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Title: Impact to the 3GPP IMS stemming from fixed broadband access to IMS¹(FB-IMS) – standardization principles in 3GPP

Document for: Decision

Agenda Item: NGN work item for SA1 and NGN documents

Introduction

The application of an IP/SIP-based call control architecture in the context of fixed broadband access has received strong market interest. In standardization the concept of IP-based next generation network is known as NGN. It has been recognized by the NGN market that the 3GPP IMS already addresses / solves most of the issues related to the application of SIP protocol for public operators as security, charging, legal intercept, interfaces for service creation, interworking with legacy network,...). It is also recognized that 3GPP IMS is the leading activity in applying SIP for public operators and followed by others, e.g. 3GPP2 MMD.

This lead NGN standardization activities to identify the 3GPP IMS as the basis for their next generation control structure for person to person communication.

Within 3GPP there are different degrees of interest in the work, varying from reservation from a GSM/UMTS scope perspective on the one side to the desire that 3GPP takes a rather strong role with respect to different NGN IMS standardization activities. This document advocates why the chosen work set up is appropriate from 3GPP's perspective.

Discussion

There are various activities on NGN based on IMS, including activities in all three main regions and on ITU-T level. It is not 3GPP's role to be proactive but rather to react on liaisons from NGN IMS activities. ETSI TISPAN declared that TISPAN Rel 1 is based on IMS services via fixed broadband access and thus contacted 3GPP. This resulted in a joined work shop and subsequently in two 3GPP work items (TSG SA WI with SA2 lead, TSG CN WI with CN1 lead). We think these work items form the appropriate basis for the work in 3GPP. We believe that this should be the basis for working together with other SDO's.

In line with the set up of work we stress some principles in 3GPP with respect to the work on FB-IMS.

Fixed Broadband access to IMS is regarded an opportunity in 3GPP : access independence was a main design principle of IMS so we welcome the interest of the fixed broadband market. It provides the opportunity that a mobile service is terminated at fixed counterpart. A larger market typically will lead to cost advantages through economy of scale. Last, choosing the 3GPP IMS is also a recognition of the leadership, effectiveness and quality results of the 3GPP project.

IMS core specifications (e.g. 24.228, 24.229) including modifications required for fixed broadband access are within 3GPP : the competence of the 3GPP IMS lies in 3GPP. Only by concentrating the protocol work in 3GPP we assure the following objectives : maintain concentration of competence, minimize modification to what is needed, avoid regional protocol differences (development effort, service interworking and interoperability, market size). If 3GPP would show a radical attitude not accepting any requirements from NGN standardization this might force the NGN standardization bodies to develop their own IMS specification. It should be recalled that the copyright of the 3GPP specifications is owned by the SDO's, which could use any given version as a basis for their work. In the worst case we would result in several incompatible IMS stage 3's.

3GPP does not extend 3GPP scope to include NGN : although this has not been proposed openly is useful to make this clear. 3GPP scope is the mobile market of GSM/UMTS and its evolution. An extension toward fixed access would strongly hinder the 3GPP effectiveness.

Detailed service requirements with respect to FB-IMS are outside 3GPP

¹ The term NGN evokes different concepts. From a 3GPP perspective the relevant issue is the access to the IMS via fixed broadband access.

3GPP requirement concerning FB-IMS should be very general and high level : obviously, as a manufacturer our interest is to restrict the modifications with respect to 3GPP IMS Rel 6 to the very minimum. However, it is important to understand the requirements from the NGN markets in detail with respect to issues as services, impact from underlying access network, terminal types, support of legacy and legal requirement in fixed-line markets.

3GPP Architecture is the main focus point for detailed requirements : it is important that 3GPP understands the system impact from the service requirements and makes sure that there is a coherent answer providing minimum modifications. Therefore it is right that lead in TSG SA has been given to SA2 which involves SA1, SA3, SA4 and SA5. On the other side, direct change requests to the core network groups without understanding the system impact will lead to incoherence.

3GPP does not harmonize the different worldwide NGN requirements : It is well-known that there are different IMS-based NGN standardization activities around the world, which need to collaborate and cooperate. There is a desire in striving for a resolution serving best the need of the industry at a whole². However, as far as 3GPP is concerned, harmonization of different NGN projects is outside 3GPP scope. At present diverging requirements from the different NGN activities is a hypothetical question. If 3GPP would need clarification between requirements on FB-IMS from different NGN activities it should then liaise to the respective bodies. In addition, some of the requirements stem from regional market differences and regional legal requirements. 3GPP has successfully dealt with regional requirements (priority service, emergency service, numbering, communication for disabled people,...) in the past. Most importantly: IMS call/session control infrastructure is only *one* aspect of NGN, other important include *access stratum* topics for NGN. The understandable need for collaboration and coordination between regional NGN activities must be done outside 3GPP.

FB-IMS and All-IP are independent work items : The SA1 feasibility study on all-IP is an important study with respect to the evolution of the mobile network. The FB-IMS work need not be linked to that.

Learn from 3GPP IMS/3GPP2 MMD collaboration with IETF SIP: in order to put the outlined principles in perspective let's recall the successful collaboration of 3GPP with IETF on IMS / SIP. IETF provides essential building blocks to the 3GPP IMS, namely the core IP protocols. 3GPP formulates requirements by our understanding of the mobile market and business. Probably issues such as authentication would not have been resolved in the interest of the mobile operators if they were decided in IETF. However, 3GPP did listen to IETF guidance about design principles of SIP. 3GPP changed some specifications to better align with IETF principles where other solutions could be found to satisfy the mobile market (e.g. modification of SIP messages by proxies). Finally, both 3GPP IMS and 3GPP2 MMD base on SIP. Collaboration between the mobile network standardization bodies 3GPP and 3GPP2 is done on bilateral basis or through company contributions but not by the IETF. Analogously, the 3GPP IMS is an essential building block to NGN standards. The principles outlined in this document concerning FB-IMS work in 3GPP follow the same spirit as in the successful 3GPP IETF collaboration.

Conclusion

On the basis of this discussion it is proposed that

- Work needed in 3GPP to cater to enable IMS over fixed-broadband access is covered by NP-040372 and SP-040531. WID SP-040497 is not required.
- The understanding of 3GPP on collaboration with respect to FB-IMS is liaised to ETSI TISPAN (and other NGN standardization activities if they liaise to 3GPP)
- There are no proposals to extend the scope of 3GPP. Therefore we believe there is no need to raise the issue at PCG level as part of TSG SA report

Acronyms

FB-IMS Fixed-broadband access to IMS

Reference

NP-040372, new WI "Protocol impact from providing IMS services via fixed broadband"

SP-040531, New WID on IMS enhancement for NGN

actual WI title "system impact from providing IMS services via fixed broadband"

SP-040497, SBC, WI "IMS NGN Requirements WID"

² Although out of scope of 3GPP SA debate : Considering the progress over the last months Siemens is confident about the outcome of alignment and collaboration between IMS-based NGN.