
Source: SA1
Title: CRs to 22.950 on Priority Feasibility Study (Rel-6)
Document for: Approval
Agenda Item: 7.1.3

Meeting	SA Doc	TS No.	CR No	Rev	Rel	Cat	Subject	Vers. Current	Vers New	SA1 Doc
SP-24	SP-040296	22.950	007	-	Rel-6	F	Deletion of Annex C (Informative) from draft ITU-T Recommendation F.706	6.2.0	6.3.0	S1-040521
SP-24	SP-040296	22.950	008	-	Rel-6	F	Deletion of Annex B (Informative) from ITU-T Recommendation E.106	6.2.0	6.3.0	S1-040520

CR-Form-v7

CHANGE REQUEST

⌘ **22.950 CR 007** ⌘ rev **-** ⌘ Current version: **6.2.0** ⌘

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:	⌘ Deletion of Annex C (Informative) from draft ITU-T Recommendation F.706		
Source:	⌘ SA1 (Telcordia Technologies)		
Work item code:	⌘ PRIOR	Date:	⌘ 10/05/2004
Category:	⌘ F	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ The content of this Annex is out of date and is no longer needed.
Summary of change:	⌘ Deletion of Annex C (Informative)
Consequences if not approved:	⌘ Incorrect information from an external document

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

~~Annex C (Informative): From DRAFT ITU-T Recommendation F.706, International Emergency Multimedia Service (IEMS)~~

~~Core IEMS Functions~~

~~The network topology over which the IEMS operates is depicted in Figure 2. This figure is divided into three basic parts representing the national network of the user initiating the IEMS communication, the national network of the intended recipient or recipients of the IEMS communication, and the international connection that lies in between. The core IEMS service operates between the designated IEMS access points to the communicating national networks in accordance with the operational agreements established between the Administrations involved.~~

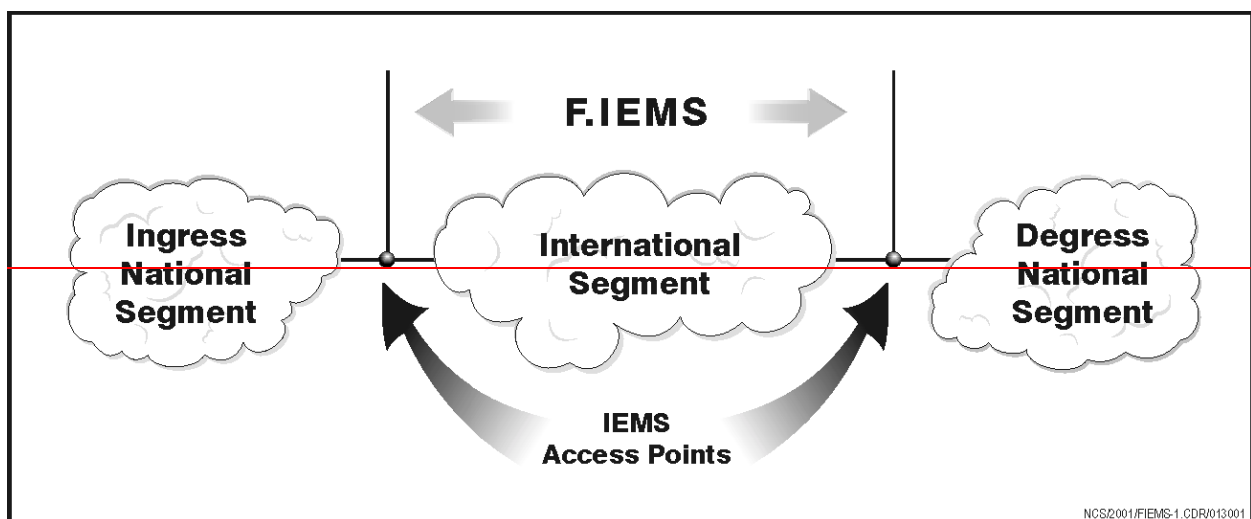


Figure 2: The IEMS Core Topology

~~The core IEMS service provides two basic service capabilities. These include a means for identifying and authenticating IEMS traffic requiring priority treatment, and the protocol mechanisms and routing procedures required by the service provider to offer a particular IEMS service feature.~~

~~IEMS Traffic Identification~~

~~IEMS traffic is identified by a special marking mechanism, or differentiated services codepoint, that will trigger specific actions by network elements in accepting, transmitting, and delivering the traffic on a priority basis. This marking mechanism consists of a basic part that provides a rapid and reliable method for separating IEMS traffic from non-IEMS traffic within a particular traffic flow. There is also a supplementary part that provides a means for selecting and managing different levels of quality and service urgency. As a minimum, the supplementary part should support the following differentiations:~~

~~**Media:** a means for distinguishing between voice, video, and data components of a multimedia communication in which these components may have a different relative importance. This may be particularly desirable during periods of congestion to reduce the bandwidth requirement, but still retain the essential essence of the communication.~~

~~**Precedence:** a facility for identifying multiple precedence levels for use in specifying the relative importance of a particular IEMS communication with respect to other IEMS traffic competing for the same network resources. The number and types of precedence levels required are a subject for further study.~~

~~**Category of User:** in certain situations, it may be more desirable to differentiate IEMS traffic by the category of user (e.g. diplomatic, medical support, police, etc.) rather than by the precedence designator assigned by the message initiator.~~

The process of prioritization will vary depending on the extent to which the network is impaired and whether some type of multi-level priority scheme has been invoked.

~~IEMS Access Control and Authentication~~

~~Access to the IEMS may be initiated through either an analog or digital network connection. In either case, the IEMS End user provides the call marking information required for IEMS access and processing across the networks involved. One or more of the following access control options is applied to the offered call to assure that only authorized users are permitted access to the IEMS:~~

- ~~a) **Access via pre-determined lines:** This option reduces the possible misuse of the IEMS, but is not portable;~~
- ~~b) **Access by means of special code** (such as a Personal Identification Number (PIN)) at any available PSTN/ISDN or Internet service provider interface: This option provides more flexibility of access and would involve additional technological and operational provisions. The allocation and control of IEMS/IEPS user PINs would require the establishment of appropriate administrative control database management procedures;~~
- ~~e) **Access from a protected national emergency network:** This option assumes that the initiating national network provides a "trusted" level of access acceptable to the other Administrations involved.~~

~~It is likely that call restrictions to certain specific destinations (e.g. country codes, area codes, IP addressing subsets, etc.) will already be in place when IEMS is activated. Such restrictions should not apply to IEMS users between countries that have a common IEPS arrangement when that arrangement has been invoked.~~

~~If sufficient resources are no longer available, the ability to make calls is removed from non-IEMS users, while the ability to receive calls is not affected. All calls then made by an essential IEMS/IEPS user should still be permitted. Pre-emption of existing non-IEMS communications may be applied optionally in countries and networks where pre-emption is allowed. The concept of how pre-emption is to be applied in a connectionless packet network environment is a subject of further study.~~

~~Network Routing and Associated Service Features~~

~~IEMS network services should guarantee priority handling for the traffic of designated users, and exemption from restrictive network management controls. The process of prioritization may vary depending on the extent to which the network is impaired, and there may be more than one level or type of priority designation.~~

~~Recognizing that different circumstances may require different service features, a particular IEMS service offering may consist of one or more of the following service components:~~

- ~~—Priority network access;~~
- ~~—Guaranteed network access (equivalent to "off hook" service in the PSTN);~~
- ~~—User validation and authentication;~~
- ~~—Priority routing and queuing for network resources;~~
- ~~—Enhanced alternate routing capability (not available for general public use);~~
- ~~—Node, network, and service management;~~
- ~~—Centralized service management and billing;~~
- ~~—Call redirection;~~
- ~~—Priority call indication;~~
- ~~—Multiple priority levels;~~
- ~~—Pre-emption of non-IEMS traffic optionally, where allowed and when needed;~~
- ~~—Caller location for mobile calls.~~

~~IEMS will cover a broad range of multimedia services, with enhanced capabilities, that will significantly benefit emergency operations for IEPS/IEMS users. These include, for example:~~

- a) Web access
- b) Instant messaging
- c) Remote printing
- d) Email
- e) File transfer
- f) Wireless Access
- g) Broadcast/multicast audio/video/data
- h) Interactive video
- i) Remote database
- j) DNS lookups

All of these services could be considered for preferential treatment, authorization, and administration for IEPS/IEMS requirements.

For circuit-switched PSTN and ISDN, priority routing and processing of IEPS emergency communications as identified in Recommendation E.106 are only necessary during call setup. However, when dealing with IEMS emergency communications over a packet-based, connectionless network service, priority routing and processing of IEMS communications must be maintained for the full duration of the emergency communication.

While only authorized users can initiate an IEMS services, the recipient can be any other user, whether IEPS/IEMS designated or not. To ensure that an IEMS user can reliably call any other user, call barring or similar facilities that can normally be set for a called party should be overridden. Priority calls to a number where a "call transfer" or "call forwarding" feature has been invoked should retain the priority designation and the marking indicator passed on to other telecommunications providers that may be involved.

During emergency situations, priority control of a connectionless type of communication may require additional considerations. The introduction of a data management scheme such as "metadata" may be necessary to indicate that the emergency information needs to be processed according to its specified IEMS priority. Data management schemes such as "metadata" can facilitate priority control by specifying the type of emergency and importance of the information. Moreover, by using a standardized data management scheme, mutual exchange and effective use of the emergency information are achieved.

IEMS services should not impose any special or additional equipment constraints on the end user, and should always provide for a basic level of operational capability between the circuit-based IEPS and packet-based IEMS user communities.

Traffic Classes

When traffic conditions degrade to a predetermined level of service, priority routing features are invoked and remain in force until traffic conditions return to an acceptable level. In order to facilitate routing through the network during periods of stress, IEMS communications can be divided into three basic classes depending on the amount of processing required by the network:

CLASS 1: a single packet communication (48 bytes of payload or less).

CLASS 2: a single media, multiple packet communication (or a multimedia communication in which each media is of the same relative importance).

CLASS 3: a multimedia, multiple packet communication in which each media may have a different relative importance, and thus assigned different priorities in a multi-level priority scheme.

Interworking

ITU-T Recommendation E.106 provides an International Emergency Preference Scheme (IEPS) for application by authorized users of the circuit-switched International Telephone Service (ITS) defined in Recommendation E.105. Interworking between the IEPS and IEMS environments is required at a level supportable by the ITS, and is to be provided in accordance with the service principles established in E.370. This includes defining a means for handling the IEPS indicator in the IP-based environment.

The features identified in E.106 that could enhance call completion in a circuit-switch network are summarized in Table A. The use of specific features will be determined by each nation after due consideration to the capabilities of the networks available for use.

For those new or enhanced IEMS features that can only be supported within a packet based network environment, provision should be made for a fallback mode that will still allow effective communication between the IEMS and IEPS user communities.

Operational Management

IEMS users are determined by national governments and may include activities such as local emergency services (police, fire department, etc.), public utilities, medical services, and diplomatic or other vital government interests.

Requests for enabling the IEMS are to be coordinated between the countries involved. In each country, the national authority responsible for making such arrangements will establish and authenticate the authorized IEMS user list. At the onset of a crisis situation wherein IEMS is invoked, the national authority in the affected country will need to confirm the preference status of calls from essential users in those countries with which agreements have been made.

Emergency situations requiring support from IEPS/IEMS communications capabilities can occur anywhere at anytime. Interchange of IEPS/IEMS service management information (e.g. trouble reports) may be required between TMNs (see Recommendation M.3010). The means of access to service management information needs to be flexible and simple.

The priority handling procedures to be assigned to each traffic class, category of user, media component, or precedence level will be assigned based upon agreements made in advance by the Administrations involved, and reconfirmed at the time an IEMS agreement is invoked.

While several countries already have emergency service capabilities within their own national network, it is important to have common procedures in place during international crises in order to allow communications between essential users in the affected countries. In order to be responsive to both national and international interests, these two capabilities need to be considered as independent, but fully compatible.

Only those users of a national emergency service scheme that have a legitimate part to play in a particular international crisis should be eligible for priority access to other IEMS participating networks. On the other hand, users that are authorized access to an international priority service will require access to this service through their own national system. Under conditions of severe local damage or congestion, countries need to retain effective control over their own national networks, particularly with respect to incoming traffic, even though an international priority scheme may have been invoked.

CR-Form-v7

CHANGE REQUEST

⌘ **22.950 CR 008** ⌘ rev **-** ⌘ Current version: **6.2.0** ⌘

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:	⌘ Deletion of Annex B (Informative) from ITU-T Recommendation E.106		
Source:	⌘ SA1 (Telcordia Technologies)		
Work item code:	⌘ PRIOR	Date:	⌘ 10/05/2004
Category:	⌘ F	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ The content of this Annex is out of date and is no longer needed.
Summary of change:	⌘ Deletion of Annex B (Informative)
Consequences if not approved:	⌘ Incorrect information from an external document.

Clauses affected:	⌘ Annex B			
Other specs affected:	⌘	Y N	Other core specifications ⌘	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Test specifications
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		O&M Specifications
Other comments:	⌘			

~~Annex B (Informative): From ITU-T Recommendation E.106, International Emergency Preference Scheme (IEPS)~~

~~ANNEX A (to Recommendation E.106)~~

~~Features and techniques to enhance call completion~~

~~The features described in this Annex may be used separately or in combination to create favourable conditions for the successful completion of calls, but IEPS is not necessarily dependent on them. The list is not exclusive and the use of these features is to be determined by each nation, having regard to the capabilities of networks being used.~~

No.	Essential features for IEPS	Feature requires call marking
1	Priority dial tone—wireline or wireless connections (Essential Line Service)	No
2	Priority call setup message through signalling network with call identifier (HPC identifier)	Yes
3	Exemption from restrictive management controls, such as call gapping (Exemption from RNMC)	Yes

No.	Optional features (F) and techniques (T) to enhance call completion	Feature requires call marking
4	Survivable access and egress from end user location to PSTN/ISDN: (F) a. Local exchange bypass; (T) b. Diverse PSTN/ISDN access from cellular; (T) c. Prescription override; (T) d. Avoidance routing; (T) e. Diverse routing; (T)	
5	IEPS user verification (F)	Yes
6	Special announcements on call progress (F)	Yes
7	Special routing capabilities (F) a. Enhanced alternate routing; (T) b. Trunk queuing; (T) c. Off-hook trunk waiting; (T) d. Dynamic trunk reservation; (T) e. Trunk sub-grouping; (T) f. Automatic call rerouting; (T) g. PSTN/ISDN partitioning; (T)	Yes Yes Yes Yes Yes No No
8	Call forwarding (F)	Yes
9	Abbreviated dialling (F)	No
10	Attendant override (F)	Yes
11	Authorisation codes (F)	No
12	Automatic call distribution (F)	No
13	Call by call service selection (F)	No
14	Call pickup (F)	No
15	Call transfer (F)	No
16	Call waiting (F)	No
17	Calling number identification (F)	No

~~DESCRIPTION of above features and techniques~~

~~1—Priority Dial Tone~~

A service arrangement that enhances the ability of IEPS users to receive priority over other users for the reception of dial tone. This is a restrictive treatment of non IEPS users. Note that access denial systems are an extreme form of restrictive treatment, providing dial tone to permitted lines only. Call attempts from such designated lines are placed in a priority queue and are handled before non IEPS calls.

~~2 — Priority call setup message through national and international signalling network with call identifier~~

This is a method of marking and identifying IEPS calls through networks. As the IEPS call progresses through the networks, this identifier would enable special routing and preferential treatment to ensure the higher probability of call completion.

~~3 — Exemption from restrictive management controls~~

A set of control measures used to prevent or control degradation of network service. These measures are either expansive or protective. Expansive measures increase call routing choices by providing more capability than normal to carry excess traffic. Protective measures limit calls going into a switch or trunk group.

~~4 — Techniques that enhance survivable access from the end user to the PSTN/ISDN are described in 4.a to 4.e~~

4.a——Local exchange bypass

The use of direct access services to or egress services from Switched Networks by using either bulk, wide band, switched, point to point, or circuit by circuit services. These services are available from providers such as cellular service providers, specialised service providers and satellite service providers.

4.b——Diverse PSTN/ISDN access from cellular

This technique allows cellular networks to directly interconnect with other elements of PSTN/ISDN. This allows cellular calls to be routed around failed or congested nodes. Network access diversity allows specifically identified calls to be routed to private or special purpose networks.

4.c——Prescription override

The ability to select an alternative carrier, e.g. by dialling a specific code or operating a selection key on the terminal instrument.

4.d——Avoidance routing

This technique, with limited availability, permits a user to enhance their survivability in PSTN/ISDN by directing the service provider to assign them to transmission facilities that avoid points of vulnerability such as earthquake zones or hurricane areas.

4.e——Diverse routing

This technique provides the user with a second route over physically separate facilities which can be used if the primary route is unavailable.

5——IEPS user verification

This feature allows for the verification of the IEPS user. Personal Identification Numbers (PINs), line identification, authorisation codes or call back facilities could be used to verify the call as an authorised IEPS call.

6——Special announcements on call progress

This feature will provide recorded voice announcements for originated call to announce information to the user when calls cannot be completed or to provide problem and restoral information.

7——Special routing capabilities that enhance call completion are described in 7.a to 7.g**7.a——Enhanced alternate routing**

Routing programs are used to provide special routing controls and paths within a network.

7.b——Trunk queuing

This technique would hold the IEPS call in queue until a trunk became available, then the first call in queue (the IEPS call) would have access to the next available trunk. The IEPS call would not receive an immediate "all trunks busy" tone.

7.c——Off hook trunk waiting

This technique allows the IEPS caller to remain off hook and the network continually searches, at predetermined intervals (i.e. several seconds) for an idle trunk if no idle trunk was found on the initial attempt.

7.d——Dynamic trunk reservation

This technique automatically reserves reservation of trunks for certain classes of calls under designated conditions. It could be implemented or activated in the following ways:

- IEPS calls could be allocated a variable number of trunks between switches according to demand;
- the use of network management control under predetermined conditions, to reserve trunks in an idle condition for the exclusive use of IEPS calls; and
- the designation of specific sub groups within a trunk group that, under predetermined conditions would be reserved for IEPS calls.

7.e — Trunk sub-grouping

This technique splits trunks into pre-assigned sub-groups; one for general use and another for IEPS use only. Under normal conditions general use traffic could use either sub-group. During emergencies only IEPS calls would use the IEPS sub-group. Overflow from the IEPS sub-group could be routed over the general use subgroup but the general calls would not be allowed to overflow to the IEPS sub-group.

7.f — Automatic call re-routing

This technique allows calls to be routed over other operator's networks.

7.g — PSTN/ISDN partitioning

This is the use of hardware or software to separate traffic into specific functional groups for the purpose of providing special service capabilities such as enhanced call completion for IEPS calls.

8 — Call forwarding

A feature that enables calls to be rerouted automatically from one line to another or to an attendant.

9 — Abbreviated dialling

A feature by which a user can attempt a call by dialling a two or three digit code that instructs a database to obtain the actual desired number from a look-up table and transmit it into the network to connect the calling line to the called line.

10 — Attendant override

A feature that allows the terminal equipment operator to interrupt a call that is in progress.

11 — Authorisation Codes

Unique multi-digit codes used to allow an authorised user privileged access to a network, system or device. If the code is validated the call is allowed to advance.

12 — Automatic Call Distribution

A system designed to evenly distribute traffic by directing incoming calls over a group of terminals.

13 — Call-by-call service selection

A feature that provides improved trunking efficiency between end-user location and end-office by allowing a variety of services to use the same trunk group and by distributing traffic over the total number of available trunks on a call-by-call basis.

14 — Call pickup

A feature that enables a connected extension to answer any ringing extension within an assigned call pickup group.

15 — Call transfer

A feature whereby a call to a user's number is automatically transferred to one or more alternative numbers when the called number is busy or does not answer.

16 — Call waiting

A feature that provides a distinctive audible tone to a busy user's line to notify the user when another caller is attempting to reach his/her number.

17 — Calling Number Identification

A feature that provides the identification of the calling user's number by means of a visual or audible identification at the called terminal.