3GPP TSG SA WG3 Security — S3#29 **S3-030337**
15 - 18 July 2003
San Francisco, USA

3GPP TSG CN WG4 Meeting #19 ***N4-030722***
San Diego, CA, USA, 19th – 23rd May 2003

Title:	LS on adapting Cx interface protocols for security purposes
Response to:	LS (N4-030590/S3-030305) on Adopting C-x based protocols for several interfaces: NAF-BSF (D interface) and BSF-HSS (C interface), the interface between Authentication Proxy and HSS, and the interface between HSS and BM-SC for MBMS from SA3.
Release:	Rel 6
Work Item:	Support for subscriber certificates (SEC-SC), Security issues of Presence Capability (PRESNC), MBMS
Source:	CN4
To:	SA3
Cc:	-

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Attachments: -

1. Overall Description

CN4 thanks SA3 for the LS (N4-030590/S3-030305) on Adopting Cx based protocols for several interfaces: NAF-BSF (D interface) and BSF-HSS (C interface), the interface between Authentication Proxy and HSS, and the interface between HSS and BM-SC for MBMS. Within CN4, the definition of the Cx interface protocol is now stable and the associated work within the IETF on Diameter Multimedia Application is now very closely aligned with the content of 29.228 and 29.229.

CN4 studied the possibility to either enhance the Cx interface protocol or to define a new Diameter application(s), either from scratch or based on Cx protocol, for security purposes. Both of the above options are feasible and may be used to define the interfaces in question. On choosing the applied option, it is CN4's intention to follow the IETF guidance on re-use and adaptation of Diameter applications (see draft-ietf-aaa-diameter-17.txt chapter 1.2 Approach to Extensibility). IETF recommends reusing AVPs and applications. However, if major changes are needed to the existing application, such as adding new mandatory AVPs, it may be desirable to create a new Diameter application. On reusing Cx to D interface CN4 would like to emphasise that the Cx interface protocol has not been used in inter domain interfaces and therefore the current security level of the Cx interface protocol has to be checked against the requirements of the D interface.

Since other types of users than CSCF are now able to request authentication vectors, the HSS needs to know the source of the request:

1. in order to avoid the problem that the requestors stealing each other's sequence numbers and causing resynchronisation problems
2. in case of enhancing Cx, because different requestors can use different subsets of Cx interface protocol commands

The HSS can know the source of the request by:

1. Adding an AVP to the Cx protocol or as a vendor specific AVP in Diameter Base Protocol

   Pros
   - Allows easy identification of the source of the request
   - Cx specifications require little or no other modification
   - CN4 can do this change as a straight forward CR to existing Cx application

   Cons

- Co-ordination of changes to the Cx protocol will be needed, since changes in the Cx commands will affect all implementations using the related Cx commands

2. Each application having separate protocols based on Cx interface protocol (or not)

   Pros

   - Each application can be designed to meet the exact requirements of the related interface
   - The 3GPP group defining the interface would have ownership of the protocol definition.

   Cons

   - Every new interface needs a new protocol, which means a new application

If no major impacts are anticipated to the Cx functionality a new Diameter application based on the Cx interface can be specified or the requested functionality can be added to the existing Cx application in Rel 6 timescale. Otherwise, for the deployment of a new application from scratch, an estimation of the timescale cannot be given.

2. Actions

ACTION1: CN4 kindly asks SA3 to consider the synchronisation problem of authentication vectors described above, as well as the security requirements of inter domain usage of Cx protocol, and give guidance to CN4.

3. Date of Next CN4 Meetings:

CN4 #20	25th August – 29th August 2003	Sophia Antipolis, FRANCE
CN4 #21	27th October – 31st October 2003	CHINA