3GPP TSG SA WG3 Security — S3#22 **S3-020007**

25 - 28 February 2002

Bristol, UK

3GPP TSG-CN1 Meeting #21 ***Tdoc N1-012041***
Cancun, Mexico, 26.- 30. November 2001was *Tdoc N1-011963*

Title:	Liaison Statement on privacy of IPv6 addresses allocated to terminals using the IM CN subsystem
Source:	CN1
To:	TSG_SA WG1
Cc:	TSG_SA WG2, TSG_SA WG3
Response to:	LS (S1-011190 → N1-011942) on privacy of IPv6 addresses allocated to terminals using the IM CN subsystem from TSG SA WG1.

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Attachments: None

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1. Overall Description:

In their incoming liaison statement, SA1 asked:

> **SA1** has received and reviewed CN1's liaison N1-011313. **SA1 reasserts the importance of user privacy and anonymity and prefers that the use of IPv6 not reveal additional information about the user's location**, e.g., that the user may be in a location other than his home PLMN.
>
> At the same time, SA1 does not have a good feel for just how serious a problem this is for user security, or how much complexity it would add to the specifications. SA1 does believe that this requirement is not mandatory for Release 5, especially if it threatens the timeliness of the Release 5 schedule. At the same time, if the complexity of adding this in Release 6, if required, were significantly greater than starting with it in Release 5, then SA1 would reconsider the advisability of its inclusion as a service requirement.
>
> SA1 would like specific feedback from CN1 on these complexity concerns.

CN1 identifies that there are a number of architectural solutions that would resolve this problem, each with their own problems of complexity and compatibility. These solutions would each require further investigation within both SA2 and CN1 before adoption. These are not in any order of precedence.

1. Where either the UA or the home network on behalf of the user may require privacy or anonymity, then provide the GGSN in the home network. This would result in the user always having an IPv6 address allocated by the home network, and therefore when the user roamed, there would be no change in IPv6 address for that user, and therefore no indication of change in location. This is a valid option within Release 5, and is determined by information placed in the USIM by the network operator. It is not envisaged that it would be feasible to change to a home network GGSN on a per-call basis. This solution provides a certain degree of privacy (e.g., still the IPv6 address may reveal the location of the user within a certain geographical area within the operator's network). This mechanism has the disadvantage that all the bearer paths also get routed via the home network, rather than being transferred directly between the two roaming networks.
2. Use a protocol such as mobile IP. This can be regarded as impractical given the decision to base the IP transport on GPRS.

3. Provide an anonymiser function. This entity acts as a network address translator, and needs to exist on both the signalling path and on the bearer path. Such functionality is not intended to be specified by IETF for IPv6. Based on S-CSCF decision, this could be inserted in similar manner to that currently being investigated for the MRFC / MRFP. However, it does not exist in the SA2 architecture at this point, and therefore it is not feasible to include in Release 5. This entity could be in the home network, or any other network, but presumably would have to be in the home network to give location privacy, unless some means of allocating addresses to the anonymiser itself is defined that does not identify the location of the anonymiser. This mechanism therefore has the disadvantage that all the bearer paths also get routed via the home network, rather than being transferred directly between the two roaming networks.

2. Actions:

For information, answer to a request.

3. Date of Next CN1 Meetings:

CN1_SIP-adhoc	14th – 18th January 2002	Phoenix, USA.
CN1_22	28th Jan.– 1st February 2002	Sophia Antipolis, France
CN1_22bis	19th – 21st February 2002	?