Source: **TSG SA WG2**
Title: **CRs on 23.228 (IMS Stage 2)**
Agenda Item: **7.2.3**

The following Change Requests (CRs) have been approved by TSG SA WG2 and are requested to be approved by TSG SA plenary #25.

S2 doc #	Title	Spec	CR #	cat	Version in	Rel	WI	S2 meeting	Clauses affected
S2-042737	Session based messaging size negotiation	23.228	415r1	F	6.6.0	6	IMS2	S2 #41	5.16.2.1
S2-042646	Registration Requirement related to Application Server	23.228	437	F	6.6.0	6	IMS2	S2 #41	5.2.1
S2-042843	Clarification to the Re-Registration procedure	23.228	438r1	F	6.6.0	6	IMS2	S2 #41	5.2.1, 5.2.2.4
S2-042700	IMS Emergency Services	23.228	439	F	6.6.0	6	IMS2	S2 #41	5.13, 5.13.0, 5.13.1, 5.13.2, 5.13.3, and E.4
S2-042850	Treatment of SIP forking request	23.228	440r1	F	6.6.0	6	IMS2	S2 #41	4.2.7.3
S2-042851	Session based messaging release procedure	23.228	441r1	F	6.6.0	6	IMS2	S2 #41	5.16.2.2.4, 5.16.2.2.5
S2-042847	Generic signaling flow without preconditions	23.228	442r1	F	6.6.0	6	IMS2	S2 #41	5.4.8, 5.7a (new)
S2-042848	Session based messaging clean-up according latest version of IETF draft	23.228	443r1	F	6.6.0	6	IMS2	S2 #41	3.3, 5.16.2.1, 5.16.2.2.1, 5.16.2.2.2, 5.16.2.2.3, 5.16.2.2.4, 5.16.2.2.5
S2-042753	Correction on precondition usage	23.228	444	F	6.6.0	6	IMS2	S2 #41	5.4.8
S2-042949	Network control of PDP Context establishment for SBLP	23.228	445r1	C	6.6.0	6	IMS2	S2 #41	E.2.2.1

3GPP TSG-SA2 Meeting #41 **Tdoc S2-042737**
Montreal, Canada, 16-20 August 2004

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.228** **CR** **415** ⌘ **rev** **1** ⌘ Current version: **6.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☒

Title:	⌘	Session based messaging size negotiation
Source:	⌘	SA2 (Ericsson)
Work item code:	⌘	IMS2
Date:	⌘	11/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*
Rel-7 *(Release 7)*

Reason for change: ⌘ In Session based messaging a session is first set-up between the participants and then the messages are sent over a TCP connection.
Currently it is not possible for a recipient to know how large messages the other party will send until MSRP header is received by the recipient and by that time the whole or most part of the message may already be sent over the air of the sending party.
Support for negotiation of the maximum content size to be sent between the endpoints within the session based messaging session would be useful due to:

- A UE have limited memory and may not be willing to receive too large messages
- An application may limit the size of the messages and instead prefer to include URLs to any larger content to be transferred
- If message size is negotiated during the session set-up, the network may be involved and perform policing of the message size to be used within the session, as required by the existing requirement ìThe session based messaging shall be able to provide operator-controlled policy to be set on the size and content of the messagesî
- Depending on charging model it may be important for the sender to know whether the message is likely to be accepted by the recipient and the recipient may want to know how large messages the sender intend to send.

The negotiation mechanism will limit the number of times a message is ìrejectedî by the receiver or by the network due to its size.

The latest MSRP draft includes the possibility to include an indication of the

		maximum message size the UE accepts to receive, i.e. in IETF it was not agreed to include the maximum message size to send which will not make it possible for e.g. the AS to limit the message size of the messages during the session set-up other than rejecting the INVITE or limit the size without the UE knowing about it.
Summary of change:	⌘	A requirement is added to allow maximum message size to be indicated during set-up and modification of a session based messaging sessions.
Consequences if not approved:	⌘	There is a major risk that the existing requirement ìOperator-controlled policy to be set on the size and content of the messagesî will not be possible to perform efficiently.

Clauses affected:	⌘	5.16.2.1			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	24.247
		X /	Other core specifications		
		/ **X**	Test specifications		
		/ **X**	O&M Specifications		
Other comments:	⌘				

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.16.2 Session-based Messaging

5.16.2.0 General

This subclause describes architectural concepts and procedures for fulfiling the requirements for Session-based Messaging described in TS 22.340 [29a].

5.16.2.1 Architectural principles

Session-based IMS messaging communications shall as much as possible use the same basic IMS session delivery mechanisms (e.g. routing, security, service control) as defined in clause 4 and 5 of this document. For session based messaging the session shall include a messaging media component, other media components may also be included.

As the messaging media component does not require QoS beyond best-effort, it is expected that the UE will have an appropriate IP-CAN bearer available for the messaging media component prior to starting session initiation. Hence, use of the preconditions mechanism defined in RFC 3312[41] is not required for Session based messaging establishment that only includes a messaging media component.

NOTE: Pre-conditions mechanism may still be required for session establishment with additional media components that require the establishment of additional IP-CAN bearers.

Authorization-token based SBLP shall not be applied by the UE to IP-CAN bearers that carry the session-based messaging media components.

Once the session containing a messaging media component is established, messages in the session are transported between the session participants as per the parameters defined in the messaging media component part of the session description (SDP).

The inviting UE shall host the message session (accept a connection for the message session from the other endpoint). In order to offer to host the message session the UE first needs a best-effort IP-CAN bearer on which it can accept the connection for the message media component. Messages within a message session should be transported over a connection-oriented reliable transport protocol. Message sessions may be either established end to end between two UEs or may involve one or more intermediate nodes (e.g. a chat server for multi party chat or to perform per message charging).

For addressing chat-group-type session based messaging the concept of Public Service Identities is used.

Session based messaging is available for users that are registered in the IMS.

The session based messaging shall be able to provide the following functionality:

- Per-message-based charging, as well as content- and size-based charging.
- Operator-controlled policy to be set on the size and content of the messages.
- Support for indication of maximum message content size that a UA will accept to be received.
- Support for a messaging media component as part of a session where other media components are also included.
- Support for messaging-only sessions.

If charging mechanisms like charging based on the message content, message type or number of sent and/or received messages (see TS 22.340 [29a]) are required, then an intermediate node (messaging AS) shall be involved, which is able to inspect the SIP signalling as well as the exchanged messages and their content. Such an intermediate node may also provide support for time- and/or volume based charging.

3GPP TSG-SA WG2 Meeting #41
Montreal, 16th ñ 20th Auguest 2004

Tdoc ⌘S2-042646

CR-Form-v7

CHANGE REQUEST

⌘ **23.228** **CR** **437** ⌘**rev** ⌘ Current version: **6.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Registration Requirement related to Application Server
Source:	⌘	SA2 (Fujitsu, RIM, NTT DoCoMo)
Work item code:	⌘	IMS2
Date:	⌘	09/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
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D *(editorial modification)*
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Use one of the following releases:
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R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	This CR is originated from CR 424r4 from last SA2 meeting. The proposed change in 424r4 has been agreed in principle and a LS is sent to CN1 (cc to CN4) in S2-042280 to check the potential impact on the related stage 3 specifications. This CR therefore is created as what we agreed last meeting and should be agreed upon positive reply LS from CN1 or CN4. In IMS, some application servers need to be notified by userís registration status by the SIP core in order to perform services. Such services include Presence and PoC. The interface between AS and SIP core in IMS is the ISC interface. Therefore, the S-CSCF has a role in registration phase to check whether ISC interface needs to be invoked or not. However, such role is not included in the registration requirement currently. For efficiency when the AS subscribes to the registration event after the initial Register request it shall be possible for the filtering to specify condition information about when and whether the initial Register message or re-register messages to be communicated directly to the AS.
Summary of change:	⌘	It is proposed to add the ISC interface checking to IMS registration requirement and clarify 5.2.1 so that S-CSCF can decide when and whether the initial Register message or re-register messages to be communicated directly to the AS.
Consequences if not approved:	⌘	The requirements are not completed and the SIP messages that filtering will apply on is not clear.

Clauses affected:	⌘	5.2.1
Other specs	⌘	Y: ☐ N: **X** Other core specifications ⌘

affected:		X	Test specifications
		X	O&M Specifications
Other comments:	⌘		

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change reques

5.2.1 Requirements considered for registration

The following points are considered as requirements for the purpose of the registration procedures.

1. The architecture shall allow for the Serving-CSCFs to have different capabilities or access to different capabilities. E.g. a VPN CSCF or CSCFs in different stages of network upgrade.

2. The network operator shall not be required to reveal the internal network structure to another network. Association of the node names of the same type of entity and their capabilities and the number of nodes will be kept within an operatorís network. However disclosure of the internal architecture shall not be prevented on a per agreement basis.

3. A network shall not be required to expose the explicit IP addresses of the nodes within the network (excluding firewalls and border gateways).

4. It is desirable that the UE will use the same registration procedure(s) within its home and visited networks.

5. It is desirable that the procedures within the network(s) are transparent to the UE, when it register with the IM CN subsystem.

6. The Serving-CSCF is able to retrieve a service profile of the user who has IMS subscription. The S-CSCF shall check the registration request against the filter information and if necessary inform the application server about the registration of the user. It shall be possible for the filter information to allow either just the initial registration of the user or also subsequent re-registrations of the user to be communicated to the application server. The Serving-CSCF knows how to reach the Proxy-CSCF currently serving the user who is registered.

3GPP TSG-SA WG2 Meeting #41
Montreal, Canada, 16-20 August 2004

Tdoc ⌘S2-042843
Revision of S2-042655

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.228** **CR** **438** ⌘ **rev** **1** ⌘ Current version: **6.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Clarification to the Re-Registration procedure
Source:	⌘	SA2 (Huawei, China Mobile)
Work item code:	⌘	IMS2
Date:	⌘	09/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
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A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
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R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	In current specification 23.228, the re-registration procedure is initiated by the UE either to refresh an existing registration or in response to a change in the registration status of the UE, which doesn't include into the consideration that the UE can also initiate a re-registration to refresh the information about the UEís capabilities. If the UE has indicated capability information upon IMS registration in terms of SIP User Agent capabilities and characteristics described in ìdraft-ietf-sip-callee-caps-01î [38], when the capabilities are changed for some reason, in some cases, the UE should initiate a re-registration to update the capability information, otherwise, the S-CSCF will make an inappropriate decision based on the old capability information in generating a target contact set.
Summary of change:	⌘	Add some description to clarify that there exists other conditions fot the UE to initiate a Re-Registration Procedure.
Consequences if not approved:	⌘	The UE has changed the capabilities or pereference, but the S-CSCF still keeps the old information acquired upon the registration procedure. When the S-CSCF wants to choose a target contact set based on the capability information and/or preference information, the output may not be the appropriate contact address.

Clauses affected:	⌘	5.2.1, 5.2.2.4
Other specs	⌘	Y ☐ N ☒ Other core specifications ⌘

affected:	X	Test specifications
	X	O&M Specifications
Other comments:	⌘	

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<< First changed clause >>

5.2.1 Requirements considered for registration

The following points are considered as requirements for the purpose of the registration procedures.

1. The architecture shall allow for the Serving-CSCFs to have different capabilities or access to different capabilities. E.g. a VPN CSCF or CSCFs in different stages of network upgrade.

2. The network operator shall not be required to reveal the internal network structure to another network. Association of the node names of the same type of entity and their capabilities and the number of nodes will be kept within an operatorís network. However disclosure of the internal architecture shall not be prevented on a per agreement basis.

3. A network shall not be required to expose the explicit IP addresses of the nodes within the network (excluding firewalls and border gateways).

4. It is desirable that the UE will use the same registration procedure(s) within its home and visited networks.

5. It is desirable that the procedures within the network(s) are transparent to the UE, when it register with the IM CN subsystem.

6. The Serving-CSCF is able to retrieve a service profile of the user who has IMS subscription. The S-CSCF shall check the registration request against the filter information and if necessary inform the application server about the registration of the user. The Serving-CSCF knows how to reach the Proxy-CSCF currently serving the user who is registered.

7. The HSS shall support the possibility to bar a public user identity from being used for IMS non-registration procedures. The S-CSCF shall enforce these barring rules for IMS. Examples of use for the barring function are as follows:

   - Currently it is required that at least one public user identity shall be stored in the ISIM application. In case the user/operator wants to prevent this public user identity from being used for IMS communications, it shall be possible to do so in the network without affecting the ISIM application directly.

8. The HSS shall support the possibility to restrict a user from getting access to IM CN Subsystem from unauthorized visited networks.

9. It shall be possible to register multiple public identities via single IMS registration procedure from the UE. See subclause 5.2.1a for details.

10. It shall be possible to register a Public User Identity that is simultaneously shared across multiple contact addresses via IMS registration procedures. However, each registration and each de-registration process always relates to a particular contact address and a particular private user identity.

11. Registration of a public user identity shall not affect the status of already registered public user identity(s), unless due to requirements by Implicit Registration set defined in subclause 5.2.1a.

12. When multiple UEs share the same public identity (es), each UE shall be able to register its contact address with IMS.

13. The UE may indicate its capabilities and characteristics in terms of SIP User Agent capabilities and characteristics described in ì draft-ietf-sip-callee-caps-01î [38] during IMS registration. The UE may also update its capabilities by initiating a re-registration when the capabilities are changed on the UE.

<< Next changed clause >>

5.2.2.4 Re-Registration information flow ñ User currently registered

Periodic application level re-registration is initiated by the UE either to refresh an existing registration or in response to a change in the registration status of the UE. A re-registration procedure can also be initiated when the capabilities of

the UE have changed. Re-registration follows the same process as defined in subclause 5.2.2.3 ìRegistration Information Flow ñ User not registeredî. When initiated by the UE, based on the registration time established during the previous registration, the UE shall keep a timer shorter than the registration related timer in the network.

Note: if the UE does not re-register, any active sessions may be deactivated.

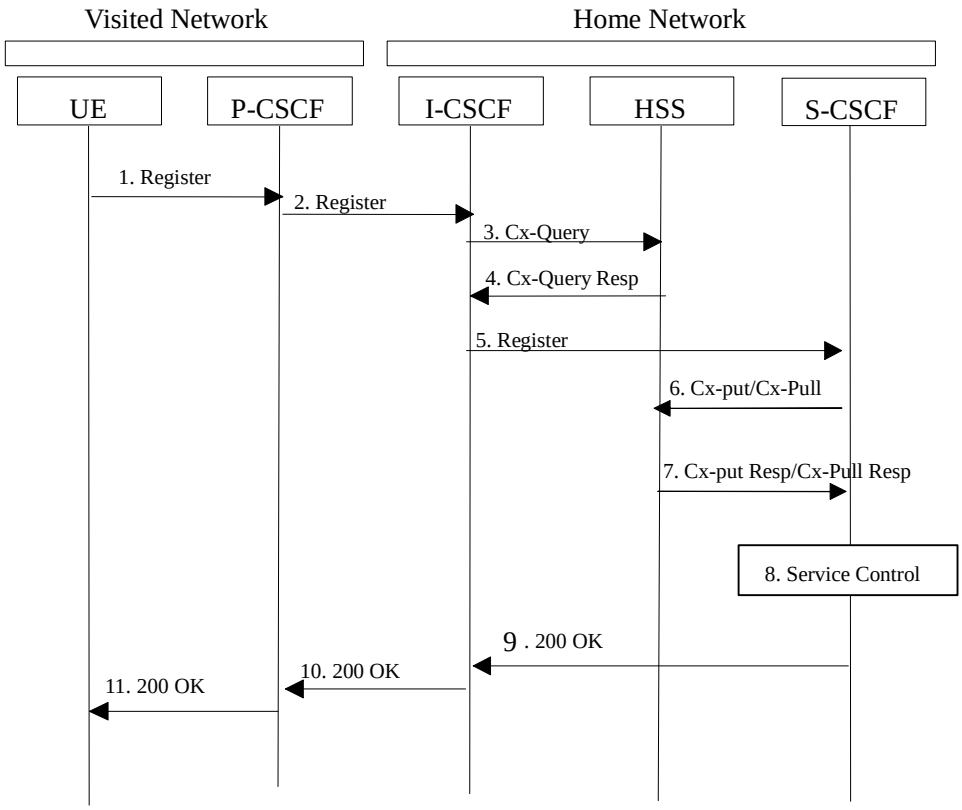

Figure 5.2: Re-registration - user currently registered

1. ~~Prior to expiry of the agreed registration timer, t~~The UE initiates a re-registration. For periodic registration, the UE initiates a re-registration prior to expiry of the agreed registration timer. To re-register, the UE sends a new REGISTER request. The UE sends the REGISTER information flow to the proxy (public user identity, private user identity, home network domain name, UE IP address, capability information).

2. Upon receipt of the register information flow, the P-CSCF shall examine the ìhome domain nameî to discover the entry point to the home network (i.e. the I-CSCF). The proxy does not use the entry point cached from prior registrations. The proxy shall send the Register information flow to the I-CSCF (P-CSCF address/name, public user identity, private user identity, P-CSCF network identifier, UE IP address). A name-address resolution mechanism is utilised in order to determine the address of the home network from the home domain name. The P-CSCF network identifier is a string that identifies at the home network, the network where the P-CSCF is located (e.g., the P-CSCF network identifier may be the domain name of the P-CSCF network).

3. The I-CSCF shall send the Cx-Query information flow to the HSS (public user identity, private user identity and P-CSCF network identifier).

4. The HSS shall check whether the user is registered already and return an indication indicating that an S-CSCF is assigned. The Cx-Query Resp (indication of entry contact point, e.g. S-CSCF) is sent from the HSS to the I-CSCF.

5. The I-CSCF, using the name of the S-CSCF, shall determine the address of the S-CSCF through a name-address resolution mechanism. The I-CSCF also determines the name of a suitable home network contact point, possibly based on information received from the HSS. The home network contact point may either be the S-CSCF itself, or a suitable I-CSCF(THIG) in case network configuration hiding is desired. If an I-CSCF(THIG) is chosen as the home network contact point for implementing network configuration hiding, it may be distinct from the I-CSCF that appears in this registration flow, and it shall be capable of deriving the S-CSCF name from the home

contact information. I-CSCF shall then send the register information flow (P-CSCF address/name, public user identity, private user identity, P-CSCF network identifier, UE IP address, I-CSCF(THIG) in case network configuration hiding is desired) to the selected S-CSCF. The home network contact point will be used by the P-CSCF to forward session initiation signalling to the home network.

The S-CSCF shall store the P-CSCF address/name, as supplied by the visited network. This represents the address/name that the home network forwards the subsequent terminating session signalling to the UE.

6. The S-CSCF shall send Cx-Put/Cx-Pull (public user identity, private user identity, S-CSCF name) to the HSS. Note: Optionally as an optimisation, the S-CSCF can detect that this is a re-registration and omit the Cx-Put/Cx-Pull request.

7. The HSS shall stores the S-CSCF name for that user and return the information flow Cx-Put Resp/Cx-Pull-Resp (user information) to the S-CSCF. The S-CSCF shall store the user information for that indicated user.

8. Based on the filter criteria, the S-CSCF shall send re-registration information to the service control platform and perform whatever service control procedures are appropriate.

9. The S-CSCF shall return the 200 OK information flow (home network contact information) to the I-CSCF. If an I-CSCF is chosen as the home network contact point for implementing network configuration hiding, the I-CSCF shall encrypt the S-CSCF address in the home network contact information.

10. The I-CSCF shall send information flow 200 OK (home network contact information) to the P-CSCF. The I-CSCF shall release all registration information after sending information flow 200 OK.

11. The P-CSCF shall store the home network contact information, and shall send information flow 200 OK to the UE.

Note: The encryption mechanism for implementing network configuration hiding is specified in TS 33.203.

<< End of changed clause >>

3GPP TSG-SA WG2 Meeting #41
Montreal, Canada, 16-20 August, 2004

Tdoc S2-042700

CR-Form-v7

CHANGE REQUEST

23.228	CR	439	rev	-	Current version:	6.6.0

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the symbols.*

Proposed change affects: UICC apps ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	IMS Emergency Services	
Source:	SA2 (Lucent Technologies)	
Work item code:	IMS2	***Date:*** 17/08/2004
Category:	**F**	***Release:*** Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	It was decided that IMS based Emergency Services are not to be included in Release 6. Some early text was added to 23.228 prior to the work on TR 23.867. This material was copied into the TR and was not kept up to date with the subsequent work done in 23.867. Since the text is not aligned with subsequent work and since the feature is not included in R6, the text should be removed from the document.
Summary of change:	Remove the text added for IMS Emergency Services and replace it with the statement from the R5 version.
Consequences if not approved:	Incorrect and incomplete information will remain in 23.228.

Clauses affected:	5.13, 5.13.0, 5.13.1, 5.13.2, 5.13.3, and E.4

Other specs affected:	Y	N		
		X	Other core specifications	
		X	Test specifications	
		X	O&M Specifications	

Other comments:	

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******** First Change ********

5.13 IMS Emergency Sessions

Emergency sessions via IMS are not supported in this release of the present document. A CS capable UE shall use the CS domain for emergency services.

~~5.13.0 General~~

~~This section presents the main procedures for the IMS emergency sessions.~~

~~5.13.1 Requirements for IMS Emergency Sessions~~

~~A CS capable UE shall use the CS domain for emergency services. In addition, the solution for emergency sessions in the IMS shall fullfil the following capability requirements:~~

1. ~~It should be independent from the used underlying IP connectivity network with respect to the detection and routing of emergency sessions.~~
2. ~~Any kind of emergency numbers, all kinds of emergency SIP URIs and special indications for emergency sessions within the SIP signalling must be supported (especially IETF proposals on addressing should be taken into consideration).~~
3. ~~Emergency sessions should be prioritized over ìordinaryî sessions by the system.~~
4. ~~Setup of IMS emergency sessions shall be possible for users with a barred public user identity.~~
5. ~~The primary solution shall be that the UE can detect an emergency session (e.g. by evaluating the SIP URI or the dialed number) by itself and indicates the emergency session to the network. But the specification must also support cases where the UE canít detect an emergency session.~~
6. ~~The solution must work in case the UE has a UICC card and is registered to the IMS or not, as well as in the UICC less case. In the UICC less and non registered cases it must be possible to setup a bearer in the IP connectivity network and session setup must be possible without an existing security association between UE and P CSCF.~~
7. ~~Emergency Service is not a subscription service and therefore will normally be supported entirely in the serving network and provided without interaction with a ìHomeî network in a roaming case.~~
8. ~~The solution shall also work in a roaming case when the session establishment is routed via a P CSCF located in the home network. In this case the home network should be able to detect that the session is for emergency service (whether indicated as such or not) and route emergency sessions to an emergency center in the roaming country (i.e. where the user is geographically located).~~
9. ~~Alternatively, the home network may respond to the UE indicating that the UE should initiate an emergency session in the serving network (e.g. via the CS domain of the serving network). The solution should be in principle similar for both scenarios (considering e.g. the entities, which perform session control and detection of emergency situations).~~
10. ~~Emergency centers may be connected to the CS domain, PS domain or any other packet network.~~
11. ~~Emergency centres shall be able to call back the user.~~

~~The solution for emergency sessions shall also fulfil the following architectural requirements:~~

1. ~~The architecture for Emergency Service should be driven by the specific capabilities requirements. To the extent that existing IMS functional entities can be re used, this should be done. However the specification should not be constrained by the existing functional entities.~~

2. The architecture should take into account that it may be possible to make emergency calls on other media than voice. It needs to take account support, for example, the deaf and hearing-impaired using a text phone that might generate information, for example, using IMS messaging procedures. There may also be a need to work with phones that attempt the emergency call as a video telephony call.

5.13.2 Procedures for SIP Emergency Session Establishment

It shall be possible for the network to discriminate between emergency sessions and other sessions. This shall allow special treatment (e.g. with respect to filtering, higher priority, routing, QoS) of emergency sessions.

The P-CSCF in the visited or home network is the IMS network entity, which always detects an emergency session. The P-CSCF should route the corresponding request to an S-CSCF, which is able to handle emergency sessions. P-CSCF and S-CSCF shall be located in the same network. Alternatively, the home network may respond to the UE indicating that the UE should initiate an emergency session in the serving network (e.g. via the CS domain of the serving network). Based on location information provided by the UE and the location of the S-CSCF, the S-CSCF shall route the emergency request directly to an emergency centre, to an I-CSCF or BGCF.

5.13.3 Procedures for IMS Emergency Session Establishment

In order to establish an IMS emergency session the UE needs to have IP-CAN bearers to be used for IMS related signalling and for the media related to the emergency session.

******** Next Change ********

E.4 IMS Emergency sessionsVoid

It shall be possible for the network to identify that a PDP context to be activated is for emergency use (signalling and media context). It allows to apply special treatment (e.g. with respect to filtering, higher priority, routing, QoS) of IMS emergency sessions.

If the UE is not attached to GPRS network, then it shall first perform a GPRS attach. It shall be possible for the network to discriminate between a normal Attach and an Attach for emergency use.

3GPP TSG-SA2 Meeting #41 **Tdoc S2-042850**
Montreal, Canada, 16-20 August 2004

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.228** **CR** **440** ⌘ **rev** **1** ⌘ Current version: **6.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☒

Title:	⌘	Treatment of SIP forking request
Source:	⌘	SA2 (Ericsson)
Work item code:	⌘	IMS2
Date:	⌘	18/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*
Rel-7 *(Release 7)*

Reason for change:	⌘	It is stated in section 16.7 in RFC 3261 If the forwarded response was a final response, the proxy MUST generate a CANCEL request for all pending client transactions associated with this response context. A pending client transaction is one that hasreceived a provisional response, but no final response (it is in the proceeding state) and has not had an associated CANCEL.. The requirement to CANCEL pending client transactions upon forwarding a final response does not guarantee that an endpoint will not receive multiple 200 (OK) responses to an INVITE. 200 (OK) responses on more than one branch may be generated before the CANCEL requests can be sent and processed. Further, it is reasonable to expect that a future extension may override this requirement to issue CANCEL requests. The present text in TS 23.228 does not align with this.
Summary of change:	⌘	Clarified that the UE and MGCF will not cancel other early dialogs when a 200 OK is received.
Consequences if not approved:	⌘	Stage 2 not aligned with stage 3.

Clauses affected:	⌘	4.2.7.3
Other specs	⌘	Y: ☐ N: ☒ Other core specifications ⌘

affected:	X	Test specifications
	X	O&M Specifications
Other comments:	⌘	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.2.7.3 Support for forked requests

UE and MGCF shall be ready to receive responses generated due to a forked request and behave according to the procedures specified in [12] and in this section.

The UE and MGCF may accept or reject early dialogues from different terminations as described in [12], for example if the UE is only capable of supporting a limited number of simultaneous dialogs.

Upon the reception of a first final 200 OK (for INVITE), the UE or MGCF shall acknowledge the 200 OK ~~and cancel other early dialogues that may have been established~~. In addition ~~this case~~ the UE or MGCF may require updating the allocated resources according to the resources needed. In case ~~it~~ the UE or MGCF receives a subsequent 200 OK, the UE or MGCF shall acknowledge the dialogue and immediately send a BYE to drop the dialog.

The UE and MGCF may include preferences according to ìdraft-ietf-sip-callerprefs-10î [42], in INVITE's, indicating that proxies should not fork the INVITE request. The S-CSCF and AS should follow the preferences, if included in the INVITE request. On the terminating side, UE and MGCF shall be able to receive, as specified in [12], several requests for the same dialog that were forked by a previous SIP entity.

Application Servers and MRFCs shall be capable to handle forked requests according to the procedures specified in [12].

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Montreal, Canada, 16-20 August 2004

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CHANGE REQUEST

⌘ **23.228** **CR** **441** ⌘ **rev** **1** ⌘ Current version: **6.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☒

Title:	⌘	Session based messaging release procedure
Source:	⌘	SA2 (Ericsson)
Work item code:	⌘	IMS2
Date:	⌘	18/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*
Rel-7 *(Release 7)*

Reason for change:	⌘	Normal SIP procedures according to RFC 3261 are ìOnce the BYE is constructed, the UAC core creates a new non-INVITE client transaction, and passes it the BYE request. The UAC MUST consider the session terminated (and therefore stop sending or listening for media) as soon as the BYE request is passed to the client transaction.î The MSRP now seems to follow those procedures and there is no reason why 3GPP would need to wait with releasing the TCP connection once a BYE is sent or received.
Summary of change:	⌘	The possibility to tear down the transport connection is moved to directly after a BYE request is sent or received.
Consequences if not approved:	⌘	Stage 2 not aligned with stage 3.

Clauses affected:	⌘	5.16.2.2.4, 5.16.2.2.5

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.16.2.2.4 Session based messaging release procedure

The following procedure shows the release of a message session, which was established between two UEs. It is assumed that UE#1 is the session host.

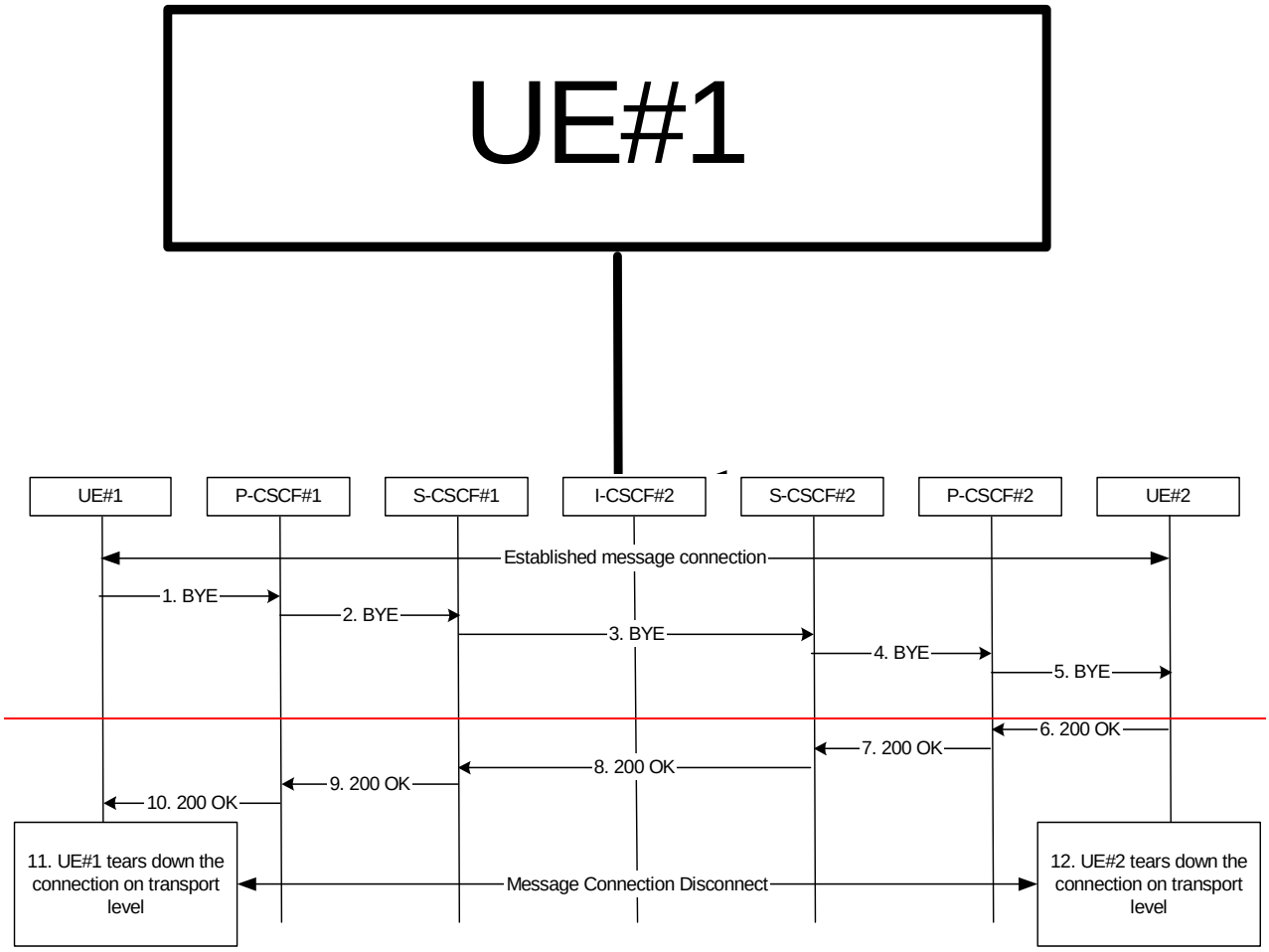

Figure 5.48d: Message session release procedure

1.ñ65. UE#1 indicates its intent to terminate the message session by sending a BYE request to UE#2. UE#1 stops sending messages and tears down the message connection on the transport level and destroy local state for the message session. The UE#1 may use the IP-CAN bearer for some other services; hence it keeps the bearer activated.

7-8. UE#2 agrees to end the session and tear down the message connection on the transport level and destroy local state for the message session. The UE#2 may use the IP-CAN bearer for some other services; hence it keeps the bearer activated.

9-13.6.ñ10. UE#2 ~~agrees to end the session and~~ acknowledges the BYE request by sending a 200 OK to UE#1, which traverses back the signalling path.

~~11. Session host UE#1 shall tear down the message connection on the transport level and destroy local state for the message session. It is assumed that UE#1 uses the IP-CAN bearer for some other services, hence it keeps the bearer activated.~~

~~12. UE#2 shall tear down the message connection on the transport level and destroy local state for the message session. It is assumed that UE#2 uses the IP-CAN bearer for some other services; hence it keeps the bearer activated.~~

5.16.2.2.5 Session based messaging release procedure with an intermediate node

The following procedure shows the release of a message session, which was established between two UEs via an intermediate node. It is assumed that UE#1 is the session host.

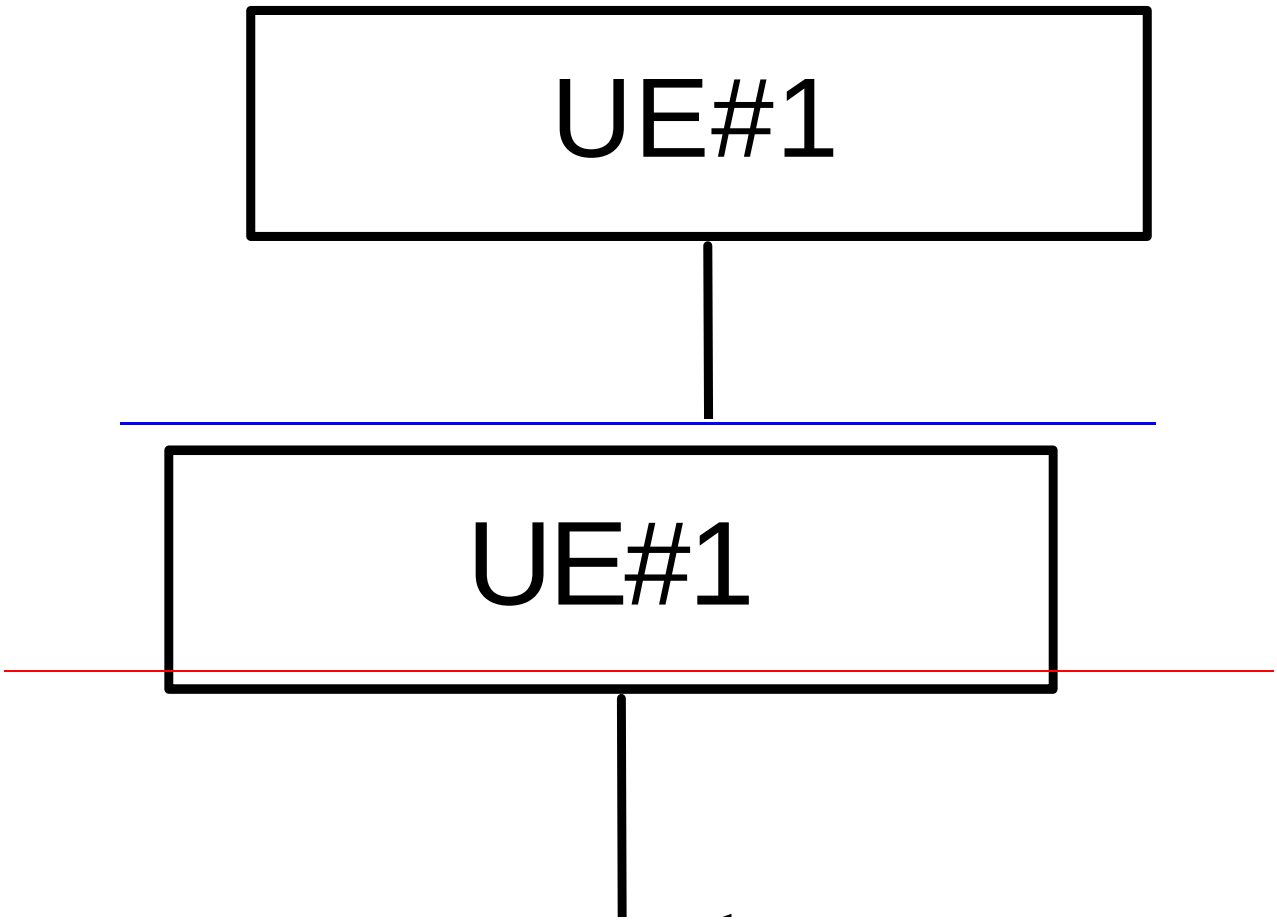

Figure 5.48e: Message session release procedure with intermediate node

1.ñ43. UE#1 indicates its intent to terminate the message session by sending a BYE request to UE#2, via the AS. UE#1 stops sending messages and tears down the message connection on the transport level and destroy local state for the message session. The UE#1 may use the IP-CAN bearer for some other services; hence it keeps the bearer activated.

54. The AS forwards the BYE request to the UE#2

6-9. 5.ñ7. The AS tears down the message connection on the transport level and destroys local state for the message session. The AS may now either agree to end the session and acknowledges the BYE request by sending a 200 OK to UE#1, directly, which traverses back the signalling path, or wait until the UE#2 has agreed to end the session. In the example above the AS immediately accepts to end the session, the decision whether to accept a request to end the session from UE#1 without waiting for the response from UE#2 can be based upon the AS operator policy.

8. Session host UE#1 shall tear down the message connection on the transport level and destroy local state for the message session. It is assumed that UE#2 uses the IP-CAN bearer for some other services; hence it keeps the bearer activated. Any further data that might still be sent by UE#2 will not reach UE#1 in this scenario.

109. The AS receives the acknowledgement, from UE#2, to end the session

10. The AS shall tear down the message connection with UE#2 on the transport level and destroy local state for the message session.

3GPP TSG-SA WG2 Meeting #41
Montreal, Canada, 16-20 August 2004

Tdoc ⌘S2-042847

CR-Form-v7

CHANGE REQUEST

⌘ **23.228** **CR** **442** ⌘ **rev** **1** ⌘ Current version: **6.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network [X]

Title:	⌘	Generic signaling flow without preconditions
Source:	⌘	SA2 (Siemens, Lucent)
Work item code:	⌘	IMS2
Date:	⌘	11/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	During the discussions on session based messaging and PoC it became obvious that the complex Preconditions signalling flow specified in Rel-5 is not applicable for these kind of services. Main reasons for this are strict timing requirements (as for PoC), no requirements for QoS enabled bearers (as for messaging) and no clipping problems in case of non-realtime (nrt) services or due to the fact that intermediary store-and-forward servers are used. Currently 23.228 does contain a signalling flow with Preconditions and a flow without Preconditions in the chapter on session based messaging. To avoid similar flows for each new nrt service created, it would be useful to provide a generic signalling flow as a framework for such services. The flow should be general enough to be applicable in various use-cases, e.g. providing the capability to use SBLP. It is expected that this generic signalling flow serves as a framework for flows of upcoming new nrt services, which have to decide what optional parts of the signalling flow to be used and at which stage of the flow to send and receive media. Real-time services requiring enhanced QoS bearers are recommended to use the Preconditions signalling flow. The proposed generic signalling flow will be used first in the context of session based messaging (see CR443).
Summary of change:	⌘	Note in chapter 5.4.8 refering to the new chapter 5.7a with a signalling flow without Preconditions. New chapter 5.7a behind 5.7 with the new flow.
Consequences if not approved:	⌘	Different signalling flows may have to be supported in ME and Core Network. Duplication of work, if different services are using quite similar flows.

Clauses affected:	⌘	5.4.8, 5.7a (new)

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

********** 1st MODIFIED SECTION **********

5.4.8 QoS-Assured Preconditions

This section contains concepts for the relation between the resource reservation procedure and the procedure for end-to-end sessions.
A precondition is a set of constraints about the session, which are introduced during the session initiation. The recipient of the session generates an answer, but does not alert the user or otherwise proceed with session establishment until the preconditions are met. This can be known through a local event (such as a confirmation of a resource reservation), or through a new set of constraints sent by the caller.

A ìQoS-Assuredî session will not complete until required resources have been allocated to the session. In a QoS-Assured session, the UE must succeed in establishing the QoS bearer for the media stream according to the QoS preconditions defined at the session level before it may indicate a successful response to complete the session and alert the other end point. The principles for when a UE shall regard QoS preconditions to be met are:

- A minimum requirement to meet the QoS preconditions defined for a media stream in a certain direction, is that an appropriate IP-CAN bearer established at the local access for that direction.

- Segmented resource reservation is performed since the end points are responsible to make access network resource reservations via local mechanisms.

- The end points shall offer the resources it may want to support for the session and negotiate to an agreed set. Multiple negotiation steps may be needed in order to agree on a set of media for the session. The final agreed set is then updated between the end points.

- The action to take in case a UE fails to fulfil the pre-conditions (e.g. failure in establishment of an RSVP session) depends on the reason for failure. If the reason is lack of resources in the network (e.g. an admission control function in the network rejects the request for resources), the UE shall fail to complete the session. For other reasons (e.g. lack of RSVP host or proxy along the path) the action to take is local decision within the UE. It may for example 1) choose to fail to complete the session, 2) attempt to complete the session by no longer requiring some of the additional actions.

The following cases exist in the context of using ìQoS-Assuredî preconditions for IMS:

a. The IMS session requires the reservation of additional bearer resources, and the UE requires confirmation from the other endpoint of the fulfilment of the pre-conditions related to this resource reservation. Alternatively, the UE may not require explicit confirmation from the other SIP endpoint when the pre-conditions are fulfilled. One example of such SIP endpoint is the MGCF used for PSTN interworking. In these cases, one or both of the reservation confirmation messages may not be sent.

b. The IMS session does not require the reservation of additional bearer resources, and both endpoints indicate in their initial session setup message that the pre-conditions are fulfilled.

c. The IMS session does not require the reservation of additional bearer resources, and the endpoints do not use the mechanism to indicate ìQoS-Assuredî pre-conditions.

Note: The flows of sections 5.5, 5.6 and 5.7 depict the case where both UEs require confirmation from each other of the fulfilment of the pre-conditions. The flow in section 5.7a depicts the case where the IMS session does not require the reservation of additional bearer resources and the endpoints do not use pre-conditions.

********** 2nd MODIFIED SECTION **********

5.7.4 Mobile Termination from an external SIP client

This clause describes the terminating session setup procedures from an external SIP client that doesnít support the required IMS SIP extensions, towards an IMS UE.

An incoming SIP request may arrive, where the UE detects that the originating party does not support the IMS SIP extensions described in 3GPP TS 24.229 [10a]. In case the external SIP client does not support the Precondition extension of SIP, the UE continues to setup the session without activating media transfer until the session parameters have been negotiated and accepted. Session flows 5.19a and 5.19b show an example of an end-to-end session setup in such a case.

For illustration purposes these session flows show the case of a non-roaming termination. This flow is a variant of MT#2 defined in clause 5.7.2. The same principles apply in roaming cases, i.e. analogous variants of MT#1 defined in clause 5.7.1 are also supported for interworking with SIP clients that do not support the required IMS procedures.

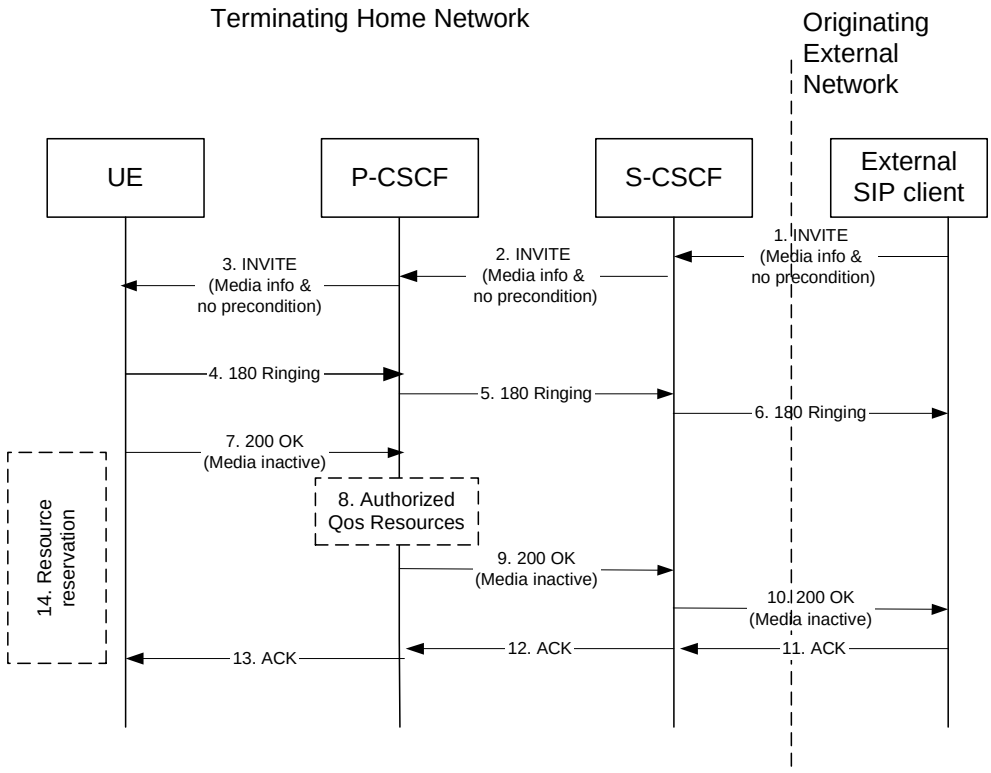


Figure 5.19a. Terminating session from external SIP client, detection & initial setup with media not allowed

1-3. A session arrives at the UE in the IMS network with media information but without requiring precondition capability.

4-6. Ringing information is sent end to end towards the originating party.

7-10. The UE begins the resource reservation according to the session and media parameters. The P-CSCF/PDF may authorise the media parameters being negotiated and the originating party is notified of the session setup details with all media components set to inactive.

11-13. The originating party acknowledges the session.

14. When the UE has completed the resource reservation procedures, the UE continues with the session setup according to flow 5.19b. The UE sets the media components to active state.

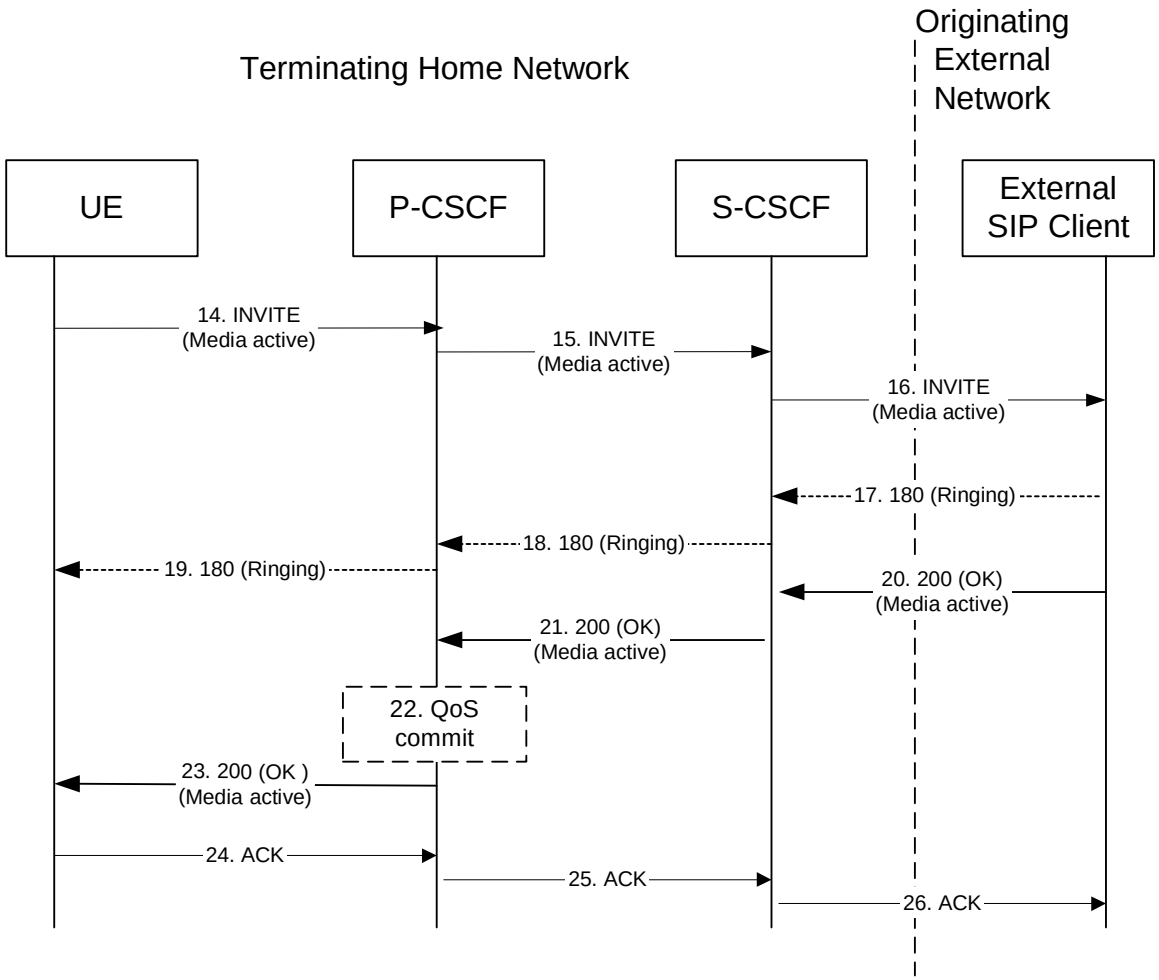


Figure 5.19b. Continuation of terminating session from external SIP client, session setup with active media

14-16. By sending a re-INVITE indicating the support for the precondition capability, the terminating UE initiates setting of media components to active.

17-19. Ringing Information may be sent from an external SIP entity (in this case the originating party) through the session path towards the terminating UE.

20-23. The originating SIP client accepts the re-INVITE with the active media streams. In step 22, The P-CSCF/PDF may commit/approve the resources authorised for the session.

24-26. Session is acknowledged end-to-end.

5.7a Procedures for the establishment of sessions without preconditions

This subclause presents the general end-to-end session flow procedures without preconditions. These flows are applicable to services without real-time QoS requirements, and thus do not need to set-up dedicated IP-CAN bearers but can use existing IP-CAN bearers, and to services which do not require that the terminating endpoint obtains a SIP-level notification when the originating endpointís IP-CAN bearer becomes available.

Note that the flows in this subclause do not show the use of a THIG. If a THIG is used, the use is completely analogous to the use in subclauses 5.5, 5.6 and 5.7.

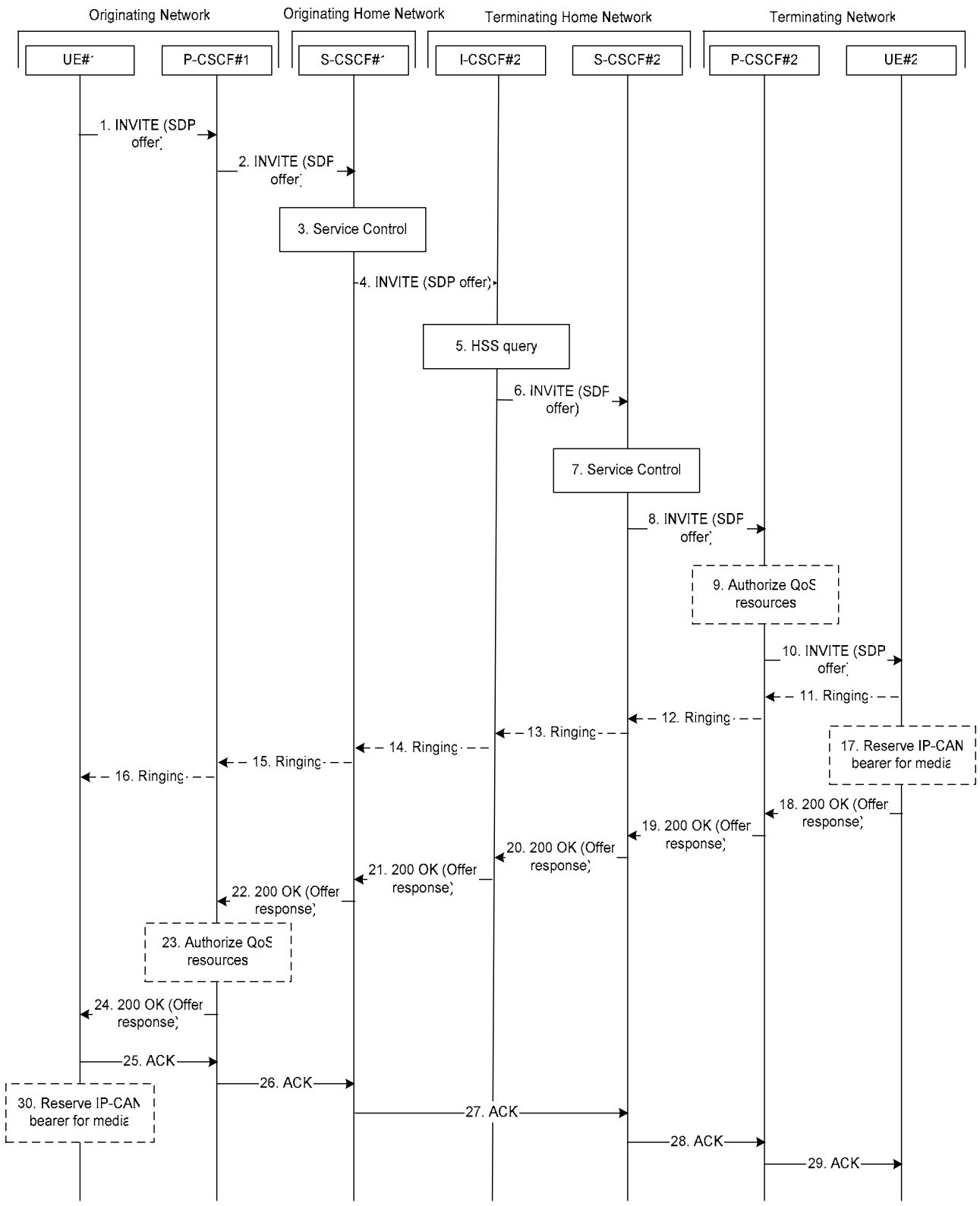


Figure 5.19c. End-to-end session flow procedure without preconditions

1. UE#1 sends the SIP INVITE request, containing an initial SDP, to the P-CSCF#1 determined via the P-CSCF discovery mechanism. The initial SDP may represent one or more media for a multi-media session. It should be noted that a media offer without preconditions in general implies that the offering entity might expect to receive incoming media for any of the offered media as soon as the offer is received by the other endpoint. Therefore either an existing IP-CAN bearer is assumed to be available for use or the application is implemented such that incoming media is not expected until some later point in time.

2. P-CSCF#1 forwards the INVITE request to S-CSCF#1 along the path determined upon UE#1's most recent registration procedure.

3. Based on operator policy S-CSCF#1 validates the userís service profile and may invoke whatever service control logic is appropriate for this INVITE request. This may include routing the INVITE request to an application server, which processes the request further on.

4. S-CSCF#1 forwards INVITE request to I-CSCF#2.

5. I-CSCF#2 performs Location Query procedure with the HSS to acquire the S-CSCF address of the destination user (S-CSCF#2).

6. I-CSCF#2 forwards the INVITE request to S-CSCF#2.

7. Based on operator policy S-CSCF#2 validates the userís service profile and may invoke whatever service control logic is appropriate for this INVITE request. This may include routing the INVITE request to an application server, which processes the request further on.

8. S-CSCF#2 forwards the INVITE request to P-CSCF#2 along the path determined upon UE#2's most recent registration procedure.

9. Based on operator policy P-CSCF#2/PDF may authorize the resources necessary for this session. The media authorization token is generated by the PDF.

10. P-CSCF#2 forwards the INVITE request to UE#2. The INVITE request may contain the media authorization token.

11. - 16. UE#2 may optionally generate a ringing message towards UE#1.

17. UE#2 may reserve a dedicated IP-CAN bearer for media based on the media parameters received in the SDP offer. Note that the sequential ordering of 17. and 18. does not indicate that these steps are necessarily performed one after the other. If step 18. is performed before step 17. is finished, UE#2 shall use an existing IP-CAN bearer to send and receive media unless the application is such that a new bearer is not needed until some later point in time. If step 17. is performed successfully, media are sent and received by UE#2 on the dedicated IP-CAN bearer.

18. UE#2 accepts the session with a 200 OK response. The 200 OK response is sent to P-CSCF#2.

19. - 22. The 200 OK response traverses back to UE#1.

23. Based on operator policy P-CSCF#1/PDF may authorize the resources necessary for this session. The media authorization token is generated by the PDF.

24. P-CSCF#1 forwards the 200 OK response to UE#1. The 200 OK response may contain the media authorization token.

25. - 29. UE#1 acknowledges the 200 OK with an ACK, which traverses back to UE#2.

30. UE#1 may reserve a dedicated IP-CAN bearer for media based on the media parameters received in the SDP answer. Note that the sequential ordering of 25. and 30. does not indicate that these steps are necessarily performed one after the other. If step 30. is performed successfully, media are sent and received by UE#1 on the reserved dedicated IP-CAN bearer. UE#1 may also use an existing IP-CAN bearer to send and receive media.

5.8 Procedures related to routing information interrogation

5.8.0 General

When a mobile terminated session set-up arrives at an I-CSCF that is authorised to route sessions, the I-CSCF interrogates the HSS for routing information. The mobile terminated sessions for a user shall be routed to a S-CSCF.

The Cx reference point shall support retrieval of routing information from HSS to I-CSCF. The resulting routing information is the contact information of S-CSCF.

3GPP TSG-SA WG2 Meeting #41
Montreal, Canada, 16-20 August 2004

Tdoc ⌘S2-042848

CR-Form-v7

CHANGE REQUEST

⌘ **23.228** **CR** **443** ⌘ **rev** **1** ⌘ Current version: **6.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☒

Title:	⌘	Session based messaging clean-up according latest version of IETF draft
Source:	⌘	SA2 (Siemens, Ericsson)
Work item code:	⌘	IMS2
Date:	⌘	19/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	The IETF draft on session based messaging (draft-ietf-simple-message-sessions-07.txt) has significantly changed between version 05 (latest version recognized in 23.228) and 07. The two most relevant changes for the stage 2 description of message sessions are: the offerer now opens the TCP connection towards the answerer and the MSRP VISIT message was removed. This change request provides the necessary update of the session based messaging section in TS 23.228. The signaling flow in this change request is inline with the general flow introduced with CR442. There are no flows showing how the requirement ìThe session based messaging shall be able to provide operator-controlled policy to be set on the size and content of the messagesî can be solved. The requirement can be solved by adding the possibility to negotiate the maximum message content size within the session.
Summary of change:	⌘	Added SBLP to the abbreviation list. Adapted signaling flows to the current version of the IETF draft and to the general signaling flow. Made some editorial changes. The session based messaging flows have been enhanced with the possibility to indicate maximum message content size accepted to be received.
Consequences if not approved:	⌘	Description and signalling flows for session based messaging not consistent with corresponding IETF draft. There is a major risk that the existing requirement ìOperator-controlled policy to be set on the size and content of the messagesî will not be possible to perform efficiently.
Clauses affected:	⌘	3.3, 5.16.2.1, 5.16.2.2.1, 5.16.2.2.2, 5.16.2.2.3, 5.16.2.2.4, 5.16.2.2.5

		Y	N		
Other specs affected:	⌘	X		Other core specifications	⌘ 24.247
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Subclause 5.16.2.2.1 includes a reference to the new subclause introduced with CR442 and both text and figure need to be adjusted accordingly. This CR is merged with CR416.			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

********** 1st MODIFIED SECTION **********

3.3 Abbreviations

For the purposes of the present document the following abbreviations apply. Additional applicable abbreviations can be found in GSM 01.04 [1].

AMR	Adaptive Multi-rate
API	Application Program Interface
AS	Application Server
BCSM	Basic Call State Model
BG	Border Gateway
BGCF	Breakout Gateway Control Function
BS	Bearer Service
CAMEL	Customised Application Mobile Enhanced Logic
CAP	Camel Application Part
CDR	Charging Data Record
CN	Core Network
CS	Circuit Switched
CSCF	Call Session Control Function
CSE	CAMEL Service Environment
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
ENUM	E.164 Number
GGSN	Gateway GPRS Support Node
GLMS	Group and List Management Server
GMLC	Gateway Mobile Location Centre
GUP	Generic User Profile
HSS	Home Subscriber Server
I-CSCF	Interrogating-CSCF
IETF	Internet Engineering Task Force
IM	IP Multimedia
IMS	IP Multimedia Core Network Subsystem
IMS ALG	IMS Application Level Gateway
IMSI	International Mobile Subscriber Identifier
IP	Internet Protocol
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
IP-CAN	IP-Connectivity Access Network
ISDN	Integrated Services Digital Network
ISIM	IMS SIM
ISP	Internet Service Provider
ISUP	ISDN User Part
MAP	Mobile Application Part
MGCF	Media Gateway Control Function
MGF	Media Gateway Function
NAI	Network Access Identifier
NA(P)T-PT	Network Address (Port-Multiplexing) Translation-Protocol Translation
OSA	Open Services Architecture
P-CSCF	Proxy-CSCF
PDF	Policy Decision Function
PDN	Packet Data Network
PDP	Packet Data Protocol e.g., IP
PEF	Policy Enforcement Function
PLMN	Public Land Mobile Network
PSI	Public Service Identity
PSTN	Public Switched Telephone Network
QoS	Quality of Service
RAB	Radio Access Bearer
RFC	Request for Comments

SBLP	Service Based Local Policy
SCS	Service Capability Server
S-CSCF	Serving-CSCF
SDP	Session Description Protocol
SGSN	Serving GPRS Support Node
SLF	Subscription Locator Function
SSF	Service Switching Function
SS7	Signalling System 7
SIM	Subscriber Identity Module
SIP	Session Initiation Protocol
SGW	Signalling Gateway
THIG	Topology Hiding Inter-network Gateway
TrGW	Translation Gateway
UE	User Equipment
UMTS	Universal Mobile Telecommunications System
URL	Universal Resource Locator
USIM	UMTS SIM

********** 2nd MODIFIED SECTION **********

5.16.2 Session-based Messaging

5.16.2.0 General

This subclause describes architectural concepts and procedures for fulfiling the requirements for Session-based Messaging described in TS 22.340 [29a].

5.16.2.1 Architectural principles

Session-based IMS messaging communications shall as much as possible use the same basic IMS session delivery mechanisms (e.g. routing, security, service control) as defined in clause 4 and 5 of this document. For session based messaging the session shall include a messaging media component, other media components may also be included.

As the messaging media component usually does not require QoS beyond best-effort, ~~it is expected that the UE will have an appropriate IP-CAN bearer available for the messaging media component prior to starting session initiation. Hence,~~ use of the preconditions mechanism as defined in RFC 3312[41] is not required for ~~S~~session based messaging establishment that only includes a messaging media component.

NOTE: Pre-conditions mechanism may still be required for session establishment with additional media components that require the establishment of additional IP-CAN bearers.

~~Authorization token based SBLP shall not be applied by the UE to IP-CAN bearers that carry the session based messaging media components.~~

Once the session containing a messaging media component is established, messages in the session are transported between the session participants as per the parameters defined in the messaging media component part of the session description (SDP).

The invited~~ing~~ UE shall host the message session (accept a connection for the message session from the other endpoint). In order to ~~offer to~~ host the message session the UE ~~first~~ needs an ~~best-effort~~ appropriate IP-CAN bearer, on which it can accept the connection for the message media component. This IP-CAN bearer may be e.g. a general purpose bearer available prior to starting the session initiation or a dedicated bearer that is established during session establishment. Messages within a message session should be transported over a connection-oriented reliable transport protocol. Message sessions may be either established end to end between two UEs or may involve one or more intermediate nodes (e.g. a chat server for multi party chat or an application server to perform per message charging).

For addressing chat-group-type session based messaging the concept of Public Service Identities is used.

Session based messaging is available for users that are registered in the IMS.

The session based messaging shall be able to provide the following functionality:

- Per-message-based charging, as well as content- and size-based charging.
- Operator-controlled policy to be set on the size and content of the messages.
- Support for a messaging media component as part of a session where other media components are also included.
- Support for messaging-only sessions.

If charging mechanisms like charging based on the message content, message type or number of sent and/or received messages (see TS 22.340 [29a]) are required, then an intermediate node (messaging AS) shall be involved, which is able to inspect the SIP signalling as well as the exchanged messages and their content. Such an intermediate node may also provide support for time- and/or volume based charging.

5.16.2.2 Procedures to enable Session based Messaging

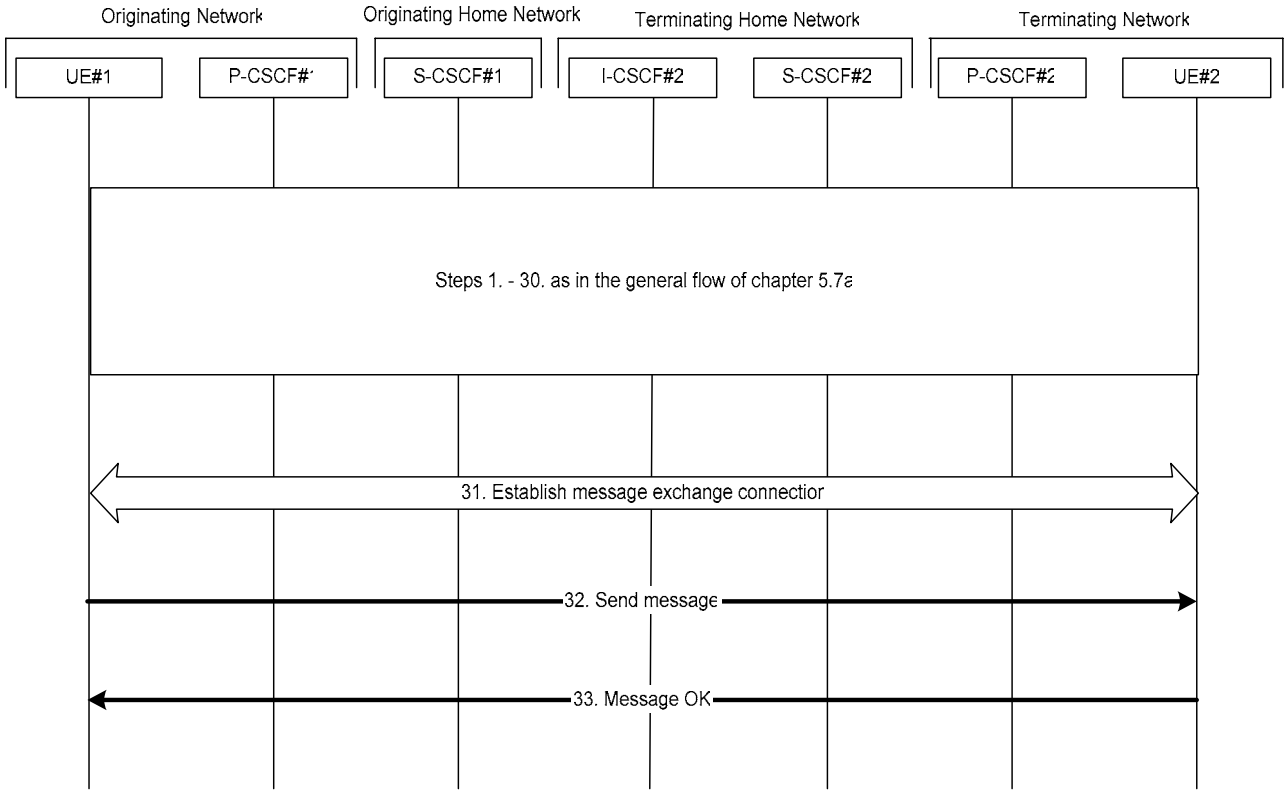
5.16.2.2.0 General

IMS users shall be able to exchange session-based messages with each other by using the procedures described in this sub-clause. These procedures shall allow the exchange of any type of multimedia content (subject to possible restrictions based on operator policy and user preferences/intent), for example but not limited to:

- Pictures, video clips, sound clips with a format defined by 3GPP TS 26.xxx [37]

5.16.2.2.1 Session based messaging procedure to registered public user identity

The following procedure shows the establishment of a message session between two registered UEs where the UEs are able to exchange messages end-to-end. The signaling flow is based on the general flow shown in chapter 5.7a of this specification.



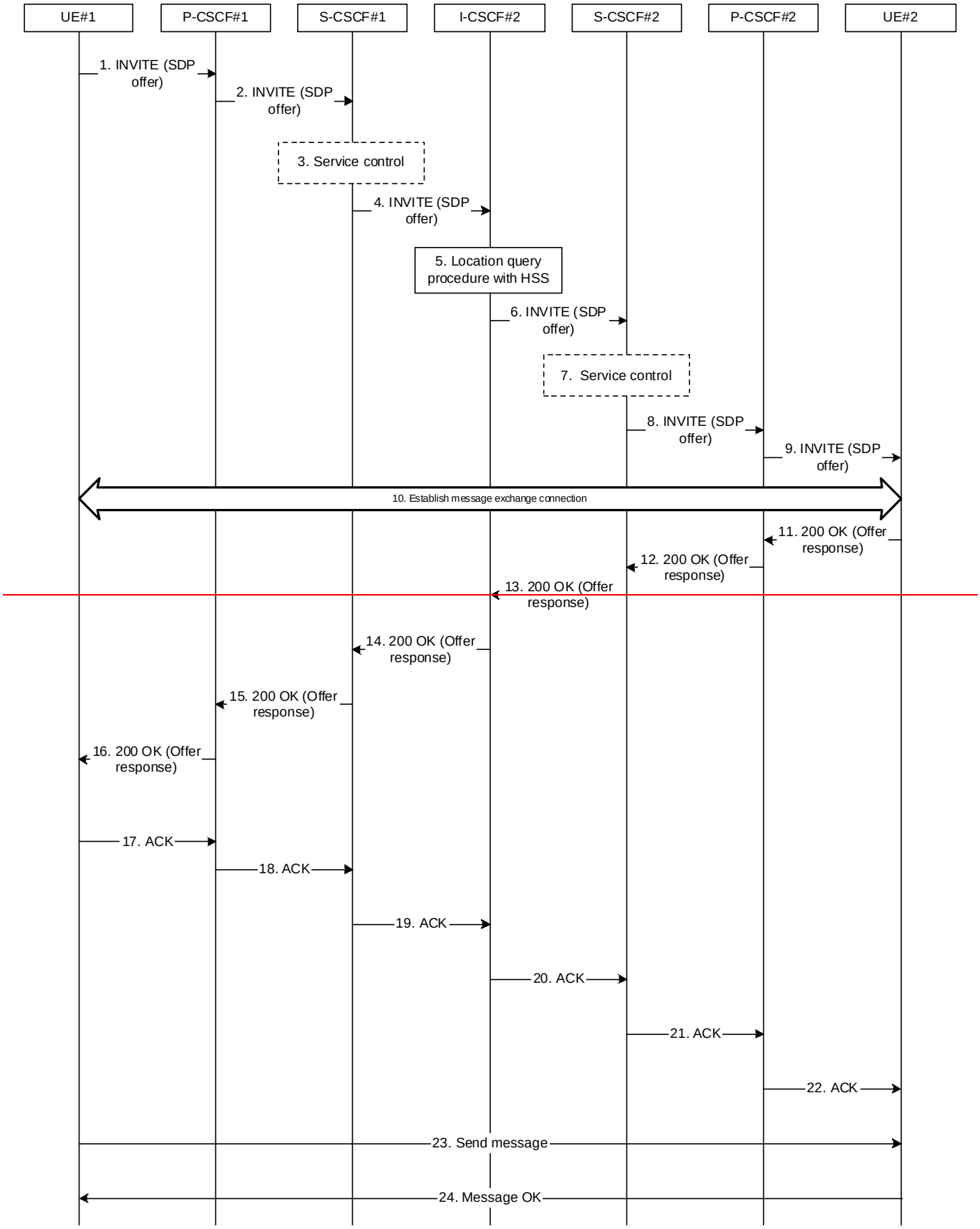


Figure 5.48a: Message session establishment

~~1. UE#1 sends the SIP INVITE request, containing an initial SDP, to the P-CSCF.~~

~~2. P-CSCF#1 forwards the INVITE request to S-CSCF#1 along the path determined upon UE#1's most recent registration procedure.~~

~~3. Based on operator policy S-CSCF#1 may reject the INVITE request with an appropriate response. S-CSCF#1 may invoke whatever service control logic is appropriate for this INVITE request. This may include routing the INVITE request to an application server, which processes the request further on.~~

~~4. S-CSCF#1 forwards INVITE request to I-CSCF#2.~~

~~5. I-CSCF#2 performs Location Query procedure with the HSS to acquire the S-CSCF address of the destination user (S-CSCF#2).~~

~~6. I-CSCF#2 forwards INVITE request to S-CSCF#2.~~

~~7. Based on operator policy S-CSCF#2 may reject the INVITE request with an appropriate response. S-CSCF#2 may invoke whatever service control logic is appropriate for this INVITE request. This may include routing the INVITE request to an application server, which processes the request further on.~~

~~8. S-CSCF#2 forwards the INVITE request to P-CSCF#2 along the path determined upon UE#2's most recent registration procedure.~~

~~9. P-CSCF#2 forwards the INVITE request to UE#2.~~

~~10. UE#2 establishes with UE#1 a reliable end-end connection for exchange of the message media.~~

~~11.ñ16. UE#2 accepts the message session with a 200 OK response. The 200 OK response traverses back to UE#1.~~

~~17-22. UE#1 acknowledges the 200 OK with an ACK which traverses back to UE#2.~~

~~23. UE#1 generates the message content and sends it to UE#2 using the established message connection.~~

~~24. UE#2 acknowledges the message with a response that indicates that the UE#2 has received the message. The response traverses back to UE#1. After receiving the message UE#2 renders the multimedia content to the user.~~

1. - 30. These steps are identical to the steps 1 to 30 in the flow of chapter 5.7a. After that the message session is established. For session based messaging the SDP offer in the first INVITE request may indicate the maximum message size UE#1 accepts to receive and the 200 OK (Offer response) to the INVITE request may indicate the maximum message size UE#2 accepts to receive.

31. UE#1 establishes a reliable end-to-end connection with UE#2 to exchange the message media.

32. UE#1 generates the message content and sends it to UE#2 using the established message connection.

33. UE#2 acknowledges the message with a response that indicates that UE#2 has received the message. The response traverses back to UE#1. After receiving the message UE#2 renders the multimedia content to the user.

Further messages may be exchanged in either direction between UE#1 and UE#2 using the established connection. The size of the messages exchanged within the session shall be within the size limits indicated by UE#1 and UE#2 respectively.

5.16.2.2.2 Session based messaging procedure using multiple UEs

Session based messaging between more than two UEs require the establishment of a session based messaging conference.

Within session based messaging conferences including multiple UEs (e.g. multiparty chat conferences) an MRFC/MRFP or an IMS AS shall be used to control the media resources.

When MRFC/MRFP are used, then conferencing principles are used to provide the chat service:

- MRFP must be able to establish message connections with all involved parties.
- MRFC/MRFP must be able to receive messages from conference participants and to distribute messages to all or some of the participants.

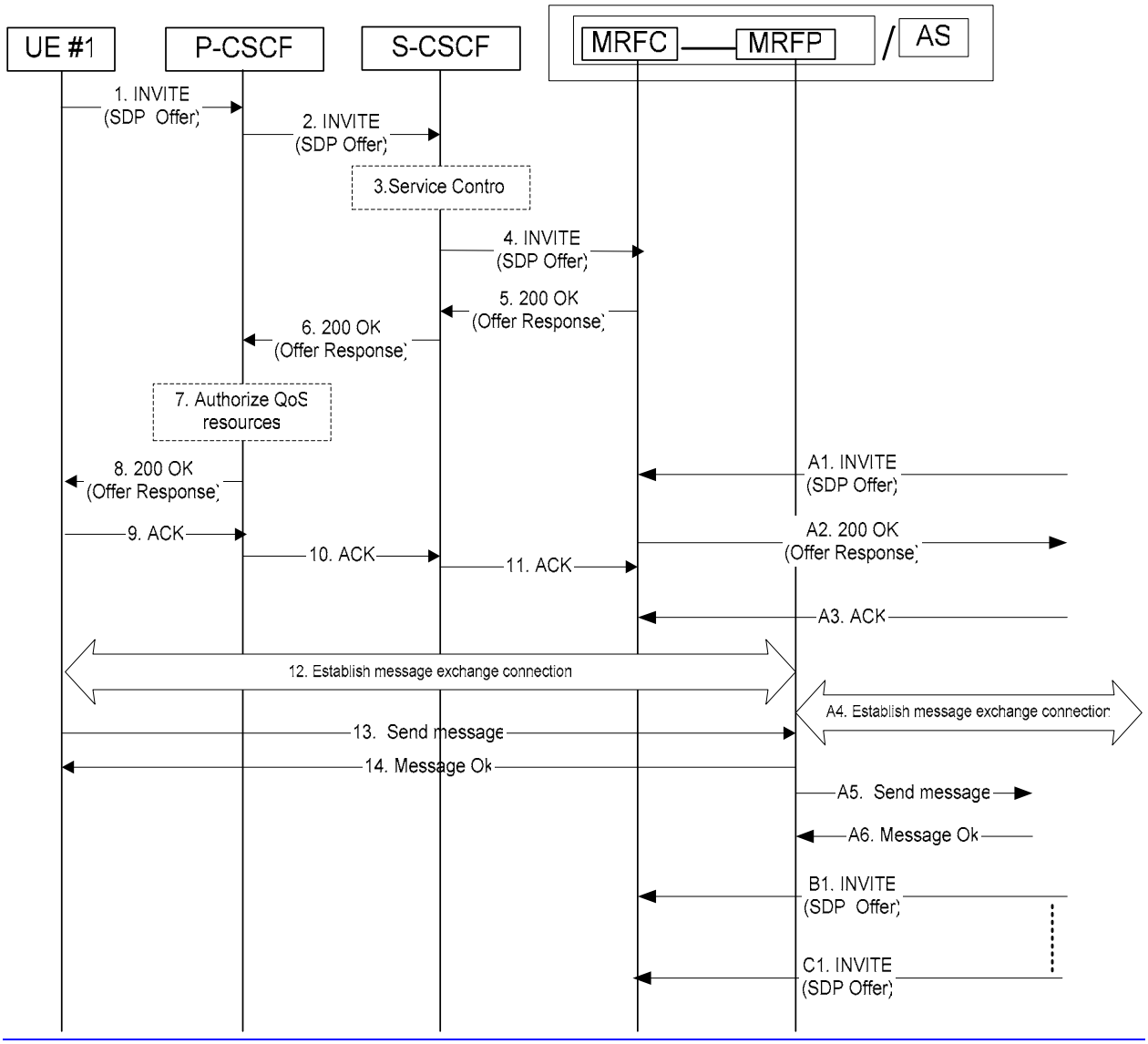
- In order to enable the UE managing information related to the session based messaging conference the MRFC may be co-located with an IMS AS.

- MRFC/MRFP roles and interactions with an AS are described in more detail in chapters 4.7 and 5.14.1 and 5.14.2.

- The interface for session based messaging between MRFC and MRFP is not standardised in this release. When an AS is used, then the IMS service control architecture is used to provide the chat service. Both signalling and user plane are then supported by the AS. For more details, see section 4.2.

The following flow shows the originating session based messaging set up using an intermediate server for a chat service. In this case the intermediate chat server is addressed by the UE#1 using a PSI. It is assumed that UE#1 is the first UE entering the chat session.

NOTE: Interactions between MRFC and MRFP are not shown in the flows below since these interactions are not standardized. An optional ringing response from MRFC/AS to the UE is not shown in the following procedure.



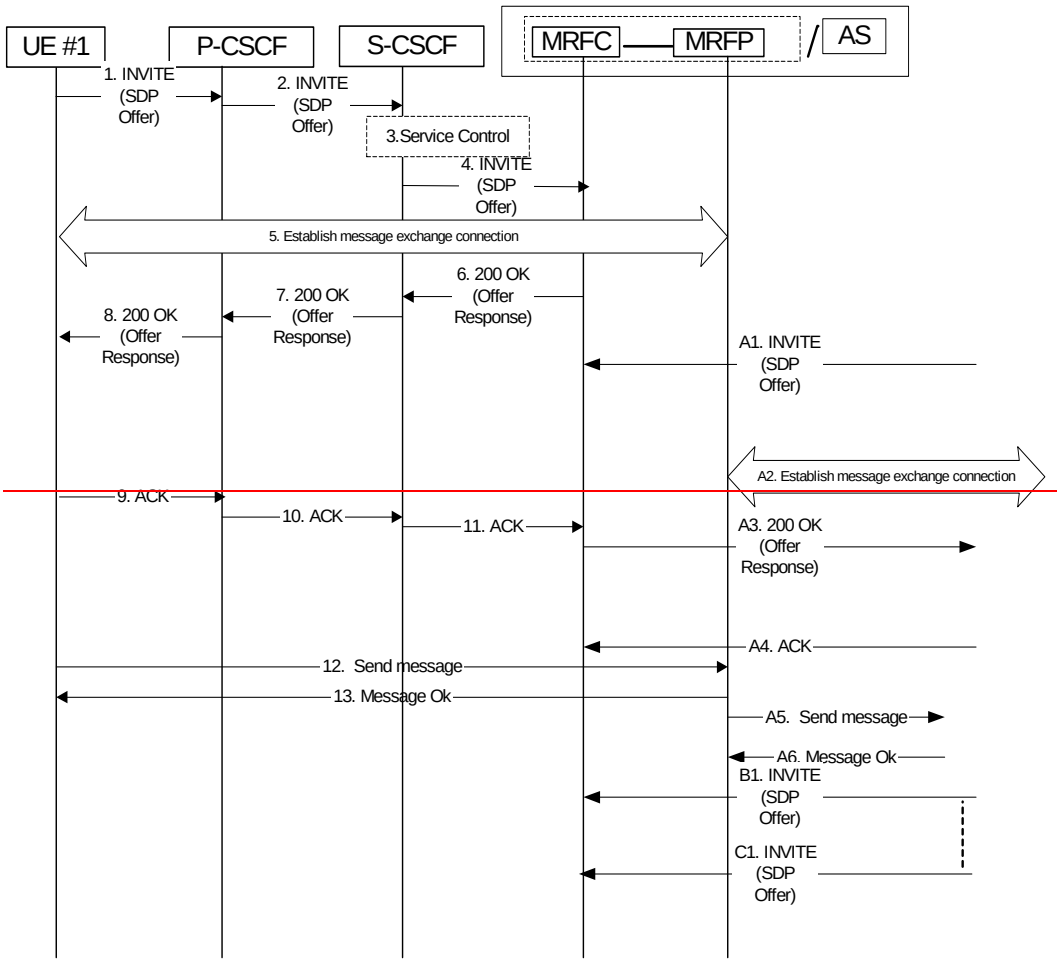


Figure 5.48b: Session based messaging using a chat server

1. UE #1 ~~generates and~~ sends ~~an~~ the SIP INVITE request addressed to a conferencing or chat PSI to the P-CSCF. The SDP offer indicates that UE#1 wants to establish a message session and contains all necessary information to do that. The SDP offer may indicate the maximum message size UE#1 accepts to receive.

2. P-CSCF forwards the INVITE request to the S-CSCF. ~~that then forwards the INVITE to the MRFC (AS).~~

3. S-CSCF~~#1~~ may invoke service control logic for UE#1.

4. S-CSCF forwards the INVITE request to the MRFC/AS.

~~5. MRFP/AS establishes reliable end ñto end connection for exchange of the message media.~~

5., 6. and ~~8~~. MRFC/AS acknowledges the INVITE with a 200 OK, which traverses back to UE#1. The 200 OK (Offer response) may indicate the maximum message size the host of the PSI accepts to receive.

7. Based on operator policy P-CSCF/PDF may authorize the resources necessary for this session. The media authorization token is generated by the PDF and sent in the 200 OK to UE#1.

9.-11. UE#1 acknowledges the establishment of the messaging session with an ACK towards MRFC/AS.

12. UE#1 establishes a reliable end-to-end connection with MRFP/AS to exchange the message media.

13~~2~~. UE#1 sends a message towards ~~the~~ MRFP/AS.

14~~3~~. MRFP/AS acknowledges the message.

A1. Another UE (UE#2) sends an INVITE request addressed to the same conferencing or chat PSI. The initial SDP indicates that the UE wants to establish a message session and contains all necessary information to do that.

~~A2. MRFP/AS initiates the establishment of a messaging path connection towards the UE#2.~~

A~~3~~2. MRFC/AS acknowledges the INVITE request with a 200 OK.

A3~~4~~. UE#2 acknowledges the ~~establishment~~ 200 OK ~~of the session~~with an ACK.

A4. UE#2 establishes a reliable end-to-end connection with MRFP/AS to exchange the message media.

A5.~~6 A7.~~ ~~–~~MRFP/AS forwards the message to all recipients, e.g. all participants in the chat room.

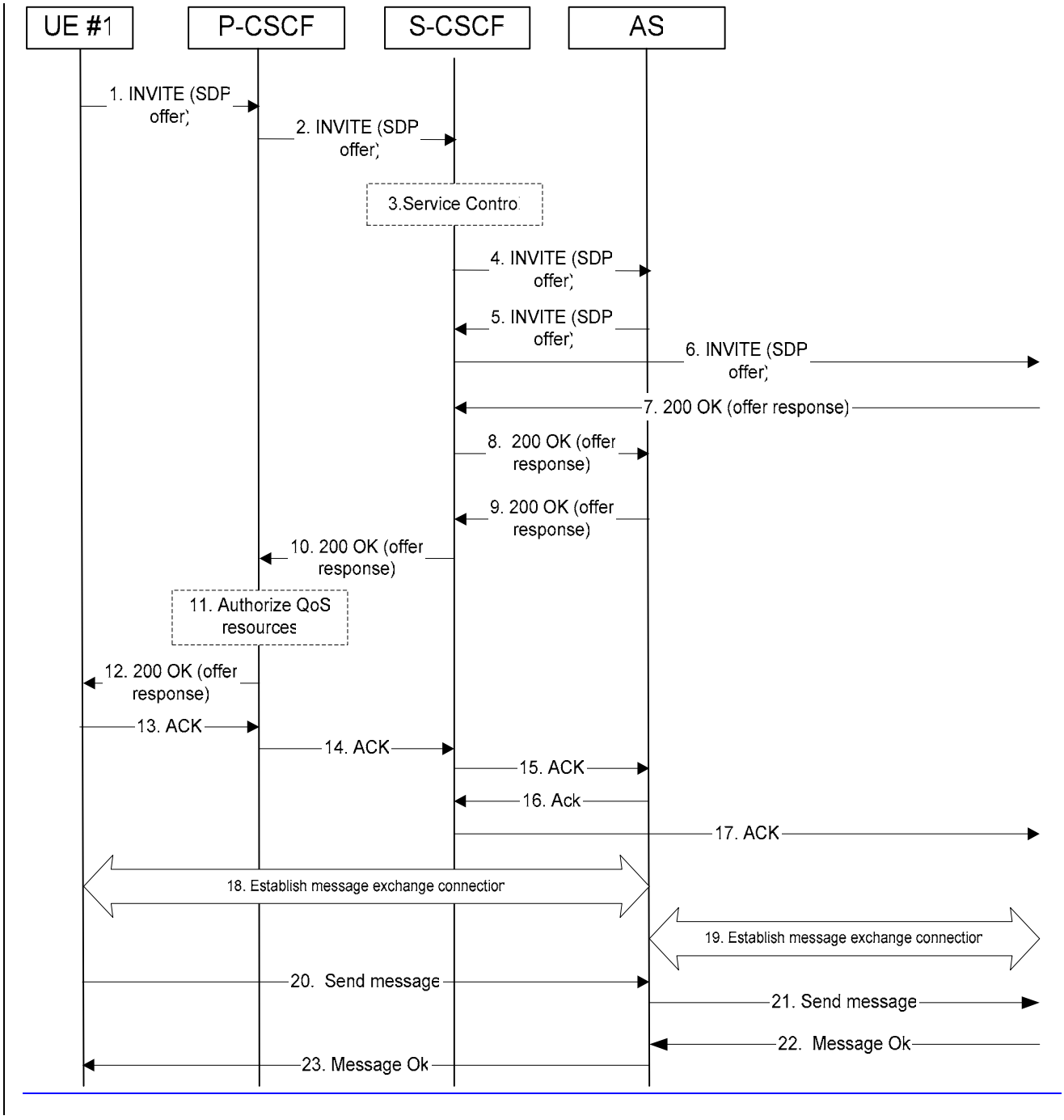
A6. The recipients acknowledge the message towards MRFP/AS.

B1.~~-~~ and C1. Further INVITE requests ~~(i.e.~~ from new possible participants ~~to the session)~~ may arrive at any time.

Further messages may be exchanged in either direction between the participating UEs using the established connection via the MRFC/MRFP or AS. The size of the messages exchanged within the session shall be within the size limits indicated by UE#1 and the host of the PSI respectively.

5.16.2.2.3 Session based messaging procedure with an intermediate node

The following procedure shows the originating session based messaging involving an intermediate node. An optional ringing response from AS to the UE or vice versa is not shown in the following procedure.


UE #1
P-CSCF
S-CSCF
AS
1. INVITE (SDP offer)
2. INVITE (SDP offer)
3.Service Contro
4. INVITE (SDP offer)
5. INVITE (SDP offer)
6. INVITE (SDP offer)
7. 200 OK (offer response)
8. 200 OK (offer response)
9. 200 OK (offer response)
10. 200 OK (offer response)
11. Authorize QoS resources
12. 200 OK (offer response)
13. ACK
14. ACK
15. ACK
16. Ack
17. ACK
18. Establish message exchange connectior
19. Establish message exchange connectior
20. Send message
21. Send message
22. Message Ok
23. Message Ok

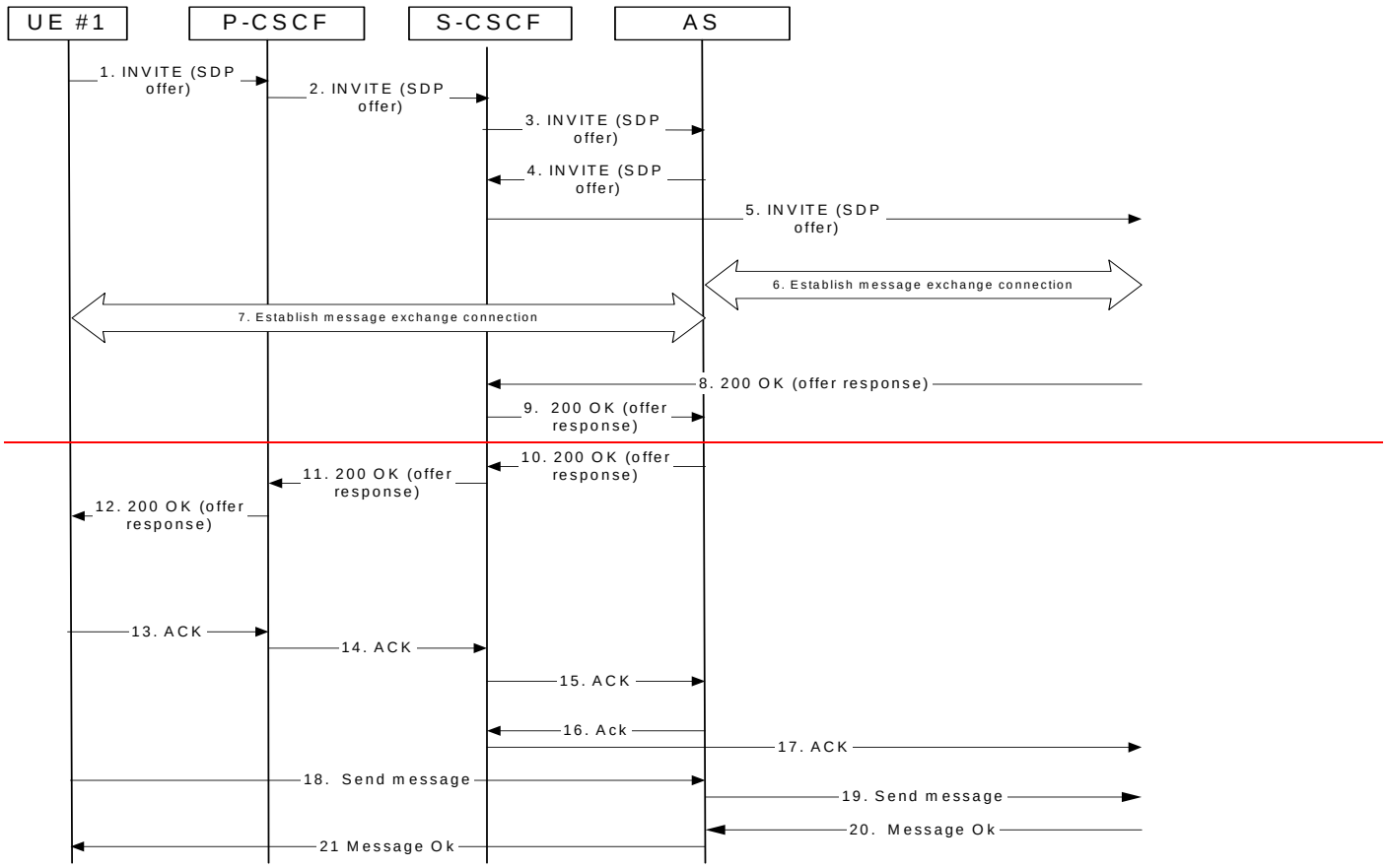


Figure 5.48c: Session based messaging with an intermediate node

1. UE#1 sends the SIP INVITE request addressed to UE#2, containing an initial SDP, to the P-CSCF. The SDP offer may indicate the maximum message size UE#1 accepts to receive.

2. The P-CSCF~~#1~~ forwards the INVITE request to the S-CSCF along the path determined upon UE#1's most recent registration procedure.

3. Based on operator policy the S-CSCF may reject the INVITE request with an appropriate response. S-CSCF may invoke whatever service control logic is appropriate for this INVITE request. In this case the Filter Criteria trigger the INVITE request to be routed to an application server that acts as an intermediate node for the message session.

4. The S-CSCF forwards the INVITE request to the AS. The AS may modify the content~~s~~ of the SDP (such as IP address/port numbers). Based on operator policy the AS may either reject the session set-up or decrease the maximum message size indication.

5. The AS sends the INVITE request to the S-CSCF.

6~~5~~. The S-CSCF forwards the INVITE request to the destination network. The destination network will perform the terminating procedure.

~~6. The destination UE or AS in the terminating network establishes with the AS a reliable end-end connection for exchange of the message media.~~

~~7. The AS establishes with UE#1 a reliable end-end connection for exchange of the message media.~~

7.~~8.~~ ñ 8.~~9.~~ The UE or AS in the terminating network accepts the ~~message session~~INVITE request with a 200 OK response. The 200 OK response is forwarded ~~to the AS~~ by the S-CSCF to the AS. The 200 OK (Offer response) may indicate the maximum message size UE#2 accepts to receive, possibly decreased by the AS.

9., 10. ~~ñ~~and 12. The AS accepts the message session with a 200 OK response. The 200 OK response traverses back to UE#1.

11. Based on operator policy P-CSCF/PDF may authorize the resources necessary for this session. The media authorization token is generated by the PDF and sent in the 200 OK to UE#1.

13. -15. UE#1 acknowledges the 200 OK with an ACK, which traverses back to the AS.

16. - 17. The AS acknowledges the 200 OK response from the terminating network ~~by~~with an ACK, ~~from UE#1~~ which traverses back to the UE or AS in the terminating network via the S-CSCF. Based on AS implementation sending of the ACK may happen sometimes after step 8.

18. UE#1 establishes a reliable end-to-end connection with the AS to exchange the message media.

19. The AS establishes a reliable end-to-end connection with the UE or AS in the terminating network to exchange the message media.

20~~18~~. UE#1 generates the message content and sends it to the AS using the established message connection.

21~~19~~. The AS forwards the message content ~~and~~ using the established message connection with the terminating network.

22~~0~~. The UE or AS in the terminating network acknowledges the message with a response that indicates ~~that~~ the reception of the message. The response traverses back to the AS.

23~~1~~. The AS forwards the message response ~~that~~ back to UE#1.

Further messages may be exchanged in either direction between UE#1 and the terminating network using the established message connection via the AS. The size of the messages exchanged within the session shall be within the size limits indicated by UE#1 and UE#2 respectively, possibly decreased by the AS.

5.16.2.2.4 Session based messaging release procedure

The following procedure shows the release of a message session, which was established between two UEs. It is assumed that UE#1 is the session host.

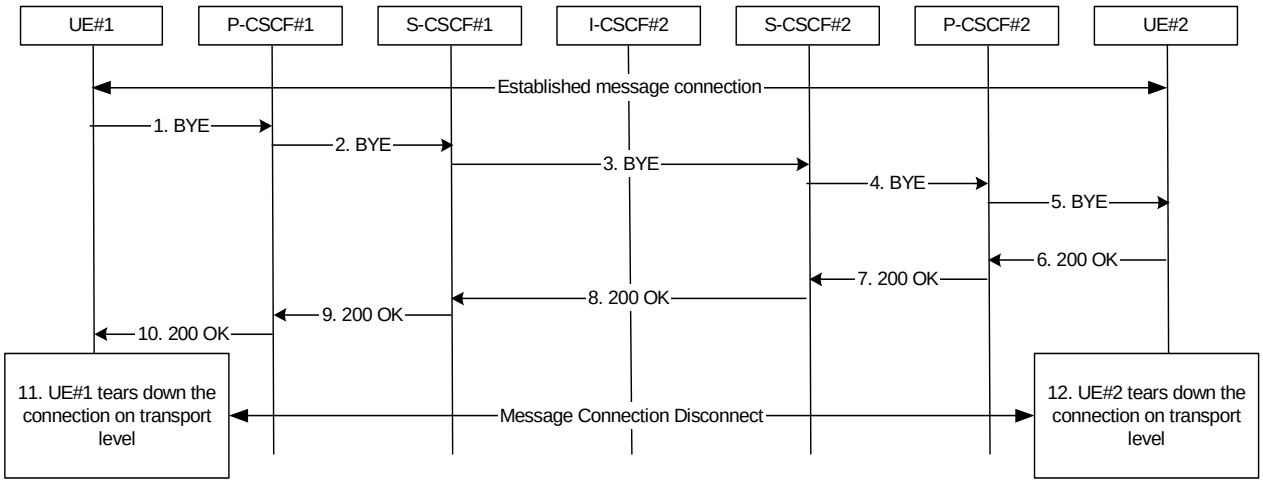


Figure 5.48d: Message session release procedure

1.ñ5. UE#1 indicates its intent to terminate the message session by sending a BYE request to UE#2.

6.ñ10. UE#2 agrees to end the session and acknowledges the BYE request by sending a 200 OK to UE#1, which traverses back the signalling path.

11. Session host UE#1 shall tear down the message connection on the transport level and destroy local state for the message session. It is assumed that UE#1 uses the IP-CAN bearer for some other services, hence it keeps the bearer activated.

12. UE#2 shall tear down the message connection on the transport level and destroy local state for the message session. It is assumed that UE#2 uses the IP-CAN bearer for some other services~~;~~, hence it keeps the bearer activated.

5.16.2.2.5 Session based messaging release procedure with an intermediate node

The following procedure shows the release of a message session, which was established between two UEs via an intermediate node. It is assumed that UE#1 is the session host.

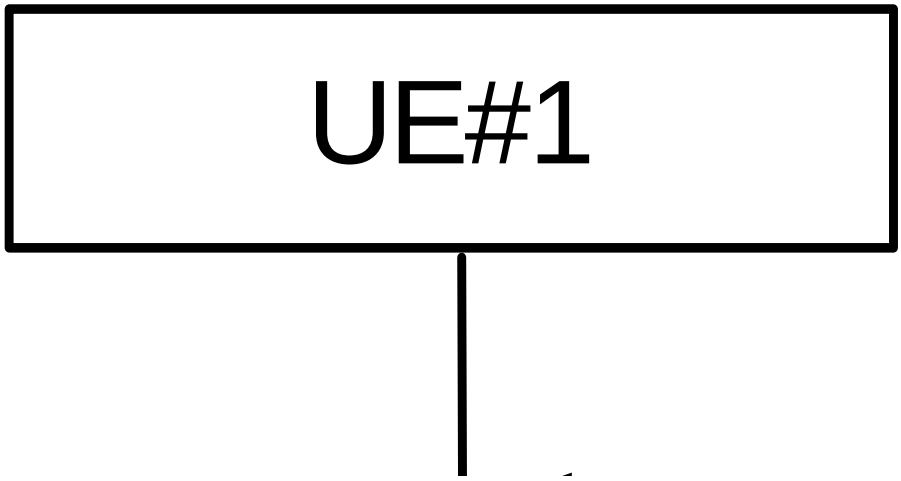


Figure 5.48e: Message session release procedure with intermediate node

1.ñ3. UE#1 indicates its intent to terminate the message session by sending a BYE request to UE#2, via the AS.

4. The AS forwards the BYE request to the UE#2.

5.ñ7. The AS may now either agree to end the session and acknowledges the BYE request by sending a 200 OK to UE#1 directly, which traverses back the signalling path, or waits until ~~the~~ UE#2 has agreed to end the session. In the example above the AS immediately accepts to end the session, the decision whether to accept a request to end the session from UE#1 without waiting for the response from UE#2 can be based upon the AS operator policy.

8. Session host UE#1 shall tear down the message connection on the transport level and destroy local state for the message session. It is assumed that UE#2 uses the IP-CAN bearer for some other services~~;~~, hence it keeps the bearer activated. Any further data that might still be sent by UE#2 will not reach UE#1 in this scenario.

9. The AS receives the acknowledgement~~,~~ from UE#2~~,~~ to end the session.

10. The AS shall tear down the message connection with UE#2 on the transport level and destroy local state for the message session.

3GPP TSG-SA WG2 Meeting #41 **Tdoc ⌘S2-042753**
Sophia Antipolis, France. 16th to 20th August 2004.

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.228** **CR** **444** ⌘ **rev** **-** ⌘ Current version: **6.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☒

Title:	⌘	Correction on precondition usage
Source:	⌘	SA2 (Siemens)
Work item code:	⌘	IMS2
Date:	⌘	09/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	The current text suggests that an SIP endpoint has knowledge whether resource reservation is required by its peer, and decides upon these criteria whether to use preconditions. However, an SIP endpoint may not know the peer a request will be routed to, and will probably not know the resouce reservation requirements of its peer. Furthermore, this contradicts the usge of the segmented status type of the preconditions, as described in RFC 3312.
Summary of change:	⌘	Each endpoint may immediately indicate that its local preconditions are fulfilled if no resource reservation is required. The resource reservation requirements of the peer have no influence on the local precondition usage.
Consequences if not approved:	⌘	Misleading stage 2 specification which cannot be implemented and is in contradiction to stage 3 and RFC 3312.

Clauses affected:	⌘	5.4.8

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	The same error already exists in the Rel-5 version of the specification.

5.4.8 QoS-Assured Preconditions

This section contains concepts for the relation between the resource reservation procedure and the procedure for end-to-end sessions.
A precondition is a set of constraints about the session, which are introduced during the session initiation. The recipient of the session generates an answer, but does not alert the user or otherwise proceed with session establishment until the preconditions are met. This can be known through a local event (such as a confirmation of a resource reservation), or through a new set of constraints sent by the caller.

A ìQoS-Assuredî session will not complete until required resources have been allocated to the session. In a QoS-Assured session, the UE must succeed in establishing the QoS bearer for the media stream according to the QoS preconditions defined at the session level before it may indicate a successful response to complete the session and alert the other end point. The principles for when a UE shall regard QoS preconditions to be met are:

- A minimum requirement to meet the QoS preconditions defined for a media stream in a certain direction, is that an appropriate IP-CAN bearer established at the local access for that direction.

- Segmented resource reservation is performed since the end points are responsible to make access network resource reservations via local mechanisms.

- The end points shall offer the resources it may want to support for the session and negotiate to an agreed set. Multiple negotiation steps may be needed in order to agree on a set of media for the session. The final agreed set is then updated between the end points.

- The action to take in case a UE fails to fulfil the pre-conditions (e.g. failure in establishment of an RSVP session) depends on the reason for failure. If the reason is lack of resources in the network (e.g. an admission control function in the network rejects the request for resources), the UE shall fail to complete the session. For other reasons (e.g. lack of RSVP host or proxy along the path) the action to take is local decision within the UE. It may for example 1) choose to fail to complete the session, 2) attempt to complete the session by no longer requiring some of the additional actions.

The following cases exist in the context of using ìQoS-Assuredî preconditions for IMS:

a. The IMS session requires the reservation of additional bearer resources, and the UE requires confirmation from the other endpoint of the fulfilment of the pre-conditions related to this resource reservation. ~~Alternatively, the UE may not require explicit confirmation from the other SIP endpoint when the pre-conditions are fulfilled~~An endpoint may not require the reservation of bearer resources, and may therefore immediately indicate the local fulfilment of the pre-conditions. One example of such SIP endpoint is the MGCF used for PSTN interworking. In these cases, one or both of the reservation confirmation messages may not be sent.

b. The IMS session does not require the reservation of additional bearer resources, and both endpoints indicate in their initial session setup message that the pre-conditions are fulfilled.

c. The IMS session does not require the reservation of additional bearer resources, and the endpoints do not use the mechanism to indicate ìQoS-Assuredî pre-conditions.

Note: The flows of sections 5.5, 5.6 and 5.7 depict the case where both UEs require confirmation from each other of the fulfilment of the pre-conditions.

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CR-Form-v7

CHANGE REQUEST

⌘ **23.228** **CR** **445** ⌘ **rev** **1** ⌘ Current version: **6.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network [X]

Title:	⌘	Network control of PDP Context establishment for SBLP
Source:	⌘	SA2 (Nortel Networks)
Work item code:	⌘	IMS2
Date:	⌘	19/08/2004
Category:	⌘	**C**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Release 5 specifications require the UE to establish one or more new PDP Contexts for every IMS Session if SBLP is in use. It is proposed to relax this requirement, in order to use a general-purpose PDP Context for non-real-time IMS media components. Such a context may already be available when the IMS session is started. If Flow Based Charging is used, then differential IMS charging can be applied to the IMS Flows. However, if Flow Based Charging is not used, it must still be possible for the network to instruct the UE to establish separate PDP Contexts for the IMS media flows in order that SBLP and differential charging can be applied. This can be achieved using the already specified mechanism for the P-CSCF to control the mapping of Media Components to PDP Contexts.
Summary of change:	⌘	Clarification that media components that are not subject to explicit indication from the P-CSCF regarding mapping to PDP Contexts can be mapped in any manner chosen by the UE.
Consequences if not approved:	⌘	Inefficient and unnecessary use of multiple PDP Contexts for non-real-time services such as Session Based Instant Messaging.

Clauses affected:	⌘	E.2.2.1			
Other specs affected:	⌘	**Y** [X] **N** [ ]	Other core specifications	⌘	29.208, 29.209
		Y [ ] **N** [X]	Test specifications		
		Y [ ] **N** [X]	O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

********** Start of Changes **********

E.2.2.1 Relation of IMS media components and PDP contexts carrying IMS media

The relation between IMS media components and PDP contexts carrying IMS media may be controlled by the IMS network on media component level in the following way:

The P-CSCF indicates to the UE that a separate PDP Context is required for each IMS media component indicated. The P-CSCF shall apply and maintain the same policy to separate specific media components into separate PDP Contexts during a session. If a media component is added during the session, the new decision on the separation for the media components shall not contradict any former decisions. For mobile originating sessions the P-CSCF shall apply the policy to the initial offer to ensure identical decisions for different answers, e.g. a media component not required to use a separate PDP Context initially, shall not later require a separate PDP Context (e.g. in case of subsequent answers received due to forking).

- If the UE receives such an indication for a media component, it shall open a separate PDP Context for this media component.

- If the UE receives no such indication for a media component, the UE makes the decision whether to open a separate PDP Context, ~~or~~ modify an existing PDP Context, or use an existing PDP Context without modification for this media component. ~~In this case~~If an existing PDP Context is used, the UE may also decide to carry media components from different IMS sessions in the same PDP context, as long as none of the bundled media components is required to be kept separate. If an existing PDP Context is used without modification, the PDP Context will not be subject to Service Based Local Policy. If Service Based Local Policy is required, the P-CSCF must therefore include the indication requiring a new PDP Context to be established.

- The criteria and information for setting this indication is determined by local policy in the network where the P-CSCF is located.

  Note: the Flow-based bearer charging capabilities of the P-CSCF's network, and the capabilities of deployed UEs should be taken into account when defining such policies in the visited IMS network operator's domain.

- The IMS network shall have the capability to transfer the media component level indication described above to the UE. It shall be possible to transfer this media component level indication in SIP/SDP signaling upon session initiation and addition of media component(s) to active IMS sessions.

All associated IP flows (such as e.g. RTP / RTCP flows) used by the UE to support a single media component are assumed to be carried within the same PDP context.

********** End of Changes **********