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(54) **SYSTEM AND METHOD FOR REDUCING INFORMATION COMMUNICATED BETWEEN UNIVERSAL MOBILE TELECOMMUNICATION SYSTEM MULTIMEDIA CAPABLE UNITS**

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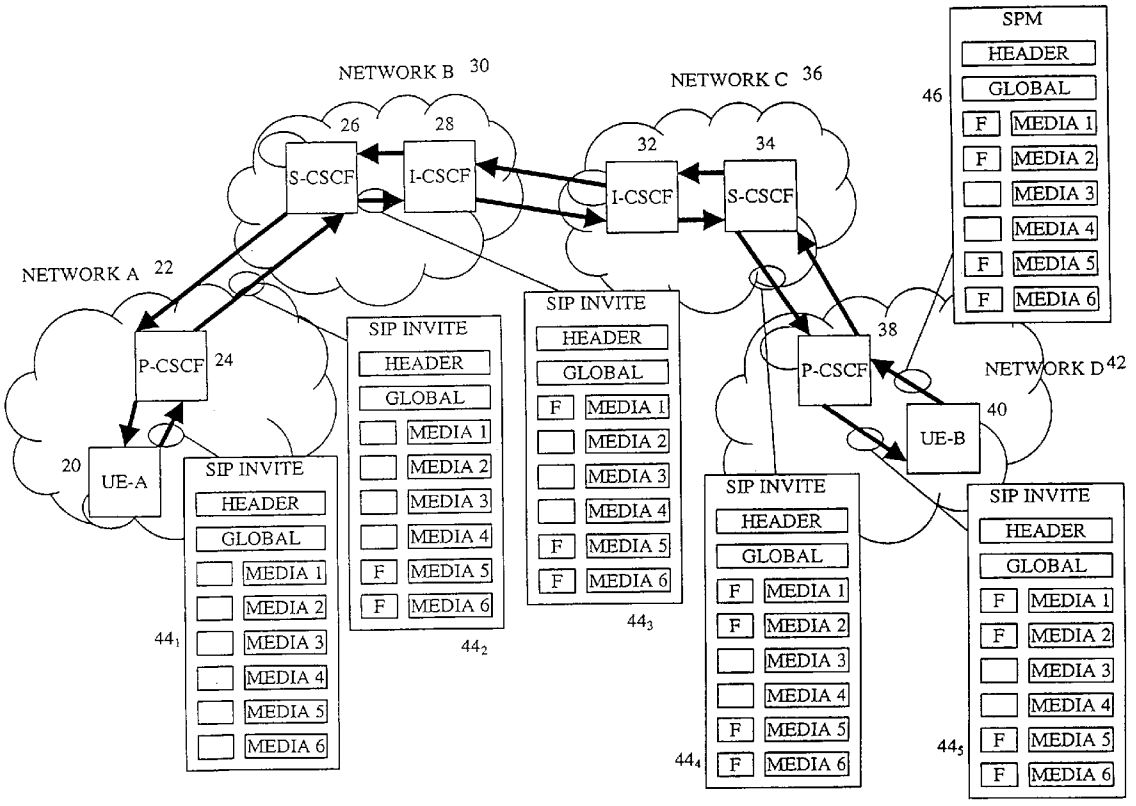
(57) **ABSTRACT**

Method and Apparatus for making more efficient use of air link resources and network capacity in a mobile telecommunications system in which unauthorized and/or unsupported media types transmitted in a session initialization protocol (SIP) message sent from one equipment user (UE) to another are deleted by the network(s) as the SIP message is routed through the system.



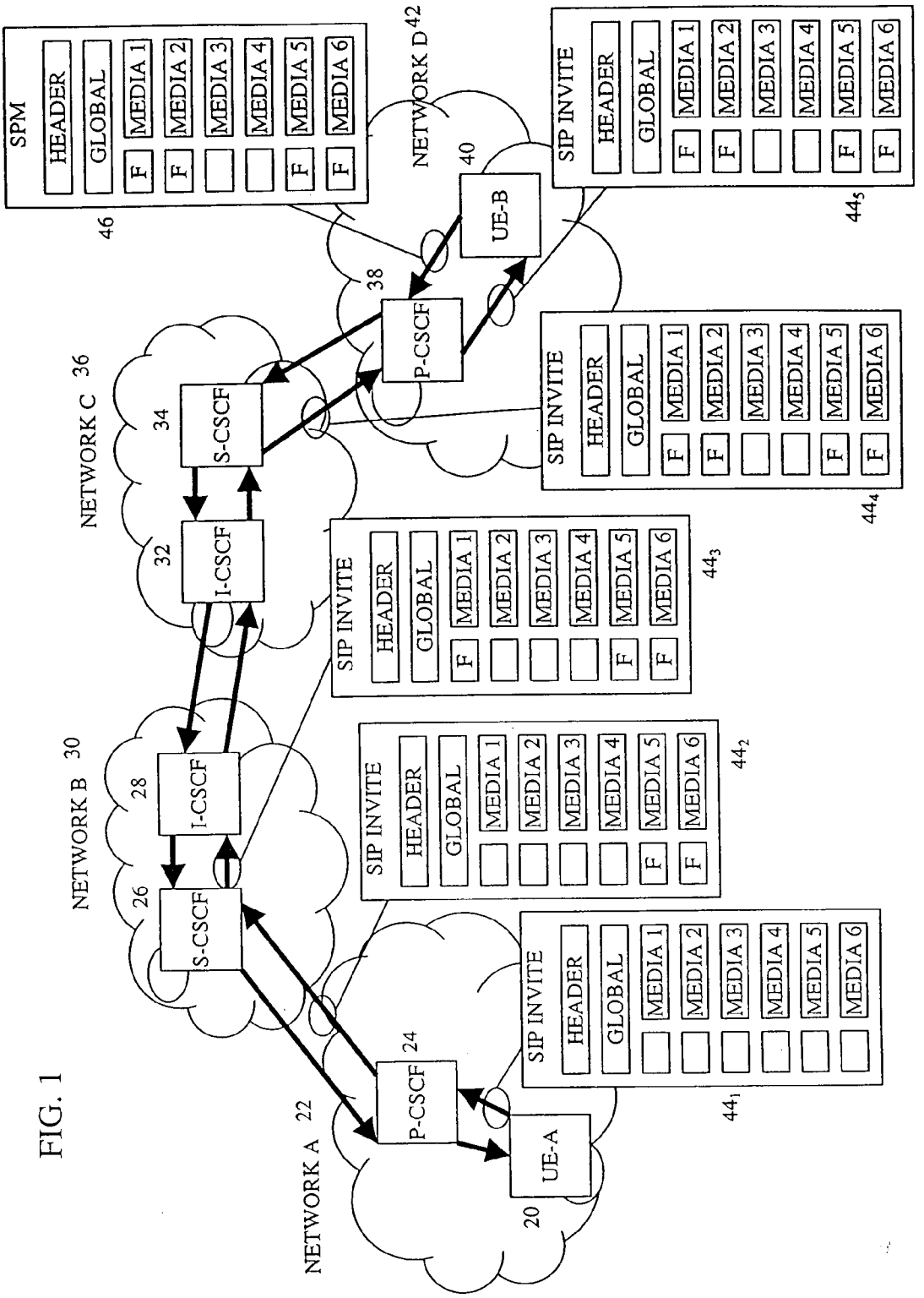

NETWORK A 22
NETWORK B 30
NETWORK C 36
NETWORK D 42
P-CSCF 24
S-CSCF 26
I-CSCF 28
I-CSCF 32
S-CSCF 34
P-CSCF 38
UE-A 20
UE-B 40
SPM
HEADER
GLOBAL
MEDIA 1
MEDIA 2
MEDIA 3
MEDIA 4
MEDIA 5
MEDIA 6
F
46
SIP INVITE
44_1
44_2
44_3
44_4
44_5

FIG. 1

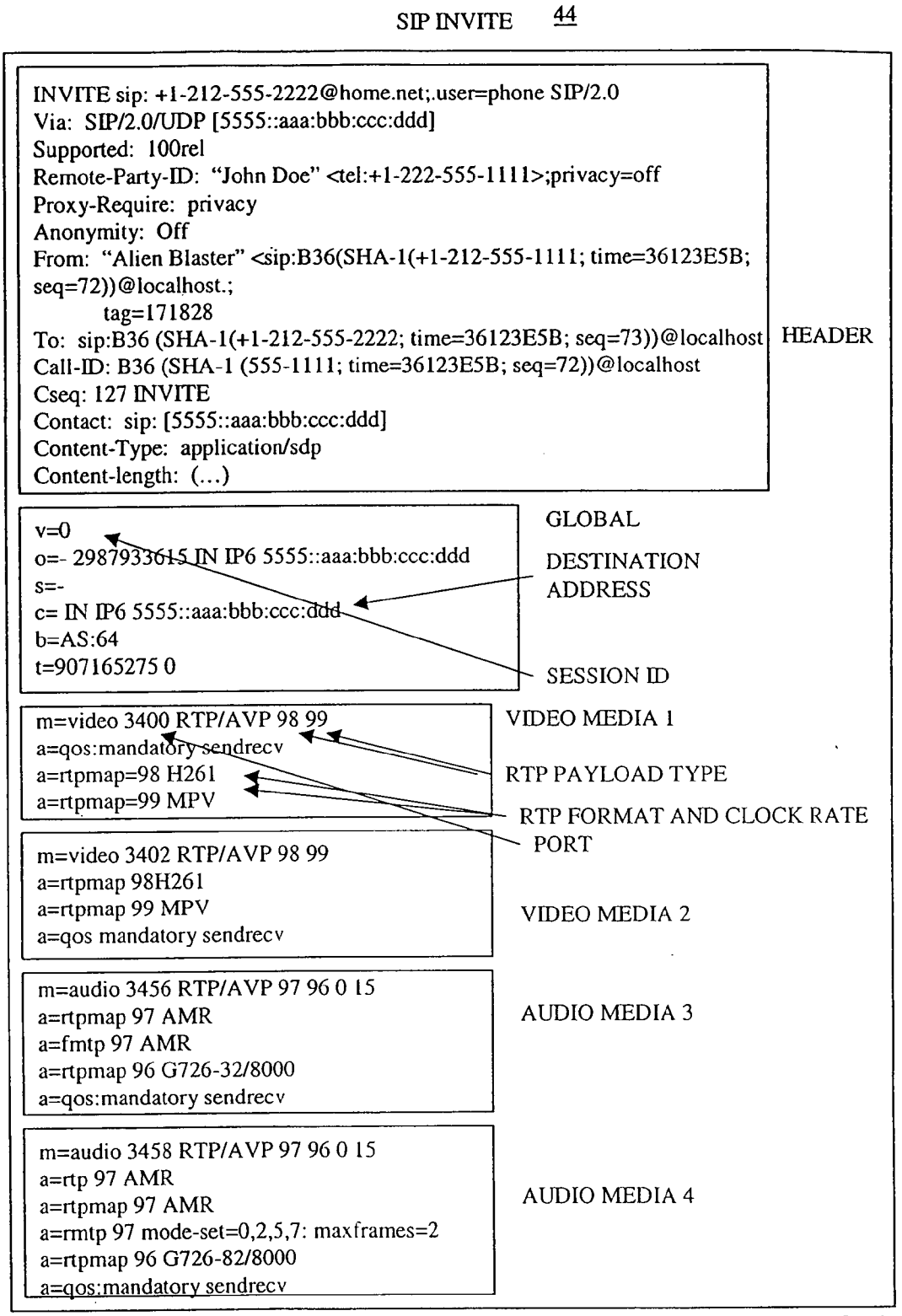

SIP INVITE 44
INVITE sip: +1-212-555-2222@home.net;.user=phone SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]
Supported: 100rel
Remote-Party-ID: "John Doe" <tel:+1-222-555-1111>;privacy=off
Proxy-Require: privacy
Anonymity: Off
From: "Alien Blaster" <sip:B36(SHA-1(+1-212-555-1111; time=36123E5B; seq=72))@localhost.;
tag=171828
To: sip:B36 (SHA-1(+1-212-555-2222; time=36123E5B; seq=73))@localhost
Call-ID: B36 (SHA-1 (555-1111; time=36123E5B; seq=72))@localhost
Cseq: 127 INVITE
Contact: sip: [5555::aaa:bbb:ccc:ddd]
Content-Type: application/sdp
Content-length: (...)
HEADER
v=0
o=- 2987933615 IN IP6 5555::aaa:bbb:ccc:ddd
s=-
c= IN IP6 5555::aaa:bbb:ccc:ddd
b=AS:64
t=907165275 0
GLOBAL
DESTINATION ADDRESS
SESSION ID
m=video 3400 RTP/AVP 98 99
a=qos:mandatory sendrecv
a=rtpmap=98 H261
a=rtpmap=99 MPV
VIDEO MEDIA 1
RTP PAYLOAD TYPE
RTP FORMAT AND CLOCK RATE
PORT
m=video 3402 RTP/AVP 98 99
a=rtpmap 98H261
a=rtpmap 99 MPV
a=qos mandatory sendrecv
VIDEO MEDIA 2
m=audio 3456 RTP/AVP 97 96 0 15
a=rtpmap 97 AMR
a=fmtp 97 AMR
a=rtpmap 96 G726-32/8000
a=qos:mandatory sendrecv
AUDIO MEDIA 3
m=audio 3458 RTP/AVP 97 96 0 15
a=rtp 97 AMR
a=rtpmap 97 AMR
a=rmtp 97 mode-set=0,2,5,7: maxframes=2
a=rtpmap 96 G726-82/8000
a=qos:mandatory sendrecv
AUDIO MEDIA 4

FIG. 2

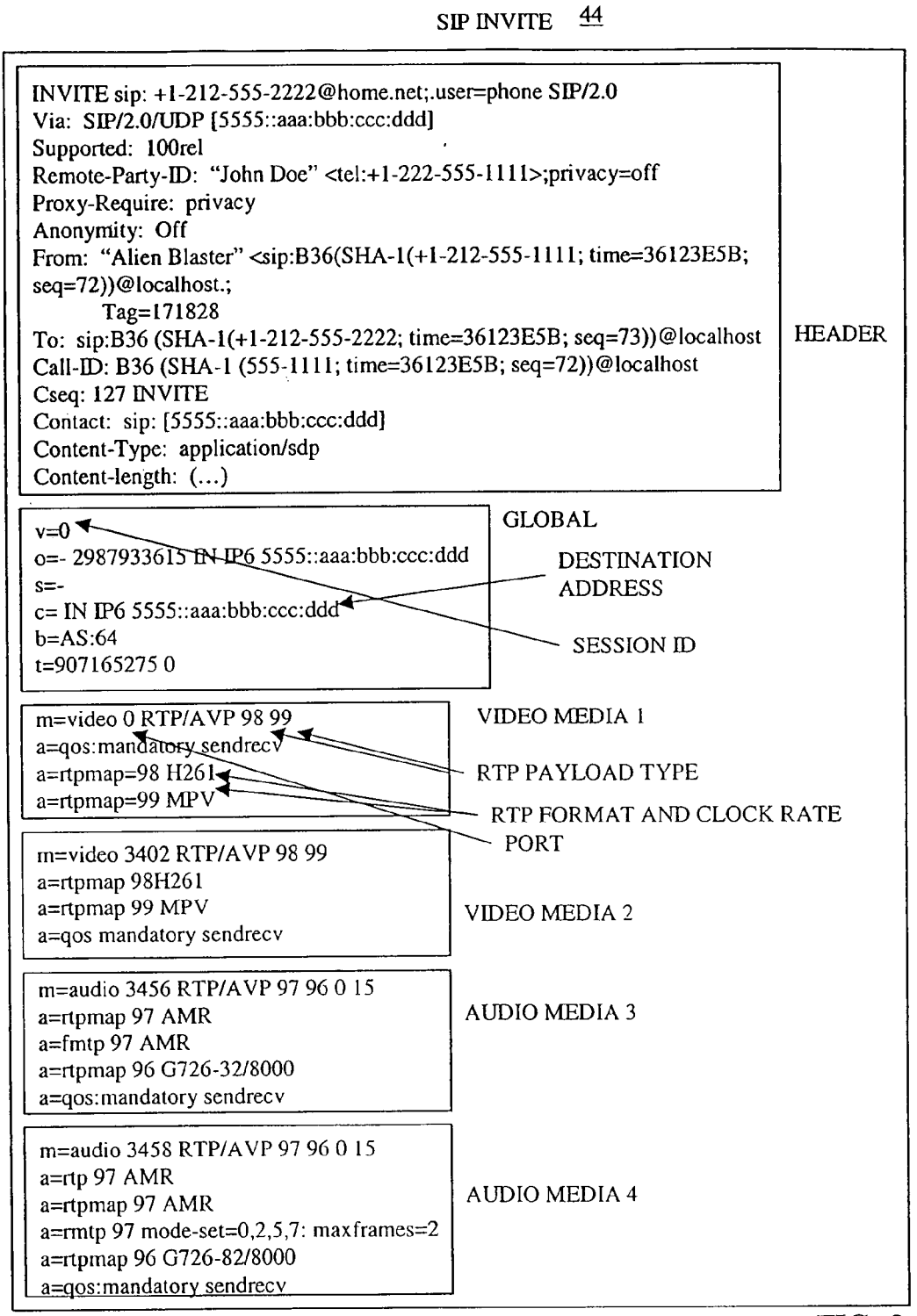

SIP INVITE 44
INVITE sip: +1-212-555-2222@home.net;.user=phone SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]
Supported: 100rel
Remote-Party-ID: "John Doe" <tel:+1-222-555-1111>;privacy=off
Proxy-Require: privacy
Anonymity: Off
From: "Alien Blaster" <sip:B36(SHA-1(+1-212-555-1111; time=36123E5B; seq=72))@localhost.;
Tag=171828
To: sip:B36 (SHA-1(+1-212-555-2222; time=36123E5B; seq=73))@localhost
Call-ID: B36 (SHA-1 (555-1111; time=36123E5B; seq=72))@localhost
Cseq: 127 INVITE
Contact: sip: [5555::aaa:bbb:ccc:ddd]
Content-Type: application/sdp
Content-length: (...)
HEADER
v=0
o=- 2987933615 IN IP6 5555::aaa:bbb:ccc:ddd
s=-
c= IN IP6 5555::aaa:bbb:ccc:ddd
b=AS:64
t=907165275 0
GLOBAL
DESTINATION ADDRESS
SESSION ID
m=video 0 RTP/AVP 98 99
a=qos:mandatory sendrecv
a=rtpmap=98 H261
a=rtpmap=99 MPV
VIDEO MEDIA 1
RTP PAYLOAD TYPE
RTP FORMAT AND CLOCK RATE
PORT
m=video 3402 RTP/AVP 98 99
a=rtpmap 98H261
a=rtpmap 99 MPV
a=qos mandatory sendrecv
VIDEO MEDIA 2
m=audio 3456 RTP/AVP 97 96 0 15
a=rtpmap 97 AMR
a=fmtp 97 AMR
a=rtpmap 96 G726-32/8000
a=qos:mandatory sendrecv
AUDIO MEDIA 3
m=audio 3458 RTP/AVP 97 96 0 15
a=rtp 97 AMR
a=rtpmap 97 AMR
a=rmtp 97 mode-set=0,2,5,7: maxframes=2
a=rtpmap 96 G726-82/8000
a=qos:mandatory sendrecv
AUDIO MEDIA 4

FIG. 3

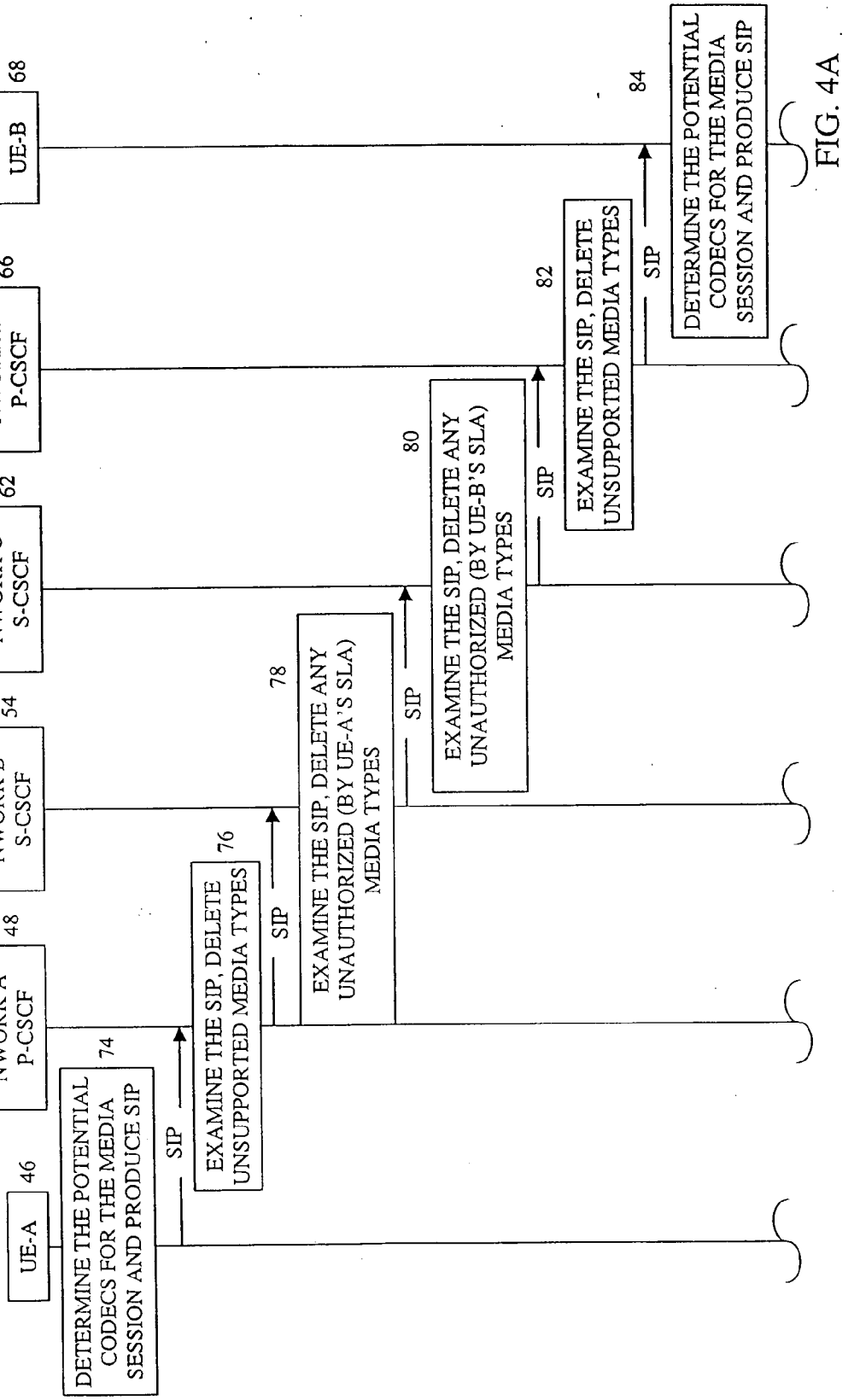

UE-A
46
NWORK A P-CSCF
48
NWORK B S-CSCF
54
NWORK C S-CSCF
62
NWORK D P-CSCF
66
UE-B
68
DETERMINE THE POTENTIAL CODECS FOR THE MEDIA SESSION AND PRODUCE SIP
74
SIP
EXAMINE THE SIP, DELETE UNSUPPORTED MEDIA TYPES
76
SIP
EXAMINE THE SIP, DELETE ANY UNAUTHORIZED (BY UE-A'S SLA) MEDIA TYPES
78
SIP
EXAMINE THE SIP, DELETE ANY UNAUTHORIZED (BY UE-B'S SLA) MEDIA TYPES
80
SIP
EXAMINE THE SIP, DELETE UNSUPPORTED MEDIA TYPES
82
SIP
DETERMINE THE POTENTIAL CODECS FOR THE MEDIA SESSION AND PRODUCE SIP
84

FIG. 4A

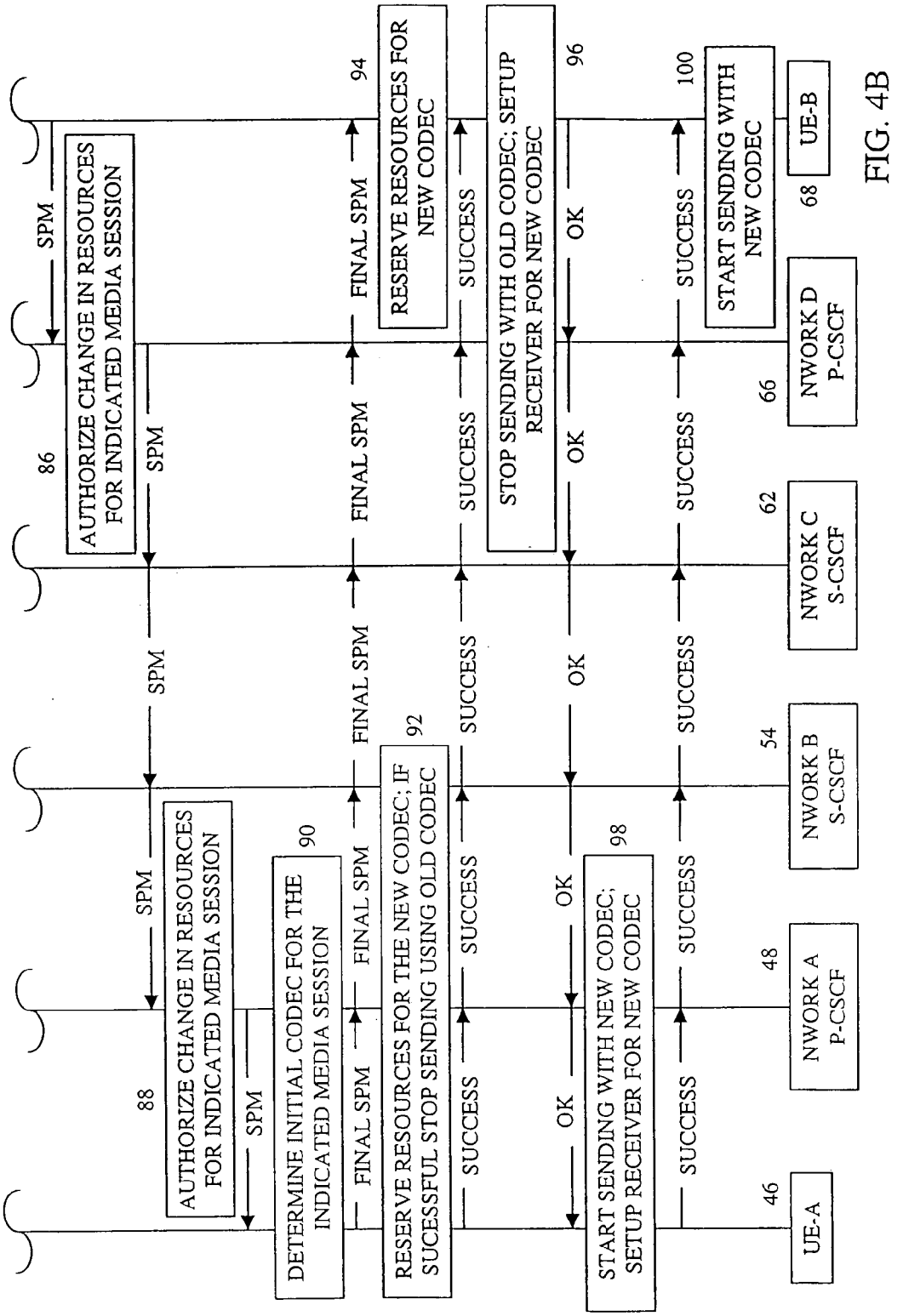

UE-A
46
NWORK A P-CSCF
48
NWORK B S-CSCF
54
NWORK C S-CSCF
62
NWORK D P-CSCF
66
UE-B
68
SPM
AUTHORIZE CHANGE IN RESOURCES FOR INDICATED MEDIA SESSION
88
SPM
DETERMINE INITIAL CODEC FOR THE INDICATED MEDIA SESSION
90
FINAL SPM
RESERVE RESOURCES FOR THE NEW CODEC; IF SUCESSFUL STOP SENDING USING OLD CODEC
92
SUCCESS
START SENDING WITH NEW CODEC; SETUP RECEIVER FOR NEW CODEC
98
OK
SUCCESS
AUTHORIZE CHANGE IN RESOURCES FOR INDICATED MEDIA SESSION
86
SPM
FINAL SPM
RESERVE RESOURCES FOR NEW CODEC
94
SUCCESS
STOP SENDING WITH OLD CODEC; SETUP RECEIVER FOR NEW CODEC
96
OK
SUCCESS
START SENDING WITH NEW CODEC
100
SUCCESS

FIG. 4B

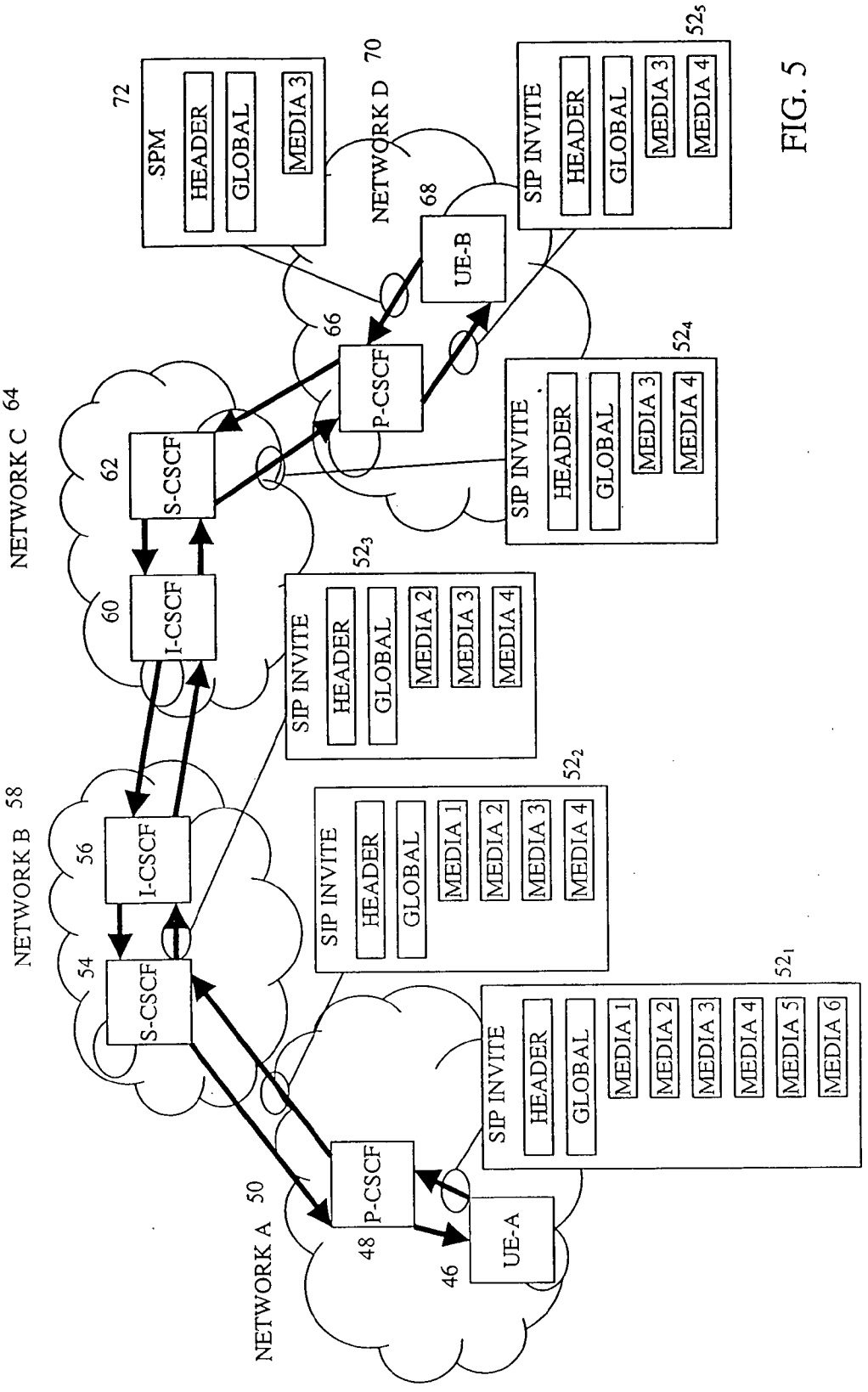

NETWORK A
50
NETWORK B
58
NETWORK C
64
NETWORK D
70
UE-A
46
UE-B
68
P-CSCF
48
P-CSCF
66
S-CSCF
54
S-CSCF
62
I-CSCF
56
I-CSCF
60
SPM
72
HEADER
GLOBAL
MEDIA 3
SIP INVITE
HEADER
GLOBAL
MEDIA 1
MEDIA 2
MEDIA 3
MEDIA 4
MEDIA 5
MEDIA 6
52_1
52_2
52_3
52_4
52_5

FIG. 5

SIP INVITE 52

HEADER

```
INVITE sip: +1-212-555-2222@home.net;.user=phone SIP/2.0
Via: SIP/2.0/UDP [5555::aaa:bbb:ccc:ddd]
Supported: 100rel
Remote-Party-ID: "John Doe" <tel:+1-222-555-1111>;privacy=off
Proxy-Require: privacy
Anonymity: Off
From: "Alien Blaster" <sip:B36(SHA-1(+1-212-555-1111; time=36123E5B;
seq=72))@localhost.;
        tag=171828
To: sip:B36 (SHA-1(+1-212-555-2222; time=36123E5B; seq=73))@localhost
Call-ID: B36 (SHA-1 (555-1111; time=36123E5B; seq=72))@localhost
Cseq: 127 INVITE
Contact: sip: [5555::aaa:bbb:ccc:ddd]
Content-Type: application/sdp
Content-length: (...)
```

GLOBAL

```
v=0
o=- 2987933615 IN IP6 5555::aaa:bbb:ccc:ddd
s=-
c= IN IP6 5555::aaa:bbb:ccc:ddd
b=AS:64
t=907165275 0
```

AUDIO MEDIA 3

```
m=audio 3456 RTP/AVP 97 96 0 15
a=rtpmap 97 AMR
a=fmtp 97 AMR
a=rtpmap 96 G726-32/8000
a=qos:mandatory sendrecv
```

AUDIO MEDIA 4

```
m=audio 3458 RTP/AVP 97 96 0 15
a=rtp 97 AMR
a=rtpmap 97 AMR
a=rmtp 97 mode-set=0,2,5,7: maxframes=2
a=rtpmap 96 G726-82/8000
a=qos:mandatory sendrecv
```

FIG. 6

SESSION PROGRESS MESSAGE 72

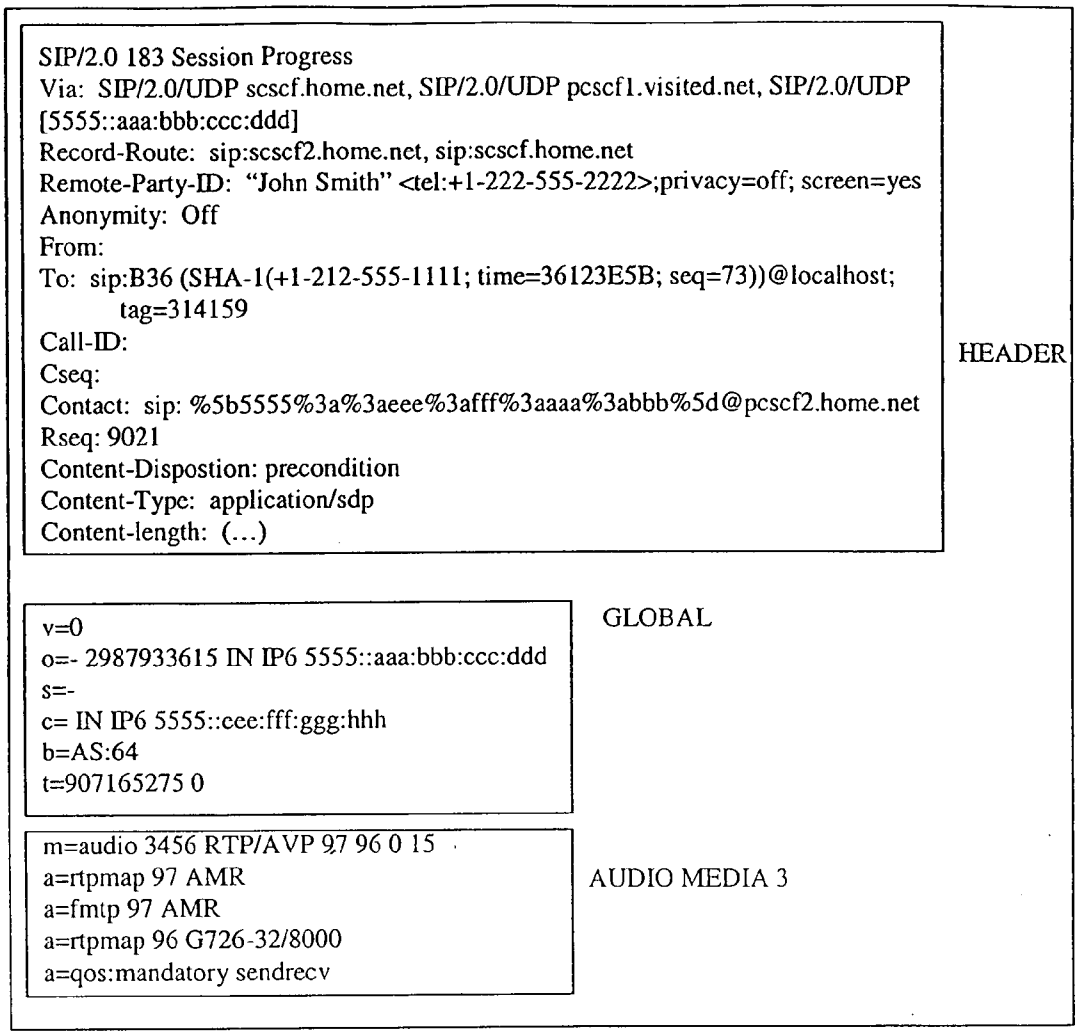


FIG. 7

SYSTEM AND METHOD FOR REDUCING INFORMATION COMMUNICATED BETWEEN UNIVERSAL MOBILE TELECOMMUNICATION SYSTEM MULTIMEDIA CAPABLE UNITS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of U.S. patent application Ser. No. 10/022,998 filed Dec. 18, 2001, which claims the benefit of U.S. Provisional Patent Application No. 60/294,192, filed on May 29, 2001, which are incorporated by reference as if fully set forth.

BACKGROUND

[0002] The present invention relates to wireless telecommunications. More specifically, the present invention relates to a technique for reducing unnecessary consumption of the air link resources and network capacity by reducing the size of transmitted messages.

[0003] The current third generation partnership project (3GPP) and internet engineering task force (IETF) session description protocol (SDP) protocol (RFC 2327) mandate that the proxy call state control functions (P-CSCF), the serving call state control functions (S-CSCFs) and the terminating end user (User Equipment UE) to examine the media contents of the session description protocol (SDP) text in the session initialization protocol (SIP) message.

[0004] FIG. **1** shows a simplified session initiation system. A user, UE-A **20**, desires to initiate a media session with another user UE-B **40**. In FIG. **1**, UE-A **20** is shown as "roaming" in network A **22**, not its home network. UE-A **20** sends a SIP invite message $\mathbf{44}_1$ to UE-B **40** via network A **22**. The UE-A SIP invite $\mathbf{44}_1$ indicates all the media types that it can support. As shown in FIG. **1**, the SIP invite $\mathbf{44}_1$ has a header, global information, and a list of the supported media types (media **1** to media **6**). The supported media types include information for each media, such as the CODEC type, stream format, stream bit rate, and communication port number. Under the proposed system, there are no limits on the number of media types that a UE can include in the SIP invite message.

[0005] FIG. **2** is an example of a SIP invite message. The SIP invite message has a header, global information and supported media types for UE-A **20** for potential use in the proposed media session. The header includes various overhead information, such as the origin and destination of the SIP invite. The global information includes information common to all the proposed media types, such as the destination address and the proposed session identification (ID) number. The supported media types are listed. In this example, four media types are listed, two video (video media **1** and video media **2**) and two audio (audio media **3** and audio media **4**). Each proposed media session includes information regarding the media session, such as the port number, real time protocol (RTP) payload type and RTP format and clock rate port.

[0006] UE-A **20** sends the SIP invite to its current network, such as network A **22**, in which it is currently located. UE-A may be "roaming," as shown in FIG. **1** and communicating with a network, network A **22**, or it may be in its home network, network B **30**. The SIP invite $\mathbf{44}_1$ is examined by a P-CSCF **24** of its current network, such as network A **22**, for routing to its destination, UE-B **40** via UE-A's home network, network B **30**. The P-CSCF **24** examines the session description protocol (SDP) multimedia contents of the SIP invite $\mathbf{44}_1$ for validation and authorization. If the P-CSCF's network, network A **24**, does not support any part of the media information, (such as the CODESs, bit rate or the type), it flags that portion of the media information by setting the port number to "0" and leaving the other contents of the media information untouched, as shown for media **5** and **6** for SIP invite $\mathbf{44}_2$.

[0007] FIG. **3** is an example of such a flagged SIP invite **44**. To illustrate, the P-CSCF cannot support video media **1**. As shown in FIG. **3**, the port number is set to "0" so that UE-B **40** realized that video media **1** cannot be selected for the media session.

[0008] The network A P-CSCF **24** forwards the modified SIP invite $\mathbf{44}_2$ to the network B S-CSCF **26** for further handling, routing and validation. If UE-A **20** is in the home network, both the P-CSCF and S-CSCF function are performed by the home network **30**. The network B S-CSCF **26** examines the SIP invite $\mathbf{44}_2$ including the media information. Media types not supported by UE-A's service license agreement (SLA) are flagged. If UE-A **20** is in its home network, the flagging process is only performed by the S-CSCF **26**, not by the P-CSCF **24**. The S-CSCF **26** forwards the SIP invite $\mathbf{44}_3$ to UE-B's home network, network C_{36}, using intorgating-CSCFS (I-CSCF) **28**, **32**.

[0009] The network C S-CSCF **34** similarly examines the SIP invite $\mathbf{44}_3$ for media types not available under UE-B's SLA. The not available media types are flagged, as illustrated for media **1** and of SIP $\mathbf{44}_4$. If UE-B **40** is not in its home network, as shown, the SIP invite $\mathbf{44}_4$ is forwarded to the P-CSCF **38** of the network, network D **42**, where UE-B **40** is currently located, or "roaming." If UE-B **40** is in its home network, the SIP invite $\mathbf{44}_4$ is forwarded to the P-CSCF **38** of the home network.

[0010] The P-CSCF **38** flags the media types not supported by the network, network D. No additional flagged media types are shown in SIP invite $\mathbf{44}_5$. If the UE-B is in its home network, the flagging is only performed by the S-CSCF **34**. The P-CSCF **38** sends the SIP invite $\mathbf{44}_5$ to UE-B **40**. UE-B **40** examines the media information of the SIP invite $\mathbf{44}_5$ and determines whether it is capable of using any of the unflagged media types. If it can not use any of the unflagged media types or there are not any remaining unflagged media types, UE-B **40** sends UE-A **20** a session description protocol message (SPM) **46** with all media types flagged. If it can use the unflagged media types, UE-B **40** selects one or more of the available media types for the session. The selected media types unflagged and the flagged media types are returned to UE-A **20** in the SPM **44**.

[0011] As shown in FIGS. **2** and **3**, the SIP invite message **44** is large and, accordingly, consumes valuable air interface and wireless network resources. This resource consumption either degrades the network performance or reduces the maximum number of users serviced by the networks.

[0012] Accordingly, it is desirable to have alternate approaches for media session initiation.

SUMMARY

[0013] The present invention reduces the size of the SIP message by eliminating or deleting unsupported and/or

unauthorized media types in the SIP along the signaling route from the originating end user to the terminating one and back. The present invention restricts the media information carried within the SIP message to information that is allowed by the network and authorized for the users at both ends.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. **1** is an example of an overall system diagram for media session initiation.

[0015] FIG. **2** is an example of a Session Initialization Protocol (SIP) message.

[0016] FIG. **3** is an example of a SIP message with a flagged media type.

[0017] FIGS. **4***a* and **4***b* are signaling diagrams.

[0018] FIG. **5** is an example of an overall system diagram.

[0019] FIG. **6** is an example of a SIP message.

[0020] FIG. **7** is an example of a SIP message with removed media information.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] FIGS. **4***a* and **4***b* is a signaling diagram of the present invention. FIG. **5** illustrates an example of the components of the media session initiation. UE-A **46** desires to initiate a media session with UE-B **68**. UE-A **46** and UE-B **48** may be any wireless communication device, such as a mobile phone, personal computer (PC) or personal digital assistant (PDA). UE-A **46** in the system of FIG. **5** is shown as "roaming" in network A **50**. For FIG. **1**, network B **58** is the "home" network for UE-A **46**. Alternately, UE-A **46** may be in its home network.

[0022] UE-A **46** determines the CODECS available for the media types for the proposed session, (**74**). A SIP invite $\mathbf{52}_1$, such as shown in FIG. **2**, is composed using this information. UE-A **46** sends the SIP invite message $\mathbf{52}_1$ intended for UE-B **58** via network A is P-CSCF **48**. UE-B **68** is shown as "roaming" in network D **70**. Alternately, UE-B **68** may be in its home network, network C **64**. The SIP invite $\mathbf{52}_1$ includes all the media types that UE-A **46** can support and invites UE-B **68** to choose the type(s) that it can support. The media information includes the CODEC types, stream format, stream bit rate, and communication port number, among other media attributes. Under the current proposed system, there are no limits on the number of media types that a UE can include in the SIP invite message $\mathbf{52}_1$. Furthermore, there are no restrictions on the end user, such as UE-B **68** to include unauthorized unsupported media types.

[0023] The P-CSCF **48**, incorporated in network A, routes the SIP invite $\mathbf{52}_1$ to the end user (UE-B **68**). The P-CSCF function **48** initiates examination of the SIP invite message $\mathbf{52}_1$ for routing and for validation and authorization of the SDP multimedia contents. If network A **50** does not support any part of the media information (such as the CODECS, the bit rate or the media type), P-CSCF **48** deletes the media entry from the SDP message leaving only the supported media entries, (**76**), as shown as SIP invite $\mathbf{52}_2$. In the example SIP invite $\mathbf{52}_2$, media types **5** and **6** have been deleted, since it is not supported by network A **50**. Deleting the media type is performed by removing all of the information of the unsupported media type.

[0024] FIG. **6** is an example of the SIP invite message **44** of FIG. **2** with the media types deleted, as shown as SIP invite **52**. To illustrate, network A **50** does not support video media types, (video media **1** and **2**). As shown in FIG. **6**, the information concerning video media **1** and **2** is deleted, leaving only audio media **3** and **4**. The P-CSCF **48** then forwards the modified SIP invite $\mathbf{52}_2$ to the S-CSCF **54** of network B **58** for further handling (routing and validation). The S-CSCF **54** of network B **58** examines the SIP invite $\mathbf{52}_2$ including the modified SDP message. The S-CSCF **54** will remove unauthorized media types that UE-A **46** is not permitted to use under its SLA, (**78**). The S-CSCF **54** (which usually exists in the UE home network) also removes any not permitted media contents. In the FIG. **5** example, media type **1** is deleted, as shown for SIP invite $\mathbf{52}_3$. If UE-A **46** is in its home network, typically both the P-CSCF and S-CSCF function **46**, **54** are performed by the home network, with only the S-CSCF **54** deleting media types.

[0025] The S-CSCF **54** forwards the further modified SIP invite $\mathbf{52}_3$ to UE-B's home network, network C **64**, through its I-CSCF **56** (Intorgating-CSCF). After receiving the SIP invite $\mathbf{52}_3$ via its I-CSCF **60**, the S-CSCF **62** of network C **64** removes media types not permitted under UE-B's SLA, (**80**). After forwarding the SIP invite $\mathbf{52}_4$ to UE-B's current network D **70**, P-CSCF **66** removes unsupported media types of the current network, where UE-B is roaming, (**82**). As shown in FIG. **5**, no additional media types are deleted in SIP invite $\mathbf{52}_5$. If UE-B **68** is in its home network, typically the S-CSCF and P-CSCF functions **62**, **66** are performed by the home network, with the S-CSCF **62** deleting the media types.

[0026] UE-B **68** examines the remaining SDP media types of the SIP invite $\mathbf{52}_5$ and determines if it can support them. If it can, it selects one or more of the remaining media types and sends UE-A **48**, a session progress message **72**, (**84**), through the network D P-CSCF **66**. If it can not support any of the media types or none remain in the SDP information, UE-B **68** also sends a session progress message with all the media types deleted.

[0027] FIG. **7** is an example of a SPM **72**. To illustrate a possible derivation for SPM **72**, UE-B **68** receives the SIP invite **52** of FIG. **6**. UE-B **68** is capable of supporting audio media **3**. A SPM **72** is generated at UE-B **68** only containing the selected media type, audio media **3**, and a header and global information. Audio media type **4** is not included.

[0028] Upon reception of the SPM **72**, the P-CSCF **66** authorizes network D **70** to allocated the resources for the sessions indicated by the media type information, (**86**). The SPM progresses to UE-A **46** through the network C S-CSCF **62**, the network B S-CSCF **54** and the network A P-CSCF **48**. The network A P-CSCF **48** authorizes network A **50** to allocate the resources for the indicated session(s), (**88**). After the P-CSCF **48** sends the SPM **72** to UE-A **46**, UE-A **46** determines the initial CODEC(S) to use for the media session(s) of the SPM **72**, (**90**).

[0029] UE-A **46** sends a final SPM to UE-B **68**, through the same path, indicating the selected CODEC(S). At the same time as sending the final message, UE-A reserves the resources for the selected CODEC, (**92**), and, if successful,

sends a success message to UE-B **68**. After UE-B receives the final SPM, it reserves resources for the selected CODEC, (**94**).

[**0030**] When UE-B **68** receives the success message, it stops sending messages with its old CODEC, sets up the receiver for the new CODEC and sends an O.K. message to UE-A, (**98**). After UE-A **98** receives the O.K. message, it sends a success message with the new CODEC and sets up the receiver for the new CODEC, (**98**). After UE-B **68** receives the success message, it starts sending data with the new CODEC, (**100**).

What is claimed is:

1. A method of establishing a multimedia communication session between a first user equipment (UE) and a second UE through a plurality of networks having functions, the functions including a first proxy call state control function (P-CSCF) associated with the first UE and a first network, a first serving call state control function (S-CSCF) associated with the first UE and a second network, a first interrogating call state control function (I-CSCF) associated with the first UE and the second network, a second interrogating call state control function (I-CSCF) associated with the second UE and a third network, a second serving call state control function (S-CSCF) associated with the second UE and the third network, and a second proxy call state control function (P-CSCF) associated with the second UE and a fourth network, the method comprising:

the first UE generating a session initialization protocol (SIP) message for the second UE, setting forth the media types the first UE supports for potential use in a proposed multimedia communication session;

the first UE sending the SIP message to the first P-CSCF;

the first P-CSCF receiving the SIP message and deleting therefrom media types not supported by said first network to form a first modified SIP, and sending the first modified SIP message to the first S-CSCF;

the first S-CSCF receiving the first modified SIP, deleting therefrom media types the first UE is not authorized to use to form a second modified SIP, and sending the second modified SIP to the first I-CSCF;

the first I-CSCF receiving the second modified SIP and routing the second modified SIP to the second I-CSCF;

the second I-CSCF receiving the second modified SIP and sending the second modified SIP to a second S-CSCF;

the second S-CSCF receiving the second modified SIP and deleting therefrom media types the second UE is not authorized to use to form a third modified SIP, and sending the third modified SIP to the second P-CSCF;

the second P-CSCF receiving the third modified SIP and deleting therefrom media types not supported by the fourth network to form a fourth modified SIP, and sending the fourth modified SIP to the second UE; and

the second UE receiving the fourth modified SIP and deleting therefrom media types not supported by the second UE, and selecting at least one media type not deleted to form a session description protocol message (SPM) for the first UE, and sending the SPM for the first UE to the second P-CSCF.

2. The method of claim 1 wherein the deleting of media types comprises removing all of the information of the media types.

3. The method of claim 1 further comprising:

the second P-CSCF authorizing the fourth network to allocate resources for the multimedia session indicated by media types in the SPM, and sending the SPM to the second S-CSCF;

the second S-CSCF receiving the SPM and sending it to the second I-CSCF;

the second I-CSCF receiving the SPM and sending it to the first I-CSCF;

the first I-CSCF receiving the SPM and sending it to the first S-CSCF;

the first S-CSCF receiving the SPM and sending it to the first P-CSCF;

the first P-CSCF receiving the SPM and authorizing the first network to allocate resources for the multimedia session indicated by media types in the SPM, and sending the SPM to the first UE.

4. The method of claim 3 further comprising the first UE:

receiving the SPM;

determining the media types in the SPM;

selecting at least one media type to use for the multimedia communication session;

sending a final SPM message indicating said selected media type to the second UE;

reserving resources needed for the multimedia communication session;

if the resources are successfully reserved, sending a success message to the second UE.

5. The method of claim 4 further comprising:

the second UE receiving the final SPM message and the success message;

the second UE reconfiguring to use said selected media type;

the second UE sending an O.K. message to the first UE;

the first UE receiving the O.K. message;

the first UE reconfiguring to use said selected media type;

the first UE sending another success message to the second UE;

the second UE receiving the another success message; whereby the multimedia communication session is established.

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