Source:	**One to One**
Title:	**Proposed WID:** Service Requirements for network sharing
Document for:	**Approval**
Agenda Item:	

TSG-SA WG 1 (Services) meeting #14   **S1-011228**
Kobe, Japan, 5-9 November 2001   **Agenda Item: 8**

Work Item Description

SERVICE REQUIREMENTS FOR NETWORK SHARING

1   3GPP Work Area

X	Radio Access
X	Core Network
X	Services

2   Linked work items

SA work on Inter domain connection of RAN nodes to Multiple CN nodes (Iu-Flex): overall system architecture

BB2   RAN work for Intra domain connection of RAN nodes to multiple CN nodes [RAN 3 is predicted to lead the work in RAN]

BB3   GERAN work for Intra Domain connection of RAN Nodes to Multiple CN Nodes [GERAN 2 is predicted to lead the work in GERAN]

BB4   CN work for Intra Domain Connections of RAN Nodes to Multiple CN Nodes [CN 1 is predicted to lead the work in CN]

3   Justification

In the current dynamic market place, as a result of partnerships, acquisitions, creative agreements among operators and so on, the need for tools that enable various degrees of network sharing is becoming more and more important.

When GSM and then UMTS were specified, the possibility of sharing part or all of the network by two or more separated commercial entities was not considered and as a result the standards lack some functionalities that enable the realisation of such commercial agreements.

For example, a PLMN is uniquely identified by the combination of a mobile country code and a mobile network code, such definition appears to be quite restrictive and poses some problems not only for what concerns the network sharing between different partners, but also for the management of a dual radio access technology network.

Work has already been carried out in this area with the definition of the equivalent PLMN concept and partly with the introduction of Iu-Flex, but there is still the need to consolidate these activities under a coherent work plan.

GSM was designed under the principle "one operator, one radio access network". The GSM network has some possibilities of infrastructure sharing, but it does not support true radio access network sharing. The initial design of UMTS has followed the same principle. But with the above mentioned issues in mind, it is now time to consider full support in the UMTS standards of two (or more) operators sharing the expensive radio access network. The current design of UMTS still allows full competition between the operators at the service provisioning and pricing level.

In addition to the lower cost per operator for the radio access network, radio access network sharing will also increase the overall spectrum efficiency as no guard band is required between the operators and the trunking gain will increase.

4   Objective

Analyse the shortcomings of the standards in the area of network sharing, e.g. radio network sharing.. Introduction of enhanced requirements for the control of the handover and cell reselection, services, charging, security in a shared network environment.

5   Service Aspects

Seamless service continuity for subscribers roaming in a shared network

6   MMI-Aspects

Display of the network name

7   Charging Aspects

Possible improvements to the mandatory information in the CDR
Information required in order to split the access network costs between the operators. (Cells used, other resources used, QoS used, etc.)

8   Security Aspects

Possible improvements to guarantee the control of the access to the shared network

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes	X	X	X	X	
No					
Don't know					X

10 Expected Output and Time scale (to be updated at each plenary)

Meeting	Date	Activity
SA#14	5-9 Nov 2001	WID presented for approval
SA1#15	February 2002	First draft of the technical report
SA1#16	April 2002	Technical report version 1.0 ready for plenary approval
SA#16	June 2002	Technical report presented for approval

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR 22.xyz	Service Requirements for network sharing	TSG SA1				
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#	Comments	

11 Work item rapporteurs

12 Work item leadership

TSG SA WG 1

13 Supporting Companies

One 2 One Personal Communications Limited, Telia, BT, SBC,
Voicestream, Fujitsu

14   **Classification of the WI (if known)**

	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)