Technical Specification Group Services and System Aspects **TSGS#23(04)0042**
Meeting #23, Phoenix, USA, 15 - 18 March 2004

Source: TSG SA WG2 (S2-041057)
Title: WID on "**3GPP Access Class Barring and Overload Protection"**
Agenda Item: 7.2.3

Work Item Description

Title

3GPP Access Class Barring and Overload Protection

1 3GPP Work Area

X	Radio Access
X	Core Network
	Services

2 Linked work items

None

3 Justification

SA2 has received requirement from SA1 (S2-040529 = S1-040129) to investigate any mechanisms necessary for Domain Specific Access Control within the UTRAN, and was asked for investigation related to an issue where overload in the CS transit network caused a restriction in the packet switched traffic while radio capacity was available.

It was considered valuable to investigate impacts and study issues that go beyond CS congestion issues on the UTRAN.

In addition, S2-040842 indicates that the Access Class Control and Overload Protection functions of the 3GPP system have not been enhanced to cope with architectural changes made in R'97, R'99 and R'5.

SA 2 believes that these aspects should be studied urgently.

4 Objective

This work item is intended to study possible enhancements to the 3GPP system needed to cope with R'97 (GPRS), R'99 (UMTS) and R'5 ("Iu-flex") architectural changes.

It is anticipated that the following types of overload situation will be studied:

a) cell level congestion (eg traffic jam on country road served by one cell)
b) wide area radio interface congestion (eg traffic jam in a large town served by many cells)
c) RNC/BSC overload
d) MSC overload/failure
e) Voice transit network (and/or MGW?) overload/failure
f) SS7 signalling network overload/failure (eg impact on MM, GMM and SMS)
g) SGSN overload/failure
h) "packet backbone" (GTP-U or Gi) overload/failure

i) GGSN overload/failure (eg how to prevent all mobiles re-establishing PDP contexts when one GGSN fails.)

Based on the requirement given from S2-040529, the solution of domain specific access control in case of CS domain overload in R'6 is given the higher priority of this study.

Other aspects that may need consideration include:

- the impact of the URA-PCH and Cell-PCH states
- how to avoid automatic re-establishment attempts by PS domain applications (cf the auto-redialling restrictions in 02.07 Annex A)

Under this Work item, appropriate CRs will also be generated.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

None

9 Impacts

Affects:	UICC apps	ME	AN	CN	Others
Yes		X	X	X	
No					
Don't know	?				

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

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
New TR 23.8xx	3GPP Access Class Barring and Overload protection	SA2	RAN 2	SA#24	SA#24	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
25.331		Extra access class barring information	RAN #25	
25.413		Potential impact on Iu interface Overload functionality	RAN #25	
44.018		Extra access class barring information	GERAN xx	
		The list of impacted specifications should be completed when the TR is sent for “information” to TSG SA.		

11 Work item rapporteur

T.B.D.

12 Work item leadership

SA2

13 Supporting Companies
Vodafone, NTT DoCoMo, Fujitsu, NEC

14 Classification of the WI (if known)

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

14a The WI is a Feature: List of building blocks under this feature

14b The WI is a Building Block: parent Feature

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)

form change history:
2003-05-28: spelling of “rapporteur” corrected
2002-07-04: "USIM" box changed to "UICC apps"