103.

15 The notification message receiver 307 is coupled to detection unit 309 which is fed information identifying the content item that was selected by the content item selection unit 207 and identified in the notification message. The detection unit 309 is furthermore coupled to
20 the presentation processor 305 and receives information of which content items are currently being presented to the user.

The detection unit 309 is arranged to generate a
25 detection indication in response to detecting that the selected content item is presented. Specifically, when the selected content item is known to be transmitted from the TV broadcast transmitter, the detection unit 309 detects whether the presentation processor 305 is indeed
30 presenting the selected content item. If so, a positive detection indication is generated.

As another example, the notification message may comprise an indication of a specific content item indicator in the received content item stream and the detection unit 309 may monitor the presented content item stream to detect
5 if it includes the content item indicator. For example, the content item stream may be an MPEG stream comprising dedicated tags identifying the individual content items and the detection unit 309 may detect the tags of the presented content items and compare them to tag(s)
10 included in the notification message.

The detection unit 309 is furthermore coupled to an overlay processor 311 which is also coupled to the presentation processor 305. If the detection unit 309
15 detects that the selected constant item is indeed presented, the positive detection indication is fed to the overlay processor 311 which proceeds to generate a user notification message indicating that the user has received a reward. The user notification message is in
20 the specific example overlaid on the image which is currently being presented to the user.

Thus, the user will simply experience that while watching an advert, a message will appear on the screen informing
25 him that he has won a prize simply for watching the specific advert.

Thus, in some embodiments, the presentation processor 305 may simply overlay the current display by some textual
30 information about the prize and/or may present the information on e.g. a secondary display. Such information may for instance consist in a number to be called to

validate the win or may include a password to get a discount in a shop.

In some embodiments, the presentation processor 305 may
5 replace the selected content item with another content item. For example, an advert may be replaced by a customized advert. In some examples, the replacement content item may be received with or as part of the notification message.

10

In some embodiments, the detection unit 309 can detect if the content item is presented when it is received. For example, in some embodiments, the positive detection indication is only generated if the content item is
15 presented when received. In such examples, the user is only presented with the prize of he is actually watching the selected constant item in real-time as it is being broadcast.

20 In some embodiments, the TV receiver 103 may comprise functionality for storing content items. For example, the TV receiver 103 may be a PVR that can record individual TV programmes. In some such embodiments, the detection unit 309 can be arranged to detect not only if the
25 content item is presented when it is broadcast but alternatively or additionally the detection unit 309 can generate a positive detection indication if the selected content item is being presented during playback of the recorded sequence.

30

Thus, in such embodiments, the user may also be presented with the prize if he watches the selected content item as part of a recorded programme. For example, if a user

watches a recorded TV programme he may be rewarded with a prize if the detection unit 309 detects that he watches the selected advert during play back rather than fast forwarding through the advert breaks.

5

In some embodiments, the detection unit 309 may also detect whether the entire selected content item is watched from start to finish. In such cases, the positive detection indication may only be generated if the entire
10 content item is presented without fast forwarding of any part of the content item.

In some embodiments, the TV receiver 103 may furthermore comprise a user input and the detection unit 309 may only
15 generate the positive detection indication if the user provides a suitable input during the presentation of the content item.

For example, the detection unit 309 may initially detect
20 that the selected content item is being presented. It may then generate a tentative detection indication and feed this to the overlay processor 311. In response, the overlay processor may overlay the presented image with a user notification that indicates that the user has been
25 awarded a prize if he enters a specific user input. For example, the message may require the user to enter a specific number code using his remote control.

The detection unit 309 may furthermore be coupled to the
30 user input and detect whether the requested user input is received. In the specific example, the detection unit 309 determines whether the user has entered the required number code. If so, the positive detection indication is

generated and forwarded to the overlay processor 311 which accordingly imposes an overlay message indicating that the prize has been awarded.

5 This approach may ensure that an award is only presented if the user is actively watching the selected content item. For example, it may ensure that a user does not receive rewards merely because he leaves the TV receiver 103 on continuously.

10

In some embodiments, the overlay message may indicate a further action to be performed by the user. For example, the overlay message may indicate that the user should phone a specific telephone number in order to claim the

15 prize.

In some embodiments, the transmission of the notification message may use encryption techniques to provide increased security. Furthermore, in some embodiments, the
20 encryption may be combined with an identification of the desired recipient. For example, each TV receiver 103 may have a public cryptography key pair. In such cases, the second transmit controller 211 may encrypt the notification message using the public key of the selected
25 TV receiver 103. The encrypted notification message may then be broadcast e.g. by the TV broadcast transmitter 101. The notification message receiver 307 of the different TV receivers 103 may receive the encrypted notification messages and apply their private key to the
30 encrypted notification message in order to decrypt this. This encryption will only be successful for the TV receiver 103 for which the public key has been used. Thus, only this receiver will proceed to use the

transmitted notification message to provide a reward to a user. Hence, a simple, efficient and secure system can be achieved.

5 In some embodiments, a return channel may exist from the TV receiver 103 to a remote server used by the operator to monitor and control the system. For example, the TV receivers 103 and the content server 105 may be coupled to the Internet thereby providing means for the TV
10 receivers 103 to transmit messages to the content server 105. In this case, the overlay processor 311 may furthermore comprise functionality for notifying the content server 105 that a reward has been issued to the user. This may be used to automatically provide the prize
15 (e.g. if the prize is a free access to premium content) to generate a message for the operator to provide a prize to the user. Furthermore, in such embodiments the overlay processor 311 may include an identification of the TV receiver 103 which can be compared to the list of
20 potential winners generated by the subscriber selection unit 209 thereby providing increased security and reliability.

FIG. 4 and 5 illustrates a method of content item
25 distribution in accordance with some embodiments of the invention. FIG. 4 illustrates the operation performed by a transmitter and FIG. 5 illustrates the method performed by a presentation unit, such as a TV receiver 103 of FIG. 1.

30

In step 401 a plurality of content items are transmitted from the transmitter. It will be appreciated that step

401 may be performed after or in parallel to steps 403 to 407.

In step 403 a subscriber identity is selected from a
5 plurality of subscriber identities.

In step 405 a selected content item is selected from the plurality of content items.

10 In step 407 a notification message is transmitted to the presentation unit. The notification message comprises an identification of the selected content item. The method then returns to step 401.

15 In step 501 the presentation unit receives the notification message.

In step 503 the plurality of content items are received.

20 In step 505 the content items are presented to a user.

In step 507 a detection indication is generated in response to detecting that the selected content item is
25 presented. If no positive detection indication is generated, the method returns to step 503. Otherwise it proceeds to step 509.

In step 509 a user notification is presented to the user
30 in response to the detection indication.

It will be appreciated that the above description for clarity has described embodiments of the invention with

reference to different functional units and processors. However, it will be apparent that any suitable distribution of functionality between different functional units or processors may be used without
5 detracting from the invention. For example, functionality illustrated to be performed by separate processors or controllers may be performed by the same processor or controllers. Hence, references to specific functional units are only to be seen as references to
10 suitable means for providing the described functionality rather than indicative of a strict logical or physical structure or organization.

The invention can be implemented in any suitable form
15 including hardware, software, firmware or any combination of these. The invention may optionally be implemented at least partly as computer software running on one or more data processors and/or digital signal processors. The elements and components of an embodiment of the invention
20 may be physically, functionally and logically implemented in any suitable way. Indeed the functionality may be implemented in a single unit, in a plurality of units or as part of other functional units. As such, the invention may be implemented in a single unit or may be physically
25 and functionally distributed between different units and processors.

Although the present invention has been described in connection with some embodiments, it is not intended to
30 be limited to the specific form set forth herein. Rather, the scope of the present invention is limited only by the accompanying claims. Additionally, although a feature may appear to be described in connection with particular

embodiments, one skilled in the art would recognize that various features of the described embodiments may be combined in accordance with the invention. In the claims, the term comprising does not exclude the presence
5 of other elements or steps.

Furthermore, although individually listed, a plurality of means, elements or method steps may be implemented by e.g. a single unit or processor. Additionally, although
10 individual features may be included in different claims, these may possibly be advantageously combined, and the inclusion in different claims does not imply that a combination of features is not feasible and/or advantageous. Also the inclusion of a feature in one
15 category of claims does not imply a limitation to this category but rather indicates that the feature is equally applicable to other claim categories as appropriate. Furthermore, the order of features in the claims does not imply any specific order in which the features must be
20 worked and in particular the order of individual steps in a method claim does not imply that the steps must be performed in this order. Rather, the steps may be performed in any suitable order.

CLAIMS

1. A content item distribution system comprising:
a distribution unit comprising:
 - 5 first transmitting means for transmitting a plurality of content items,
selection means for selecting a user associated identity from a plurality of user associated identities,
10 means for selecting a selected content item from the plurality of content items, and
second transmitting means for transmitting a notification message to a presentation unit, the notification message comprising an identification of
15 the selected content item, and
the presentation unit comprising:
means for receiving the plurality of content items,
means for presenting content items to a user,
receiving means for receiving the notification
20 message,
detection means for generating a detection indication in response to detecting that the selected content item is presented, and
presenting means for presenting a user notification
25 to the user in response to the detection indication.
2. The content item distribution system of claim 1 wherein the first selection means is arranged to randomly select the user associated identity from the plurality of
30 user associated identities.
3. The content item distribution system of claim 1 wherein the second transmitting means is arranged to

broadcast the notification message to a plurality of presentation units, the notification message comprising an identity indication for the selected user associated identity, and the presentation unit is further arranged
5 to determine if the notification message is intended for the presentation unit in response to the identity indication.

4. The content item distribution system of claim 1
10 wherein the presentation unit further comprises means for transmitting a message to a remote processor in response to the detection indication, the message indicating that the user notification is presented to the users.

15 5. The content item distribution system of claim 1 wherein the detection means is arranged to generate the detection indication if the selected content item is presented when received.

20 6. The content item distribution system of claim 1 further comprising storage means for storing received content items and wherein the detection means is arranged to generate the detection indication if the selected content item is presented by retrieval from the storage
25 means.

7. The content item distribution system of claim 1 further comprising user input means for receiving a user input and wherein the detection means is further arranged
30 to generate the detection indication in response to receiving a user input during the presentation of the selected content item.

8. The content item distribution system of claim 7 further comprising means for presenting a user input request in response to detecting that the selected content item is presented.

5

9. The content item distribution system of claim 1 wherein the identification of the selected content item comprises an indication of a transmission time for the selected content item.

10

10. The content item distribution system of claim 1 wherein the first transmitting means is arranged to transmit the plurality of content items as a stream of content items, the stream further comprising content item

15 indicators, and the identification of the selected content item comprises an indication of a content item indicator associated with the selected content item.

11. The content item distribution system of claim 1
20 wherein the presenting means is arranged to replace the selected content item by a different content item in response to the detection indication.

12. The content item distribution system of claim 1
25 wherein the presenting means is arranged to overlay the presentation of the selected content item by the user notification.

13. The content item distribution system of claim 1
30 wherein the second transmitting means is arranged to encrypt the notification message and the receiving means is arranged to decrypt the notification message.

14. The content item distribution system of claim 1 wherein the second transmitting means is arranged to encrypt the notification message using a public key for the selected user associated identity and to broadcast
5 the notification message to a plurality of presentation units, and the receiver is arranged to decrypt the notification message using a private key associated with the presentation unit.

10 15. The content item distribution system of claim 1 wherein the user notification comprises an indication of a requested user action.

16. The content item distribution system of claim 1
15 wherein the selected content item is an advertisement content item.

17. A distribution unit for a content item distribution system comprising:

20 means for transmitting a plurality of content items; selection means for selecting a user associated identity from a plurality of user associated identities;
means for selecting a selected content item out of
25 the plurality of content items; and transmitting means for transmitting a notification message to a presentation unit, the notification message comprising an identification of the selected content item.

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18. A presentation unit for a content item distribution system comprising:

means for receiving a plurality of content items;

means for presenting content items to a user;
receiving means for receiving a notification
message, the notification message comprising an
identification of a selected content item of the
5 plurality of content items;
detection means for generating a detection
indication in response to detecting that the
selected content item is presented; and
presenting means for presenting a user notification
10 to the user in response to the detection indication.

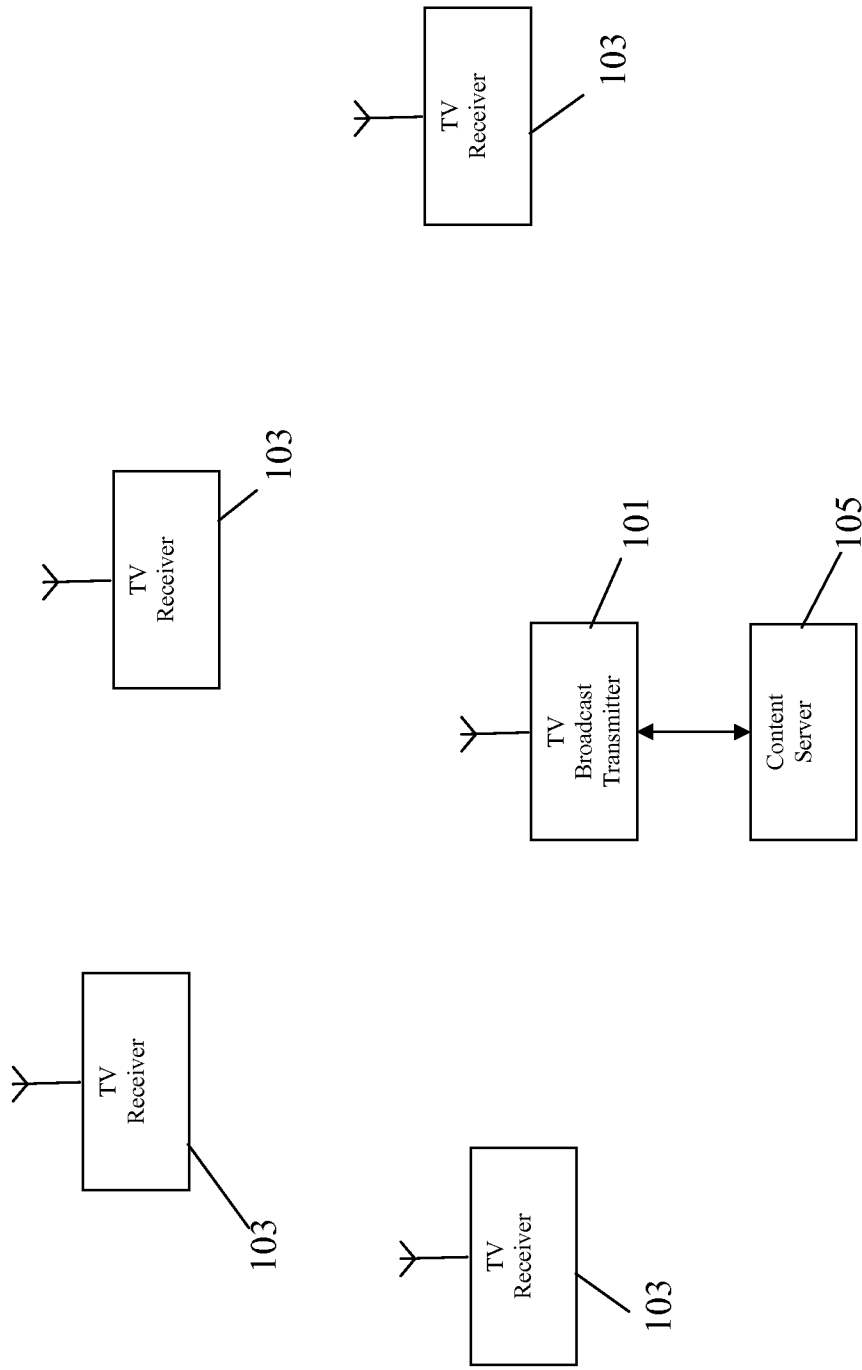
19. A method of content item distribution, the method
comprising:

a distribution unit performing the steps of:

15 transmitting a plurality of content items,
selecting a user associated identity from a
plurality of user associated identities,
selecting a selected content item from the plurality
of content items, and
20 transmitting a notification message to a
presentation unit, the notification message
comprising an identification of the selected content
item, and

the presentation unit performing the steps of:

25 receiving the plurality of content items,
presenting content items to a user,
receiving the notification message,
generating a detection indication in response to
detecting that the selected content item is
30 presented, and
presenting a user notification to the user in
response to the detection indication.



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FIG. 1

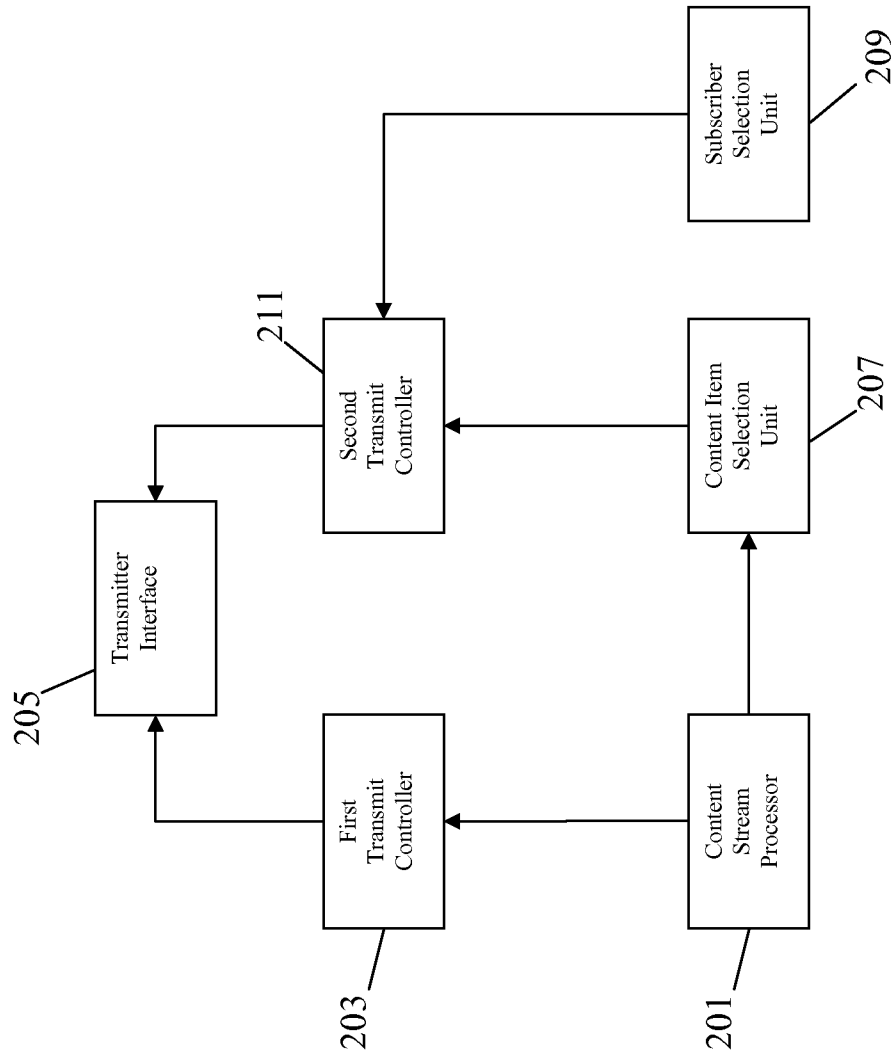
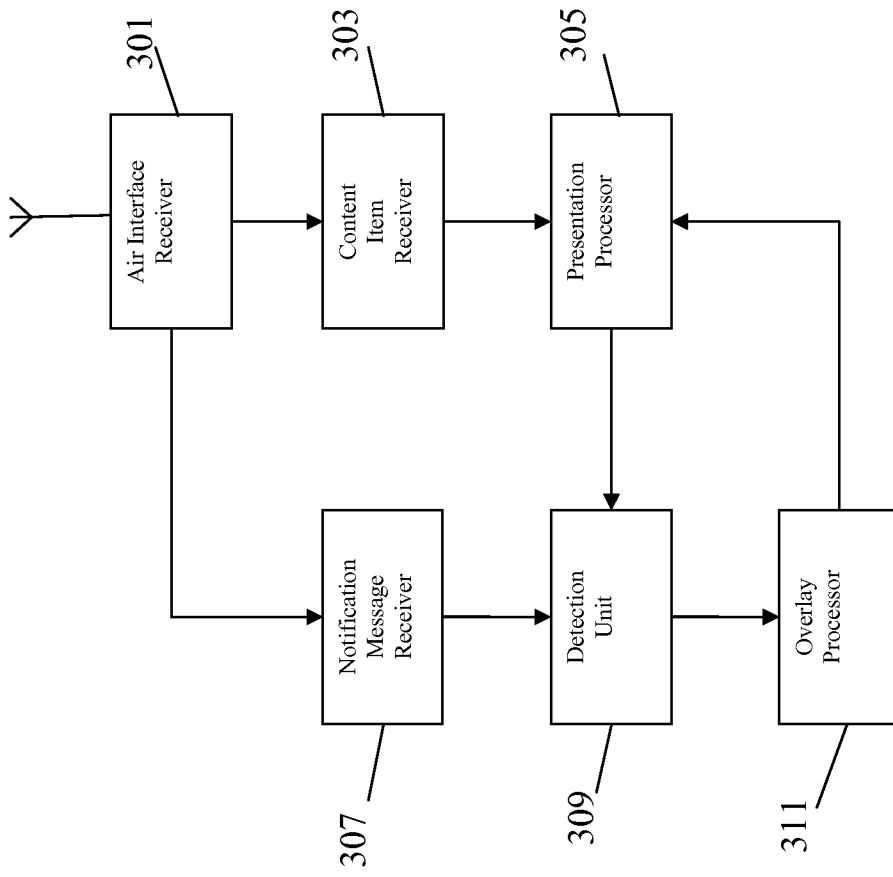


FIG. 2



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FIG. 3

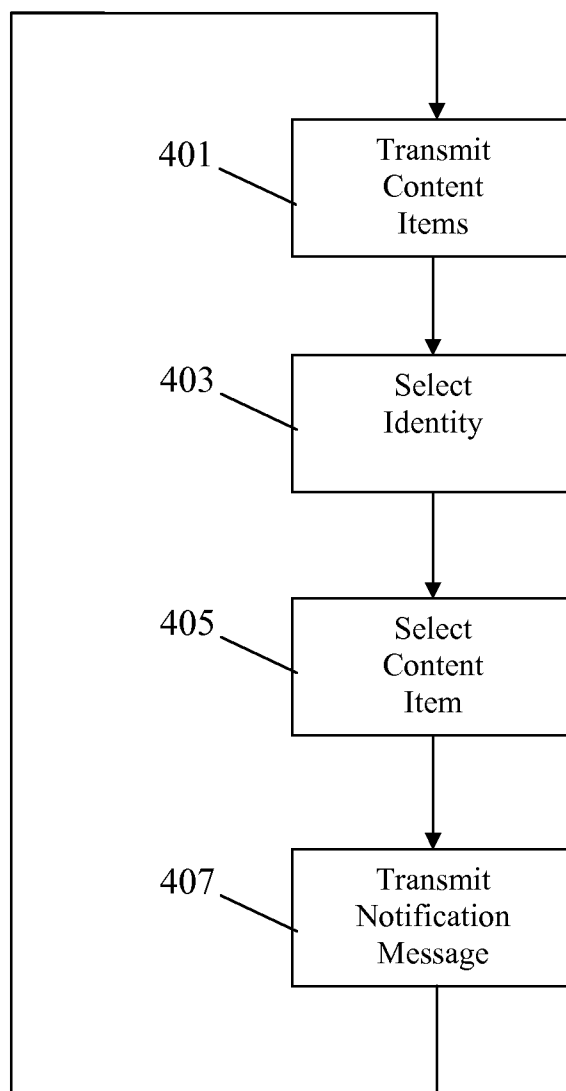


FIG.4

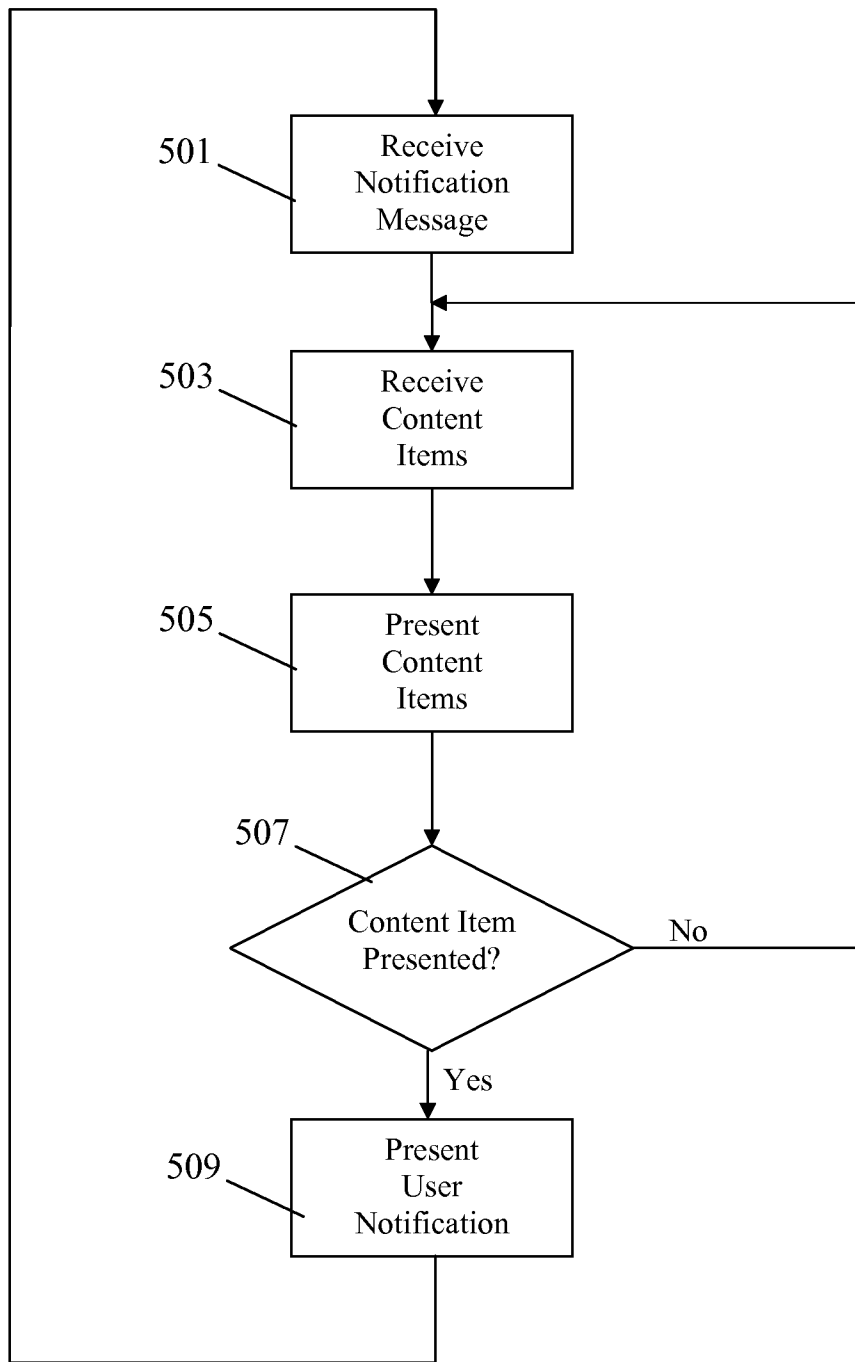


FIG.5