Source: **TSG SA**

Title: **Revised CR to 22.129 (007 rev1)**

Document for: **Approval**

Agenda Item: **5.1.3**

This document contains a revised version of CR007 to 22.129.

CHANGE REQUEST No :	**007 Rev1**	*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*			
Technical Specification / Report UMTS	22.129	Version:	3.0.0		
Submitted to TSG_SA *list TSG plenary meeting no. here ↑*		for approval		without presentation ("non-strategic")	
		for information		with presentation ("strategic")	

PT SMG CR cover form is available from: http://docbox.etsi.org/tech-org/smg/Document/smg/tools/CR_form/crf28_1.zip

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] TE [X] Network [X]

Work item: GSM UMTS Handover

Source: Rapporteur **Date:** 21.7.99

Subject: Removes all non-R99 requirements, by changing them into Cross phase compatibility requirements which apply to R99.

Category: *(one category and one release Only shall be Marked with an X)*

F	Correction	[ ]	**Release:**	Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]		Release 96	[ ]
B	Addition of feature	[ ]		Release 97	[ ]
C	Functional modification of feature	[X]		Release 98	[ ]
D	Editorial modification	[ ]		UMTS 99	[X]

Reason for change: (1) To carry out action on rapporteurs of 22.xxx documents: "include only requirements relating to R99" (2) To re-phrase Tdoc 539 on Subscriber preference for inter-PLMN handover.

Clauses affected: Passim

Other specs Affected:

Other releases of same spec	[ ]	→ List of CRs:
Other core specifications	[ ]	→ List of CRs:
MS test specifications / TBRs	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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<--------- double-click here for help and instructions on how to create a CR.

1st Change *[Text deleted, in preparation for move to new section 8]*

5 Requirements for Handover from UMTS to UMTS

5.1 Handover due to UE Movement

It should be possible to provide a technical implementation of handover such that there is no measurable impact on the quality of any service when handover due to UE movement occurs. This does not imply that all UMTS handovers will achieve this ideal. However, the standards shall define at least one UTRA mode in which this is possible given the following:

- UE speed stays within limits for given service;
- UE stays constantly within UMTS coverage of a single UTRAN.

5.2 Handover Between UMTS Modes

The standards shall permit a technical implementation in which service is continued, although there may be a temporary degradation which may affect teleservices at the time of handover.

~~5.3 Handover Between Environments~~

~~UMTS is expected to provide coverage in a number of environments including fixed and mobile. The standard shall enable handover between these environments as described in the table below. The following are indicative of long term requirements and do not necessarily apply to R99. However, technical standardisation should not preclude the possiblity of implementing these requirements.~~

~~To~~ / ~~From~~	~~Terrestrial Cellular~~	~~Fixed/Cordless~~	~~Satellite~~
~~Terrestrial Cellular~~	~~Yes~~	~~Yes~~	~~Yes~~
~~Fixed/Cordless~~	~~Yes~~	~~Yes~~	~~Yes~~
~~Satellite~~	~~Yes~~	~~Yes~~	~~No~~

5.4 UMTS cell capacity

Consideration must be given services such as multimedia which may involve use of multiple bearers. Due for example to cell loading, it may happen that a target cell cannot support the combination of bearer services provided by the current serving cell. Means shall be provided for the application(s) to indicate minimum acceptable QoS for services continuation after handover. Although all UMTS bearer services may not be handed over, the handover to another UMTS cell should not be precluded.

2nd Change *[addition of a new section 8 in the normative text, incorporating text from 5.3, discussion of cross phase compatibility and future requirement for 'Subscriber Inter-PLMN handover preference']*

8 Cross Phase Compatibility for R99

This section details the cross phase compatibililty requirements relating to the service requirements in this document.

Note: when a change is introduced which affects the UMTS technical standards, it is said to be 'backward compatible' if existing equipment can continue to operate and perform correctly with equipment that conforms to the new implemenation.

8.1 Compatiblity With Existing Standards

There are no earlier releases of the UMTS standards for which backward compatibility is required.

Where the service and operational requirements in this document relate to a GSM PLMN, compatibility is required with GSM systems conforming to the R99 GSM standard.

8.2 Compatibility With Future UMTS Standards

It is envisaged that UMTS will evolve beyond R99, for example with the addition of new service requirements. The standards which define the technical implementation of R99 should be developed in such a way that it is practical to add the requirements in this section in a backward compatible manner.

8.2.1 Handover Between Environments

UMTS is expected to provide coverage in a number of environments including fixed and mobile as described in the table below. The technical standards should not preclude the possiblity of implementing these requirements in a backward compatible manner.

To / **From**	**Terrestrial Cellular**	**Fixed/Cordless**	**Satellite**
Terrestrial Cellular	Yes (R99)	Yes	Yes
Fixed/Cordless	Yes	Yes	Yes
Satellite	Yes	Yes	No

~~8.2.2 Subscriber Inter-PLMN handover Preference~~

~~The standards shall not preclude the backward compatible introduction of technical means which enable inter-PLMN handover based on subscriber's preferred PLMN. A situation is illustrated in Annex A which explains the background to this service requirement. Since this requirement is motivated by particular circumstances which may not exist in every PLMN, its implementation within a given PLMN should be optional.~~

3rd Change *[Illustration of 'Subscriber Inter-PLMN handover preference' in non-normative annex]*

Annex A (informative): Illustration of elements in inter-operator handover

Figure 1 illustrates the above definitions taking an example of European GSM networks. The subscriber's home network is France. The visited network where the subscriber is registered in a VLR is Germany. The signalling connection between HLR and VLR is indicated by dotted lines. The calls for the subscriber are controlled by the MSC collocated to the VLR where the subscriber is registered. This MSC is called "*anchor MSC*".

Handover to a different MSC may occur if the cell serving the subscriber after handover is not controlled by the anchor MSC. This MSC is called the "*serving MSC*".Even after the call has been handed over to a different MSC, the call control function remains in the anchor MSC. The signalling connection and circuit switched connection established between anchor MSC and serving MSC are indicated by a solid line.

When the French subscriber registered in a German network roams near the border to the Netherlands, inter-network handover may occur. In this case a Dutch network is the *target network*. After handover, the anchor MSC located in a German network continues to control the call. The German network remains the *visited network* where the subscriber is registered. The subscriber's location information stored in the HLR remains unchanged. The signalling and circuit switched connections between the anchor MSC and the previously serving MSC in theGerman network will be released when the Mobile Station (MS) is served by a cell within a Dutch network. The Dutch network becomes the *serving network*. From the Dutch network the subscriber may be handed over to a Belgian network.

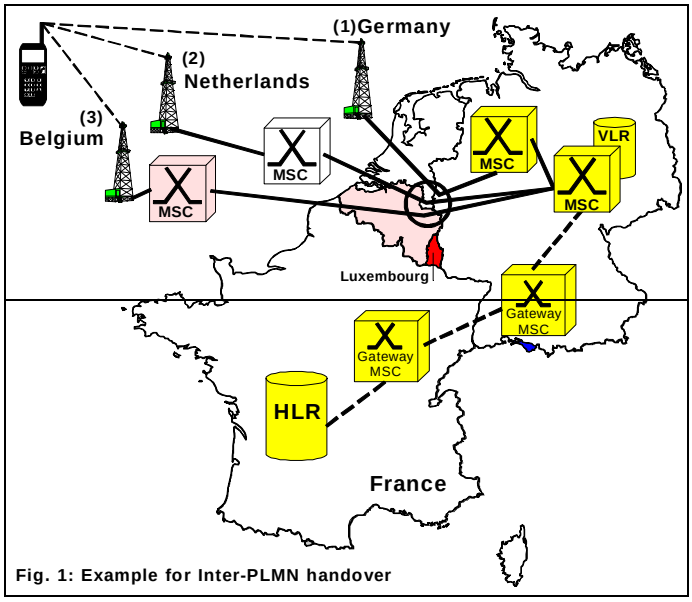

Figure 1: Example for inter-PLMN handover

A.1 Subscriber Inter-PLMN handover Preference

If a French subscriber within the Luxembourg network moves toward the German and French borders and a handover is desired, he should preferrably be handed over to his home PLMN (i.e., the French network). Note that in this same scenario a Luxembourg subscriber may prefer to be handed over to (eg) the German network. This illustrates the service requirement for subscriber preference on inter-PLMN handover.