

Source: SA1
Title: CRs to 22.228 on IMS (Rel-6)
Document for: Approval
Agenda Item: 7.1.3

CR-Form-v7
CHANGE REQUEST
⌘ 22.228 CR 019 ⌘ rev - ⌘ Current version: 6.2.0 ⌘

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

Title:	⌘ Multiple UEs in IMS service subscription		
Source:	⌘ TSG-SA WG 1		
Work item code:	⌘ IMS	Date:	⌘ 08/04/2003
Category:	⌘ B	Release:	⌘ Rel-6
	Use <u>one</u> 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 <u>one</u> 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:	⌘ In the future, it is very likely that a subscriber will own more than one terminal equipment capable of utilizing various IMS services. To accommodate this requirement, the IMS subscription should support the possibility to attach multiple UEs to a single service subscription.
Summary of change:	⌘ Requirement added to define Multiple UEs for IMS service subscription.
Consequences if not approved:	⌘ Subscriber cannot utilize his/her IMS subscription with full potential.

Clauses affected:	⌘ 5, 7.3, 7.4						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;">X</td> <td style="padding: 2px 5px;"></td> </tr> </table>	Y	N	X		Other core specifications	⌘ 23.228
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	X						
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	X						
Other comments:	⌘						

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

***** FIRST MODIFIED SECTION *****

5 High level requirements

Support for IP multimedia sessions shall be provided in a flexible manner to allow operators to differentiate their services in the market place as well customise them to meet specific user needs. This shall be provided by the use of service capabilities in both networks and terminals, for the creation and support of IP multimedia applications.

The following high level requirements shall be supported for IP multimedia applications:-

- Negotiable QoS for IP multimedia sessions both at the time of a session establishment as well as during the session by the operator and the user
- Negotiable QoS for individual media components in an IP multimedia session both at the time of establishing a media component as well as when the media component is active by the operator and the user
- End to end QoS for voice at least as good as that achieved by the circuit-switched (e.g. AMR codec based) wireless systems shall be enabled
- Support of roaming, negotiation between operators for QoS and for Service Capabilities is required. Such negotiation should be automated rather than manual, e.g., when another operator adds new service capabilities.
- Possibility for a network operator to implement IP Policy Control for IP multimedia applications.
- IP multimedia sessions shall be able to support a variety of different media types. A set of media types shall be identified to ensure interoperability (e.g. default codec selection and header compression).
- Within each IP multimedia session, one or more IP multimedia applications shall be supported
- The possibility for IP multimedia applications to be provided without a reduction in privacy, security, or authentication compared to corresponding GPRS and circuit switched services.
- Roaming shall be supported enabling users to access IP multimedia services provisioned by the:-
 - Home Environment
 - Serving Network
- Access independence shall be supported. It is desirable that an operator should be able to offer services to their subscribers regardless of how they obtain an IP connection (e.g. GPRS, fixed lines, LAN).
- It shall be possible to support session-related internet applications that have been developed outside the 3GPP community.
- It shall be possible to limit the view of an operator's network topology to authorised entities.
- [It shall be possible to support the multiple UEs associated with a single IMS service subscription. It shall be possible to share one Public User Identity between multiple UEs. It shall also be possible to identify the individual UEs with separate Public User Identities.](#)

In R5 the ISIM application shall require the presence of a USIM application on the same UICC. This shall not preclude the possibility in later releases of having an ISIM in a UICC that does not contain a USIM.

***** SECOND MODIFIED SECTION *****

7 User service requirements

IP multimedia sessions provide the ability for users to invoke IP multimedia applications to send and receive (where applicable) voice and data communications, even when roaming. This includes interworking with existing voice and data networks for both fixed (e.g. PSTN, ISDN, internet etc.) and mobile users.

The IM CN subsystem shall support interworking with existing fixed and mobile voice and IP data networks, including PSTN, ISDN, Mobile and Internet.

It shall be possible to have basic voice calls between IMS users and users in CS domain/PSTN-style networks. When an IM session originates or terminates in a CS telephony call, the experience of the CS telephony network user should not substantially differ from that of a call between two CS telephony network users in terms of aspects such as the delay to set-up communications and the total permissible delay in transporting speech between the end users. The IM CN subsystem does not necessarily have to support all services offered by the CS telephony network.

Visited network provided services give the opportunity for the visited network to offer services of a local nature to the visiting user and gain additional revenue from their usage by inbound roamers.

7.1 Identifying IP multimedia application subscriptions

There is no requirement to support standardised subscription mechanisms for IP multimedia applications.

IP multimedia applications may require to be provisioned and configured by users and operators. Since the source and variety of IP multimedia applications are not standardised, the specific feature codes to provision, enable and configure IP multimedia applications cannot be standardised either. Thus there are no requirements on the network capabilities to support provisioning and configuration for specific IP multimedia applications.

Note: The standardised service capabilities, personalised Internet web pages and evolving IP mechanisms may be used to allow user (self) provisioning, configuration and enabling of IP multimedia applications.

7.2 Access to the IM CN subsystem

7.2.1 Access control

The IM CN subsystem shall be able to verify at any time that the user is entitled to use the resources of the IM CN subsystem.

7.3 Capability negotiation

The IP multimedia applications shall be able to negotiate their capabilities to identify and select the available media components, QoS etc. of IP multimedia sessions. It shall be possible for the capability negotiation to take place on invocation, acceptance and during an IP multimedia session (e.g. following a change in UE capabilities, change in media types etc.). Capability negotiation may be initiated by the user, operator or an application on behalf of them.

In order to support the user's preferences for IP multimedia applications, the capability negotiation shall take into account the information in the user profile whenever applicable. [This includes the capability to route the IP multimedia session to a specific UE, when multiple UEs share the same IMS service subscription.](#)

7.4 Redirecting of IP Multimedia sessions

It shall be possible for the user or the network to identify an alternative destination for an IP multimedia session or individual media of an IP multimedia session. Redirection to alternative destinations may be initiated by the sending party, receiving party or the network on their behalf. It shall be possible for redirection to be initiated at various stages of an IP Multimedia session. For example:

- Prior to the set up of an IP Multimedia session
- During the initial request for an IP Multimedia session

- During the establishment of an IP Multimedia session
- While the IP Multimedia session is ongoing

Redirection can be applied for all Multimedia sessions unconditionally or it can be caused by any of a set list of events or conditions. Typical causes could be:

- Identity of the caller
- Location or presence of the calling or called party
- If the called party is already in a session
- If the called party is unreachable or unavailable in some other way
- If the called party does not respond
- After a specified alerting interval
- User's preference on routing for specific IP Multimedia session based on the capabilities of multiple UEs sharing the same IMS service subscription.

There are other causes that could be applied that do not require standardisation (e.g. time of day).

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⌘ 22.228 CR 020 ⌘ rev - ⌘ Current version: 6.2.0 ⌘

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

Title:	⌘ Addition of requirements to IMS to enable conference-like services		
Source:	⌘ SA1 IMS SWG		
Work item code:	⌘ IMS2 Date: ⌘ 24/03/2003		
Category:	⌘ B Release: ⌘ Rel-6		
	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <i>Use one of the following categories:</i> 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. </td> <td style="width: 50%; vertical-align: top;"> <i>Use one of the following releases:</i> 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) </td> </tr> </table>	<i>Use one of the following categories:</i> 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 .	<i>Use one of the following releases:</i> 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)
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Reason for change:	⌘ In order to enable various kinds of services, that involve-conference like functions, the IMS needs to be able to support a minimum set of user requirements for conference handling. While the appendix of 22.228 mentions multiple examples of conference-like services the basic user requirements are still missing in the document.
Summary of change:	⌘ The definition of "conference" and "focus of a conference" is introduced. In a new sub-chapter 7.10 (Handling of conferences) user requirements for the handling of conferences are stated.
Consequences if not approved:	⌘ Missing support of IMS for conference-like services.

Clauses affected:	⌘ 3.1, new sub-chapter 7.10							
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;"></td> </tr> </table>	Y	N	Y				Other core specifications ⌘ 23.228 Test specifications O&M Specifications
	Y	N						
	Y							
Other comments:	⌘							

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3.1 Definitions

For the purposes of this TS the following definitions apply:

3GPP Generic User Profile: 3GPP Generic User Profile (GUP) is the collection of user related data which affects the way in which an individual user experiences services and which may be accessed in a standardised manner.

Basic Voice Call: A Basic Voice Call (BVC) is a call that conveys only a speech component. The definition of the BVC pertains only to the boundary between the IMS and the CS/PSTN. If more than one IMS party is involved in a communication with a PSTN party/parties, the communication between the IMS parties shall not be adversely impacted by the presence of a PSTN party. Please note that this boundary may still be subject to regulatory requirements associated with communications with the PSTN including, but not limited to, lawful interception of voice calls and number portability.

Conference: [An IP multimedia session with two or more participants. Each conference has a "conference focus". A conference can be uniquely identified by a user. An example for a conference could be a multimedia game, in which the conference focus is located in a game server.](#)

Conference Focus: [The conference focus is an entity which has abilities to host conferences including their creation, maintenance, and manipulation of the media. A conference focus implements the conference policy \(e.g. rules for talk burst control, assign priorities and participant's rights\).](#)

IM CN subsystem: (IP Multimedia CN subsystem) comprises of all CN elements for the provision of IP multimedia applications over IP multimedia sessions

IP multimedia application: an application that handles one or more media simultaneously such as speech, audio, video and data (e.g. chat text, shared whiteboard) in a synchronised way from the user's point of view. A multimedia application may involve multiple parties, multiple connections, and the addition or deletion of resources within a single IP multimedia session. A user may invoke concurrent IP multimedia applications in an IP multimedia session.

IP multimedia service: an IP multimedia service is the user experience provided by one or more IP multimedia applications.

IP multimedia session: an IP multimedia session is a set of multimedia senders and receivers and the data streams flowing from senders to receivers. IP multimedia sessions are supported by the IP multimedia CN Subsystem and are enabled by IP connectivity bearers (e.g. GPRS as a bearer). A user may invoke concurrent IP multimedia sessions.

Local service: See definition in [14].

Next modified section

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- If the called party does not respond

- After a specified alerting interval

There are other causes that could be applied that do not require standardisation (e.g. time of day).

7.5 Invoking an IP multimedia session

The user shall be able to invoke one or more IP multimedia sessions. The user shall also be able to activate concurrent IP multimedia applications within each IP multimedia session.

7.5.1 Identification of entities

Both telecom and internet numbering and addressing schemes shall be supported as public identities. IP multimedia communication establishment (both mobile originating and terminating) depending on originator shall be able to be based on E.164/TEL URL (e.g. tel:+4412345678) [15] or SIP URL (sip:my.name@company.org) [9]. It shall be possible to assign several public identities for one subscription.

Public identities shall be administered by the network operator and shall not be changeable by the user.

It shall be possible for the network operator to guarantee the authenticity of a public identity presented for an incoming call to a user where the call is wholly within that operator's network (i.e. originating and terminating parties are subscribers to, and resident in, a single PLMN). This is equivalent to the situation for CLIP with today's telephony networks.

It shall be possible for the network operator to use

- the same E.164 number for IP multimedia sessions and CS speech telephony (TS11) [1]
- a different E.164 number if desired for IP multimedia sessions

This allows customers who originally had only an E164 MSISDN to retain the same number for receiving communications in the IM domain and also in the CS domain when outside IM coverage.

7.5.2 Negotiation at IM session invocation

It shall be possible for the capability negotiation to take place at the time of the IP multimedia session invocation. Refer to subclause 7.3 for further details on capability negotiation on IP multimedia session invocation.

7.5.3 Emergency communications

See [5] for further details.

7.6 Handling of an incoming session (by the terminating entity)

7.6.1 Presentation of session originator identity

It shall be possible to present the identity of the session originator (see 7.5.1) subject to it not being suppressed by the session originator.

7.6.2 Negotiation of an incoming session

Interaction with the user profile shall be supported, and additionally direct interaction with the user may be required. Refer to subclause 7.3 for further details on capability negotiation on an incoming IP multimedia session.

7.6.3 Accepting or rejecting an incoming session

It shall be possible for the user to either accept or reject an incoming IP multimedia session. Further, it shall also be possible for the user to accept only a subset of the offered media, not have any of the media offered to him at all etc.

7.7 Handling of an ongoing session

7.7.1 User modification of media in an ongoing session

The user shall be able to negotiate the addition or deletion of media components of IP multimedia applications during an IP multimedia session. Refer to subclause 7.3 for further details on capability negotiation during an IP multimedia session.

7.7.2 Suspending and resuming of an ongoing session

It shall be possible for the user to suspend an IP multimedia session, and resume that IP multimedia session at a later time.

7.7.3 Presentation of identity of connected-to party of a session

It shall be possible to present to the originator of a session the identity of the party to which she is connected (see 7.5.1). However, the connected-to party shall be able to request that her identity is not revealed to the originator of the session.

7.8 Ending a session

The user shall be able to end an IP multimedia session at any time during the session.

7.9 Local services

When users roam outside the Home Environment, as well as being able to access VHE features with a similar look and feel to the home network, they should also be able to access services of a local nature offered to them by the visited network.

Such services offered by the visited network could include, for example:

- Access to local numbering plans;
- Address translation;
- Services dependent on the geographical location of the user, e.g. traffic information.

Visited network offered services would probably be non-subscription services, although they may be chargeable, with charges collected via the Home Environment according to the usual arrangements for roaming.

7.10 Handling of conferences

Conferences allow users participating in the conference to communicate with all other participants simultaneously. A conference has a "conference focus", that controls the conference.

Note that a user, participating in the conference, depending on the conference policy may be allowed to communicate with the focus (e.g. to request invitation of another user into the conference).

The following minimum user requirements for conferences exist:

- A user shall be able to request the creation of a conference.
- A user shall be able to request to join an existing conference.
- A user participating in the conference shall be able to request modification of the conference (e.g. add/remove media, manipulation of data streams, add/remove participants) depending on the conference policy.
- A user participating in the conference shall be able to request termination of the conference, depending on the conference policy.

- A user participating in the conference shall be able to receive information from the conference focus (e.g. participants in conference, participants joining or leaving the conference)