3GPP TSG CT Meeting #28 **CT-050112**
1st – 3rd June 2005. Quebec, CANADA.

3GPP TSG-CT WG4 Meeting #27 **C4-050847**
Cancun, MEXICO. 25th to 29th April 2005.

Title:	**LS to SA3, OMA-LOC, 3GPP Requirements for HTTP based Zn interface support between the Network Application Function and the Boot Strapping Function**
Release:	**Release 7**
Work Item:	**Subscriber Certificates (Generic Authentication Architecture)**
Source:	**3GPP CT4**
To:	**3GPP SA3, OMA-LOC, 3GPP2 TSG X**
Cc:	**CT**

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Attachments: **C4-050586 DISC; HTTP based Zn interface support to BSF - Nokia**

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1. Overall Description:

A discussion paper was presented to 3GPP CT4 in Cancun (28th April 2005) which outlines the usage of the HTTP protocol for the Zn interface for Release 7 stage 3. Currently a single protocol is defined within 3GPP Release-6 for this interface and that is Diameter based.

CT4 discussed this paper and agreed that a coordinated set of stage 1 and 2 requirements were needed in order to increase the usability and benefit of the 3GPP feature Subscriber Certification (Generic Authentication Architecture) within the mobility arena.

As a result we request a coordinated set of top level requirements are provided such that a clear indication of stage 3 specification work can begin in CT4.

We ask SA3 as owners of TS 33.919 to help to coordinate this effort.

We also ask OMA-LOC if GAA with an HTML interface could be useful for other services e.g. OMA SUPL. If so they should request the capability or indicate its usefulness to SA3 and CT4.

As a long term goal, we should also consider advancing the use of SIP as a transport for SUPL, as it was pointed out in the OMA LOC meeting almost all 3G UE's will implement an IMS stack.

2. Actions:

To SA3 group.

ACTION: We ask SA3 as owners of TS 33.919 to help to coordinate this effort to obtain a consistent set of top level requirement for 3GPP Release-7.

To OMA-LOC group.

ACTION: CT4 also ask OMA-LOC if GAA with an HTML interface could be useful for other services, e.g. OMA SUPL. If so they should request the capability or indicate its usefulness to SA3 and CT4.

To 3GPP2 TSG-X group.

ACTION: In the interests of convergence CT4 asks TSG-X to consider these new interfaces for Subscriber Certification and indicate if a common top level requirements approach is useful to further the interests of 3GPP2.

3. Date of Next CN4 Meetings:

CT4#28	29th Aug – 02nd Sep 2005	London, UK
CT4#29	31st Oct – 04th Nov 2005	Berlin, GER

3GPP TSG-CT WG4 Meeting #27 **C4-050586**
Cancun, MEXICO. 25th to 29th April 2005

Source: **Nokia**

Title: **HTTP based Zn interface support to BSF**

Agenda item: **6.2**

Document for: **Discussion and Decision**

1 Introduction

A NAF that does not reside in the home operator network might be dedicated to a special service. Currently, only NAF servers that support the diameter protocol can use GAA. This can be regarded as a limitation, since the NAF only uses the Bootstrapping-Info-Request, Bootstrapping-Info-Answer messages and the corresponding Error codes. But also service providing NAFs that reside in the home operator network, e.g. currently OMA SUPL does not support diameter. This discussion paper outlines the usage of the HTTP protocol for the Zn interface for Release 7.

2 Discussion

2.1 Reason for introducing HTTP based interface Zn

A NAF that use GAA has currently to implement the full diameter protocol and also needs to support SCTP (Stream Control Transmission Protocol). If the NAF is using diameter only for this purpose, then it has to support

- full diameter protocol, including extensions, and
- SCTP

only to use Bootstrapping-Info-Request (BIR), Bootstrapping-Info-Answer (BIA) messages of the diameter extensions and the corresponding Error codes. Especially, Java based NAFs might have difficulties supporting diameter, since Java does not support SCTP.

The goal of using the BIR and BIA messages is to transfer GAA related data between the BSF and NAFs. During the start of drafting process, the full requirements for the Zn were not known and therefore the diameter protocol was chosen as it was seen as the best fit for the Zn.

The NAF receives the B-TID and some form of authentication response from the UE. The NAF then sends the following data to the BSF:

- B-TID,
- hostname of NAF, and
- possible application identifiers to identify the needed USSs.

The BSF answers this request by sending to the NAF:

- NAF specific key material,
- Key lifetime,
- Bootstrapping time,
- Private identity (if NAF is allowed to receive it), and
- possible USSs as idenfied by the request.

The intention of the Zn interface is to carry these parameters.

2.2 HTTP-based Zn Interface Alternatives

The BSF has to support the HTTP protocol on the Ub interface, hence this protocol is already available and can be used also on the Zn interface. The HTTP based Zn' interface is not needed, since in this case diameter support is available.

There are three approaches, how to transfer the GAA data over the Zn interface using HTTP. They are outlined and discussed below:

1. Plain HTTP-based
2. HTTP-based with XML-schema in the payload
3. HTTP-based with Web Service support

The plain HTTP-based Zn interface puts all the GAA data into the payload without any further structuring. This is very easy to implement, but might cause some processing and interoperability problems with other applications. Also, the extensibility for future additions might be quite limited and backward compatibility can not be ensured.

Introducing an XML based schema into the payload, does enable better processing than the plain HTTP-based solution. But the solution would be very 3GPP specific and not generic enough to be used by web services framework as standardized e.g. by the Liberty Alliance.

The communication between NAF and BSF is a server-to-server communication to request some data that resides at the BSF, actually a classical web service. The usage of web service enables implementation independent access to BSF that conforms to existing Liberty Alliance standards. To avoid that the BSF has later to implement a 3GPP specific XML schema and a SOAP specific BSF interface (and also all the possible interoperablitiy problems, caused by such a situation), web service support should be taken into account.

The security of the HTTP-based Zn interface should be easy to support in the visited and in the home operator use case. This needs to be aligned with SA3.

3 Conclusion

The generic authentication architecture should be usable by NAFs that do not support the diameter protocol and SCTP for this purpose. The NAF should be able to choose between the diameter based or HTTP based interface. Easy integration and usage with web services will increase the usage of GAA and should be supported by offering a HTTP based Zn interface to the BSF with web service support. Also it should be noted that this poses no additional protocol requirements for the BSF as it already supports HTTP (in Ub interface).

An alignment to SA3 is needed to secure the HTTP based Zn interface.