

**Source:** TSG CN WG1  
**Title:** Network Sharing stage 3 WID  
**Agenda item:** 9.19  
**Document for:** APPROVAL

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This document contains **the update of Network Sharing stage 3 WID** that has been agreed by TSG CN WG1 CN#35 meeting and forwarded to TSG CN Plenary meeting #25 for approval.

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## Introduction

As described in TS 23.251, since Network Sharing supporting UEs are able to decode the multiple PLMNs information in the broadcast system information, Network Sharing supporting UEs shall inform the network (the RAN) of the chosen core network operator in a shared network. In the GWCN configuration, the shared MSC/VLR and the shared SGSN shall store the identity of the selected core network operator as a temporary subscriber data for the purpose of e.g. charging. Therefore, there is a need to add the selected CN operator ID parameter in TS 23.008. If the Gs interface is installed, the PLMN ID of the chosen core network operator needs to be transferred to the VLR. This implies changes in TS 29.018.

## Proposal

This document updates the approved WID of Network Sharing stage 3 to cover newly discovered changes that affect existing CN specifications and include CN4 in this CN wide WI. The estimated completion date is also updated based on the agreement at previous meetings.

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### Work Item Description

#### **Title: Network Sharing Stage 3**

#### **1 3GPP Work Area**

	Radio Access
X	Core Network
	Services

#### **2 Linked work items**

- TSG SA1: Network sharing – Technical Report 22.951 (v 6.0.0) “Service Aspects and Requirements for Network Sharing” (with unique ID 31019)

- TSG SA2: Network sharing – Technical Report 23.851 (v 1.1.0) “Network Sharing, Architecture and Functional Description” (with unique ID 32044)

- TSG RAN2&RAN3: Network sharing stage 3 – Enhancement of the support of network sharing in the UTRAN (with unique ID 22004)

#### **3 Justification**

Network sharing may be used to lower the initial rollout cost for new radio networks. In addition, network sharing provides possibilities for operators not owning a 3G license to be able to deliver 3G services.

Based on the work concurred in SA and RAN on “Network Sharing” TSG-CN should develop support for this feature.

## 4 Objective

The objective of this WI is to develop the functionality support in the core network to meet the requirements on the network sharing as defined in stage 1 (TR22.951) and stage 2 ([TS23.251](#), TR23.851).

~~So far the following work have been identified in CN group(s):~~

~~The following work is to be done in CN1:~~

- ~~• Review the possible impacts on the network [registration and selection](#)~~selection~~ procedures due to multiple PLMN broadcast~~
- ~~• Review [and specify](#) the [required](#) CN ~~behaviour~~[procedures](#) due to rerouting [of Network Sharing non-supporting UEs in MOCN](#)~~
- ~~• [Review any changes when the Gs interface is installed in a shared network](#)~~
  - ~~—Consider relative share of inbound roamers in the case that part of the CN node is shared~~
  - ~~—Study the needs of inclusion of multiple PLMN information in the NAS system information elements~~
  - ~~—Allow the indication of the selected PLMN from the UE to the network when attempting to register~~

~~The following work is to be done in CN4:~~

- ~~• [Inclusion of the Selected CN operator ID in the shared CN node](#)~~

## 5 Service Aspects

*None*

## 6 MMI-Aspects

*None*

## 7 Charging Aspects

*None*

## 8 Security Aspects

*None*

## 9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X		X	
No	X		X		X
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#	Appr oved at plen ary#	Comments
Affected existing specifications						
Spec No.	CR	Subject		Approved at plenary#	Comments	
24.008		Mobile radio interface Layer 3 specification; Core network protocols; Stage 3		CN#254, <del>September</del> Jun e 2004	CN related changes with the introduction of network sharing Rel-6, e.g. <ul style="list-style-type: none"> <li>• <a href="#">Review the possible impacts on the network registration and selection procedures due to multiple PLMN broadcast</a></li> <li>• <del>Possible impacts</del> <a href="#">Review the required -on-CN procedures behaviour</a> due to rerouting of Network Sharing non-supporting UEs in MOCN</li> <li>- <del>Consider relative share of inbound roamers if part of the CN is also shared</del></li> <li>- <del>Check the CN system information elements to enable the inclusion of multiple PLMN information</del></li> <li>- <del>Allow the indication of the selected PLMN from the UE to the network when attempting to register.</del></li> </ul>	
23.122		Non-Access-Stratum functions related to Mobile Station (MS) in idle mode		CN#254, <del>September</del> Jun e 2004	Impacts on PLMN <a href="#">registration and selection</a> <del>selection</del> due to multiple PLMN broadcast.	
<a href="#">24.007</a>		<a href="#">Mobile radio interface signalling layer 3; General aspects</a>		CN#25, <del>September</del> 2004	<a href="#">Review the required</a> <del>Possible impacts on-CN</del> <a href="#">procedures due to rerouting of Network Sharing non-supporting UEs in MOCN</a>	
<a href="#">29.018</a>		<a href="#">SGSN-VLR Gs interface layer 3 specification</a>		CN#25, <del>September</del> 2004	<a href="#">Review any changes when the Gs interface is installed in a shared network</a>	
<a href="#">23.008</a>		<a href="#">Organisation of subscriber data</a>		CN#256, <del>December</del> Sept ember 2004	<a href="#">Inclusion of Selected CN operator ID parameter</a>	

## 11 Work item rapporteur

TeliaSonera

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## 12 Work item leadership

TSG-CN WG 1

## 13 Supporting Companies

TeliaSonera, Ericsson, Motorola, HuaWei Technology, Sonofon

## 14 Classification of the WI (if known)

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

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

(list of Work Items identified as building blocks)

14b The WI is a Building Block (with Unique ID 11043): Parent Feature: Network Sharing (with unique ID 31018)

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

(one Work Item identified as a building block)

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#### **3 Justification**

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Based on the work concurred in SA and RAN on “Network Sharing” TSG-CN should develop support for this feature.

#### 4 Objective

The objective of this WI is to develop the functionality support in the core network to meet the requirements on the network sharing as defined in stage 1 (TR22.951) and stage 2 (TS23.251, TR23.851).

The following work is to be done in CN1:

- Review the possible impacts on the network registration and selection procedures due to multiple PLMN broadcast
- Review and specify the required CN procedures due to rerouting of Network Sharing non-supporting UEs in MOCN
- Review any changes when the Gs interface is installed in a shared network

The following work is to be done in CN4:

- Inclusion of the Selected CN operator ID in the shared CN node

#### 5 Service Aspects

*None*

#### 6 MMI-Aspects

*None*

#### 7 Charging Aspects

*None*

#### 8 Security Aspects

*None*

#### 9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		X		X	
No	X		X		X
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24.007		Mobile radio interface signalling layer 3; General aspects		CN#25, September 2004	Review the required CN procedures due to rerouting of Network Sharing non-supporting UEs in MOCN	
29.018		SGSN-VLR Gs interface layer 3 specification		CN#25, September 2004	Review any changes when the Gs interface is installed in a shared network	
23.008		Organisation of subscriber data		CN#26, December 2004	Inclusion of Selected CN operator ID parameter	

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