

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 December 2007 (27.12.2007)

PCT

(10) International Publication Number
WO 2007/147447 A1

(51) International Patent Classification:
H04L 29/06 (2006.01) **H04Q 7/38** (2006.01)

(21) International Application Number:
PCT/EP2006/069476

(22) International Filing Date:
8 December 2006 (08.12.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/805,538 22 June 2006 (22.06.2006) US
11/469,954 5 September 2006 (05.09.2006) US

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

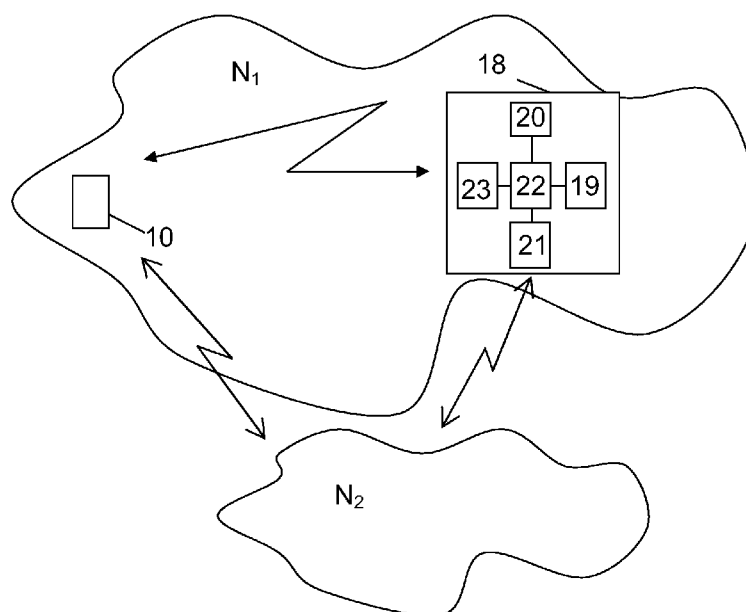
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CONTINUED FILE TRANSFER AFTER HANDOVER



(57) Abstract: The invention concerns a method and computer program product for transferring or streaming a data file to a portable communication device from a data file server in a local network, a method and computer program product for receiving, in a portable communication device, such a data file from a data file server, such a data file server, such a portable communication device as well as a system for transferring or streaming a data file. The server (18) receives a request for transfer or streaming of a data file sent in the local network (N₁) from the portable communication device (10). It provides the portable communication device with an identifier allowing the data file to be located on the server via a wide area network (N₂) and transfers or streams the file over the local network to the portable communication device as long as a local connection exists.

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CONTINUED TRANSFER OR STREAMING OF A DATA FILE AFTER LOSS OF A LOCAL CONNECTION

TECHNICAL FIELD OF THE INVENTION

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The present invention relates to the field of transferring or streaming data files from data file servers to portable communication devices. More particularly the present invention relates to a method and a computer program product for transferring or streaming at least one data file to a portable communication device from a data file server in a local network,
10 a data file server in a local network, a method and a computer program product for receiving in a portable communication device at least one transferred or streamed data file from a data file server in a local network, a portable communication device and a system for transferring or streaming at least one data file to a portable communication device from a data file server in a local network.

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DESCRIPTION OF RELATED ART

Portable communication devices, such as cellular phones, nowadays more and more frequently comprise various sorts of media playing functionalities. It is then known to
20 transfer or stream content to such a device for instance via a data file server handling various types of data files in a local network when this functionality is to be used in the portable communication device.

However, as a portable communication is moved around, it is possible that the data file
25 being transferred or streamed may be interrupted because the connection over which the streaming or transfer was being made may be lost. This means that the user of the portable communication device will not be able to enjoy the data files in the way he/she expects.

30 It would therefore be advantageous to provide a way to continue transferring or streaming a data file even though the connection is lost. The present invention directed towards solving this problem.

SUMMARY OF THE INVENTION

The present invention is directed towards enabling a continued transferring or streaming of a data file between a portable communication device and a data file server in a local
5 network even though a local connection is lost.

One object of the present invention is to provide a method of transferring or streaming at least one data file to a portable communication device from a data file server in a local network that can be continued even though a local connections is lost.

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According to a first aspect of the present invention this is achieved by a method of transferring or streaming at least one data file to a portable communication device from a data file server in a local network comprising the steps of:

receiving a request for transfer or streaming of at least one data file from the portable

15 communication device in the local network,

providing the portable communication device with identifying data comprising an identifier allowing the data file to be located on the server via a wide area network, and

transferring or streaming the file over the local network to the portable communication device as long as a local connection exists.

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A second aspect of the present invention includes the features of the first aspect, further comprising the steps of determining that a local connection no longer exists, disrupting the transferring or streaming, receiving a request, via a wide area network, for continued transfer or streaming over this wide area network and continuing the transfer or streaming

25 of the data file over this wide area network.

A third aspect of the present invention includes the features of the second aspect, further comprising the steps of determining that a local connection once again exists, disrupting the transferring or streaming over the wide area network, and resuming transfer or

30 streaming over the local network.

A fourth aspect of the present invention includes the features of the second aspect, wherein the identifying data comprises authentication data and further comprising the steps of receiving authentication data together with the request for continued transfer or

streaming, determining if the correct authentication data has been provided and continuing the transfer only if the authentication data is correct.

A fifth aspect of the present invention includes the features of the second aspect, further
5 comprising the step of determining a point in the data file after which continued transfer or streaming is to be made and continuing transfer or streaming from this point.

A sixth aspect of the present invention includes the features of the first aspect, further comprising the step of changing the coding of the file before transfer or streaming.

10

Another object of the present invention is to provide a data file server in a local network that enables a continued transferring or streaming of a data file between a portable communication device and the data file server even though a local connection is lost.

15 According to a seventh aspect of the present invention this is achieved by a data file server in a local network comprising:

an archive control unit controlling a data file archive and configured to

receive a request for transfer or streaming of at least one data file from a portable communication device in the local network,

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provide the portable communication device with identifying data comprising an identifier allowing the data file to be located on the server via a wide area network, and

transfer or stream the file over the local network to the portable communication device as long as a local connection exists.

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An eighth aspect of the present invention includes the features of the seventh aspect, wherein the archive control unit is further configured to determine that a local connection no longer exists, disrupt the transfer or streaming, receive a request, via a wide area network, for continued transfer or streaming over this wide area network and continue the
30 transfer or streaming of the data file over this wide area network.

A ninth aspect of the present invention includes the features of the eighth aspect, wherein the archive control unit is further configured to determine that a local connection once again exists, disrupt the transferring or streaming over the wide area network, and
35 resuming transfer or streaming over the local network.

A tenth aspect of the present invention includes the features of the eighth aspect, wherein the identifying data comprises authentication data and the archive control unit is further configured to receive authentication data together with the request for continued transfer
5 or streaming, determine if the correct authentication data has been provided and continue the transfer only if the authentication data is correct.

An eleventh aspect of the present invention includes the features of the eighth aspect, wherein the archive control unit is further configured to determine a point in the data file
10 after which continued transfer or streaming is to be made and continuing transfer or streaming from this point.

A twelfth aspect of the present invention includes the features of the seventh aspect, wherein the archive control unit is further configured to at least order the changing of the
15 coding of the file before transfer or streaming.

A thirteenth aspect of the present invention is directed towards a data file server in a local network comprising:

means for receiving a request for transfer or streaming of at least one data file from
20 the portable communication device in the local network,
means for providing the portable communication device with identifying data comprising an identifier allowing the data file to be located on the server via a wide area network, and
means for transferring or streaming the file over the local network to the portable
25 communication device as long as a local connection exists.

Another object of the present invention is to provide a computer program product that enables a continued transferring or streaming of a data file between a portable communication device and a data file server in a local network even though a local
30 connection is lost.

According to a fourteenth aspect of the present invention this is achieved by a computer program product for transferring or streaming at least one data file to a portable communication device from a data file server in a local network comprising:

computer program code, configured to make the data file server perform, when said program code is loaded in the data file server,
receive a request for transfer or streaming of at least one data file from the portable communication device in the local network,

- 5 provide the portable communication device with identifying data comprising an identifier allowing the data file to be located on the server via a wide area network, and transfer or stream the file over the local network to the portable communication device as long as a local connection exists.

- 10 Another object of the present invention is to provide a method of receiving in a portable communication device at least one transferred or streamed data file from a data file server even though a local connection is lost.

According to a fifteenth aspect of the present invention this is achieved by a method of

- 15 receiving in a portable communication device at least one transferred or streamed data file from a data file server in a local network comprising the steps of:
sending a request for transfer or streaming of at least one data file to the data file server via the local network,
receiving identifying data comprising an identifier allowing the data file to be located on
20 the server via a wide area network, and
receiving the file or stream over the local network as long as a local connection exists.

A sixteenth aspect of the present invention includes the features of the fifteenth aspect, further comprising the steps of determining that a local connection no longer exists,

- 25 sending a request, via a wide area network, for continued transfer or streaming over this wide area network using said identifier, and continuing receiving the file or stream over this wide area network.

A seventeenth aspect of the present invention includes the features of the sixteenth

- 30 aspect, further comprising the steps of determining that a local connection once again exists, sending a request for resumed transfer or streaming over this local network, and resuming receiving the file or stream over the local network.

An eighteenth aspect of the present invention includes the features of the sixteenth

- 35 aspect, wherein the identifying data comprises authentication data and further comprising

the steps of sending authentication data together with the request for continued transfer or streaming, for safeguarding the transfer to the right recipient.

A nineteenth aspect of the present invention includes the features of the fifteenth aspect,
5 wherein the coding of the file has been changed before being received.

Another object of the present invention is directed towards providing a portable communication device that allows continued transferring or streaming of a data file between a data file server in a local network and the portable communication device,
10 which enables receiving the data file even though a local connection is lost.

According to a twentieth aspect of the present invention, this is achieved by a portable communication device comprising:

at least one communication unit for communicating in a local network and a wide area
15 network, and

a control unit configured to

send a request for transfer or streaming of at least one data file to a data file server via the local network,

receive identifying data comprising an identifier allowing the data file to be located on
20 the server via a wide area network, and

receive the file or stream over the local network as long as a local connection exists.

A twenty-first aspect of the present invention includes the features of the twentieth aspect, wherein the control unit is further configured to determine that a local connection no
25 longer exists, send a request, via the wide area network, for continued transfer or streaming over this wide area network using said identifier, and continue receiving the file or stream over this wide area network.

A twenty-second aspect of the present invention includes the features of the twenty-first aspect, wherein the control unit is further configured to determine that a local connection
30 once again exists, send a request for resumed transfer or streaming over this local network, and resume receiving the file or stream over the local network.

A twenty-third aspect of the present invention includes the features of the twenty-first
35 aspect, wherein the identifying data comprises authentication data and the control unit is

further configured to send authentication data together with the request for continued transfer or streaming, for safeguarding the transfer to the right recipient.

A twenty-fourth aspect of the present invention includes the features of the twentieth
5 aspect, wherein the coding of the file has been changed before being received.

A twenty-fifth aspect of the present invention includes the features of the twentieth aspect, wherein it is a cellular phone.

10 A twenty-sixth aspect of the present invention is directed towards a portable communication device comprising:
means for sending a request for transfer or streaming of at least one data file to a data file server via a local network,
means for receiving identifying data comprising an identifier allowing the data file to be
15 located on the server via a wide area network, and
means for receiving the file or stream over the local network as long as a local connection exists.

Another object of the present invention is to provide yet another computer program
20 product that enables a continued transferring or streaming of a data file between a portable communication device and a data file server in a local network even though a local connection is lost.

According to a twenty-seventh aspect of the present invention this is achieved by a
25 computer program product for receiving in a portable communication device at least one transferred or streamed data file from a data file server in a local network comprising:
computer program code, configured to make the portable communication device execute, when said program code is loaded in the portable communication device,
send a request for transfer or streaming of at least one data file to the data file server via
30 the local network,
receive identifying data comprising an identifier allowing the data file to be located on the server via a wide area network, and
receive the file or stream over the local network as long as a local connection exists.

Another object of the present invention is to provide a system that allows continued transferring or streaming of a data file between a data file server and the portable communication device even though a local connection is lost.

- 5 According to a twenty-eight aspect of the present invention, this is achieved by a system for transferring or streaming at least one data file to a portable communication device from a data file server in a local network and comprising:
- at least one radio communication unit
 - at least one data file archive
- 10 a data file server comprising
- an archive control unit controlling the data file archive and configured to
 - receive a request for transfer or streaming of at least one data file from a
 - portable communication device in the local network,
 - provide the portable communication device with identifying data comprising
 - 15 an identifier allowing the data file to be located on the server via a wide
 - area network, and
 - transfer or stream the file over the local network to the portable
 - communication device as long as a local connection exists, and
 - a portable communication device having
 - 20 at least one communication unit for communicating in a local network and a wide
 - area network, and
 - a control unit configured to
 - send said request for transfer or streaming,
 - receive said identifying data, and
 - 25 receive said file or stream over the local network as long as the local
 - connection exists.

The invention has the following advantages. It allows the continued transfer or streaming of files when a local connection is lost. Transfer or streaming is often slowed down

30 because of a required change of coding. This means that a portable communication device that is to receive such a file may lose the local connection, for instance if it moves out of the local network. The present invention therefore ensures that the content is continued to be transferred or streamed in case the local connection is lost. The invention is furthermore provided in a simple and user friendly way without a user having to get

35 involved. It is automatic.

It should be emphasized that the term "comprises/comprising" when used in this specification is taken to specify the presence of stated features, steps or components, but does not preclude the presence or addition of one or more other features, steps,
5 components or groups thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will now be described in more detail in relation to the enclosed
10 drawings, in which:

fig. 1 shows a portable communication device in the form of a cellular phone,
fig. 2 schematically shows the phone in fig. 1 connected to a data file server in a local network and via a wide area network,
15 fig. 3 shows a block schematic of the relevant parts of the cellular phone for providing the present invention, and
fig. 4 shows a flow chart of a method of receiving a data file from the data file server according to an embodiment of the present invention,
fig. 5 shows a flow chart of a method of transferring a data file to the portable
20 communication device according to an embodiment of the present invention, and
fig. 6 shows a CD ROM disc on which program code for executing a method according to the invention is provided.

DETAILED DESCRIPTION OF EMBODIMENTS

25 A portable communication device 10 according to the present invention is shown in fig. 1. In the preferred embodiment the device is a cellular phone 10 having a display 12, a user input unit in the form of a keypad 14 including a number of keys as well as a speaker 16. The phone 10 also has a system connector 17. Via the system connector 17 it is possible
30 to connect the phone to other devices such as a PC or a data file server. The keypad 14 is used for entering information such as selecting of functions and responding to prompts and the display 12 is used for displaying functions and prompts to a user of the phone as well as for presenting video, while the speaker 16 is arranged to emit sound, like speech or music being played in the phone or the sound associated with video. A cellular phone is
35 just one example of a device in which the invention can be implemented. The invention

can for instance also be used in a PDA (personal digital assistant), a palm top computer, a lap top computer or a media player as long as the device has media processing functionality, like for instance being able to play or record media files, and it can become connected to a data file server via a wide area network, for instance using a PC card, as well as locally. The local connection is preferably a wireless connection, but may also be via cable.

Fig. 2 shows the cellular phone 10 provided in a local wireless network N_1 and wirelessly communicating with a media file server 18 also provided in the local network N_1 . The local network N_1 is preferably a home network and it can include such other things as one or more PCs, stereo equipment, TVs, video equipment etc. The local network N_1 is preferably a wireless LAN network, but other ways of providing local communication is possible, like for instance using Bluetooth™, USB ports on a computer and IR links. The local network N_1 has a limited physical extension, which means that the cellular phone 10 may for long periods of time be provided outside of the local network N_1 . The data file server 18 comprises a data file archive 20 comprising a number of data files, which may be music, for instance coded or uncoded using MP3 and/or video files, like DVD files. The data file server 18 furthermore comprises an archive control unit 22, a code changing unit 19 as well as a first radio communication unit 21 and a second radio communication unit in the form of a proximity communication unit 23, which may be a WLAN or Bluetooth™ communication unit.

Since the portable communication device is a cellular phone 10 it is also able to communicate using one or more wide area networks, where one network N_2 is shown in fig. 2. This network may be a cellular GPRS network or a cellular UMTS network. The invention is not limited to these types of networks though, but can be implemented in any wireless wide area network allowing the transfer or streaming of data files. Also the data file server 18 is able to communicate via this network N_2 using the first communication unit 21. In this way the phone 10 has more than one route through which it may contact the server 18. In fig. 2 the second network N_2 is shown as covering another area than the area covered by the local network N_1 . However, in reality the second network N_2 normally covers a very large area and normally also the area covered by the local network N_1 .

Fig. 3 shows a part of the interior of the cellular phone 10 that is relevant for the present invention. The phone 10 includes a control unit 24 connected to a third radio

communication unit 30 for communication in the wide area network N_2 , to a fourth radio communication unit in the form of a proximity communication unit 34, which may thus be a WLAN or BluetoothTM communication unit for communication in the local network N_1 , to a data processing unit 26, which in this embodiment is a DVD player, to the keypad 14, to the display 12, to a local file store 28, to the speaker 16 and to the system connector 17. The third radio communication unit 30 is connected to a first antenna 32 for communication with the wide area network N_2 and the fourth communication unit 34 is connected to a second antenna 36 for communication with the local network N_1 . The DVD player 26 is connected to the speaker 16 as well as to the file store 28 and the display 12.

As an alternative it is furthermore possible that several other types of data processing units are provided, in order to handle media of different types provided in the phone 10, like for instance a music player and a camera and/or other media recording units as well as other media playing, editing and presenting units. Thus all types of units that can play, display, create, review or record media files can be used.

15

The functioning of the present invention will now be described in relation to the previously described fig. 1 - 3 together with fig. 4, which shows a flow chart of a method of receiving a data file from the data file server according to an embodiment of the present invention provided in the phone and fig. 5, which shows a flow chart of a method of transferring a data file to the portable communication device from the file server according to an embodiment of the present invention.

The present invention will in the following be described with an example in relation to a user, where media files are provided as video files, for instance DVD files. It should however be realised that the present invention can be used for other types of coding as well as other types of media files, like for instance music files and image files. It may also be applied to already compressed files.

A user has a data file archive 20 provided in the server 18 in his home network N_1 . There are provided several data files in the data file archive 20. A user may here wish to transfer or stream a file to the phone in order to enjoy it there. A user may therefore select to transfer a data file, which is here a DVD video file to the cellular phone 10. As that is done the user may therefore select, via the keypad 14 of the phone 10 to transfer a DVD file from the data file archive 20 for watching a movie. He may here be provided with the possibility to browse the content of the data file archive 20 via a wireless connection in the

local network N_1 between the data file server 18 and the phone 10 using the second and fourth radio communication units 23 and 34. The file selection is received by the control unit 24, which therefore sends a request for transfer of the selected content, i.e. data file, to the archive control unit 22 of the server 18 over a connection via the fourth and second
5 radio communication units 34 and 23, step 40. This request is thus sent locally. The request is received by the archive control unit 22 of the server 18, step 62. Upon the reception of this request the archive control unit 22 first retrieves an identifier of the server 18 associated with the wide area network N_2 as well as associated with the data file, which identifier in this embodiment is a URL that enables the finding of an IP address of
10 the server in the network. The URL is here a podcast type link to the coded content, i.e. to the DVD file. The identifier in the form of the URL is then sent to the control unit 24 of the phone 10 over the local network N_1 , step 64, which URL is thus received by the phone control unit 24, step 42. The archive control unit 22 also sends authentication data, for instance in the form of encryption and decryption keys, step 66, which authentication data
15 is received by the phone control unit 24 also over the local network N_1 , step 44. Once this has been done file transfer is now possible. The archive control unit 22 fetches the DVD file from data file archive 20 and forwards it to the code changing unit 19. The archive control unit 22 then orders the code changing unit 19 to change code, whereupon the code changing unit 19 changes the coding of the file and in this embodiment compresses
20 the file, step 68. This may for instance be done in order to fit the file to the limited size of the display 12 in the phone 10. It is also possible to use other types of compression. Thereafter the archive control unit 22 starts transferring the compressed file to the phone control unit 24 over the local network N_1 , step 70, which control unit 24 thereby starts receiving the compressed file, step 46.

25

As the transfer is being made the archive control unit 22 checks if the phone 10 has received all the content, i.e. the whole DVD file, step 72, and if it has, the method is ended, step 74. Also the phone control unit 24 checks if the whole content has been received, step 48, and if it has, the method is ended also by the phone, step 50. If not all
30 content has been received by the phone, step 72, the archive control unit 22 investigates if the local connection has been lost, step 76, and if it has not it investigates the failure, step 78. Also the phone control unit 24 investigates if the local connection has been lost, step 52, in case all content has not been received, step 48. And if it has not lost the connection, step 52, it may also investigate the failure, step 54, for instance through
35 querying the archive control unit 22.

In case the local connection has been lost, step 52 and 76, which may be due to the fact that the phone has moved out of the coverage of the local network N_1 , the archive control unit 22 disrupts the transfer of the file, step 80, and determines a position in the file which it knows that the phone 10 has received. Thereafter it awaits the phone 10 once again connecting to it. The phone control unit 24 on the other hand now sends a request for continued transfer to the data file server 18 over the wide area network N_2 using the third communication unit 30, step 56. It does this through locating an IP-address of the server 18 associated with the URL it received. This address of the server 18 is typically obtained via a name lookup in a DNS server using the URL. The URL also directly locates the data file. The archive control unit 22 of the server 18 receives this request via the first communication unit 21, step 82. Now the archive control unit 22 asks the phone control unit 24 to perform authentication. The phone control unit 24 now authenticates the user, step 58. It does this by using the authentication data it received when communicating in the local network N_1 . The archive control unit 22 receives this authentication data and checks if it is the correct authentication data, step 84, and if the phone passes this check it continues transferring the DVD file to the phone control unit 24, step 86. Here it continues transferring from the point it previously determined. In this way the transfer of the file is continued as a podcast to the phone 10. The phone control unit 24 thus continues receiving the file over the wide area network N_2 . When the whole file has been received the phone control unit 24 stores it in the file store 28 and thereafter the user may now watch the DVD in his phone via the DVD player 26.

It should here be realised that instead of transferring a file, a file may be streamed to the phone. In this case change of coding may be performed through transcoding. It is also possible that no change of coding is performed. It may not be needed because the file already has a suitable coding. In the case of transferring a file a change of coding may also be made after the actual transfer has been made to the phone. The local connection may be provided using the system connector and a cable for instance connected to a USB port of the server, as well as via BluetoothTM or IR links. It should also be realised that both the phone and archive control units may keep checking if it is possible to communicate over the local network after connection has been lost the first time. Either of them may then decide to resume communication over the local network when it is again possible. Normally the decision is made in the phone though.

In this way the invention allows the continued transfer or streaming of files when a local connection is lost. Transfer or streaming is often slowed down because of a required change of coding. This means that a portable communication device that is to receive such a file may lose all local connections, for instance if it moves out of the local network.

- 5 The present invention therefore ensures that the content is continued to be transferred or streamed in case the local connection is lost. It is furthermore provided in a simple and user friendly way without the user having to get involved. It is automatic. Because of the authentication being made, the user is furthermore safeguarded from the wrong people getting hold of the content.

10

The control unit and data processing unit in the phone according to the present invention are preferably provided in the form of one or more processors with corresponding memory containing the program code for performing the functions of these units, whereas the local storage is provided as a memory module or a part of a memory module, which may be a

- 15 RAM, ROM, a flash memory or a memory stick. Normally the radio communication units are provided as separate hardware modules, for instance in the form of ASIC circuits.

They may however be combined in the same module. The different hardware units of the phone may furthermore be connected using a data bus.

- 20 In the server, the archive control unit and code changing unit may likewise be implemented through the use of one or more processors with one or more corresponding memories comprising program code for performing their functions. The archive may be provided as one or more memory modules, for instance in form of hard discs and may furthermore be distributed throughout the local network. The radio communication units
25 may here also be provided in the form of ASIC circuits.

The program code mentioned above can also be provided on one or more computer program products such as a CD ROM disc 88 as depicted in fig. 6, which will perform the invention when loaded into a phone having suitable processing capabilities or when

- 30 loaded into the server. Naturally other types of products can be provided for this, like for instance a removable memory like a memory stick. The computer program product can also be provided as software, which is downloaded remotely from a server either outside or inside the cellular network or be downloaded via a computer like a PC to which the phone is temporarily connected.

35

There are a number of further variations that can be made to the present invention in addition to those already mentioned. The local network may include only the server and the phone. It is thus also possible that the phone communicates directly with the server. The local network may also include several other devices. The server may furthermore be
5 provided in a DVD player, a stereo or other such device. The radio communication units of the local network may be provided in each device, such as in the server, but the server may just as well have a link to a radio communication unit provided as a separate entity in the local network. The same is also true for the code changing unit. The server may thus have a link to a code changing unit provided as a separate entity in the network. It is also
10 possible that the data file archive is provided as an entity that is separate from the archive control unit.

Although the present invention has been described in connection with specific embodiments, it is not intended to be limited to the specific form set forth herein. Rather,
15 the scope of the present invention is limited only by the accompanying claims.

CLAIMS

1. Method of transferring or streaming at least one data file to a portable communication device (10) from a data file server (18) in a local network (N_1) comprising the steps of:
5 receiving (62) a request for transfer or streaming of at least one data file from the portable communication device (10) in the local network (N_1),
providing (64) the portable communication device (10) with identifying data comprising an identifier allowing the data file to be located on the server (18) via a wide area network (N_2), and
10 transferring (70) or streaming the file over the local network (N_1) to the portable communication device (10) as long as a local connection exists.
2. Method according to claim 1, further comprising the steps of determining (76) that a local connection no longer exists, disrupting (80) the transferring or streaming,
15 receiving (82) a request, via a wide area network (N_2), for continued transfer or streaming over this wide area network and continuing (86) the transfer or streaming of the data file over this wide area network (N_2).
3. Method according to claim 2, further comprising the steps of determining that a local
20 connection once again exists, disrupting the transferring or streaming over the wide area network (N_2), and resuming transfer or streaming over the local network (N_1).
4. Method according to claim 2 or 3, wherein the identifying data comprises authentication data and further comprising the steps of receiving authentication data
25 together with the request for continued transfer or streaming, determining (84) if the correct authentication data has been provided and continuing the transfer only if the authentication data is correct.
5. Method according to any of claims 2 - 4, further comprising the step of determining a
30 point in the data file after which continued transfer or streaming is to be made and continuing transfer or streaming from this point.
6. Method according to any previous claim, further comprising the step of changing the
35 coding of the file before transfer or streaming.

7. Data file server (18) in a local network (N_1) comprising:
an archive control unit (22) controlling a data file archive (20) and configured to
receive a request for transfer or streaming of at least one data file from a portable
communication device (10) in the local network (N_1),
5 provide the portable communication device (10) with identifying data comprising
an identifier allowing the data file to be located on the server (18) via a wide area
network (N_2), and
transfer or stream the file over the local network (N_1) to the portable
communication device (10) as long as a local connection exists.
- 10 8. Data file server (18) according to claim 7, wherein the archive control unit (22) is
further configured to determine that a local connection no longer exists, disrupt the
transfer or streaming, receive a request, via a wide area network (N_2), for continued
transfer or streaming over this wide area network (N_2) and continue the transfer or
15 streaming of the data file over this wide area network (N_2).
9. Data file server (18) according to claim 8, wherein the archive control unit (22) is
further configured to determine that a local connection once again exists, disrupt the
transferring or streaming over the wide area network (N_2), and resuming transfer or
20 streaming over the local network (N_1).
10. Data file server (18) according to claim 8 or 9, wherein the identifying data comprises
authentication data and the archive control unit (22) is further configured to receive
authentication data together with the request for continued transfer or streaming,
25 determine if the correct authentication data has been provided and continue the
transfer only if the authentication data is correct.
11. Data file server (18) according to any of claims 8 - 10, wherein the archive control unit
(22) is further configured to determine a point in the data file after which continued
30 transfer or streaming is to be made and continuing transfer or streaming from this
point.
12. Data file server (18) according to any of claims 7 - 11, wherein the archive control unit
(22) is further configured to at least order the changing of the coding of the file before
35 transfer or streaming.

13. Data file server (18) in a local network (N_1) comprising:
means (22) for receiving a request for transfer or streaming of at least one data file from a portable communication device (10) in the local network (N_1),
5 means (22) for providing the portable communication device (10) with identifying data comprising an identifier allowing the data file to be located on the server (18) via a wide area network (N_2), and
means (22) for transferring or streaming the file over the local network (N_1) to the portable communication device (10) as long as a local connection exists.
- 10
14. A computer program product (88) for transferring or streaming at least one data file to a portable communication device (10) from a data file server (18) in a local network (N_1) comprising:
computer program code, configured to make the data file server (18) perform, when
15 said program code is loaded in the data file server,
receive a request for transfer or streaming of at least one data file from the portable communication device (10) in the local network (N_1),
provide the portable communication device (10) with identifying data comprising an identifier allowing the data file to be located on the server (18) via a wide area network
20 (N_2), and
transfer or stream the file over the local network (N_1) to the portable communication device (10) as long as a local connection exists.
15. Method of receiving in a portable communication device (10) at least one transferred
25 or streamed data file from a data file server (18) in a local network (N_1) comprising the steps of:
sending (40) a request for transfer or streaming of at least one data file to the data file server (18) via the local network (N_1),
receiving (42) identifying data comprising an identifier allowing the data file to be
30 located on the server (18) via a wide area network (N_2), and
receiving (46) the file or stream over the local network (N_1) as long as a local connection exists.
16. Method according to claim 15, further comprising the steps of determining (52) that a
35 local connection no longer exists, sending (56) a request, via a wide area network

(N₂), for continued transfer or streaming over this wide area network (N₂) using said identifier, and continuing (60) receiving the file or stream over this wide area network (N₂).

5 17. Method according to claim 16, further comprising the steps of determining that a local connection once again exists, sending a request for resumed transfer or streaming over this local network (N₁), and resuming receiving the file or stream over the local network (N₁).

10 18. Method according to claim 16 or 17, wherein the identifying data comprises authentication data and further comprising the steps of sending (58) authentication data together with the request for continued transfer or streaming, for safeguarding the transfer to the right recipient.

15 19. Method according to any of claims 15 - 18, wherein the coding of the file has been changed before being received.

20. Portable communication device (10) comprising:
at least one communication unit (30, 34) for communicating in a local network (N₁) and
20 a wide area network (N₂), and
a control unit (24) configured to
send a request for transfer or streaming of at least one data file to a data file
server (18) via the local network (N₁),
receive identifying data comprising an identifier allowing the data file to be located
25 on the server (18) via a wide area network (N₂), and
receive the file or stream over the local network (N₁) as long as a local connection
exists.

21. Portable communication device (10) according to claim 20, wherein the control unit
30 (24) is further configured to determine that a local connection no longer exists, send a request, via the wide area network (N₂), for continued transfer or streaming over this wide area network (N₂) using said identifier, and continue receiving the file or stream over this wide area network.

22. Portable communication device (10) according to claim 21, wherein the control unit (24) is further configured to determine that a local connection once again exists, send a request for resumed transfer or streaming over this local network (N_1), and resume receiving the file or stream over the local network (N_1).
- 5 23. Portable communication device (10) according to claim 21 or 22, wherein the identifying data comprises authentication data and the control unit (24) is further configured to send authentication data together with the request for continued transfer or streaming, for safeguarding the transfer to the right recipient.
- 10 24. Portable communication device (10) according to any of claims 20 - 23, wherein the coding of the file has been changed before being received.
25. Portable communication device (10) according to any of claims 20 - 24, wherein it is a
15 cellular phone.
26. Portable communication device (10) comprising:
means (24) for sending a request for transfer or streaming of at least one data file to a data file server (18) via a local network (N_1),
20 means (24) for receiving identifying data comprising an identifier allowing the data file to be located on the server (18) via a wide area network (N_2), and
means (24) for receiving the file or stream over the local network (N_1) as long as a local connection exists.
- 25 27. A computer program product (88) for receiving in a portable communication device (10) at least one transferred or streamed data file from a data file server (18) in a local network (N_1) comprising:
computer program code, configured to make the portable communication device (10) execute, when said program code is loaded in the portable communication device
30 (10),
send a request for transfer or streaming of at least one data file to the data file server (18) via the local network (N_1),
receive identifying data comprising an identifier allowing the data file to be located on the server (18) via a wide area network (N_2), and
35 receive the file or stream over the local network as long as a local connection exists.

28. System for transferring or streaming at least one data file to a portable communication device (10) from a data file server (18) in a local network (N_1) and comprising:
- at least one radio communication unit (21, 23),
 - 5 at least one data file archive (20),
 - a data file server (18) comprising
 - an archive control unit (22) controlling the data file archive (20) and configured to receive a request for transfer or streaming of at least one data file from a portable communication device (10) in the local network (N_1),
 - 10 provide the portable communication device (10) with identifying data comprising an identifier allowing the data file to be located on the server (18) via a wide area network (N_2), and
 - transfer or stream the file over the local network to the portable communication device (10) as long as a local connection exists, and
 - 15 a portable communication device (10) having
 - at least one communication unit (30, 34) for communicating in a local network (N_1) and a wide area network (N_2), and
 - a control unit (24) configured to
 - send said request for transfer or streaming,
 - 20 receive said identifying data, and
 - receive said file or stream over the local network (N_1) as long as the local connection exists.

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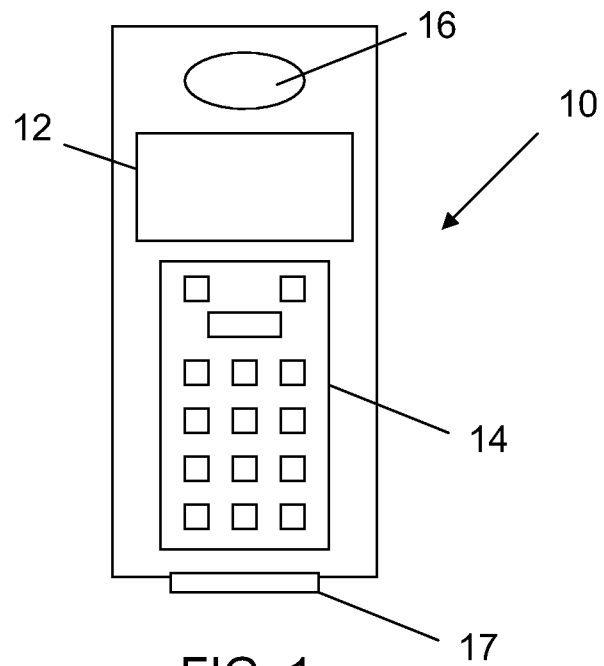


FIG. 1

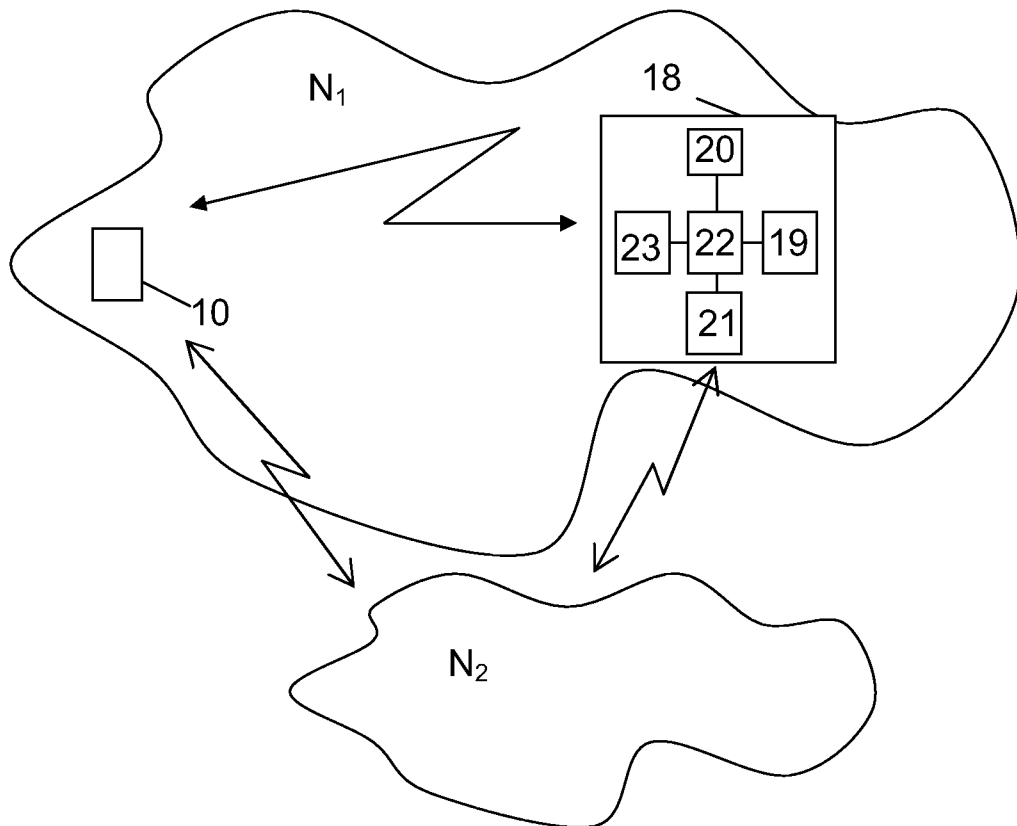


FIG. 2

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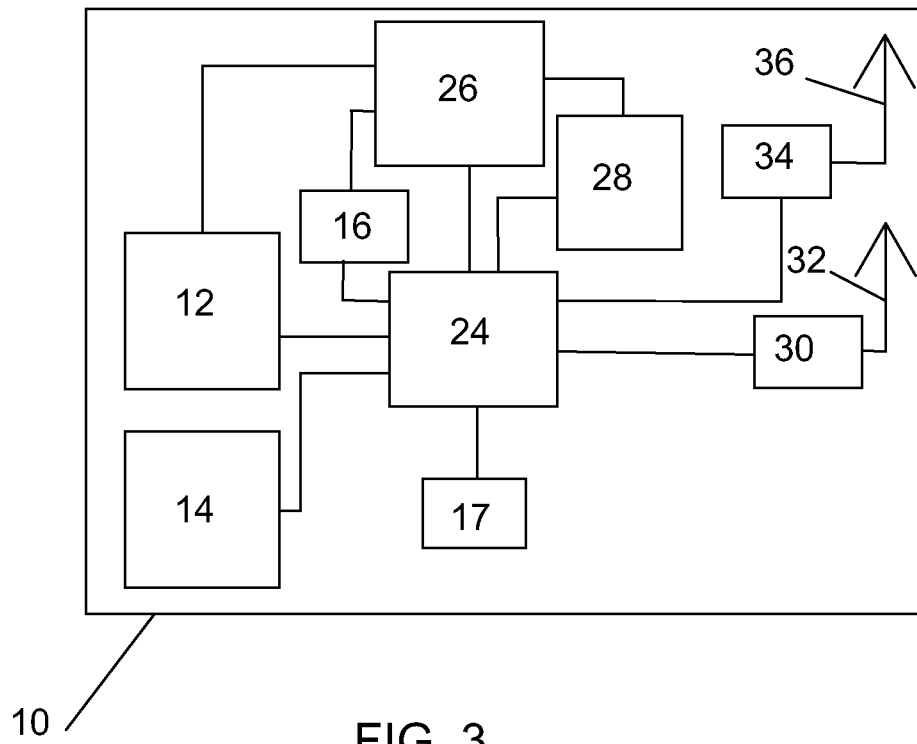


FIG. 3

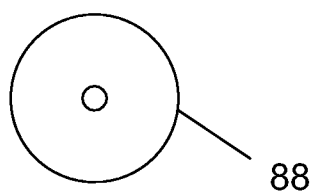


FIG. 6

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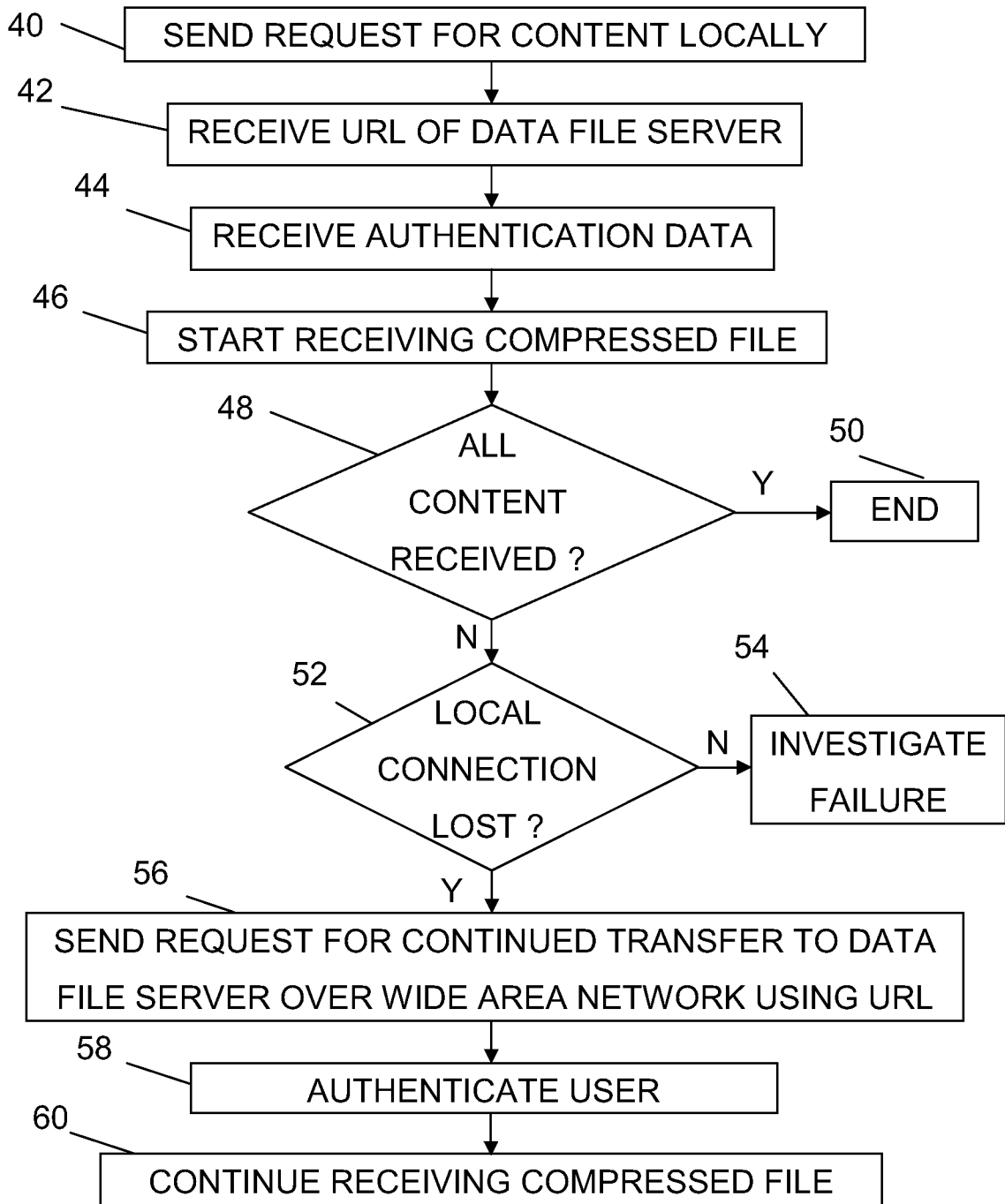


FIG. 4

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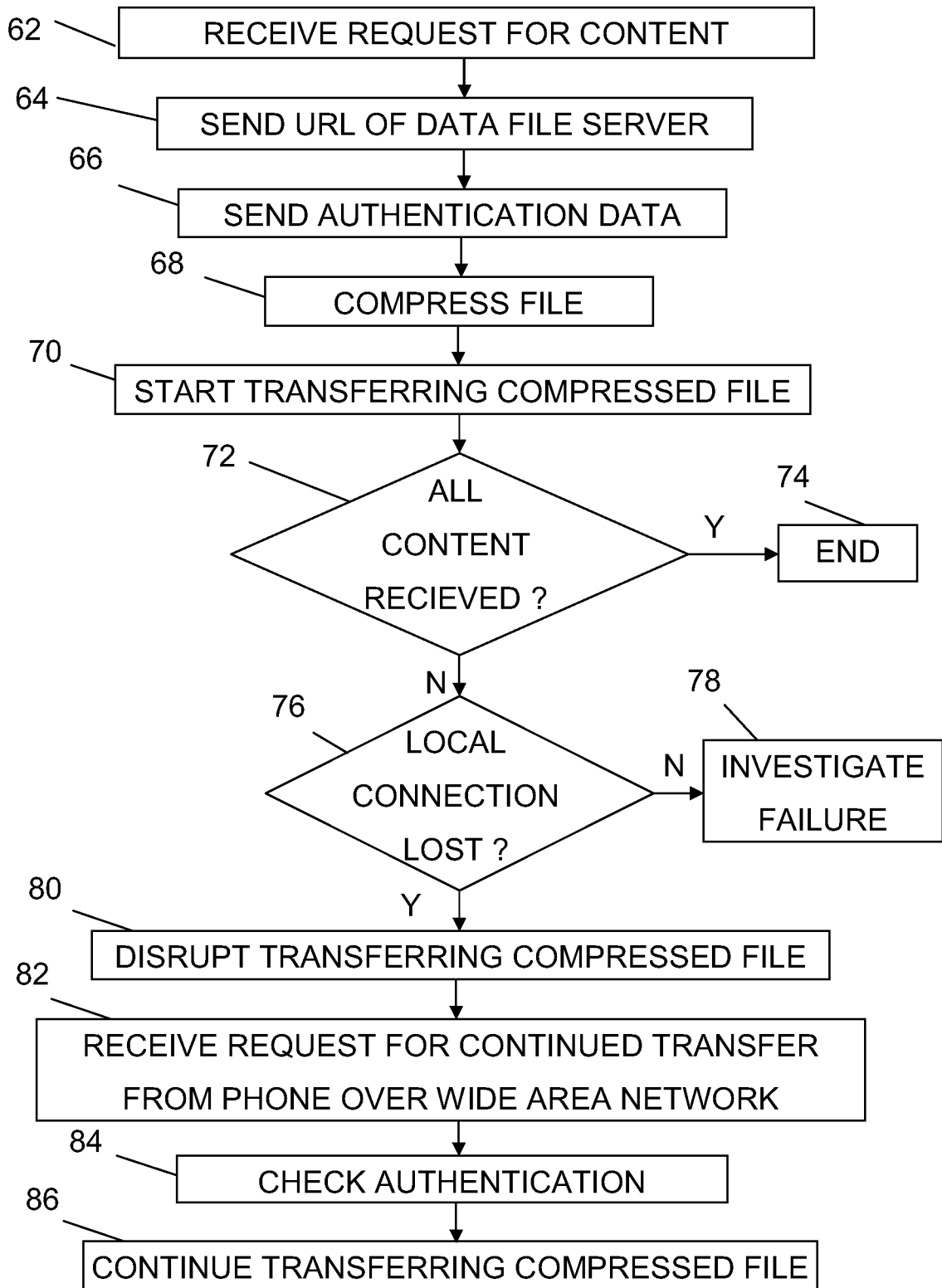


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2006/069476

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04L29/06 H04Q7/38

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)
H04L H04Q

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 practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 1 480 408 A1 (SIEMENS MOBILE COMM SPA [IT] SIEMENS SPA ITALIANA [IT]) 24 November 2004 (2004-11-24) paragraphs [0032] - [0040]; figures 3,4,7,8 paragraphs [0044] - [0049] -----	1-28
Y	US 2005/271011 A1 (ALEMANY JUAN [US] ET AL) 8 December 2005 (2005-12-08) paragraphs [0023] - [0028] paragraph [0034] figures 2,3 abstract -----	1-28

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

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- "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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- "&" document member of the same patent family

Date of the actual completion of the international search

9 March 2007

Date of mailing of the international search report

15/03/2007

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2006/069476

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1480408	A1	24-11-2004	AT 333182 T	15-08-2006
			CN 1574838 A	02-02-2005
			US 2004233866 A1	25-11-2004
US 2005271011	A1	08-12-2005	NONE	