

3GPP TSG SA WG3 Security — S3#20

S3-010445

16 - 19 October, 2001

Sydney, Australia

3GPP TSG-T2 #14
Edinburgh, Scotland
3-7 September 2001

T2-010823

Title: LS Response to T2-010617

Source: T2

To: SA2

Cc: CN 1, CN 4, T 2, RAN 2, GERAN 2, SA 1, SA 3

Attachment : Background information is in T2-010617

Contact Person:

Name: Rob Lockhart, Motorola

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T2 would like to thank SA2 for identifying areas in which T2 may provide support and definition in this issue of Location Information in the SIP INVITE message.

The two areas identified are in Privacy (Section 3.2) and in UE Functionality Split (Section 5.1) as identified in the attached T2-010617.

T2 will evaluate these issues but requests that further detail be provided for the issue identified in Section 3.2.

T2 also notes that, in Section 5.1, issues related to UE Functionality Split may be handled already as part of existing T2 activities that will be available in the next few months. T2 will include SA2 in the distribution of details concerning these activities as they emerge.

T2 looks forward to working with SA2 on these issues and requests that SA2 include T2 on the distribution of information as additional parameters to be transferred are considered.

3GPP TSG-T2 #14
Edinburgh, Scotland
3-7 September 2001

T2-010617

**3GPP TSG-SA WG2 drafting meeting
25-28 June, 2001
Dallas, USA**

Tdoc S2-011697

Title: LS on Cell ID in SIP messages
Source: SA2
To: CN 1, CN 4, T 2, RAN 2, GERAN 2, SA 1, SA 3
Cc:

Work Item: IMS-CCR
Attachement: Background information is in S2-01-1368

Contact Person:

Name: Chris Pudney, Vodafone
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1 Introduction

The SA 2 drafting meeting on IP Multimedia considered the issue of Location Information in the SIP INVITE message and came to the principle decision that

“the 3GPP release 5 system should provide the capability for the SIP signalling to carry the cell identification from the UE to the S-CSCF”.

Note that the S-CSCFs should be able to handle SIP signalling without cell identification information.

The attached document, S2-01-01368 provided the stimulus for the SA 2 discussion and contains some background information.

The following issues were identified as being of relevance to other 3GPP committees:

2 SIP extensions

During the discussion, it was proposed that the capability to provide cell identification should be available at:

- a) SIP registration;
- b) MO session (call) initiation (eg in the INVITE message or the use of an INFO message). This information might be used to aid call routing;
- c) MT session (call) initiation (eg in the response to the INVITE message);
- d) session termination

2.1 CN 1 action

CN 1 are requested to investigate how to use SIP signalling on the Gm interface to carry the UMTS and GSM cell identifications.

3 Privacy

It is expected that Cx interface should provide the ability for the HSS to control whether the S-CSCF is allowed to (or prohibited from) supplying the cell identification to other nodes.

It is also anticipated that the UE would have a MMI that controls whether the UE sends, or does not send, the cell identification to the network.

SA 2 is still studying how to handle emergency calls in the IM Core Network. This might require the cell identification to be included in all SIP INVITE messages sent for emergency calls.

3.1 SA 1 and SA 3 action

SA 1 and SA 3 are asked whether these levels of control will satisfy privacy (and other) requirements.

3.2 Actions for CN 4 and possibly T2

CN 4 and T 2 are invited to provide the means to implement SA 1's, SA 2's and SA 3's requirements.

4 Nature of cell identification

SA 2 expect the Cell Global Identity to be used to identify GSM cells.

For UMTS cells, SA 2 propose to use the combination of MNC, MCC, LAC, and (16 bit) Cell Identifier to identify the cell. SA 2 note that it is the choice of the UTRAN operator as to whether or not this cell identification is unique.

In both GSM and UMTS, there is always the possibility for a cell change (eg handover) to occur in the time between the application forming the SIP message and the message being sent on the radio interface. For practical reasons, SA 2 believe that it is sufficient for the mobile to send the identification of the cell where the SIP message was formed.

In UMTS, the mobile can be in soft handover and be using multiple cells. In this case, the mobile could either select one of the cell identities of those in the active set at random, or more usefully, select the one that has most recently been added to the active set (on the assumption that the mobile is moving towards this cell).

4.1 RAN 2 action

SA 2 understand that the cell identification is available to UMTS mobiles that are not in the DCH state, however SA 2 believe that the (16 bit) Cell Identifier of the current cell(s) is not available during the DCH state.

SA 2 kindly requests RAN 2 to investigate the means to provide (within the Release 5 standards) the Cell Identifier to mobiles in the DCH state.

4.2 GERAN 2 action

SA 2 kindly requests GERAN to ensure that the current Cell Global Identity is still known to release 5 GSM mobiles.

5 UE functional split

IMS mobiles might be integrated units or might be split between, say, a "radio module" and a "SIP module".

5.1 action for T 2

SA 2 recognise that provision of the cell identification from the "radio module" to the "SIP module" requires further study. SA 2 kindly requests T 2 to study this issue.

Source: Vodafone
Agenda item: 11 (release 5)

Location Information in the SIP Invite

1 Introduction

Many customers benefit from existing location based services. Services can range from emergency calls to traffic information.

Existing operational, administration, billing, roaming and fraud gathering activities also utilise location information.

In GSM these services and features work well and have been based on Cell Global Identity.

In R'99 UMTS the same services can use Service Area Identity provided that a one to one mapping is used between the (16 bit) Service Area Code and the (16 bit) Cell identifier.

In R5 Ip Multimedia, the same type of functions will be required. **Hence it is suggested that the cell identity is included in the SIP Invite messages sent by the mobiles.**

2 Privacy and Emergency Calls

Obviously customers have the right to privacy. However, when placing an emergency call, a customer does not want to enable a "per call location" function. Thus the following is suggested:

- a) all IM capable mobiles are required to include the Cell Identity in a SIP extension in the INVITE message;
- b) all IM capable mobiles shall support means to signal, on a per call basis, in the INVITE as to whether the Cell ID should be made available to, or suppressed from any Application Server(s);
- c) the Cx interface carries information to the S-CSCF as to whether or not the location information is to be passed to application servers;
- d) certain applications (eg emergency services) can have a privacy override capability; and
- e) if the mobile has additional sources of location information (eg from GPS) then these may be added. However, the Cell Identity shall always be sent.

3 Nature of Cell ID

In GSM this is the Cell Global Identity.

In UMTS, the mobile can see the PLMN ID, LAI (both known from SIB 1) and the 16 bit Cell Identifier (in SIB3). It is proposed that the mobile sends these 3 pieces of information.

In either system, there is always some time lag in between the application forming the INVITE message and the message being sent on the radio interface. For practical reasons, this can be regarded as irrelevant.

In UMTS, the mobile can be in soft handover and using multiple cells. In this case, the mobile could either select one of the Cell Identities of those in the active set at random, or more usefully, select the one that has most recently been added to the active set (on the assumption that the mobile is moving towards this cell).

[It is not clear whether the cell ID is available when a UMTS mobile is using a DCH. However, if this is the case, then this is a serious omission from the R'99 standards because this functionality is important for mobiles using an 'engineering mode' to debug and monitor the performance of UMTS networks.](#)

4 Access Independence

Some systems might not support any form of location identification. To cater for these systems, S-CSCFs need to be able to handle INVITEs without location information (at least to the extent of returning a BYE message).

Proposals

It is proposed that:

- a) the concepts of section 2 and 3 are agreed;
- b) S2 identify which sections in 23.228 should be updated to incorporate this information; ~~and~~
- c) S2 (or N1?) identify whether any new SIP extensions are required; ~~and~~
- d) send an LS to RAN 2 regarding the need for the mobile to know the Cell ID in the DCH state.