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(54) **METHOD, APPARATUS AND SYSTEM FOR IMPLEMENTING VIDEO OCCLUSION**

(57) Embodiments of the present invention disclose a method, an apparatus, and a system for implementing video mask. The method includes: receiving, by a monitoring platform, a video request of a monitoring terminal, determining permission of a user of the monitoring terminal, sending, according to a determined result, only non-masked video data to a monitoring terminal of a user that has no permission to acquire masked video data, and sending the masked video data and the non-masked

video data to a monitoring terminal of a user that has permission to acquire a part or all of the masked video data, so that the monitoring terminal merges and plays the masked video data and the non-masked video data, or sending video data merged from the masked video data and the non-masked video data, thereby solving a security risk problem resulting from sending image data of a masked part to terminals of users with different permission in the prior art.

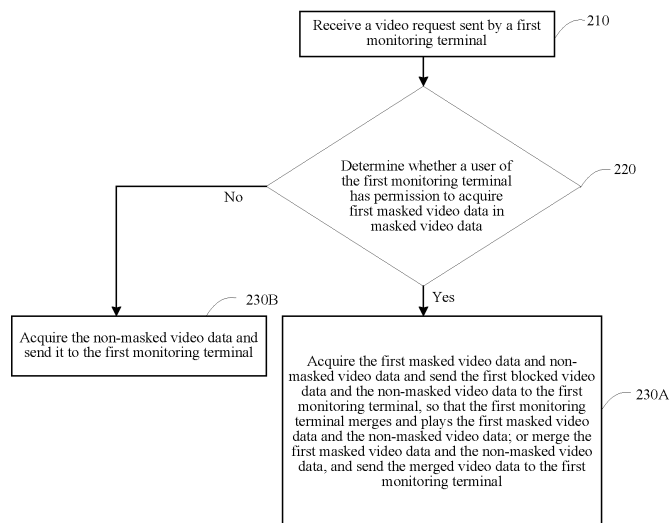


FIG. 2

Description**TECHNICAL FIELD**

5 **[0001]** Embodiments of the present invention relate to the field of video surveillance, and in particular, to a method, an apparatus, and a system for implementing video mask.

BACKGROUND

10 **[0002]** In the field of video surveillance, a requirement of protecting personal privacy exists, and therefore mask processing needs to be performed for a video image of a part of an area shot by a camera, so that a common user sees a video picture that does not include the image of a masked part, and the image of the masked part can only be viewed by a user with advanced permission.

15 **[0003]** In the prior art, encryption processing is performed for image data of a masked part in a video, and the processed video is sent to a monitoring terminal. A user with permission is capable of decrypting the image data of the masked part in the received video to see the complete video, while a user with no permission cannot see the image of the masked part. However, in the prior art, a terminal of the user with no permission is also capable of acquiring the image data of the masked part, and if an abnormal means is used to decrypt the data of the part, the image of the masked part can be seen. This causes a security risk.

SUMMARY

25 **[0004]** Embodiments of the present invention provide a method, an apparatus, and a system for implementing video mask, so as to solve a security risk problem resulting from sending image data of a masked part to terminals of users with different permission in the prior art.

[0005] In a first aspect, a method for implementing video mask is provided, including:

30 receiving, by a monitoring platform, a video request sent by a first monitoring terminal, where the video request includes a device identifier, and video data of a peripheral unit identified by the device identifier includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area;
 determining, by the monitoring platform, whether a user of the first monitoring terminal has permission to acquire first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area; and
 if a determined result is yes, acquiring the first masked video data and the non-masked video data; and sending the
 35 first masked video data and the non-masked video data to the first monitoring terminal, so that the first monitoring terminal merges and plays the first masked video data and the non-masked video data, or merging the acquired first masked video data and non-masked video data to obtain merged video data and sending the merged video data to the first monitoring terminal; or
 if a determined result is no, acquiring the non-masked video data and sending the non-masked video data to the
 40 first monitoring terminal.

[0006] In a first possible implementation manner of the first aspect, before the receiving a video request sent by a first monitoring terminal, the method includes:

45 receiving a masked area setting request sent by a second monitoring terminal, where the masked area setting request includes the device identifier of the peripheral unit and description information of the masked area; and
 sending the description information of the masked area to the peripheral unit, and receiving the non-masked video data and the masked video data that are sent by the peripheral unit and generated according to the description information of the masked area; or obtaining the masked video data and the non-masked video data by separating,
 50 according to the description information of the masked area, complete video data received from the peripheral unit.

[0007] In a second possible implementation manner of the first aspect, before the acquiring the first masked video data and the non-masked video data, the method includes:

55 storing the masked video data into a masked video file, storing the non-masked video data into a non-masked video file, and establishing an association between the masked video file and the non-masked video file, where the masked video file includes one or more video files;
 the video request includes view time;

the acquiring the non-masked video data specifically includes: acquiring video data corresponding to the view time from the non-masked video file; and

the acquiring the first masked video data specifically includes: acquiring, according to the association, one or more video files that correspond to the first masked area and are associated with the non-masked video file, and acquiring video data corresponding to the view time from the one or more video files corresponding to the first masked area.

[0008] With reference to the second possible implementation manner of the first aspect, in a third possible implementation manner,

the establishing an association between the masked video file and the non-masked video file specifically includes:

recording a non-masked video index and a masked video index, where the non-masked video index includes the device identifier of the peripheral unit, video start time and end time, indication information of the non-masked video data, and an identifier of the non-masked video file, and the masked video index includes indication information of the masked video data and an identifier of the masked video file; and establishing an association between the non-masked video index and the masked video index;

the acquiring the non-masked video data specifically includes: obtaining, through matching, the non-masked video index according to the device identifier of the peripheral unit and the view time that are included in the video request and the indication information of the non-masked video data, the device identifier of the peripheral unit, and the video start time and end time that are included in the non-masked video index, acquiring the non-masked video file according to the identifier of the non-masked video file included in the non-masked video index, and acquiring the video data corresponding to the view time from the non-masked video file; and the acquiring the first masked video data specifically includes: acquiring, according to the association, the masked video index associated with the non-masked video index, acquiring, according to the identifier of the masked video file included in the masked video index, one or more video files corresponding to the first masked area, and acquiring the video data corresponding to the view time from the one or more video files corresponding to the first masked area.

[0009] In a fourth possible implementation manner of the first aspect, the acquiring the first masked video data and the non-masked video data; and sending the first masked video data and the non-masked video data to the first monitoring terminal specifically includes:

generating an acquiring address of the non-masked video data and an acquiring address of the first masked video data and sending the acquiring addresses to the first monitoring terminal, where the acquiring address of the masked video data or a message carrying the acquiring address of the masked video data includes a data type that is used to indicate that video data corresponding to the acquiring address is masked video data;

receiving a request that is sent by the first monitoring terminal and includes the acquiring address of the non-masked video data, establishing, with the first monitoring terminal according to the acquiring address of the non-masked video data, a media channel used to send the non-masked video data, acquiring the non-masked video data according to the acquiring address of the non-masked video data, and sending the non-masked video data through the media channel; and

receiving a request that is sent by the first monitoring terminal and includes the acquiring address of the first masked video data, establishing, with the first monitoring terminal according to the acquiring address of the first masked video data, a media channel used to send the first masked video data, acquiring the first masked video data according to the acquiring address of the first masked video data, and sending the first masked video data through the media channel.

[0010] In a second aspect, a method for implementing video mask is provided, including:

sending, by a monitoring terminal, a video request to a monitoring platform, where the video request includes a device identifier, and video data of a peripheral unit identified by the device identifier includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area; and

receiving, by the monitoring terminal, first masked video data and the non-masked video data that are sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data in the masked video data, and merging and playing the first masked video data and the non-masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area; or

receiving, by the monitoring terminal, the non-masked video data sent by the monitoring platform when the monitoring

platform determines that a user of the monitoring terminal has no permission to acquire first masked video data in the masked video data, and playing the non-masked video data.

[0011] In a first possible implementation manner of the second aspect, before the merging and playing the first masked video data and the non-masked video data, the method further includes receiving description information of the first masked area, where the description information is sent by the monitoring platform; and the merging and playing the first masked video data and the non-masked video data specifically includes:

if the first masked video data includes one channel of video data, decoding the first masked video data to obtain a masked video data frame, decoding the non-masked video data to obtain a non-masked video data frame, extracting pixel data in the masked video data frame, adding, according to the description information of the first masked area, the extracted pixel data to a pixel area in a non-masked video data frame that has a same timestamp as the masked video data frame so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and playing the complete video data frame; or

if the first masked video data includes multiple channels of video data, decoding each channel of video data in the first masked video data to obtain a masked video data frame of the channel of video data, decoding the non-masked video data to obtain a non-masked video data frame, extracting pixel data in masked video data frames of all channels of video data, where the masked video data frames have a same timestamp, adding the extracted pixel data to a pixel area in a non-masked video data frame that has the same timestamp as the masked video data frames so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and playing the complete video data frame.

[0012] In a third aspect, a method for implementing video mask is provided, including:

receiving, by a peripheral unit, description information of a masked area, where the description information is sent by a monitoring platform;

encoding, by the peripheral unit according to the description information of the masked area, a captured video picture into non-masked video data corresponding to a non-masked area and masked video data corresponding to the masked area; and

sending, by the peripheral unit, the non-masked video data and the masked video data to the monitoring platform, so that the monitoring platform sends the non-masked video data and first masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data, or sends the non-masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire first masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area.

[0013] In a first possible implementation manner of the third aspect, the encoding, according to the description information of the masked area, a captured video picture into masked video data corresponding to the masked area specifically includes:

when the masked area includes one area, encoding a video picture in the captured video picture into one channel of video data, where the video picture corresponds to the masked area; or

when the masked area includes multiple areas, encoding video pictures in the captured video picture into one channel of video data, where the video pictures correspond to the multiple areas included in the masked area, or encoding video pictures in the captured video picture into one channel of video data each, where the video pictures correspond to the multiple areas included in the masked area, or encoding video pictures in the captured video picture into one channel of video data, where the video pictures correspond to areas with same permission among the multiple areas included in the masked area.

[0014] In a second possible implementation manner of the third aspect, the encoding, according to the description information of the masked area, a captured video picture into masked video data corresponding to the masked area specifically includes: directly encoding a video picture in the captured video picture into the masked video data, where the video picture corresponds to the masked area; or encoding a video picture in the captured video picture after filling the video picture by using a set pixel value so as to generate the masked video data, where the video picture corresponds to the non-masked area; and the encoding, according to the description information of the masked area, a captured video picture into non-masked video data corresponding to the non-masked area specifically includes: directly encoding a video picture in the captured

video picture into the non-masked video data, where the video picture corresponds to the non-masked area; or encoding a video picture in the captured video picture after filling the video picture by using a set pixel value so as to generate the non-masked video data, where the video picture corresponds to the masked area.

[0015] In a fourth aspect, a monitoring platform is provided, including a video request receiving unit, a determining unit, an acquiring unit, and a video data sending unit, where:

the video request receiving unit is configured to receive a video request sent by a first monitoring terminal, where the video request includes a device identifier, and video data of a peripheral unit identified by the device identifier includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area;

the determining unit is configured to determine whether a user of the first monitoring terminal has permission to acquire first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area;

the acquiring unit is configured to acquire the non-masked video data and configured to acquire the first masked video data when a determined result of the determining unit is yes; and

the video data sending unit is configured to: when the determined result of the determining unit is yes, send the first monitoring terminal the first masked video data and the non-masked video data that are acquired by the acquiring unit, so that the first monitoring terminal merges and plays the first masked video data and the non-masked video data, or merge the first masked video data and the non-masked video data that are acquired by the acquiring unit to obtain merged video data, and send the merged video data to the first monitoring terminal; and further configured to: when the determined result of the determining unit is no, send the first monitoring terminal the non-masked video data acquired by the acquiring unit.

[0016] In a first possible implementation manner of the fourth aspect,

the monitoring platform further includes: a setting request receiving unit, a description information sending unit, and a first video data receiving unit; the setting request receiving unit is configured to receive a masked area setting request sent by a second monitoring terminal, where the masked area setting request includes a device identifier of the peripheral unit and description information of the masked area; the description information sending unit is configured to send the description information of the masked area to the peripheral unit; and the first video data receiving unit is configured to receive the non-masked video data and the masked video data that are sent by the peripheral unit and generated according to the description information of the masked area; or

the monitoring platform further includes: a setting request receiving unit, a second video data receiving unit, and a video data separating unit; the setting request receiving unit is configured to receive a masked area setting request sent by a second monitoring terminal, where the masked area setting request includes a device identifier of the peripheral unit and description information of the masked area; the second video data receiving unit is configured to receive complete video data sent by the peripheral unit; and the video data separating unit is configured to obtain the masked video data and the non-masked video data by separating the complete video data received by the second video data receiving unit.

[0017] In a second possible implementation manner of the fourth aspect, the monitoring platform further includes a storing unit and an association establishing unit, where:

the storing unit is configured to store the masked video data into a masked video file and store the non-masked video data into a non-masked video file, where the masked video file includes one or more video files;

the association establishing unit is configured to establish an association between the masked video file and the non-masked video file;

the video request receiving unit is specifically configured to receive a video request that includes view time and is sent by the first monitoring terminal; and

the acquiring unit is specifically configured to acquire video data corresponding to the view time from the non-masked video file, and further specifically configured to acquire, according to the association established by the association establishing unit, one or more video files that correspond to the first masked area and are associated with the non-masked video file and acquire video data corresponding to the view time from the one or more video files corresponding to the first masked area when the determined result of the determining unit is yes.

[0018] In a fifth aspect, a monitoring terminal is provided, including a video request sending unit, a video data receiving unit, and a playing unit, where:

the video request sending unit is configured to send a video request to a monitoring platform, the video request includes a device identifier, and video data of a peripheral unit identified by the device identifier includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area;

the video data receiving unit is configured to receive first masked video data and the non-masked video data that are sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area; and further

configured to receive the non-masked video data that is sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire the first masked video data in the masked video data; and

the playing unit is configured to merge and play the first masked video data and the non-masked video data that are received by the video data receiving unit, or configured to play the non-masked video data received by the video data receiving unit.

[0019] In a first possible implementation manner of the fifth aspect,

if the first masked video data includes one channel of video data, the playing unit is specifically configured to decode the first masked video data to obtain a masked video data frame, decode the non-masked video data to obtain a non-masked video data frame, extract pixel data in the masked video data frame, add, according to description information of the first masked area, the extracted pixel data to a pixel area in a non-masked video data frame that has a same timestamp as the masked video data frame so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and play the complete video data frame; or

if the first masked video data includes multiple channels of video data, the playing unit is specifically configured to decode each channel of video data in the first masked video data to obtain a masked video data frame of the channel of video data, decode the non-masked video data to obtain a non-masked video data frame, extract pixel data in masked video data frames of all channels of video data, where the masked video data frames have a same timestamp, add the extracted pixel data to a pixel area in a non-masked video data frame that has the same timestamp as the masked video data frames so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and play the complete video data frame.

[0020] In a sixth aspect, a peripheral unit is provided, including a description information receiving unit, a video data encoding unit, and a video data sending unit, where:

the description information receiving unit is configured to receive description information of a masked area, where the description information is sent by a monitoring platform;

the video data encoding unit is configured to encode, according to the description information of the masked area, a captured video picture into non-masked video data corresponding to a non-masked area and masked video data corresponding to the masked area; and

the video data sending unit is configured to send the non-masked video data and the masked video data to the monitoring platform, so that the monitoring platform sends the non-masked video data and first masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data, or sends the non-masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire first masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area.

[0021] In a first possible implementation manner of the sixth aspect,

the video data encoding unit is specifically configured to: when the masked area includes one area, encode a video picture in the captured video picture into one channel of video data according to the description information of the masked area, where the video picture corresponds to the masked area; or when the masked area includes multiple areas, encode video pictures in the captured video picture into one channel of video data according to the description information of the masked area, where the video pictures correspond to the multiple areas included in the masked area, or encode video pictures in the captured video picture into one channel of video data each, where the video pictures correspond to the multiple areas included in the masked area, or encode video pictures in the captured video picture into one channel of video data, where the video pictures correspond to areas with same permission among the multiple areas included in the masked area; and further specifically configured to encode a video picture in the captured video picture into the non-masked video data according to the description information of the masked area, where the video picture corresponds to the non-masked area.

[0022] In a seventh aspect, a video surveillance system is provided, including a monitoring terminal and a monitoring platform, where:

the monitoring terminal is specifically the monitoring terminal according to the fifth aspect or the first possible implementation manner of the fifth aspect; and

the monitoring platform is specifically the monitoring platform according to the fourth aspect or the first or the second possible implementation manner of the fourth aspect.

[0023] In a first possible implementation manner of the seventh aspect, the video surveillance system further includes a peripheral unit, where the peripheral unit is specifically the peripheral unit according to the sixth aspect or the first possible implementation manner of the sixth aspect. According to the embodiments of the present invention, after receiving a video request of a monitoring terminal, a monitoring platform determines permission of a user of the monitoring terminal, sends, according to a determined result, only non-masked video data to a monitoring terminal of a user that has no permission to acquire masked video data, and sends the masked video data and the non-masked video data to a monitoring terminal of a user that has permission to acquire a part or all of the masked video data, so that the monitoring terminal merges and plays the masked video data and the non-masked video data, or sends video data merged from the masked video data and the non-masked video data, thereby solving a security risk problem resulting from sending image data of a masked part to terminals of users with different permission in the prior art.

BRIEF DESCRIPTION OF DRAWINGS

[0024] To illustrate the technical solutions in the embodiments of the present invention more clearly, the following briefly introduces the accompanying drawings required for describing the embodiments or the prior art. Apparently, the accompanying drawings in the following description show merely some embodiments of the present invention, and a person of ordinary skill in the art may still derive other drawings from these accompanying drawings without creative efforts.

FIG. 1 is a schematic architecture diagram of a system according to an embodiment of the present invention;
 FIG. 2 is a schematic flowchart of a method according to a first embodiment of the present invention;
 FIG. 3 is a schematic flowchart of a method of an optional implementation manner according to the first embodiment of the present invention;
 FIG. 4 is a schematic diagram of a scenario of a first exemplary implementation manner according to the first embodiment of the present invention;
 FIG. 5 is a schematic flowchart of a method of the first exemplary implementation manner according to the first embodiment of the present invention;
 FIG. 6 is a schematic processing flowchart of a terminal of the first exemplary implementation manner according to the first embodiment of the present invention;
 FIG. 7 is a schematic diagram of a scenario of a second exemplary implementation manner according to the first embodiment of the present invention;
 FIG. 8 is a schematic flowchart of a method of the second exemplary implementation manner according to the first embodiment of the present invention;
 FIG. 9 is a schematic processing flowchart of a platform of the second exemplary implementation manner according to the first embodiment of the present invention;
 FIG. 10 is a schematic diagram of a scenario of a third exemplary implementation manner according to the first embodiment of the present invention;
 FIG. 11 is a schematic flowchart of a method of the third exemplary implementation manner according to the first embodiment of the present invention;
 FIG. 12-FIG. 14 are schematic structural diagrams of a monitoring platform according to a second embodiment of the present invention;
 FIG. 15 is a schematic structural diagram of a monitoring terminal according to a third embodiment of the present invention;
 FIG. 16 is a schematic structural diagram of a peripheral unit according to a fourth embodiment of the present invention;
 FIG. 17 is a schematic structural diagram of another monitoring platform according to a fifth embodiment of the present invention;
 FIG. 18 is a schematic structural diagram of another monitoring terminal according to a sixth embodiment of the present invention;
 FIG. 19 is a schematic structural diagram of another peripheral unit according to a seventh embodiment of the present invention; and
 FIGs. 20-21 are schematic structural diagrams of a system according to an eighth embodiment of the present invention.

DESCRIPTION OF EMBODIMENTS

[0025] The following clearly describes the technical solutions in the embodiments of the present invention with reference to the accompanying drawings in the embodiments of the present invention. Apparently, the described embodiments are merely a part rather than all of the embodiments of the present invention. All other embodiments obtained by a person of ordinary skill in the art based on the embodiments of the present invention without creative efforts shall fall within the protection scope of the present invention.

[0026] FIG. 1 is a schematic architecture diagram of a video surveillance system according to an embodiment of the present invention. The video surveillance system includes a peripheral unit (PU, Peripheral Unit) 110, a monitoring platform 120, and a monitoring terminal 130, where both the peripheral unit 110 and the monitoring terminal 130 communicate with the monitoring platform 120 through a transmission network 140.

[0027] The transmission network 140 may specifically be one or a combination of the Internet, a local area network, a wide area network, a storage area network, and the like. A manner in which the monitoring platform 120 accesses a network may specifically be a wired access manner, and a manner in which the peripheral unit 110 and the monitoring terminal 130 access a network may specifically be a wired access manner or a wireless access manner, where the wired access manner includes an access manner through a network cable or an access manner through an optical fiber, and the wireless access manner includes access manners such as WIFI (for example, IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, and/or IEEE 802.11n), GSM (EDGE), WCDMA, CDMA, and TD-SCDMA, Bluetooth, and LTE.

[0028] The peripheral unit 110 is configured to collect video data and send the collected video data to the monitoring platform through the transmission network. Preferably, the peripheral unit 110 may generate, according to set description information of a masked area, non-masked video data corresponding to a non-masked area and masked video data corresponding to the masked area and separately transmit them to the monitoring platform. Presentation forms of hardware of the peripheral unit 110 may be all types of camera devices, for example, webcams such as a dome camera, a box camera, and a semi-dome camera, and for another example, an analog camera and an encoder.

[0029] The monitoring platform 120 is configured to receive the masked video data and the non-masked video data that are sent by the peripheral unit 110, or obtain masked video data and non-masked video data by separating complete video data received from the peripheral unit 110, and send corresponding video data to the monitoring terminal 130 according to permission of a user of the monitoring terminal. For a user that has permission to acquire the masked video data, the monitoring platform 120 may send the masked video data and the non-masked video data to the monitoring terminal for merging and playing; alternatively, the monitoring platform 120 may merge the masked video data and the non-masked video data and send them to the monitoring terminal for playing.

[0030] The monitoring terminal 130 is configured to receive the video data sent by the monitoring platform, and if the received video data includes the non-masked video data and the masked video data, further configured to merge and play the masked video data and the non-masked video data.

[0031] FIG. 2 is a schematic flowchart of a method for implementing video mask according to a first embodiment of the present invention.

[0032] Step 210: Receive a video request sent by a first monitoring terminal, where the video request includes a device identifier, and video data of a peripheral unit identified by the device identifier includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area.

[0033] The masked video data and the non-masked video data may specifically be encoded by using an H.264 format.

[0034] The device identifier is used to uniquely identify the peripheral unit, and specifically, it may include an identifier of a camera of the peripheral unit, and may further include an identifier of a cloud mirror of the peripheral unit.

[0035] Step 220: Determine whether a user of the first monitoring terminal has permission to acquire first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area.

[0036] The masked area may specifically include one or more areas, where the area may be rectangular, circular, polygonal, and the like. If one area is included, the masked video data corresponding to the masked area may specifically include one channel of video data. If multiple areas are included, the masked video data corresponding to the masked area may specifically include one channel of video data, or may include multiple channels of video data, for example, each area included in the masked area corresponds to one channel of video data.

[0037] Specifically, description information of the masked area may be used to describe the masked area. The description information of the masked area specifically includes a coordinate of the masked area. For example, when the masked area includes a rectangle, the description information of the masked area may include coordinates of at least three vertexes of the rectangle, or may only include a coordinate of one vertex of the rectangle and a width and a height of the rectangle, for example (x, y, w, h), where x is the horizontal coordinate of the upper left vertex, y is the vertical coordinate of the upper left vertex, w is the width, and h is the height.

[0038] Specifically, overall permission control may be performed for the masked video data, that is, permission to access the masked video data is classified into two permission levels: having access permission and having no access

permission. In this case, it can be directly determined whether a user has permission to access the masked video data. According to the implementation manner, the first masked video data is the masked video data, and the first masked area is the masked area (that is, the whole area of the masked area is included). Specifically, area-based permission control may also be performed for the masked video data. Respective permission is set for different areas, that is, video data that corresponds to different areas may correspond to different permission. For example, the masked area includes three areas, area 1 and area 2 correspond to permission A, and area 3 corresponds to permission B. For another example, the masked area includes three areas, area 1 corresponds to permission A, area 2 corresponds to permission B, and area 3 corresponds to permission C. In this case, it needs to determine whether the user has permission to access masked video data that corresponds to a specific area.

[0039] Specifically, the permission may be determined according to a password. For example, if a password that is received from the first monitoring terminal and used to acquire the first masked video data is determined to be correct (that is, a user inputs a correct password), it is determined that the user has the permission to acquire the first masked video data.

[0040] Specifically, the permission may be further determined according to a user identifier of a user of the first monitoring terminal. For example, an authorized user identifier may be preconfigured, and if the user identifier matches the authorized user identifier, it is determined that the user has the permission to acquire the first masked video data; an authorized account type may also be preconfigured, and if an account type corresponding to the user identifier matches the authorized account type, it is determined that the user has the permission to acquire the first masked video data. Optionally, the user identifier may be acquired during login of the user performed by using the monitoring terminal. In addition, the video request received in step 210 may carry the user identifier, and in this case, the user identifier carried in the video request may be acquired.

[0041] If a determined result is yes, perform step 230A. If the determined result is no, perform step 230B.

[0042] Step 230A: Acquire the first masked video data and the non-masked video data; and send the first masked video data and the non-masked video data to the first monitoring terminal, so that the first monitoring terminal merges and plays the first masked video data and the non-masked video data, or merge the first masked video data and the non-masked video data and send the merged video data to the first monitoring terminal.

[0043] Preferably, a data type of the masked video data may also be sent to the first monitoring terminal, so that the first monitoring terminal identifies the masked video data from the received video data. Specifically, the data type may specifically be included in an acquiring address (for example, a URL) that is sent to the first monitoring terminal and used to acquire the masked video data, or the data type may be included in a message that is sent to the first monitoring terminal and used to carry the acquiring address, or the data type may be sent in a process of establishing a media channel between the first monitoring terminal and a monitoring platform, where the media channel is used to transmit the masked video data.

[0044] Preferably, before the sending the first masked video data, the method may further include: sending description information of the first masked area to the first monitoring terminal, so that the first monitoring terminal merges and plays, according to the description information of the first masked area, the first masked video data and the non-masked video data that are received in step 230A. Specifically, the description information may be included in the acquiring address (for example, a URL) that is sent to the first monitoring terminal and used to acquire the masked video data, or the description information may be included in the message that is sent to the first monitoring terminal and used to carry the acquiring address, or the description information may be sent in the process of establishing the media channel used to transmit the masked video data.

[0045] Step 230B: Acquire the non-masked video data and send it to the first monitoring terminal. Optionally, specific implementations of step 230A and step 230B are as follows:

[0046] In step 230A, the acquiring the first masked video data and the non-masked video data; and sending the first masked video data and the non-masked video data to the first monitoring terminal may specifically include: generating an acquiring address (for example, a URL, acquiring address 1 for short below) of the first masked video data and an acquiring address (for example, a URL, acquiring address 2 for short below) of the non-masked video data and sending the acquiring addresses to the first monitoring terminal, receiving a request that is sent by the first monitoring terminal and includes the acquiring address 2, establishing, with the first monitoring terminal according to the acquiring address 2, a media channel used to send the non-masked video data, acquiring the non-masked video data according to the acquiring address 2, and sending the non-masked video data through the media channel; meanwhile, receiving a request that is sent by the first monitoring terminal and includes the acquiring address 1, establishing, with the first monitoring terminal according to the acquiring address 1, a media channel used to send the first masked video data, acquiring the first masked video data according to the acquiring address of the first masked video data, and sending the first masked video data through the media channel. Specifically, if the first masked video data includes multiple channels of video data, the acquiring address of the first masked video data includes acquiring addresses of the multiple channels of video data, and media channels established subsequently include multiple media channels used to transmit the multiple channels of video data.

[0047] Preferably, the acquiring address (for example, a URL) sent to the first monitoring terminal carries a data type. The data type is used to indicate that the video data that can be acquired according to the acquiring address is the non-masked video data or the masked video data. Examples of a format of a URL (universal resource locator, Universal Resource Locator) that carries the data type are as follows:

an example of a URL of the non-masked video data:

rtsp://192.7.90.55:554/ipc00001?type=non-masked; and

an example of a URL of the masked video data:

rtsp://192.7.90.55:554/ipc00001?type=masked;

where rtsp refers to the Real-Time Streaming Protocol.

[0048] Preferably, description information (for example, a coordinate of a masked area) of the masked area corresponding to the masked video data may be further carried in the acquiring address of the masked video data. Examples of a format of a URL that carries the data type and the description information of the masked area are as follows:

example 1 of the URL of the masked video data:

rtsp://192.7.90.55:554/ipc00001?type=masked&masked coordinate 1 (x1, y1, w1, h1)&masked coordinate 2 (x2, y2, w2, h2), where in this example, the masked video data corresponds to two masked areas; and

example 2 of the URL of the masked video data:

rtsp://192.7.90.55:554/ipc00001?type=masked&masked coordinate 1 (x1, y1, w1, h1), where in this example, the masked video data corresponds to one masked area.

[0049] Optionally, the monitoring platform may further send the data type and/or the description information of the masked area to the first monitoring terminal by message exchange. For example, when a URL is returned to the first monitoring terminal, the data type and/or the description information of the masked area is included in a message body of an XML structure in a message that carries the URL, as shown in the following:

```
<url> rtsp://192.7.90.55:554/ipc00001?type=masked</url>
<coordinate>
<value>(x1,y1,w1,h1)</value>
<value>(x2,y2,w2,h2)</value>
</coordinate>
```

[0050] In addition, a user-defined structure body in an RTSP ANNOUNCE message may also be used to carry the data type and/or the description information of the masked area in the process of establishing the media channel between the first monitoring terminal and the monitoring platform. An example is shown as follows:

```
S->C: ANNOUNCE rtsp://192.7.90.55:554/ipc00001 RTSP/1.0
CSeq: 312
Date: 23 Jan 1997 15:35:06 GMT
Session: 47112344
urltype: KeepOutUrl // indicating that the media stream belongs to the masked video data
urlcoordinate:x1=100,y1=100,w1=200,h1=200;x2=100,y2=100,w2=200,h2=200.
```

[0051] In step 230A, the acquiring the first masked video data and the non-masked video data, merging the first masked video data and the non-masked video data, and sending the merged video data to the first monitoring terminal specifically includes: generating an acquiring address (for example, a URL) used to acquire the merged video data and sending it to the first monitoring terminal, receiving a request that is sent by the first monitoring terminal and includes the acquiring address, establishing, with the first monitoring terminal according to the acquiring address, a media channel used to send the merged video data, acquiring and merging the first masked video data and the non-masked video data, and sending the merged video data to the first monitoring terminal through the media channel.

[0052] Step 230B may include: generating an acquiring address of the non-masked video data and sending it to the

first monitoring terminal, receiving a request that is sent by the first monitoring terminal and includes the acquiring address, establishing, with the first monitoring terminal according to the acquiring address, a media channel used to send the non-masked video data, acquiring the non-masked video data according to the acquiring address of the non-masked video data and sending the non-masked video data through the media channel.

[0053] The following describes an optional implementation manner of the first embodiment of the present invention with reference to FIG. 3.

[0054] A CU (Client Unit, client unit) in this implementation manner is client software installed on a monitoring terminal and provides monitoring personnel with functions such as real-time video surveillance, video query and playback, and a cloud mirror operation.

[0055] A monitoring platform includes an SCU (Service Control Unit, service control unit) and an MU (Media Unit, media unit). In a practical application, the SCU and the MU may be implemented in a same universal server or dedicated server, or may be separately implemented in different universal servers or dedicated servers.

[0056] Step 301: A CU sends a video request to an SCU of a monitoring platform, where the video request includes a device identifier and is used to request video data of a peripheral unit identified by the device identifier, and the video data includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area.

[0057] Step 302: The SCU determines whether a user of the CU has permission to acquire first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area.

[0058] Specific implementation of step 302 is the same as that of step 220, and therefore no further details are provided herein.

[0059] If a determined result is yes, steps 303A-312A are performed. In this implementation manner, it is assumed that the first masked video data includes one channel of video data.

[0060] If the determined result is no, steps 303B-308B are performed.

[0061] Steps 303A-306A: The SCU requests a URL of the first masked video data and a URL of the non-masked video data from an MU, and the MU generates the URL of the first masked video data and the URL of the non-masked video data and returns them to the SCU.

[0062] Step 307A: The SCU returns the URL of the first masked video data and the URL of the non-masked video data to the CU.

[0063] Steps 308A-309A: The CU requests the first masked video data from the MU according to the URL of the first masked video data, establishes, with the MU, a media channel used to transmit the first masked video data, and receives, through the media channel, the first masked video data sent by the MU.

[0064] Steps 310A-311A: The CU requests the non-masked video data from the MU according to the URL of the non-masked video data, establishes, with the MU, a media channel used to transmit the non-masked video data, and receives, through the media channel, the non-masked video data sent by the MU.

[0065] Step 312A: The CU merges and plays the first masked video data and the non-masked video data. Steps 303B-304B: The SCU requests a URL of the non-masked video data from the MU, and the MU generates the URL of the non-masked video data and returns it to the SCU.

[0066] Step 305B: The SCU returns the URL of the non-masked video data to the CU.

[0067] Steps 306B-307B: The CU requests the non-masked video data from the MU according to the URL of the non-masked video data, establishes, with the MU, a media channel used to transmit the non-masked video data, and receives, through the media channel, the non-masked video data sent by the MU.

[0068] Step 308B: The CU plays the non-masked video data.

[0069] According to the first embodiment of the present invention, after receiving a video request of a monitoring terminal, a monitoring platform determines permission of a user of the monitoring terminal, sends, according to a determined result, only non-masked video data to a monitoring terminal of a user that has no permission to acquire masked video data, and sends the masked video data and the non-masked video data to a monitoring terminal of a user that has permission to acquire a part or all of the masked video data, so that the monitoring terminal merges and plays the masked video data and the non-masked video data, or sends video data merged from the masked video data and the non-masked video data, thereby solving a security risk problem resulting from sending image data of a masked part to terminals of users with different permission in the prior art. In addition, according to the first embodiment of the present invention, area-based permission control may be implemented, that is, if the masked area includes multiple areas, permission may be set for each different area, and masked video data that corresponds to a part or all of an area and that a user has permission to acquire is sent to a monitoring terminal of the user according to the permission of the user, thereby implementing more accurate permission control.

[0070] It should be noted that the first embodiment of the present invention not only can be used in a real-time video surveillance scenario, but also can be used in a video view scenario (for example, video playback and video downloading). If the first embodiment is used in the video view scenario, the acquiring non-masked video data in steps 230A and 230B

is specifically reading the non-masked video data from a non-masked video file, and the acquiring masked video data in step 230A is specifically reading masked video data from a masked video file.

[0071] Correspondingly, before step 210, the following operations are performed:

[0072] Store the masked video data into the masked video file, store the non-masked video data into the non-masked video file, and establish an association between the masked video file and the non-masked video file, where the masked video file includes one or more video files.

[0073] The establishing an association between the masked video file and the non-masked video file specifically includes: recording a non-masked video index and a masked video index, and establishing an association between the non-masked video index and the masked video index, where the non-masked video index includes a device identifier of the peripheral unit, video start time and end time, indication information of the non-masked video data, and an identifier of the non-masked video file (for example, a storage address of the non-masked video file, which may specifically be an absolute path of the non-masked video file), and the indication information of the non-masked video data is used to indicate that the non-masked video index is an index of the non-masked video file; and the masked video index includes indication information of the masked video data and an identifier of the masked video file (for example, a storage address of the masked video file, which may specifically be an absolute path of the masked video file), and the indication information of the masked video data is used to indicate that the masked video index is an index of the masked video file. Preferably, both the non-masked video index and the masked video index may include indication information of a non-independent index, where the indication information of the non-independent index is used to indicate an index associated with the index. For example, the indication information of the non-independent index of the non-masked video index is used to indicate a masked video index associated with the non-masked video index. The non-masked video index and/or the masked video index may further include description information of a masked area, or information (for example, a storage address of the description information of the masked area) used to acquire the description information of the masked area. The establishing an association between the non-masked video index and the masked video index may specifically include recording an identifier (for example, an index number) of the masked video index into the non-masked video index, or may further include recording an identifier (for example, an index number) of the non-masked video index into the masked video index, or may further include recording an association between the identifier of the masked video index and the identifier of the non-masked video index. It should be noted that if the masked video data includes multiple channels of video data, a masked video index may be established for each channel of video data, and an association is established between the non-masked video index and each masked video index. Preferably, description information of a masked area corresponding to the video file, or information used to acquire the description information of the masked area corresponding to the video file is recorded in each masked video index.

[0074] Examples of the non-masked video index and the masked video index are shown in Table 1.

Table 1

Index number	Whether an index is an independent index Others	Identifier of associated index	Whether a video is a masked video	Identifier of video file	Acquiring address of description information of masked area	Description information of area 1
111	Xxx	No	222	No	mmm/nnn	aaa/bbb
222	Xxx	No	111	Yes	ccc/ddd	aaa/bbb

[0075] Correspondingly, if the first embodiment is used in the video view scenario, the video request sent in step 210 may further include view time. In steps 230A and 230B, the acquiring the non-masked video data is specifically acquiring video data corresponding to the view time from the non-masked video file, and may specifically include: acquiring the non-masked video index according to the identifier of the peripheral unit, the view time, and the indication information of the non-masked video data, acquiring the non-masked video file according to the identifier of the non-masked video

file in the non-masked video index, and acquiring the non-masked video data corresponding to the view time from the non-masked video file. In step 230A, the acquiring the masked video data is specifically acquiring, according to the association between the masked video file and the non-masked video file, one or more video files that are associated with the non-masked video file and correspond to the first masked area and acquiring the video data corresponding to the view time from the one or more video files corresponding to the first masked area, and specifically includes: acquiring, according to the association between the non-masked video index and the masked video index (for example, according to the identifier of the masked video index in the non-masked video index), the masked video index associated with the non-masked video index, acquiring, according to the identifier of the masked video file included in the masked video index, one or more video files corresponding to the first masked area, and acquiring the video data corresponding to the view time from the one or more video files corresponding to the first masked area. Preferably, before the acquiring, according to the association, the masked video index associated with the non-masked video index, the masked video index associated with the non-masked video index may be further determined according to the indication information of the non-independent index in the non-masked video index, so as to improve efficiency of the monitoring platform in retrieving the masked video index.

[0076] Specifically, after the non-masked video index is acquired, an acquiring address used to acquire the non-masked video data may be generated according to the non-masked video index and sent to a first monitoring terminal, a request that is sent by the first monitoring terminal and includes the acquiring address of the non-masked video data is received, a media channel used to send the non-masked video data is established with the first monitoring terminal according to the acquiring address of the non-masked video data, the non-masked video data is acquired according to the acquiring address of the non-masked video data, and the non-masked video data is sent through the media channel. For example, as shown in FIG. 3, the SCU of the monitoring platform acquires the non-masked video index after receiving the video request, requests, from the MU according to the non-masked video index, a URL used to acquire the non-masked video data corresponding to the non-masked video index, and sends the URL to the CU. The MU receives the request that is sent by the CU and includes the URL, establishes, with the CU according to the URL, a media channel used to send the non-masked video data, reads the non-masked video data in the video file according to the URL, and sends the non-masked video data to the CU through the media channel. A process of sending the masked video data after the masked video index is acquired is similar to a process of sending the non-masked video data after the non-masked video index is acquired, and therefore no further details are provided herein.

[0077] Preferably, before the sending the first masked video data, the method may further include: sending description information of the first masked area to the first monitoring terminal, so that the first monitoring terminal merges and plays, according to the description information of the first masked area, the first masked video data and the non-masked video data that are received in step 230A. The method may specifically include: acquiring the non-masked video index or description information of a masked area that is included in a masked video index corresponding to the first masked video data, or acquiring the description information of the first masked area according to the non-masked video index or information that is included in the masked video index and used to acquire the description information of the first masked area, and sending the acquired description information of the first masked area to the first monitoring terminal. Specifically, the description information of the first masked area may be carried in a message that is sent to the first monitoring terminal and carries an acquiring address of the first masked video data.

[0078] Preferably, before step 230A, the method further includes receiving a masked area setting request sent by a second monitoring terminal, where the masked area setting request includes a device identifier of the peripheral unit and the description information of the masked area. After the masked area setting request is received, the description information of the masked area may be sent to the peripheral unit, and the non-masked video data and the masked video data that are sent by the peripheral unit and generated according to the description information of the masked area are received; or the masked video data and the non-masked video data may be obtained by separating, according to the description information of the masked area, complete video data received from the peripheral unit. In addition, as described in step 230A, the masked video data and the non-masked video data may be sent to the first monitoring terminal and be merged and played by the first monitoring terminal, or the masked video data and the non-masked video data may be merged and then sent to the first monitoring terminal.

[0079] It should be noted that the first monitoring terminal and the second monitoring terminal may be a same monitoring terminal.

[0080] In conclusion, an entity generating the non-masked video data and the masked video data may be a peripheral unit or a monitoring platform, and an entity merging the non-masked video data and the masked video data may be a monitoring platform or a monitoring terminal (that is, the first monitoring terminal in the first embodiment of the present invention). According to different entities performing a generation operation and a merging operation, the following separately describes three exemplary implementation manners of the first embodiment of the present invention.

[0081] A first exemplary implementation manner is as follows: As shown in FIG. 4, the peripheral unit generates the non-masked video data and the masked video data, the monitoring platform separately sends the monitoring terminal (for example, the first monitoring terminal in this embodiment) the non-masked video data and the masked video data

(for example, the first masked video data in this embodiment) that a user has permission to acquire, and the monitoring terminal merges and plays the received video data.

[0082] The following introduces an exchange flowchart of the first exemplary implementation manner according to the first embodiment of the present invention with reference to FIG. 5.

[0083] Step 401: A second monitoring terminal sends a masked area setting request to a monitoring platform, where the masked area setting request includes a device identifier and description information of a masked area.

[0084] The masked area may specifically include one or more areas, where the area may be rectangular, circular, polygonal, and the like. Preferably, the description information of the masked area specifically includes a coordinate of the masked area. For example, when the masked area includes a rectangle, the description information of the masked area may include coordinates of at least three vertexes of the rectangle, or may only include a coordinate of one vertex of the rectangle and a width and a height of the rectangle, for example (x, y, w, h), where x is the horizontal coordinate of the upper left vertex, y is the vertical coordinate of the upper left vertex, w is the width, and h is the height.

[0085] Step 402: The monitoring platform sends the masked area setting request to a peripheral unit identified by the device identifier, where the masked area setting request includes the description information of the masked area.

[0086] Step 403: The peripheral unit encodes a captured video picture to generate masked video data and non-masked video data.

[0087] Specifically, the peripheral unit encodes the captured video picture into the non-masked video data corresponding to a non-masked area and the masked video data corresponding to the masked area. If the masked area includes one area, a video picture corresponding to the masked area may be encoded into one channel of video data, that is, the masked video data includes one channel of video data.

[0088] If the masked area includes multiple areas, video pictures corresponding to the multiple areas included in the masked area may be encoded into one channel of video data, that is, the masked video data includes one channel of video data; or video pictures corresponding to the multiple areas included in the masked area may be encoded into one channel of video data each, that is, the masked video data includes multiple channels of video data and each area corresponds to one channel of video data; or video pictures corresponding to areas with same permission among the multiple areas included in the masked area may be encoded into one channel of video data, that is, the areas corresponding to the same permission correspond to a same channel of video data, for example, if the masked area includes three areas, area 1 and area 2 correspond to same permission, and area 3 corresponds to another permission, video pictures corresponding to area 1 and area 2 are encoded into a same channel of video data, and a video picture corresponding to area 3 is encoded into another channel of video data.

[0089] Specifically, the video picture corresponding to the masked area may be directly encoded into the masked video data, that is, a video data frame of the masked video data includes only pixel data of the video picture corresponding to the masked area; or a video picture in the whole captured video picture may be encoded after filling the video picture by using a set pixel value so as to generate the masked video data, where the video picture corresponds to the non-masked area, that is, a video data frame of the non-masked video data includes both pixel data of the video picture corresponding to the masked area and filled pixel data.

[0090] Encoding formats include but are not limited to H.264, MPEG4, and MJPEG, and the like.

[0091] Specifically, the video picture corresponding to the non-masked area may be directly encoded into the non-masked video data, or the video picture in the whole captured video picture may be encoded after filling the video picture by using a set pixel value so as to generate the non-masked video data, where the video picture corresponds to the masked area, and the set pixel value is preferably RGB (0, 0, 0).

[0092] During the encoding, timestamps of video data frames corresponding to a same complete video picture are kept completely consistent in the masked video data and the non-masked video data.

[0093] It should be noted that in the first exemplary implementation manner, the description information of the masked area is sent by the monitoring platform to the peripheral unit. Optionally, the description information of the masked area may be preset on the peripheral unit.

[0094] Step 404: Send the generated masked video data and non-masked video data to the monitoring platform.

[0095] Preferably, the peripheral unit may further send a data type of the masked video data to the monitoring platform, so that the monitoring platform identifies the masked video data from received video data. The data type may be specifically included in an acquiring address (for example, a URL) that is sent to the monitoring platform and used to acquire the masked video data (where the monitoring platform may acquire the masked video data from the peripheral unit by using the acquiring address), or the data type may be included in a message that is sent to the monitoring platform and used to carry the acquiring address, or the data type may be sent in a process of establishing a media channel between the monitoring platform and the peripheral unit and used to transmit the masked video data.

[0096] Step 405: A first monitoring terminal sends a video request to the monitoring platform, where the video request includes the device identifier of the peripheral unit.

[0097] Step 406: Determine whether a user of the first monitoring terminal has permission to acquire first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first

masked area includes a part or all of the masked area.

[0098] If a determined result is yes, steps 407A-409A are performed.

[0099] If the determined result is no, steps 407B-408B are performed.

[0100] Step 407A: The monitoring platform sends description information of the first masked area to the first monitoring terminal.

[0101] Step 408A: The monitoring platform sends the first masked video data and the non-masked video data to the first monitoring terminal.

[0102] Step 409A: The first monitoring terminal merges and plays the received first masked video data and non-masked video data.

[0103] Preferably, the received first masked video data and non-masked video data are merged and played according to the description information of the first masked area.

[0104] Specifically, if the first masked video data includes one channel of video data, the first masked video data is decoded to obtain a masked video data frame, the non-masked video data is decoded to obtain a non-masked video data frame, pixel data in the masked video data frame is extracted, the extracted pixel data is added, according to the description information of the first masked area, to a pixel area in a non-masked video data frame that has a same timestamp as the masked video data frame so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and the complete video data frame is played. If a video picture corresponding to the first masked area is directly encoded into the first masked video data during encoding, that is, the masked video data frame includes only pixel data of a video picture corresponding to the masked area, the extracting the pixel data in the masked video data frame is specifically extracting all pixel data in the masked video data frame. If a video picture in the whole captured video picture is encoded after filling the video picture by using a set pixel value so as to generate the masked video data during the encoding, where the video picture corresponds to the non-masked area, that is, a video data frame of the non-masked video data includes both the pixel data of the video picture corresponding to the masked area and the filled pixel data, pixel data of the pixel area in the masked video data frame is extracted according to the description information of the first masked area, where the pixel area corresponds to the first masked area.

[0105] If the first masked video data includes multiple channels of video data, each channel of video data in the first masked video data is decoded to obtain a masked video data frame of the channel of video data, the non-masked video data is decoded to obtain a non-masked video data frame, pixel data in masked video data frames of all channels of video data is extracted, where the masked video data frames have a same timestamp, the extracted pixel data is added to a pixel area in a non-masked video data frame that has the same timestamp as the masked video data frames so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and the complete video data frame is played.

[0106] Specifically, as shown in FIG. 6, both the non-masked video data and the first masked video data are transmitted to the first monitoring terminal through the RTP protocol. The first monitoring terminal receives a non-masked video data code stream and a first masked video data code stream that are encapsulated through the RTP protocol, parses the non-masked video data code stream and the masked video data code stream to obtain the non-masked video data and the first masked video data respectively, and separately caches the non-masked video data and the first masked video data in a decoder buffer area. Frame data is synchronized according to a synchronization timestamp, that is, frame data that has a same timestamp is separately extracted from the non-masked video data and the first masked video data. The extracted frame data of the non-masked video data and the extracted frame data of the first masked video data that have the same timestamp are separately encoded to generate corresponding YUV data. Then, YUV data of the first masked video data and YUV data of the non-masked video data are merged according to the description information of the first masked area, and the merged YUV data is rendered and played.

[0107] It should be noted that if the masked video data and the non-masked video data that are sent by the peripheral unit are not received before step 404, a request for acquiring video data is sent to the peripheral unit after step 404. Specifically, video data that a user of the first monitoring terminal has permission to acquire may be requested from the peripheral unit according to the determined result in step 406. For example, if the user only has permission to acquire the non-masked video data, only the non-masked video data is requested; and if the user has permission to acquire the non-masked video data and the first masked video data, the non-masked video data and the first masked video data is requested. After receiving the request, the peripheral unit generates the requested video data and returns it to the monitoring platform. A method used by the peripheral unit to generate the non-masked video data and the first masked video data is the same as that in step 403, and therefore no further details are provided.

[0108] Step 407B: The monitoring platform forwards the non-masked video data to the first monitoring terminal.

[0109] Step 408B: The first monitoring terminal plays the received non-masked video data.

[0110] A second exemplary implementation manner 2 is as follows: As shown in FIG. 7, the peripheral unit generates the non-masked video data and the masked video data, and the monitoring platform merges the non-masked video data and the masked video data (that is, the first masked video data) that a user has permission to acquire and then sends them to the monitoring terminal.

[0111] The following introduces an exchange flowchart of the second exemplary implementation manner according to the first embodiment of the present invention with reference to FIG. 8.

[0112] Steps 501-506 are the same as steps 401-406, and therefore no further details are provided.

[0113] If a determined result in step 506 is yes, steps 507A-510A are performed.

[0114] If the determined result in step 506 is no, steps 507B-508B are performed.

[0115] Step 507A is the same as step 407A.

[0116] Step 508A: The monitoring platform merges the non-masked video data and the first masked video data.

[0117] Preferably, the first masked video data and the non-masked video data are merged according to the description information of the masked area received in step 401.

[0118] Specifically, if the first masked video data includes one channel of video data, the first masked video data is decoded to obtain a masked video data frame, the non-masked video data is decoded to obtain a non-masked video data frame, pixel data in the masked video data frame is extracted, the extracted pixel data is added to a pixel area in a non-masked video data frame that has the same timestamp as the masked video data frames so as to generate a complete video data frame, where the pixel area corresponds to the masked area, and the complete video data frame is encoded to obtain the merged video data. If a video picture corresponding to the masked area is directly encoded into the first masked video data during encoding, that is, the masked video data frame includes only pixel data of the video picture corresponding to the masked area, the extracting the pixel data in the masked video data frame is specifically extracting all pixel data in the masked video data frame. If a video picture in the whole captured video picture is encoded after filling the video picture by using a set pixel value so as to generate the first masked video data during the encoding, where the video picture corresponds to the non-masked area, that is, a video data frame of the non-masked video data includes both the pixel data of the video picture corresponding to the masked area and the filled pixel data, pixel data of a pixel area in the masked video data frame is extracted, where the pixel area corresponds to the first masked area.

[0119] If the first masked video data includes multiple channels of video data, each channel of video data in the first masked video data is decoded to obtain a masked video data frame of the channel of video data, the non-masked video data is decoded to obtain a non-masked video data frame, pixel data in masked video data frames of all channels of video data is extracted, where the masked video data frames have a same timestamp, the extracted pixel data is added to a pixel area in a non-masked video data frame that has the same timestamp as the masked video data frames so as to generate a complete video data frame, where the pixel area corresponds to the masked area, and the complete video data frame is encoded to obtain the merged video data.

[0120] Specifically, as shown in FIG. 9, both the non-masked video data and the first masked video data are transmitted to the monitoring platform through the RTP protocol. Processing after the monitoring platform receives a non-masked video data code stream and a first masked video data code stream that are encapsulated through the RTP protocol is similar to the processing after the first monitoring terminal receives a code stream in step 409A. A difference lies only in that the first monitoring terminal renders and plays YUV data after merging the YUV data, while the monitoring platform encodes merged YUV data after merging the YUV data, so as to generate the merged video data.

[0121] Step 509A: Send the merged video data to the first monitoring terminal.

[0122] Step 510A: The first monitoring terminal directly decodes and plays the merged video data.

[0123] Steps 507B-508B are the same as steps 507B-508B.

[0124] A third exemplary implementation manner is as follows: As shown in FIG. 10, the peripheral unit generates complete video data, the monitoring platform obtains the masked video data and the non-masked video data by separating the complete video data received from the peripheral unit, and separately sends the monitoring terminal the non-masked video data and the masked video data that a user has permission to acquire, and the monitoring terminal merges and plays the received masked video data and non-masked video data.

[0125] The following introduces an exchange flowchart of the third exemplary implementation manner according to the first embodiment of the present invention with reference to FIG. 11.

[0126] Step 601 is the same as step 401, and therefore no further details are provided.

[0127] Step 602: The peripheral unit encodes a captured video picture into complete video data and sends the complete video data to the monitoring platform.

[0128] Step 603: The monitoring platform obtains the masked video data corresponding to a masked area and the non-masked video data corresponding to a non-masked area by separating, according to the description information of a video masked area received in step 601, the complete video data.

[0129] If the masked area includes one area, a video picture in the complete video data may be encoded into one channel of video data, that is, the masked video data includes one channel of video data, where the video picture corresponds to the masked area.

[0130] If the masked area includes multiple areas, video pictures in the complete video data that correspond to the multiple areas included in the masked area may be encoded into one channel of video data, that is, the masked video data includes one channel of video data; or video pictures in the complete video data that correspond to the multiple areas included in the masked area may be encoded into one channel of video data each, that is, the masked video data

includes multiple channels of video data and each area corresponds to one channel of video data; or video pictures corresponding to areas with same permission among the multiple areas included in the masked area may be encoded into one channel of video data, that is, the areas corresponding to the same permission correspond to a same channel of video data, for example, if the masked area includes three areas, area 1 and area 2 correspond to same permission, and area 3 corresponds to another permission, video pictures corresponding to area 1 and area 2 are encoded into a same channel of video data, and a video picture corresponding to area 3 is encoded into another channel of video data.

[0131] Specifically, the video picture corresponding to the masked area may be directly encoded into the masked video data. This includes: decoding the complete video data to obtain a complete video data frame and extracting pixel data of the video picture in the complete video data frame to generate a video data frame of the masked video data, where the video picture corresponds to the masked area. A video picture in the whole captured video picture may also be encoded after filling the video picture by using a set pixel value so as to generate the masked video data, where the video picture corresponds to the non-masked area. This includes: decoding the complete video data to obtain a complete video data frame and setting a pixel value of a pixel of a pixel area in the complete video data frame as a set pixel value, where the pixel area corresponds to the non-masked area, that is, the video data frame of the non-masked video data includes both the pixel data of the video picture corresponding to the masked area and the filled pixel data.

[0132] The obtaining the non-masked video data corresponding to a non-masked area may specifically be directly encoding the video picture corresponding to the non-masked area into the non-masked video data, which includes decoding the complete video data to obtain a complete video data frame and extracting pixel data of the video picture in the complete video data frame to generate the video data frame of the non-masked video data, where the video picture corresponds to the non-masked area; or may specifically be encoding the video picture in the whole video picture after filling the video picture by using a set pixel value so as to generate the non-masked video data, where the video picture corresponds to the masked area, which includes: decoding the complete video data to obtain a complete video data frame and setting a pixel value of a pixel of a pixel area in the complete video data frame as the set pixel value, where the pixel area corresponds to the masked area, and the set pixel value is preferably RGB (0, 0, 0).

[0133] During the encoding, timestamps of video data frames corresponding to a same complete video picture are kept completely consistent in the masked video data and the non-masked video data. Encoding formats include but are not limited to H.264, MPEG4, and MJPEG.

[0134] Steps 604-605 are the same as steps 405-406.

[0135] If a determined result in step 605 is yes, steps 606A-608A are performed.

[0136] If the determined result in step 605 is no, steps 606B-607B are performed.

[0137] Steps 606A-608A are the same as steps 407A-409A.

[0138] Steps 606B-607B are the same as steps 407B-408B.

[0139] For brevity, the foregoing method embodiments are represented as a series of actions. However, a person skilled in the art should understand that the present invention is not limited to the order of the described actions, because according to the present invention, some steps may adopt other orders or occur simultaneously. It should be further understood by a person skilled in the art that the described embodiments all belong to exemplary embodiments, and the involved actions and modules are not necessarily required by the present invention.

[0140] According to the first embodiment of the present invention, a second embodiment of the present invention provides a monitoring platform 500.

[0141] As shown in FIG. 12, the monitoring platform includes a video request receiving unit 501, a determining unit 502, an acquiring unit 503, and a video data sending unit 504.

[0142] The video request receiving unit 501 is configured to receive a video request sent by a first monitoring terminal, where the video request includes a device identifier, and video data of a peripheral unit identified by the device identifier includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area.

[0143] The determining unit 502 is configured to determine whether a user of the first monitoring terminal has permission to acquire first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area.

[0144] The acquiring unit 503 is configured to acquire the non-masked video data and configured to acquire the first masked video data when a determined result of the determining unit 502 is yes.

[0145] The video data sending unit 504 is configured to: when the determined result of the determining unit 502 is yes, send the first monitoring terminal the first masked video data and the non-masked video data that are acquired by the acquiring unit 503, so that the first monitoring terminal merges and plays the first masked video data and the non-masked video data, or merge the first masked video data and the non-masked video data that are acquired by the acquiring unit 503 to obtain merged video data, and send the merged video data to the first monitoring terminal; and further configured to: when the determined result of the determining unit 502 is no, send the first monitoring terminal the non-masked video data acquired by the acquiring unit 503.

[0146] Optionally, the monitoring platform further includes a setting request receiving unit 505.

[0147] The setting request receiving unit 505 is configured to receive a masked area setting request sent by a second monitoring terminal, where the masked area setting request includes the device identifier of the peripheral unit and description information of the masked area.

[0148] As shown in FIG. 13, the monitoring platform further includes a description information sending unit 506 and a first video data receiving unit 507. The description information sending unit 506 is configured to send the description information of the masked area to the peripheral unit; and the first video data receiving unit 507 is configured to receive the non-masked video data and the masked video data that are sent by the peripheral unit and generated according to the description information of the masked area.

[0149] As shown in FIG. 14, the monitoring platform further includes a second video data receiving unit 508 and a video data separating unit 509. The second video data receiving unit 508 is configured to receive complete video data sent by the peripheral unit; and the video data separating unit 509 is configured to obtain the masked video data and the non-masked video data by separating the complete video data received by the second video data receiving unit.

[0150] Preferably, the monitoring platform further includes a storing unit and an association establishing unit.

[0151] The storing unit is configured to store the masked video data into a masked video file and store the non-masked video data into a non-masked video file, and the masked video file includes one or more video files.

[0152] The association establishing unit is configured to establish an association between the masked video file and the non-masked video file.

[0153] The video request receiving unit 501 is specifically configured to receive a video request that includes view time and is sent by the first monitoring terminal.

[0154] The acquiring unit 503 is specifically configured to acquire video data corresponding to the view time from the non-masked video file, and further specifically configured to acquire, according to the association established by the association establishing unit, one or more video files that correspond to the first masked area and are associated with the non-masked video file and acquire video data corresponding to the view time from the one or more video files corresponding to the first masked area when the determined result of the determining unit 502 is yes.

[0155] Further, the association establishing unit is specifically configured to record a non-masked video index and a masked video index and establish an association between the non-masked video index and the masked video index, where the non-masked video index includes the device identifier of the peripheral unit, video start time and end time, indication information of the non-masked video data, and an identifier of the non-masked video file, and the masked video index includes indication information of the masked video data and an identifier of the masked video file.

[0156] Correspondingly, the acquiring unit 503 is specifically configured to obtain, through matching, the non-masked video index according to the device identifier of the peripheral unit and the view time that are included in the video request and the indication information of the non-masked video data, the device identifier of the peripheral unit, and the video start time and end time that are included in the non-masked video index, acquire the non-masked video file according to the identifier of the non-masked video file included in the non-masked video index, and acquire the video data corresponding to the view time from the non-masked video file; and further specifically configured to acquire, when the determined result of the determining unit 502 is yes, the masked video index associated with the non-masked video index according to the association, acquire, according to the identifier of the masked video file included in the masked video index, one or more video files corresponding to the first masked area, and acquire video data corresponding to the view time from the one or more video files corresponding to the first masked area.

[0157] A functional unit described in the second embodiment of the present invention can be used to implement the method described in the first embodiment.

[0158] Preferably, the video request receiving unit 501, the determining unit 502, the setting request receiving unit 505, and the description information sending unit 506 are located on an SCU of the monitoring platform, and the acquiring unit 503, the video data sending unit 504, the first video data receiving unit 507, the second video data receiving unit 508, and the video data separating unit 509 are located on an MU of the monitoring platform.

[0159] According to the second embodiment of the present invention, after receiving a video request of a monitoring terminal, a monitoring platform determines permission of a user of the monitoring terminal, sends, according to a determined result, only non-masked video data to a monitoring terminal of a user that has no permission to acquire masked video data, and sends the masked video data and the non-masked video data to a monitoring terminal of a user that has permission to acquire a part or all of the masked video data, so that the monitoring terminal merges and plays the masked video data and the non-masked video data, or sends video data merged from the masked video data and the non-masked video data, thereby solving a security risk problem resulting from sending image data of a masked part to terminals of users with different permission in the prior art. In addition, according to the second embodiment of the present invention, area-based permission control may be implemented, that is, if the masked area includes multiple areas, permission may be set for each different area, and masked video data that corresponds to a part or all of an area and that a user has permission to acquire is sent to a monitoring terminal of the user according to the permission of the user, thereby implementing more accurate permission control.

[0160] According to the first embodiment of the present invention, a third embodiment of the present invention provides

a monitoring terminal 600.

[0161] As shown in FIG. 15, the monitoring terminal includes a video request sending unit 601, a video data receiving unit 602, and a playing unit 603.

[0162] The video request sending unit 601 is configured to send a video request to a monitoring platform, where the video request includes a device identifier, and video data of a peripheral unit identified by the device identifier includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area.

[0163] The video data receiving unit 602 is configured to receive first masked video data and the non-masked video data that are sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area; and further configured to receive the non-masked video data that is sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire first masked video data in the masked video data.

[0164] The playing unit is configured to merge and play the first masked video data and the non-masked video data that are received by the video data receiving unit 602, or configured to play the non-masked video data received by the video data receiving unit 602.

[0165] Preferably, if the first masked video data includes one channel of video data, the playing unit is specifically configured to decode the first masked video data to obtain a masked video data frame, decode the non-masked video data to obtain a non-masked video data frame, extract pixel data in the masked video data frame, add, according to description information of the first masked area, the extracted pixel data to a pixel area in a non-masked video data frame that has a same timestamp as the masked video data frame so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and play the complete video data frame.

[0166] Optionally, if the first masked video data includes multiple channels of video data, the playing unit is specifically configured to decode each channel of video data in the first masked video data to obtain a masked video data frame of the channel of video data, decode the non-masked video data to obtain a non-masked video data frame, extract pixel data in masked video data frames of all channels of video data, where the masked video data frames have a same timestamp, add the extracted pixel data to a pixel area in a non-masked video data frame that has the same timestamp as the masked video data frames so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and play the complete video data frame.

[0167] A functional unit described in the third embodiment of the present invention can be used to implement the method described in the first embodiment.

[0168] According to the first embodiment of the present invention, a fourth embodiment of the present invention provides a peripheral unit 700.

[0169] As shown in FIG. 16, the peripheral unit includes a description information receiving unit 701, a video data encoding unit 702, and a video data sending unit 703.

[0170] The description information receiving unit 701 is configured to receive description information of a masked area, where the description information is sent by a monitoring platform.

[0171] The video data encoding unit 702 is configured to encode, according to the description information of the masked area, a captured video picture into non-masked video data corresponding to a non-masked area and masked video data corresponding to the masked area.

[0172] The video data sending unit 703 is configured to send the non-masked video data and the masked video data to the monitoring platform, so that the monitoring platform sends the non-masked video data and first masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data, or sends the non-masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire first masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area.

[0173] Preferably, the video data encoding unit 702 is specifically configured to: when the masked area includes one area, encode a video picture in the captured video picture into one channel of video data according to the description information of the masked area, where the video picture corresponds to the masked area; or when the masked area includes multiple areas, encode video pictures in the captured video picture into one channel of video data according to the description information of the masked area, where the video pictures correspond to the multiple areas included in the masked area, or encode video pictures in the captured video picture into one channel of video data each, where the video pictures correspond to the multiple areas included in the masked area, or encode video pictures in the captured video picture into one channel of video data, where the video pictures correspond to areas with same permission among the multiple areas included in the masked area; and further specifically configured to encode a video picture in the captured video picture into the non-masked video data according to the description information of the masked area, where the video picture corresponds to the non-masked area.

[0174] A functional unit described in the fourth embodiment of the present invention can be used to implement the method described in the first embodiment.

[0175] As shown in FIG. 17, a fifth embodiment of the present invention provides a monitoring platform 1000, including:

5 a processor (processor) 1010, a communications interface (Communications Interface) 1020, a memory (memory) 1030, and a bus 1040.

[0176] The processor 1010, the communications interface 1020, and the memory 1030 complete communication between each other through the bus 1040.

10 **[0177]** The communications interface 1020 is configured to communicate with a network element, for example, communicate with a monitoring terminal or a peripheral unit.

[0178] The processor 1010 is configured to execute a program 1032.

[0179] Specifically, the program 1032 may include a program code, and the program code includes a computer operation instruction.

15 **[0180]** The processor 1010 is configured to perform a computer program stored in the memory and may specifically be a central processing unit (CPU, central processing unit), which is a core unit of a computer.

[0181] The memory 1030 is configured to store the program 1032. The memory 1030 may include a high-speed RAM memory, or may further include a non-volatile memory (non-volatile memory), for example, at least one disk memory.

20 **[0182]** The program 1032 may specifically include a video request receiving unit 1032-1, a determining unit 1032-2, an acquiring unit 1032-3, and a video data sending unit 1032-4.

[0183] The video request receiving unit 1032-1 is configured to receive a video request sent by a first monitoring terminal, where the video request includes a device identifier, and video data of a peripheral unit identified by the device identifier includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area.

25 **[0184]** The determining unit 1032-2 is configured to determine whether a user of the first monitoring terminal has permission to acquire first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area.

[0185] The acquiring unit 1032-3 is configured to acquire the non-masked video data and configured to acquire the first masked video data when a determined result of the determining unit 1032-2 is yes.

30 **[0186]** The video data sending unit 1032-4 is configured to: when the determined result of the determining unit 1032-2 is yes, send the first monitoring terminal the first masked video data and the non-masked video data that are acquired by the acquiring unit 1032-3, so that the first monitoring terminal merges and plays the first masked video data and the non-masked video data, or merge the first masked video data and the non-masked video data that are acquired by the acquiring unit 1032-3 to obtain merged video data, and send the merged video data to the first monitoring terminal; and further configured to: when the determined result of the determining unit 1032-2 is no, send the first monitoring terminal the non-masked video data acquired by the acquiring unit 1032-3.

[0187] Optionally, the program further includes a setting request receiving unit 1032-5.

35 **[0188]** The setting request receiving unit 1032-5 is configured to receive a masked area setting request sent by a second monitoring terminal, where the masked area setting request includes the device identifier of the peripheral unit and description information of the masked area.

40 **[0189]** The monitoring platform further includes a description information sending unit 1032-6 and a first video data receiving unit 1032-7. The description information sending unit 1032-6 is configured to send the description information of the masked area to the peripheral unit; and the first video data receiving unit 1032-7 is configured to receive the non-masked video data and the masked video data that are sent by the peripheral unit and generated according to the description information of the masked area.

45 **[0190]** The monitoring platform further includes a second video data receiving unit 1032-8 and a video data separating unit 1032-9. The second video data receiving unit 1032-8 is configured to receive complete video data sent by the peripheral unit; and the video data separating unit 1032-9 is configured to obtain the masked video data and the non-masked video data by separating the complete video data received by the second video data receiving unit.

50 **[0191]** Preferably, the program further includes a storing unit and an association establishing unit.

[0192] The storing unit is configured to store the masked video data into a masked video file and store the non-masked video data into a non-masked video file, and the masked video file includes one or more video files.

[0193] The association establishing unit is configured to establish an association between the masked video file and the non-masked video file.

55 **[0194]** The video request receiving unit 1032-1 is specifically configured to receive a video request that includes view time and is sent by the first monitoring terminal.

[0195] The acquiring unit 1032-3 is specifically configured to acquire video data corresponding to the view time from the non-masked video file, and further specifically configured to acquire, according to the association established by the

association establishing unit, one or more video files that correspond to the first masked area and are associated with the non-masked video file and acquire video data corresponding to the view time from the one or more video files corresponding to the first masked area when the determined result of the determining unit 1032-2 is yes.

[0196] Further, the association establishing unit is specifically configured to record a non-masked video index and a masked video index and establish an association between the non-masked video index and the masked video index, where the non-masked video index includes the device identifier of the peripheral unit, video start time and end time, indication information of the non-masked video data, and an identifier of the non-masked video file, and the masked video index includes indication information of the masked video data and an identifier of the masked video file.

[0197] Correspondingly, the acquiring unit 1032-3 is specifically configured to obtain, through matching, the non-masked video index according to the device identifier of the peripheral unit and the view time that are included in the video request and the indication information of the non-masked video data, the device identifier of the peripheral unit, and the video start time and end time that are included in the non-masked video index, acquire the non-masked video file according to the identifier of the non-masked video file included in the non-masked video index, and acquire the video data corresponding to the view time from the non-masked video file; and further specifically configured to acquire, when the determined result of the determining unit 1032-2 is yes, the masked video index associated with the non-masked video index according to the association, acquire, according to the identifier of the masked video file included in the masked video index, one or more video files corresponding to the first masked area, and acquire video data corresponding to the view time from the one or more video files corresponding to the first masked area.

[0198] For specific implementation of each unit in the program 1032, refer to a corresponding unit in the second embodiment of the present invention, and therefore no further details are provided herein. A functional unit described in the fifth embodiment of the present invention can be used to implement the method described in the first embodiment.

[0199] According to the fifth embodiment of the present invention, after receiving a video request of a monitoring terminal, a monitoring platform determines permission of a user of the monitoring terminal, sends, according to a determined result, only non-masked video data to a monitoring terminal of a user that has no permission to acquire masked video data, and sends the masked video data and the non-masked video data to a monitoring terminal of a user that has permission to acquire a part or all of the masked video data, so that the monitoring terminal merges and plays the masked video data and the non-masked video data, or sends video data merged from the masked video data and the non-masked video data, thereby solving a security risk problem resulting from sending image data of a masked part to terminals of users with different permission in the prior art. In addition, according to the fifth embodiment of the present invention, area-based permission control may be implemented, that is, if the masked area includes multiple areas, permission may be set for each different area, and masked video data that corresponds to a part or all of an area and that a user has permission to acquire is sent to a monitoring terminal of the user according to the permission of the user, thereby implementing more accurate permission control.

[0200] As shown in FIG. 18, a sixth embodiment of the present invention provides a monitoring terminal 2000, including:

a processor (processor) 2010, a communications interface (Communications Interface) 2020, a memory (memory) 2030, and a bus 2040.

[0201] The processor 2010, the communications interface 2020, and the memory 2030 complete communication between each other through the bus 2040.

[0202] The communications interface 2020 is configured to communicate with a network element, for example, communicate with a monitoring platform.

[0203] The processor 2010 is configured to execute a program 2032.

[0204] Specifically, the program 2032 may include a program code, and the program code includes a computer operation instruction.

[0205] The processor 2010 is configured to perform a computer program stored in the memory and may specifically be a central processing unit (CPU, central processing unit), which is a core unit of a computer.

[0206] The memory 2030 is configured to store the program 2032. The memory 2030 may include a high-speed RAM memory, or may further include a non-volatile memory (non-volatile memory), for example, at least one disk memory.

[0207] The program 2032 may specifically include a video request sending unit 2032-1, a video data receiving unit 2032-2, and a playing unit 2032-3.

[0208] The video request sending unit is configured to send a video request to a monitoring platform, the video request includes a device identifier, and video data of a peripheral unit identified by the device identifier includes non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area.

[0209] The video data receiving unit 2032-2 is configured to receive first masked video data and the non-masked video data that are sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data in the masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area; and further

configured to receive the non-masked video data that is sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire first masked video data in the masked video data.

[0210] The playing unit is configured to merge and play the first masked video data and the non-masked video data that are received by the video data receiving unit 2032-2, or configured to play the non-masked video data received by the video data receiving unit 2032-2.

[0211] Preferably, if the first masked video data includes one channel of video data, the playing unit is specifically configured to decode the first masked video data to obtain a masked video data frame, decode the non-masked video data to obtain a non-masked video data frame, extract pixel data in the masked video data frame, add, according to description information of the first masked area, the extracted pixel data to a pixel area in a non-masked video data frame that has a same timestamp as the masked video data frame so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and play the complete video data frame.

[0212] Optionally, if the first masked video data includes multiple channels of video data, the playing unit is specifically configured to decode each channel of video data in the first masked video data to obtain a masked video data frame of the channel of video data, decode the non-masked video data to obtain a non-masked video data frame, extract pixel data in masked video data frames of all channels of video data, where the masked video data frames have a same timestamp, add the extracted pixel data to a pixel area in a non-masked video data frame that has the same timestamp as the masked video data frames so as to generate a complete video data frame, where the pixel area corresponds to the first masked area, and play the complete video data frame.

[0213] For specific implementation of each unit in the program 2032, refer to a corresponding unit in the third embodiment of the present invention, and therefore no further details are provided herein.

[0214] A functional unit described in the sixth embodiment of the present invention can be used to implement the method described in the first embodiment.

[0215] As shown in FIG. 19, a seventh embodiment of the present invention provides a peripheral unit 3000, including:

a processor (processor) 3010, a communications interface (Communications Interface) 3020, a memory (memory) 3030, and a bus 3040.

[0216] The processor 3010, the communications interface 3020, and the memory 3030 complete communication between each other through the bus 3040.

[0217] The communications interface 3020 is configured to communicate with a network element, for example, communicate with a monitoring platform.

[0218] The processor 3010 is configured to execute a program 3032.

[0219] Specifically, the program 3032 may include a program code, and the program code includes a computer operation instruction.

[0220] The processor 3010 is configured to perform a computer program stored in the memory, and may specifically be a central processing unit (CPU, central processing unit), which is a core unit of a computer.

[0221] The memory 3030 is configured to store the program 3032. The memory 3030 may include a high-speed RAM memory, or may further include a non-volatile memory (non-volatile memory), for example, at least one disk memory.

[0222] The program 3032 may specifically include a description information receiving unit 3032-1, a video data encoding unit 3032-2, and a video data sending unit 3032-3.

[0223] The description information receiving unit 3032-1 is configured to receive description information of a masked area, where the description information is sent by a monitoring platform;

[0224] The video data encoding unit 3032-2 is configured to encode, according to the description information of the masked area, a captured video picture into non-masked video data corresponding to a non-masked area and masked video data corresponding to the masked area.

[0225] The video data sending unit 3032-3 is configured to send the non-masked video data and the masked video data to the monitoring platform, so that the monitoring platform sends the non-masked video data and first masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data, or sends the non-masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire first masked video data, where the first masked video data corresponds to a first masked area, and the first masked area includes a part or all of the masked area.

[0226] Preferably, the video data encoding unit 3032-2 is specifically configured to: when the masked area includes one area, encode a video picture in the captured video picture into one channel of video data according to the description information of the masked area, where the video picture corresponds to the masked area; or when the masked area includes multiple areas, encode video pictures in the captured video picture into one channel of video data according to the description information of the masked area, where the video pictures correspond to the multiple areas included

in the masked area, or encode video pictures in the captured video picture into one channel of video data each, where the video pictures correspond to the multiple areas included in the masked area, or encode video pictures in the captured video picture into one channel of video data, where the video pictures correspond to areas with same permission among the multiple areas included in the masked area; and further specifically configured to encode a video picture in the captured video picture into the non-masked video data according to the description information of the masked area, where the video picture corresponds to the non-masked area.

[0227] For specific implementation of each unit in the program 3032, refer to a corresponding unit in the fourth embodiment of the present invention, and therefore no further details are provided herein.

[0228] A functional unit described in the seventh embodiment of the present invention can be used to implement the method described in the first embodiment.

[0229] According to the first to the seventh embodiments of the present invention, an eighth embodiment of the present invention provides a video surveillance system 4000.

[0230] As shown in FIG. 20, the video surveillance system includes a monitoring terminal 4010 and a monitoring platform 4020.

[0231] The monitoring terminal 4010 is specifically the monitoring terminal according to the third or the sixth embodiment.

[0232] The monitoring platform 4020 is specifically the monitoring platform according to the second or the fifth embodiment.

[0233] As shown in FIG. 21, the video surveillance system may further include a peripheral unit 4030, which is specifically the peripheral unit according to the fourth or the seventh embodiment.

[0234] A functional unit described in the eighth embodiment of the present invention can be used to implement the method described in the first embodiment.

[0235] According to the eighth embodiment of the present invention, after receiving a video request of a monitoring terminal, a monitoring platform determines permission of a user of the monitoring terminal, sends, according to a determined result, only non-masked video data to a monitoring terminal of a user that has no permission to acquire masked video data, and sends the masked video data and the non-masked video data to a monitoring terminal of a user that has permission to acquire a part or all of the masked video data, so that the monitoring terminal merges and plays the masked video data and the non-masked video data, or sends video data merged from the masked video data and the non-masked video data, thereby solving a security risk problem resulting from sending image data of a masked part to terminals of users with different permission in the prior art. In addition, according to the eighth embodiment of the present invention, area-based permission control may be implemented, that is, if the masked area includes multiple areas, permission may be set for each different area, and masked video data that corresponds to a part or all of an area and that a user has permission to acquire is sent to a monitoring terminal of the user according to the permission of the user, thereby implementing more accurate permission control.

[0236] A person of ordinary skill in the art may be aware that, with reference to the examples described in the embodiments disclosed in this specification, units and algorithm steps may be implemented by electronic hardware, or a combination of computer software and electronic hardware. Whether the functions are performed by hardware or software depends on particular applications and design constraint conditions of the technical solutions. A person skilled in the art may use different methods to implement the described functions for each particular application, but it should not be considered that the implementation goes beyond the scope of the present invention.

[0237] It may be clearly understood by a person skilled in the art that, for the purpose of convenient and brief description, for a detailed working process of the foregoing system, apparatus, and unit, reference may be made to a corresponding process in the foregoing method embodiments, and therefore no further details are provided herein.

[0238] In the several embodiments provided in the present application, it should be understood that the disclosed system, apparatus, and method may be implemented in other manners. For example, the described apparatus embodiment is merely exemplary. For example, the unit division is merely logical function division and may be other division in actual implementation. For example, a plurality of units or components may be combined or integrated into another system, or some features may be ignored or not performed. In addition, the displayed or discussed mutual couplings or direct couplings or communication connections may be implemented through some interfaces. The indirect couplings or communication connections between the apparatuses or units may be implemented in electronic, mechanical, or other forms.

[0239] The units described as separate parts may or may not be physically separate, and parts displayed as units may or may not be physical units, that is, may be located in one position, or may be distributed on a plurality of network units. A part or all of the units may be selected according to actual needs to achieve the objectives of the solutions of the embodiments.

[0240] In addition, functional units in the embodiments of the present invention may be integrated into one processing unit, or each of the units may exist alone physically, or two or more units are integrated into one unit.

[0241] When the functions are implemented in a form of a software functional unit and sold or used as an independent

product, the functions may be stored in a computer-readable storage medium. Based on such an understanding, the technical solutions of the present invention essentially, or the part contributing to the prior art, or part of the technical solutions may be implemented in a form of a software product. The computer software product is stored in a storage medium, and includes several instructions for instructing a computer device (which may be a personal computer, a server, or a network device) to perform all or a part of the steps of the methods described in the embodiment of the present invention. The foregoing storage medium includes: any medium that can store a program code, such as a USB flash disk, a removable hard disk, a read-only memory (ROM, Read-Only Memory), a random access memory (RAM, Random Access Memory), a magnetic disk, or an optical disk.

[0242] The foregoing descriptions are merely specific implementation manners of the present invention, but are not intended to limit the protection scope of the present invention. Any variation or replacement readily figured out by a person skilled in the art within the technical scope disclosed in the present invention shall fall within the protection scope of the present invention. Therefore, the protection scope of the present invention shall be subject to the protection scope of the claims.

Claims

1. A method for implementing video mask, comprising:

receiving, by a monitoring platform, a video request sent by a first monitoring terminal, wherein the video request comprises a device identifier, and video data of a peripheral unit identified by the device identifier comprises non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area;

determining, by the monitoring platform, whether a user of the first monitoring terminal has permission to acquire first masked video data in the masked video data, wherein the first masked video data corresponds to a first masked area, and the first masked area comprises a part or all of the masked area; and

if a determined result is yes, acquiring the first masked video data and the non-masked video data; and sending the first masked video data and the non-masked video data to the first monitoring terminal, so that the first monitoring terminal merges and plays the first masked video data and the non-masked video data, or merging the acquired first masked video data and non-masked video data to obtain merged video data and sending the merged video data to the first monitoring terminal; or

if a determined result is no, acquiring the non-masked video data and sending the non-masked video data to the first monitoring terminal.

2. The method according to claim 1, wherein:

before the receiving a video request sent by a first monitoring terminal, the method comprises:

receiving a masked area setting request sent by a second monitoring terminal, wherein the masked area setting request comprises the device identifier of the peripheral unit and description information of the masked area; and

sending the description information of the masked area to the peripheral unit, and receiving the non-masked video data and the masked video data that are sent by the peripheral unit and generated according to the description information of the masked area; or obtaining, the masked video data and the non-masked video data by separating, according to the description information of the masked area, complete video data received from the peripheral unit.

3. The method according to claim 1, wherein:

before the acquiring the first masked video data and the non-masked video data, the method comprises:

storing the masked video data into a masked video file, storing the non-masked video data into a non-masked video file, and establishing an association between the masked video file and the non-masked video file, wherein the masked video file comprises one or more video files;

the video request comprises view time;

the acquiring the non-masked video data specifically comprises: acquiring video data corresponding to the view time from the non-masked video file; and

the acquiring the first masked video data specifically comprises: acquiring, according to the association,

one or more video files that correspond to the first masked area and are associated with the non-masked video file, and acquiring video data corresponding to the view time from the one or more video files corresponding to the first masked area.

5 **4.** The method according to claim 3, wherein:

the establishing an association between the masked video file and the non-masked video file specifically comprises:

10 recording a non-masked video index and a masked video index, wherein the non-masked video index comprises the device identifier of the peripheral unit, video start time and end time, indication information of the non-masked video data, and an identifier of the non-masked video file, and the masked video index comprises indication information of the masked video data and an identifier of the masked video file; and establishing an association between the non-masked video index and the masked video index;

15 the acquiring the non-masked video data specifically comprises: obtaining, through matching, the non-masked video index according to the device identifier of the peripheral unit and the view time that are comprised in the video request and the indication information of the non-masked video data, the device identifier of the peripheral unit, and the video start time and end time that are comprised in the non-masked video index, acquiring the non-masked video file according to the identifier of the non-masked video file

20 comprised in the non-masked video index, and acquiring the video data corresponding to the view time from the non-masked video file; and

 the acquiring the first masked video data specifically comprises: acquiring, according to the association, the masked video index associated with the non-masked video index, acquiring, according to the identifier of the masked video file comprised in the masked video index, one or more video files corresponding to

25 the first masked area, and acquiring the video data corresponding to the view time from the one or more video files corresponding to the first masked area.

5. The method according to claim 1, wherein:

30 the acquiring the first masked video data and the non-masked video data; and sending the first masked video data and the non-masked video data to the first monitoring terminal specifically comprises:

 generating an acquiring address of the non-masked video data and an acquiring address of the first masked video data and sending the acquiring addresses to the first monitoring terminal, wherein the acquiring

35 address of the first masked video data or a message carrying the acquiring address of the masked video data comprises a data type that is used to indicate that video data corresponding to the acquiring address is masked video data;

 receiving a request that is sent by the first monitoring terminal and comprises the acquiring address of the non-masked video data, establishing, with the first monitoring terminal according to the acquiring address

40 of the non-masked video data, a media channel used to send the non-masked video data, acquiring the non-masked video data according to the acquiring address of the non-masked video data, and sending the non-masked video data through the media channel; and

 receiving a request that is sent by the first monitoring terminal and comprises the acquiring address of the first masked video data, establishing, with the first monitoring terminal according to the acquiring address

45 of the first masked video data, a media channel used to send the first masked video data, acquiring the first masked video data according to the acquiring address of the first masked video data, and sending the first masked video data through the media channel.

6. A method for implementing video mask, comprising:

50 sending, by a monitoring terminal, a video request to a monitoring platform, wherein the video request comprises a device identifier, and video data of a peripheral unit identified by the device identifier comprises non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area; and

 receiving, by the monitoring terminal, first masked video data and the non-masked video data that are sent by

55 the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data in the masked video data, and merging and playing the first masked video data and the non-masked video data, wherein the first masked video data corresponds to a first masked area, and the first masked area comprises a part or all of the masked area; or

receiving, by the monitoring terminal, the non-masked video data sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire first masked video data in the masked video data, and playing the non-masked video data.

5 7. The method according to claim 6, wherein:

before the merging and playing the first masked video data and the non-masked video data, the method further comprises receiving description information of the first masked area, wherein the description information is sent by the monitoring platform; and

10 the merging and playing the first masked video data and the non-masked video data specifically comprises:

if the first masked video data comprises one channel of video data, decoding the first masked video data to obtain a masked video data frame, decoding the non-masked video data to obtain a non-masked video data frame, extracting pixel data in the masked video data frame, adding, according to the description information of the first masked area, the extracted pixel data to a pixel area in a non-masked video data frame that has a same timestamp as the masked video data frame so as to generate a complete video data frame, wherein the pixel area corresponds to the first masked area, and playing the complete video data frame; or

if the first masked video data comprises multiple channels of video data, decoding each channel of video data in the first masked video data to obtain a masked video data frame of the channel of video data, decoding the non-masked video data to obtain a non-masked video data frame, extracting pixel data in masked video data frames of all channels of video data, wherein the masked video data frames have a same timestamp, adding the extracted pixel data to a pixel area in a non-masked video data frame that has the same timestamp as the masked video data frames so as to generate a complete video data frame, wherein the pixel area corresponds to the first masked area, and playing the complete video data frame.

8. A method for implementing video mask, comprising:

receiving, by a peripheral unit, description information of a masked area, wherein the description information is sent by a monitoring platform;

encoding, by the peripheral unit according to the description information of the masked area, a captured video picture into non-masked video data corresponding to a non-masked area and masked video data corresponding to the masked area; and

sending, by the peripheral unit, the non-masked video data and the masked video data to the monitoring platform, so that the monitoring platform sends the non-masked video data and first masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data, or sends the non-masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire first masked video data, wherein the first masked video data corresponds to a first masked area, and the first masked area comprises a part or all of the masked area.

9. The method according to claim 8, wherein:

the encoding, according to the description information of the masked area, a captured video picture into masked video data corresponding to the masked area specifically comprises:

when the masked area comprises one area, encoding a video picture in the captured video picture into one channel of video data, wherein the video picture corresponds to the masked area; or

when the masked area comprises multiple areas, encoding video pictures in the captured video picture into one channel of video data, wherein the video pictures correspond to the multiple areas comprised in the masked area, or encoding video pictures in the captured video picture into one channel of video data each, wherein the video pictures correspond to the multiple areas comprised in the masked area, or encoding video pictures in the captured video picture into one channel of video data, wherein the video pictures correspond to areas with same permission among the multiple areas comprised in the masked area.

10. The method according to claim 8, wherein:

the encoding, according to the description information of the masked area, a captured video picture into masked

video data corresponding to the masked area specifically comprises: directly encoding a video picture in the captured video picture into the masked video data, wherein the video picture corresponds to the masked area; or encoding a video picture in the captured video picture after filling the video picture by using a set pixel value so as to generate the masked video data, wherein the video picture corresponds to the non-masked area; and the encoding, according to the description information of the masked area, a captured video picture into non-masked video data corresponding to the non-masked area specifically comprises:

directly encoding a video picture in the captured video picture into the non-masked video data, wherein the video picture corresponds to the non-masked area; or encoding a video picture in the captured video picture after filling the video picture by using a set pixel value so as to generate the non-masked video data, wherein the video picture corresponds to the masked area.

11. A monitoring platform, comprising: a video request receiving unit, a determining unit, an acquiring unit, and a video data sending unit, wherein:

the video request receiving unit is configured to receive a video request sent by a first monitoring terminal, wherein the video request comprises a device identifier, and video data of a peripheral unit identified by the device identifier comprises non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area;

the determining unit is configured to determine whether a user of the first monitoring terminal has permission to acquire first masked video data in the masked video data, wherein the first masked video data corresponds to a first masked area, and the first masked area comprises a part or all of the masked area;

the acquiring unit is configured to acquire the non-masked video data and configured to acquire the first masked video data when a determined result of the determining unit is yes; and

the video data sending unit is configured to: when the determined result of the determining unit is yes, send the first monitoring terminal the first masked video data and the non-masked video data that are acquired by the acquiring unit, so that the first monitoring terminal merges and plays the first masked video data and the non-masked video data, or merge the first masked video data and the non-masked video data that are acquired by the acquiring unit to obtain merged video data, and send the merged video data to the first monitoring terminal; and further configured to: when the determined result of the determining unit is no, send the first monitoring terminal the non-masked video data acquired by the acquiring unit.

12. The monitoring platform according to claim 11, wherein:

the monitoring platform further comprises: a setting request receiving unit, a description information sending unit, and a first video data receiving unit; the setting request receiving unit is configured to receive a masked area setting request sent by a second monitoring terminal, wherein the masked area setting request comprises a device identifier of the peripheral unit and description information of the masked area; the description information sending unit is configured to send the description information of the masked area to the peripheral unit; and the first video data receiving unit is configured to receive the non-masked video data and the masked video data that are sent by the peripheral unit and generated according to the description information of the masked area; or

the monitoring platform further comprises: a setting request receiving unit, a second video data receiving unit, and a video data separating unit; the setting request receiving unit is configured to receive a masked area setting request sent by a second monitoring terminal, wherein the masked area setting request comprises a device identifier of the peripheral unit and description information of the masked area; the second video data receiving unit is configured to receive complete video data sent by the peripheral unit; and the video data separating unit is configured to obtain the masked video data and the non-masked video data by separating the complete video data received by the second video data receiving unit.

13. The monitoring platform according to claim 11, further comprising: a storing unit and an association establishing unit, wherein:

the storing unit is configured to store the masked video data into a masked video file and store the non-masked video data into a non-masked video file, wherein the masked video file comprises one or more video files; the association establishing unit is configured to establish an association between the masked video file and the non-masked video file;

the video request receiving unit is specifically configured to receive a video request that comprises view time

and is sent by the first monitoring terminal; and
 the acquiring unit is specifically configured to acquire video data corresponding to the view time from the non-masked video file, and further specifically configured to acquire, according to the association established by the association establishing unit, one or more video files that correspond to the first masked area and are associated with the non-masked video file, and acquire video data corresponding to the view time from the one or more video files corresponding to the first masked area when the determined result of the determining unit is yes.

14. A monitoring terminal, comprising: a video request sending unit, a video data receiving unit, and a playing unit, wherein:

the video request sending unit is configured to send a video request to a monitoring platform, wherein the video request comprises a device identifier, and video data of a peripheral unit identified by the device identifier comprises non-masked video data corresponding to a non-masked area and masked video data corresponding to a masked area;

the video data receiving unit is configured to receive first masked video data and the non-masked video data that are sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data in the masked video data, wherein the first masked video data corresponds to a first masked area, and the first masked area comprises a part or all of the masked area; and further configured to receive the non-masked video data that is sent by the monitoring platform when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire the first masked video data in the masked video data; and

the playing unit is configured to merge and play the first masked video data and the non-masked video data that are received by the video data receiving unit, or configured to play the non-masked video data received by the video data receiving unit.

15. The monitoring terminal according to claim 14, wherein:

if the first masked video data comprises one channel of video data, the playing unit is specifically configured to decode the first masked video data to obtain a masked video data frame, decode the non-masked video data to obtain a non-masked video data frame, extract pixel data in the masked video data frame, add, according to description information of the first masked area, the extracted pixel data to a pixel area in a non-masked video data frame that has a same timestamp as the masked video data frame so as to generate a complete video data frame, wherein the pixel area corresponds to the first masked area, and play the complete video data frame; or

if the first masked video data comprises multiple channels of video data, the playing unit is specifically configured to decode each channel of video data in the first masked video data to obtain a masked video data frame of the channel of video data, decode the non-masked video data to obtain a non-masked video data frame, extract pixel data in masked video data frames of all channels of video data, wherein the masked video data frames have a same timestamp, add the extracted pixel data to a pixel area in a non-masked video data frame that has the same timestamp as the masked video data frames so as to generate a complete video data frame, wherein the pixel area corresponds to the first masked area, and play the complete video data frame.

16. A peripheral unit, comprising: a description information receiving unit, a video data encoding unit, and a video data sending unit, wherein:

the description information receiving unit is configured to receive description information of a masked area, wherein the description information is sent by a monitoring platform;

the video data encoding unit is configured to encode, according to the description information of the masked area, a captured video picture into non-masked video data corresponding to a non-masked area and masked video data corresponding to the masked area; and

the video data sending unit is configured to send the non-masked video data and the masked video data to the monitoring platform, so that the monitoring platform sends the non-masked video data and first masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has permission to acquire the first masked video data, or sends the non-masked video data to a monitoring terminal when the monitoring platform determines that a user of the monitoring terminal has no permission to acquire first masked video data, wherein the first masked video data corresponds to a first masked area, and the first masked area comprises a part or all of the masked area.

17. The peripheral unit according to claim 16, wherein:

the video data encoding unit is specifically configured to: when the masked area comprises one area, encode a video picture in the captured video picture into one channel of video data according to the description information of the masked area, wherein the video picture corresponds to the masked area; or when the masked area comprises multiple areas, encode video pictures in the captured video picture into one channel of video data according to the description information of the masked area, wherein the video pictures correspond to the multiple areas comprised in the masked area, or encode video pictures in the captured video picture into one channel of video data each, wherein the video pictures correspond to the multiple areas comprised in the masked area; or encode video pictures in the captured video picture into one channel of video data, wherein the video pictures correspond to areas with same permission among the multiple areas comprised in the masked area; and further specifically configured to encode a video picture in the captured video picture into the non-masked video data according to the description information of the masked area, wherein the video picture corresponds to the non-masked area.

18. A video surveillance system, comprising: a monitoring terminal and a monitoring platform, wherein:

the monitoring terminal is specifically the monitoring terminal according to claim 14 or 15;
and
the monitoring platform is specifically the monitoring platform according to any one of claims 11-13.

19. The video surveillance system according to claim 18, further comprising a peripheral unit, wherein:

the peripheral unit is specifically the peripheral unit according to claim 16 or 17.

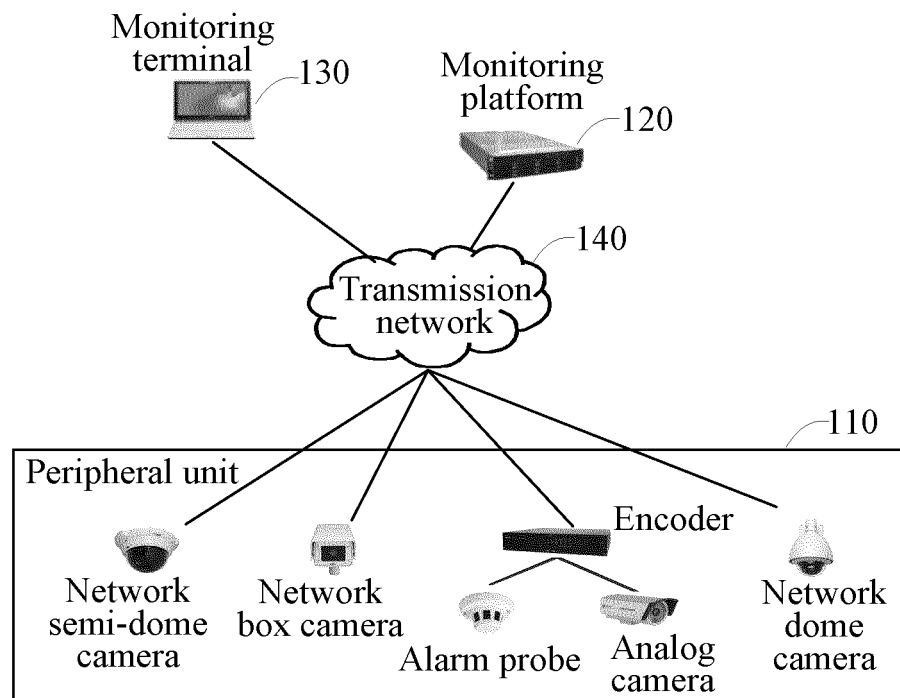


FIG. 1

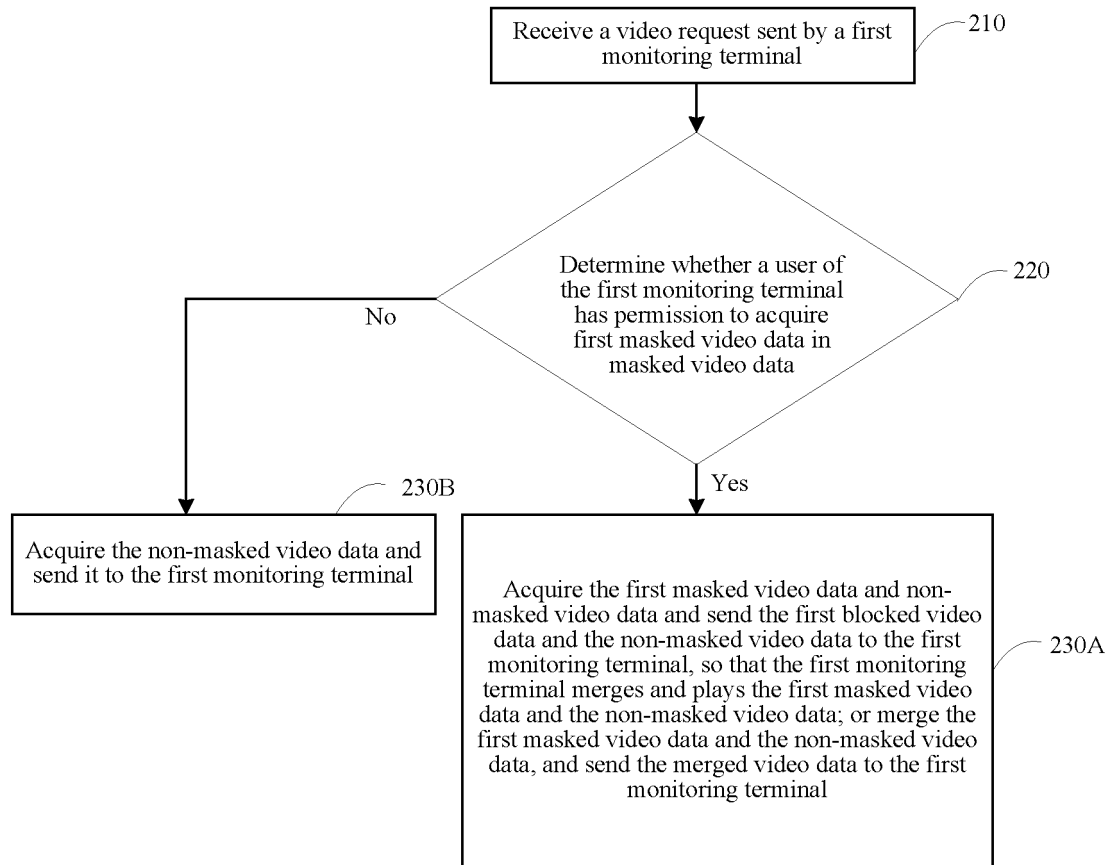


FIG. 2

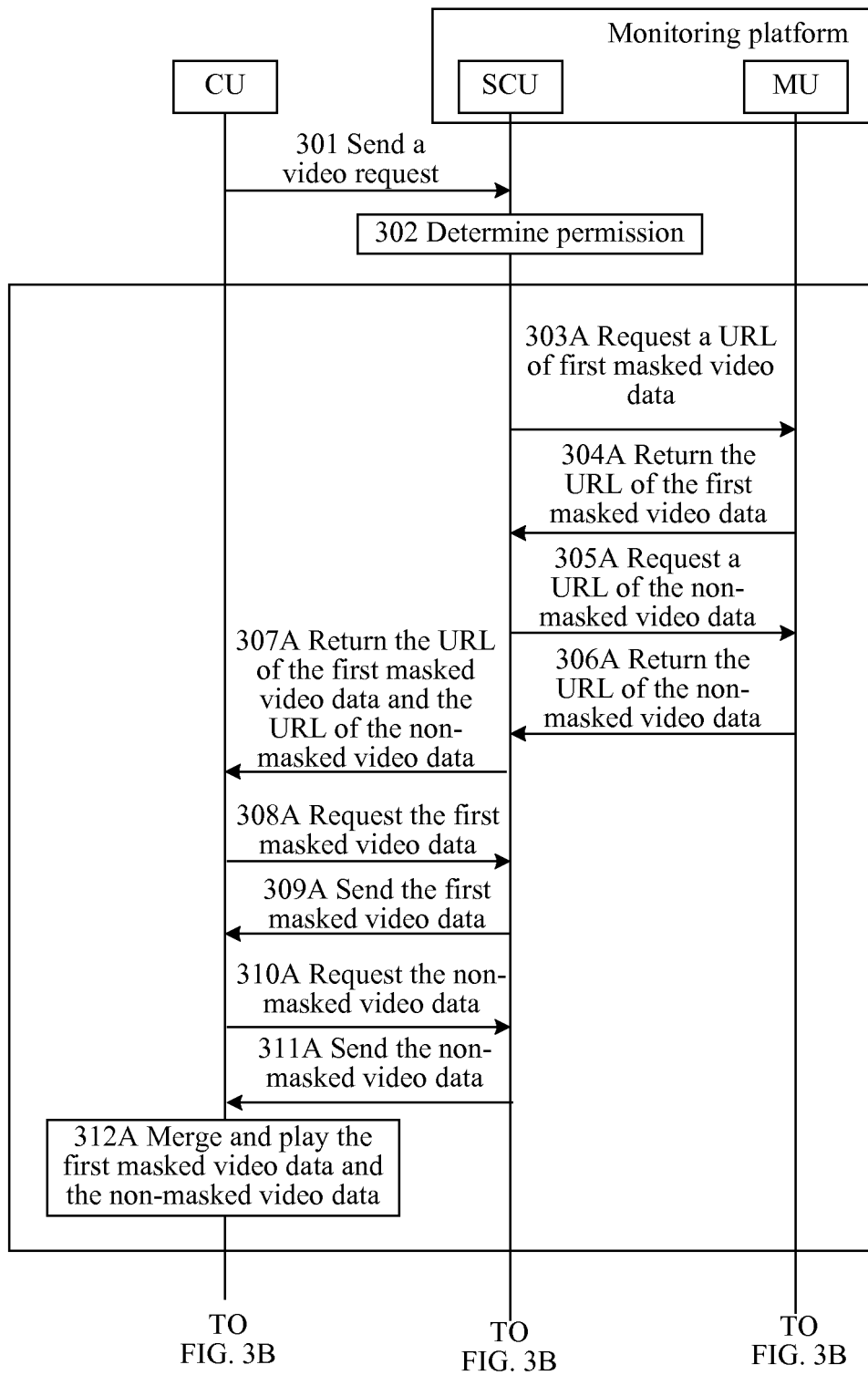


FIG. 3A

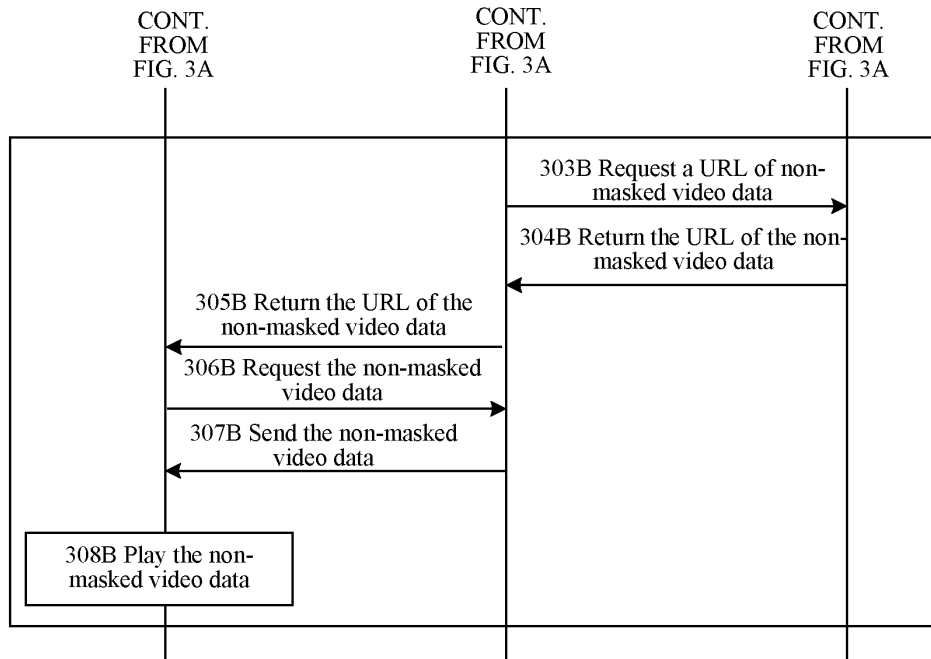


FIG. 3B

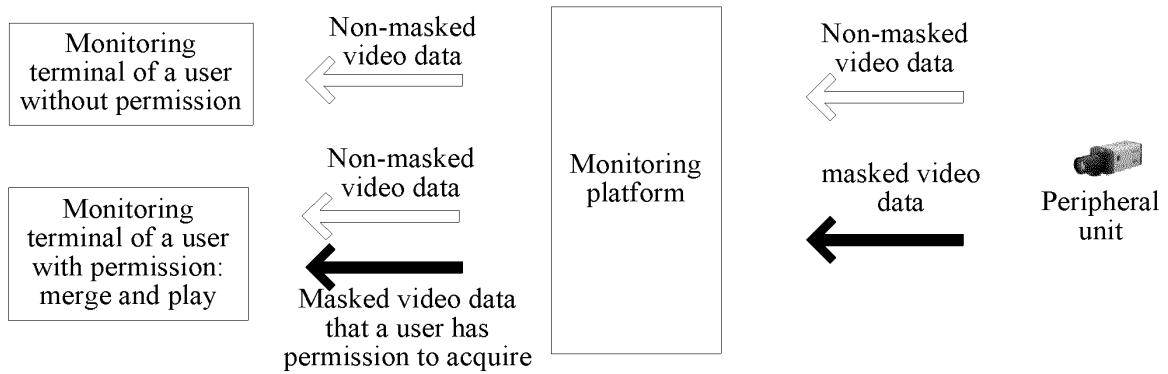


FIG. 4

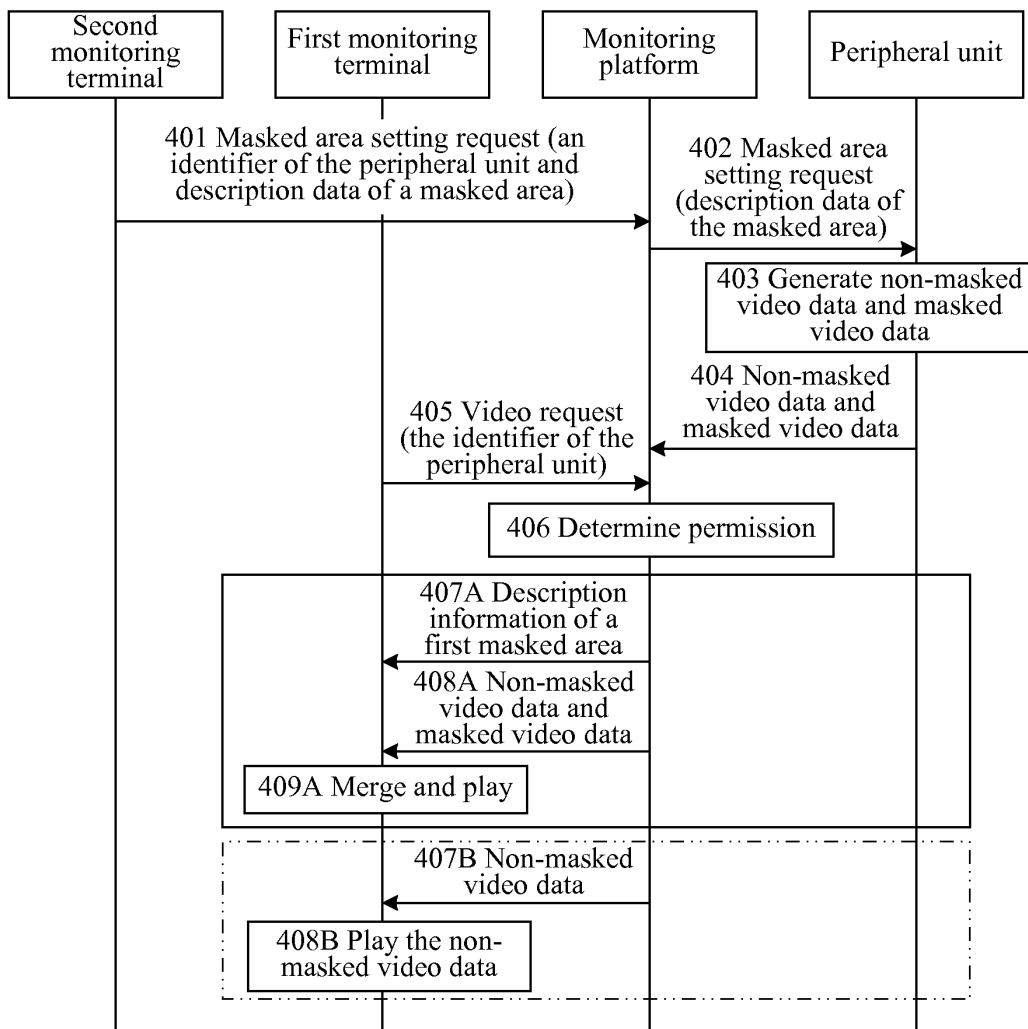


FIG. 5

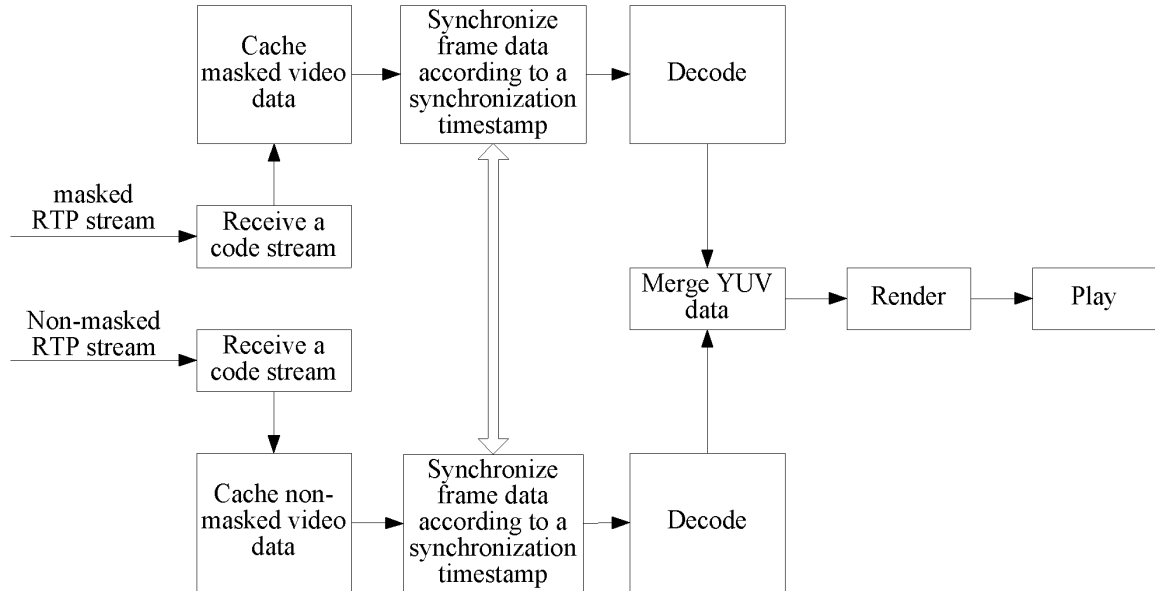


FIG. 6

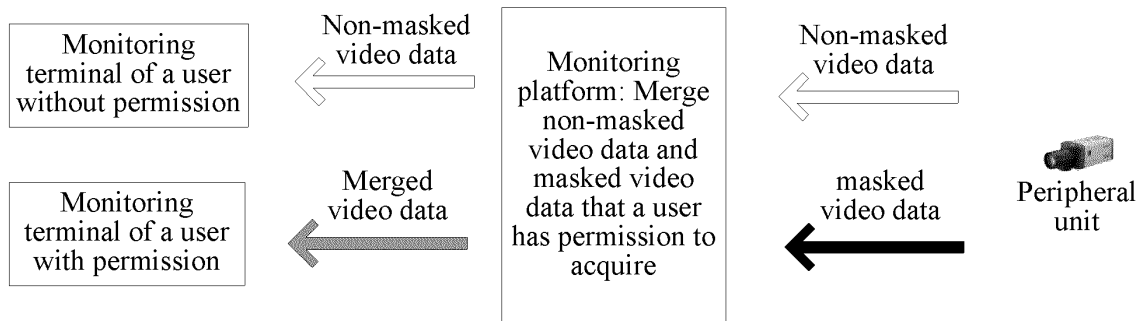


FIG. 7

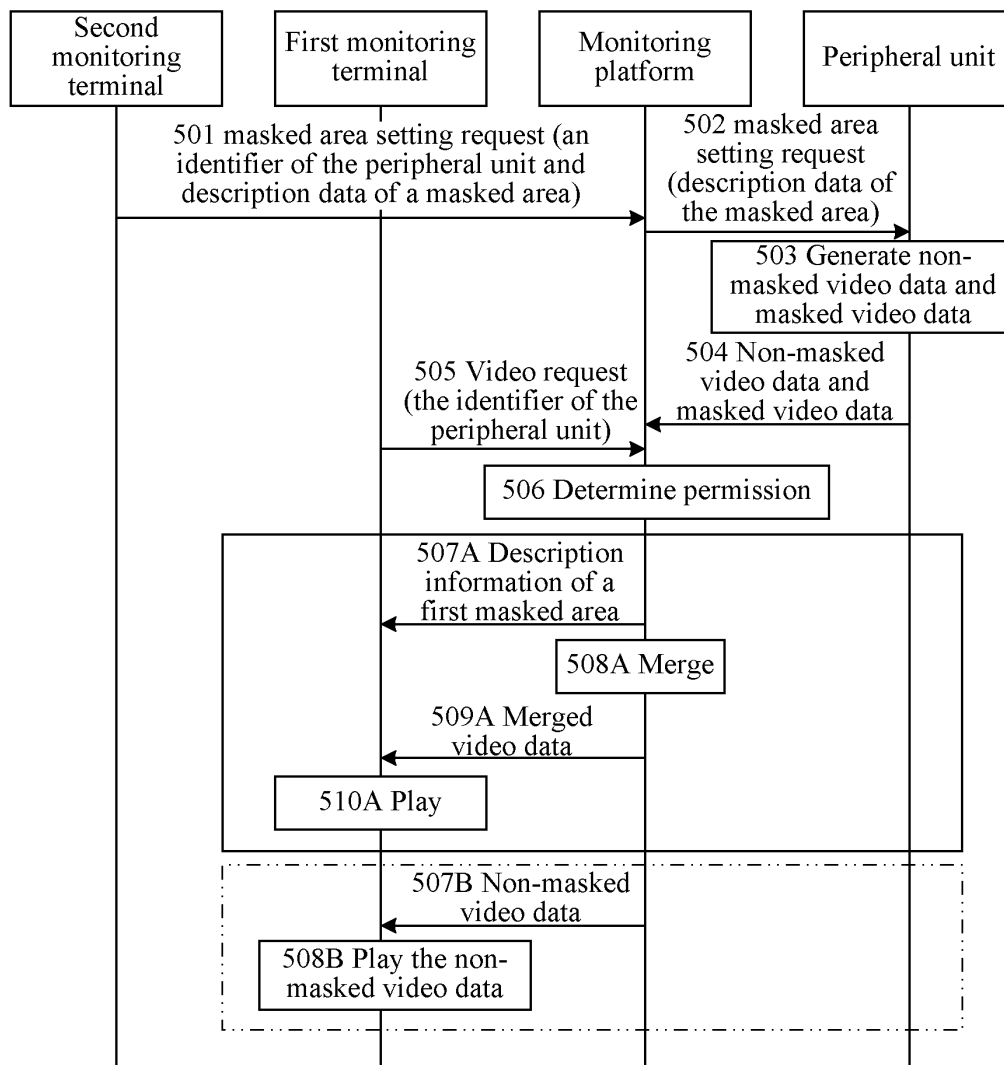


FIG. 8

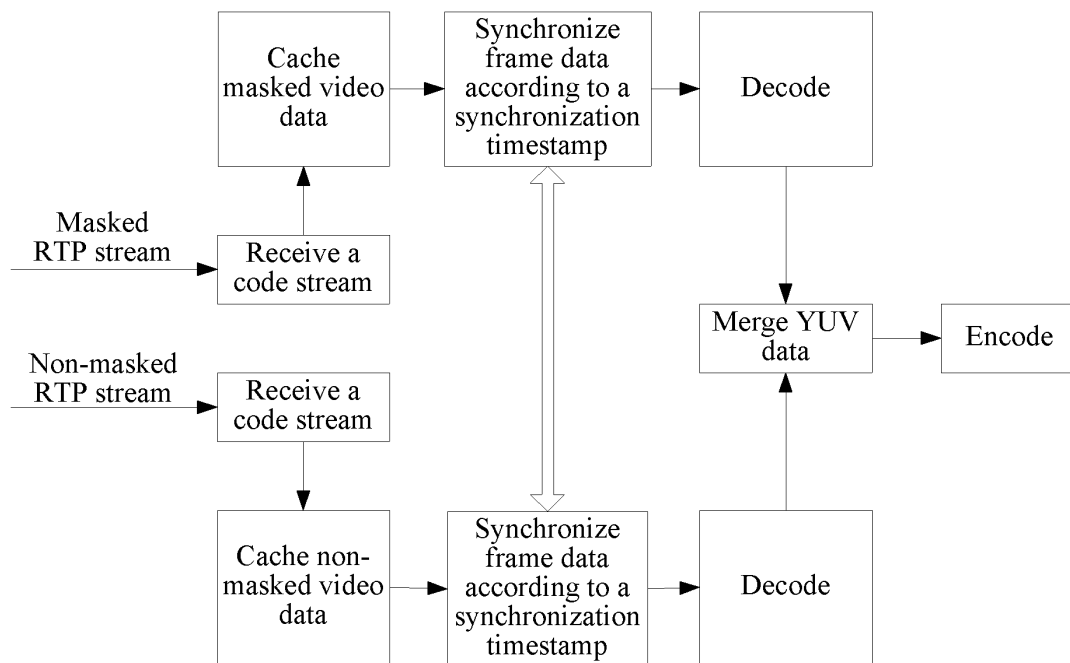


FIG. 9

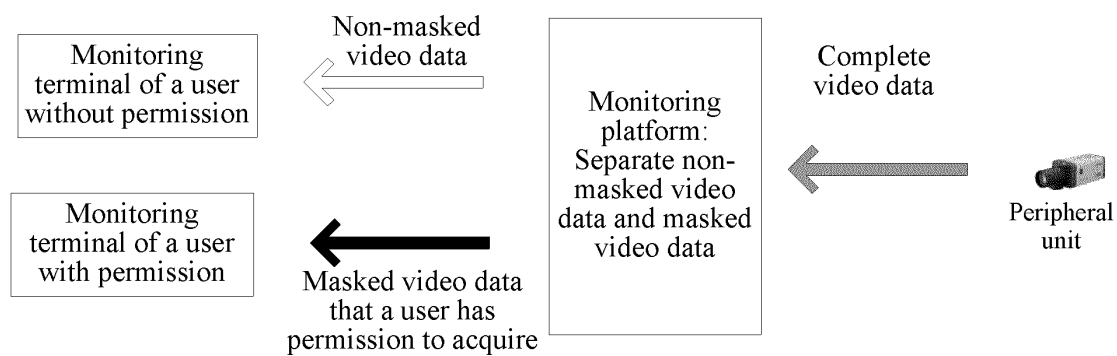


FIG. 10

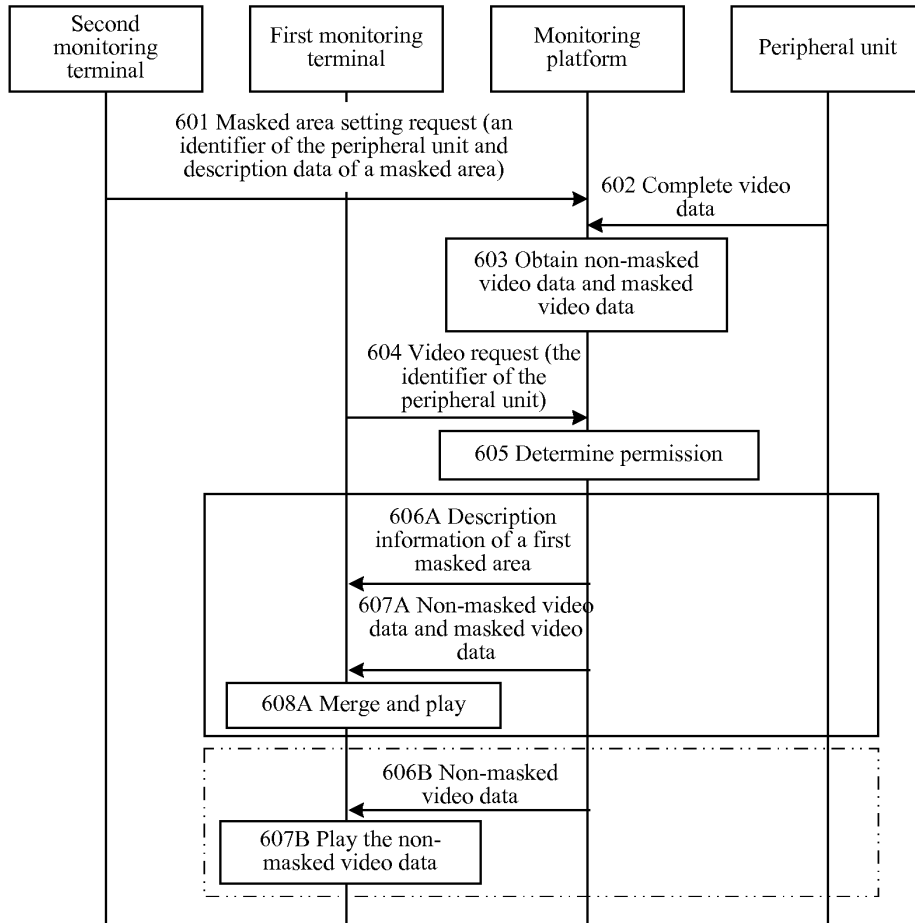


FIG. 11

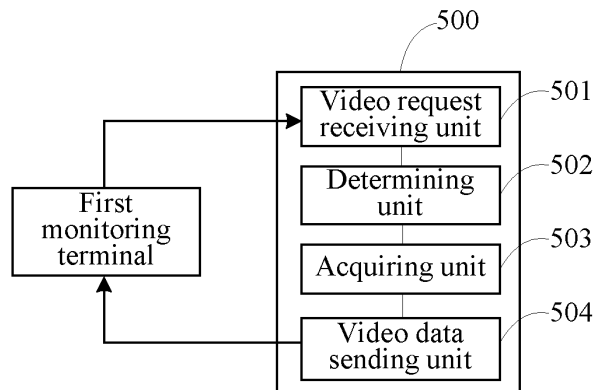


FIG. 12

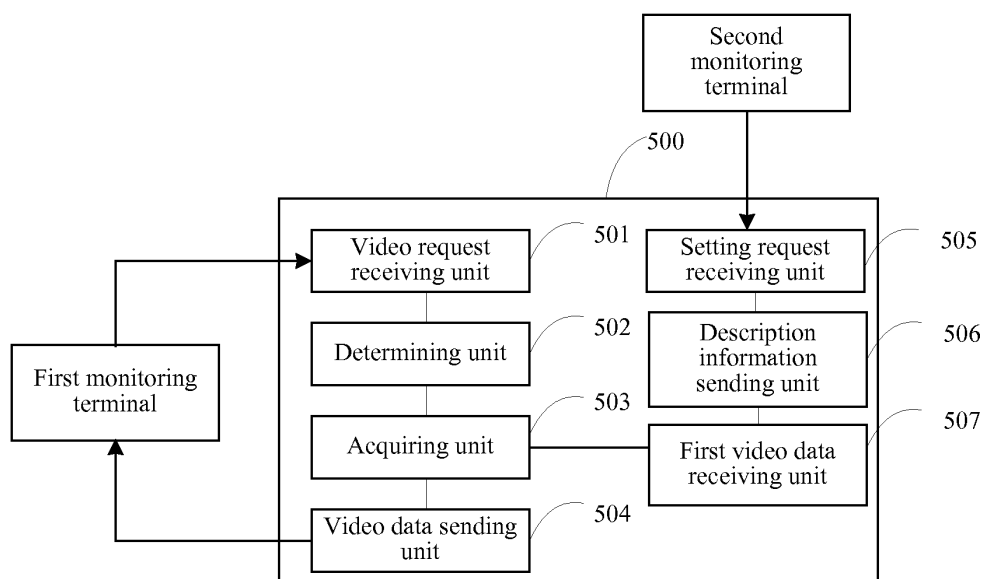


FIG. 13

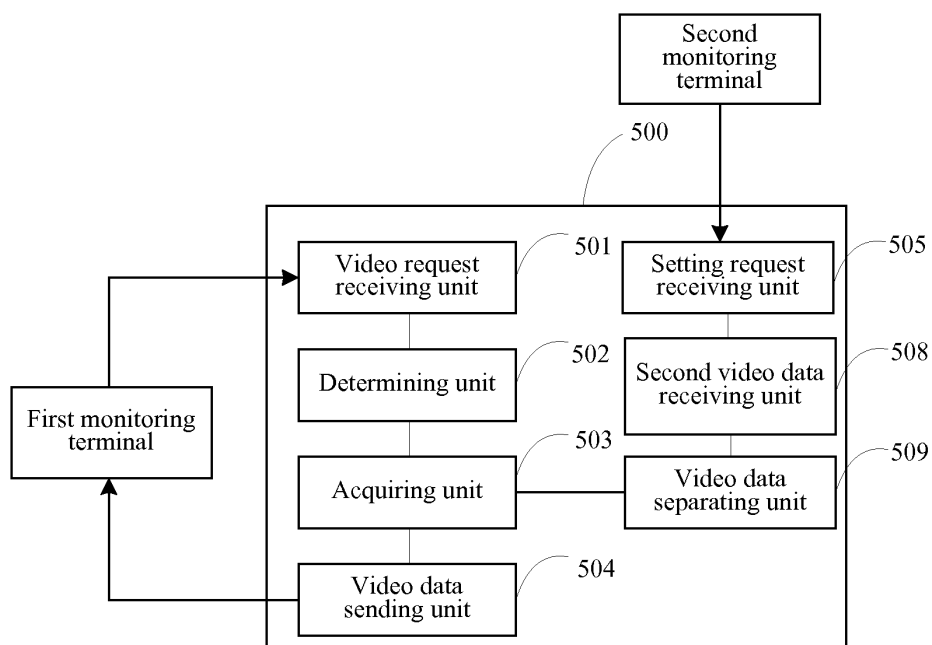


FIG. 14

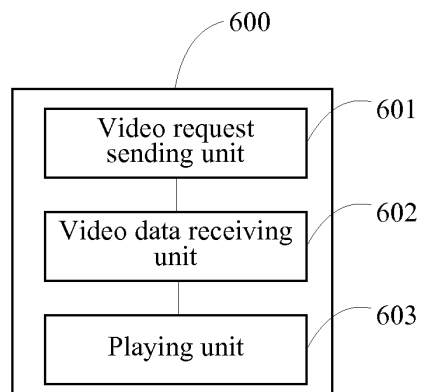


FIG. 15

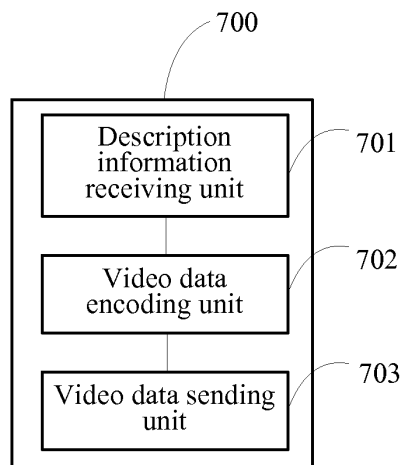


FIG. 16

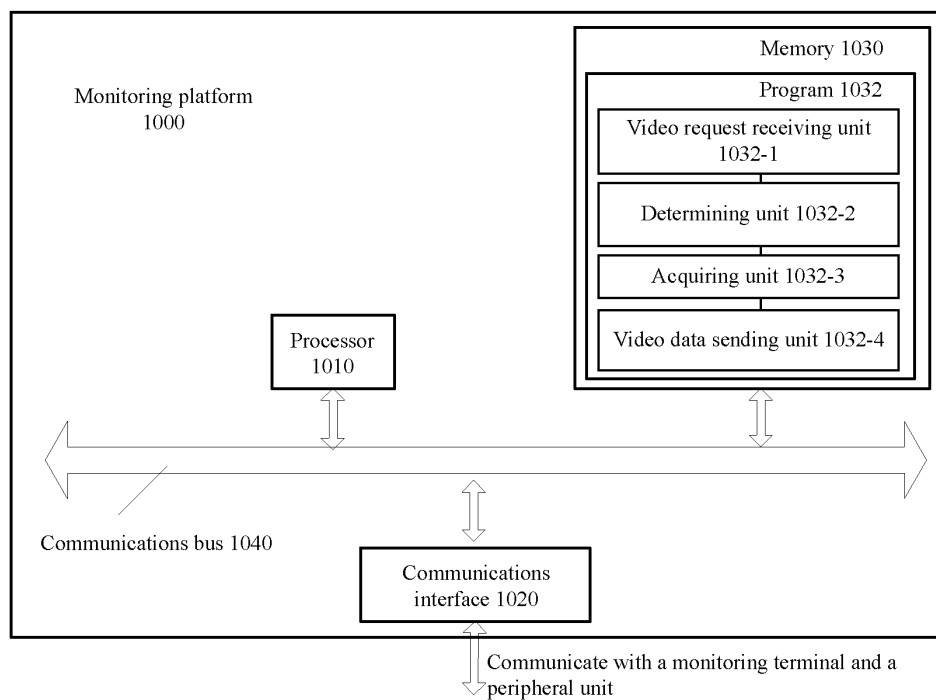


FIG. 17

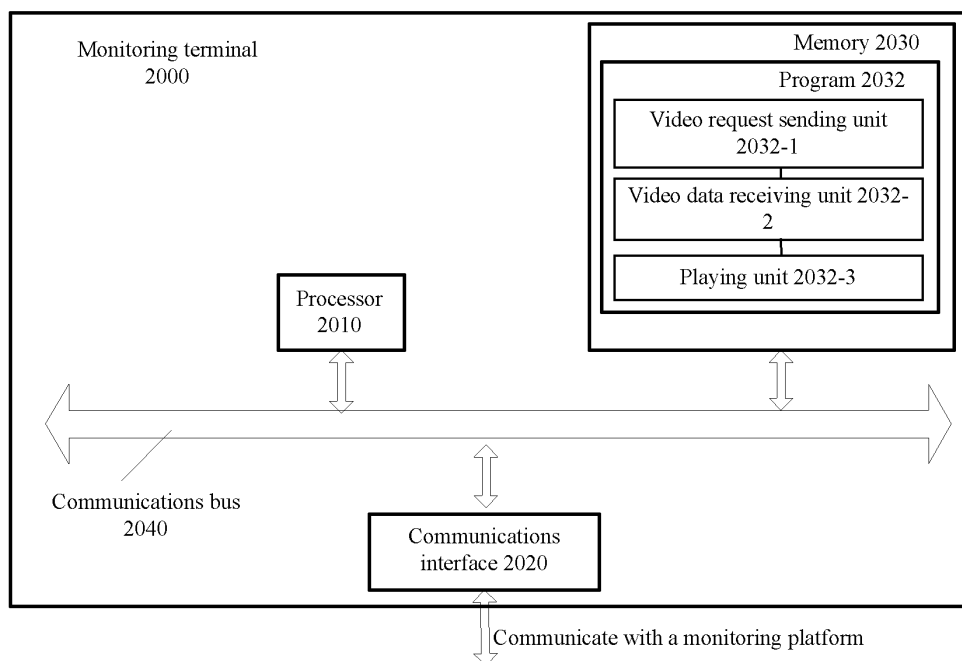


FIG. 18

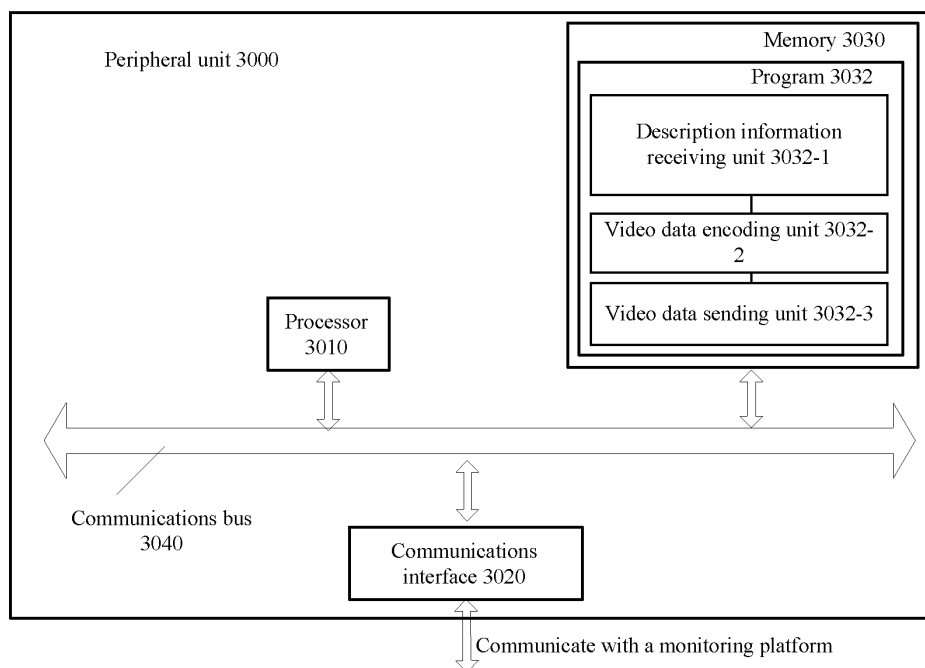


FIG. 19

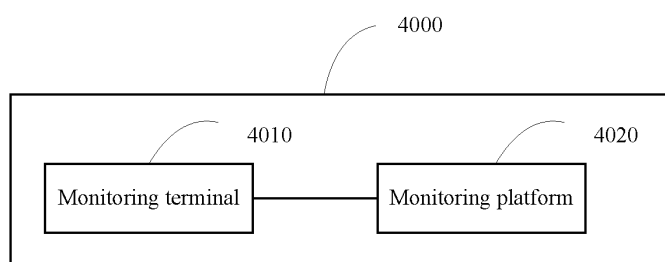


FIG. 20

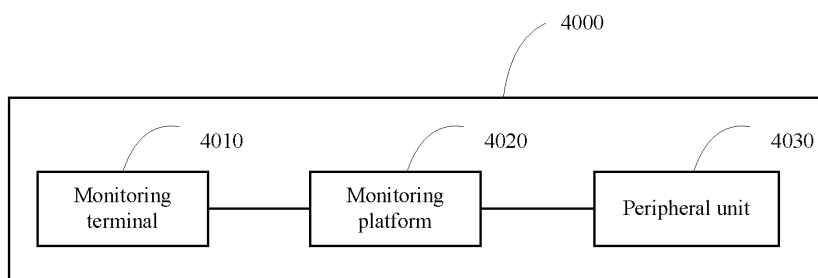


FIG. 21

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2012/082784

A. CLASSIFICATION OF SUBJECT MATTER														
G06K 9/60 (2006.01) i														
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)														
IPC: G06K														
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)														
CPRSABS, VEN, CNTXT, CNKI: complete, authority, video, monitor, occlusion, shield, safe, security, request, part, portion, right, judge, determine														
C. DOCUMENTS CONSIDERED TO BE RELEVANT														
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.												
Y	CN 101710979 A (BEIJING VIMICRO CO., LTD.), 19 May 2010 (19.05.2010), abstract, description, paragraphs 0007-0043 and 0052-0082, and figure 2	1, 6, 8, 11, 14, 16, 18-19												
A		2-5, 7, 9-10, 12-13, 15, 17												
Y	CN 102547212 A (ZHEJIANG UHOPE COMMUNICATIONS TECHNOLOGY CO., LTD.), 04 July 2012 (04.07.2012), abstract, and description, paragraphs 0018-0020	1, 6, 8, 11, 14, 16, 18-19												
A		2-5, 7, 9-10, 12-13, 15, 17												
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.														
<table border="0"> <tr> <td>* Special categories of cited documents:</td> <td>“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</td> </tr> <tr> <td>“A” document defining the general state of the art which is not considered to be of particular relevance</td> <td>“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</td> </tr> <tr> <td>“E” earlier application or patent but published on or after the international filing date</td> <td>“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</td> </tr> <tr> <td>“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>“&” document member of the same patent family</td> </tr> <tr> <td>“O” document referring to an oral disclosure, use, exhibition or other means</td> <td></td> </tr> <tr> <td>“P” document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			* Special categories of cited documents:	“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	“A” document defining the general state of the art which is not considered to be of particular relevance	“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	“E” earlier application or patent but published on or after the international filing date	“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	“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	“&” document member of the same patent family	“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	
* Special categories of cited documents:	“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													
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“E” earlier application or patent but published on or after the international filing date	“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													
“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	“&” document member of the same patent family													
“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														
Date of the actual completion of the international search 05 June 2013 (05.06.2013)		Date of mailing of the international search report 18 July 2013 (18.07.2013)												
Name and mailing address of the ISA/CN: State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No.: (86-10) 62019451		Authorized officer WANG, Xuelian Telephone No.: (86-10) 62411747												

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/CN2012/082784

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 101710979 A	19.05.2010	None	
CN 102547212 A	04.07.2012	None	