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Source:	**NTT DoCoMo Inc.,**
Title:	**Clarification of scope of NGN-related work in 3GPP**
Document for:	**Discussion**
Agenda Item:	**7.1.2, 7.2.3, 8.1.1**
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1. Introduction

At TSG SA#23 it was agreed to arrange a workshop between ETSI TISPAN and 3GPP to discuss issues related to Next Generation Network (NGN) standardisation and its relation to IMS as specified by 3GPP. This workshop was held in June of this year and it is expected that the result of the workshop will presented to TSG SA#25. It is the understanding of the authors of this contribution that the results of the aforementioned workshop have also been discussed within working groups of TSG SA and the results of these discussions will be presented to TSG SA#25 for consideration.

In addition to the workshop related activities a new WID entitled 'IMS enhancements for NGN' was presented by SA2 to TSG SA#24 for approval. However, some concerns were raised regarding the timing of this proposal the approval of this new work item was postponed.

This contribution aims to clarify various aspects regarding the proposed NGN-related activities within 3GPP with a view to agreeing upon an appropriate way forward at TSG SA#25.

2. Discussion

The results of the workshop between ETSI TISPAN and 3GPP have been discussed within both SA1 and SA2. SA1 have presented a Liaison Statement stating the results of their discussions in SP-040490. Within SA2 it was agreed to revise the new WID postponed at TSG SA#24 (SP-040328) and present it for approval for a second time within SP-040531.

This contribution discusses some general considerations regarding the undertaking of NGN-related work within 3GPP and highlights several areas requiring clarification within the proposed WID presented by SA2 for approval in SP-040531.

2.1 General issues regarding NGN-related work within 3GPP

- Clarification of NGN concept and specifications

  The term Next Generation Network (NGN) is used in a number of organisations to describe a next generation network system for fixed networks. Although this term is heavily used there does not appear

to be a common definition or a common reference for the specifications for this system and so the term NGN is subject to varied interpretation. The lack of a common understanding of the concept of NGN could mean that while it could be said that 3GPP is working on NGN, in actual fact 3GPP may only be working on a particular interpretation of the concept of NGN which may not have any common applicability. This could result in proposals based on another interpretation of NGN being rejected even though they are equally relevant for NGN but simply not the particular interpretation being used within 3GPP. This is a wholly undesirable situation and may result in interoperability problems and degrade the value of the work within 3GPP. 3GPP is a global organisation and has a responsibility to maintain global applicability of its specifications. For this reason it does not seem appropriate for NGN-related work to be undertaken in 3GPP without a common and globally applicable definition and understanding of the concept of NGN.

- Lack of collaboration with SDOs other than ETSI

  At present the only standardisation forum with which 3GPP has corresponded with regarding NGN has been ETSI TISPAN. However, as stated in the text above the concept of a 'Next Generation Network' is being studied in a number of organisations and SDOs not just ETSI. This does not seem to fairly reflect the position of 3GPP as a global organisation and does not recognise the activities of 3GPP's other organizational partners. If there is a desire to undertake NGN-related work within 3GPP then the activities of all the organizational partners should be taken into consideration and the PCG should be asked to determine which activities of which SDOs are to be taken into account within this work.

- NGN work within ITU-T Focus Group for Next Generation Networks

  It appears that NGN work is progressing within the ITU-T Focus Group for Next Generation Networks. Within this group it appears to have been decided to base the core network of NGN Release 1 on IMS. IMS is specified by 3GPP however this decision appears to have been taken without any formal correspondence between 3GPP and the ITU-T Focus Group for Next Generation Networks. Without consultation with 3GPP this activity threatens to fragment IMS deployment. For this reason the PCG should be asked to address the issue of reuse of IMS by ITU-T Focus Group for Next Generation Networks and action taken as appropriate.

2.2. Specific concerns regarding the proposed WID from SA2 in SP-040531

Although some alterations have been made compared to SP-040328 it appears that some of the issues raised at TSG SA#24 have not been fully considered. In fact some of the changes could be seen to introduce greater confusion regarding the purpose and scope of the proposed NGN-related work within 3GPP.

Some of the potential areas of confusion are presented below:

- WID Title

  The proposed WID in SP-040531 has been re-titled 'System impact from providing IMS services via fixed broadband' compared to SP-040328. However, the body of the text has not been edited to reflect the change of title. This results in a misalignment between the title of the proposed WID and its content. The title would seem to suggest a work item similar to those approved for 3GPP-WLAN interworking under which an interworking system has been specified to enable use of 3GPP-based access control and charging and access to 3GPP PS-based services. However, the body of the text is rather related to the original title in the proposed WID in SP-040328 i.e. 'IMS enhancements for NGN' and seems to imply specification of system for direct access to IMS via fixed broadband which is inconsistent with the approach utilised thus far for 3GPP-WLAN interworking.

  The term 'fixed broadband' is also ambiguous. It would seem to suggest some sort of fixed access system such as xDSL. However, this is not clear from the content of the proposed WID in SP-040531. Despite the ambiguity the term 'fixed broadband' seems to imply specification of 3GPP system functionality for a fixed access network. The scope of 3GPP is to standardise technology for mobile networks and therefore 'fixed' networks including fixed access networks are out of scope of 3GPP. Furthermore, fixed access technologies are not included within the 3GPP access technologies stated in article 3 ('Scope and objectives') of the 3GPP Working Procedures. In this respect it would be inappropriate for 3GPP to study the usage of this access technology without a decision being taken regarding the re-scoping of 3GPP at PCG level. It may be acceptable to study access to IMS via fixed broadband if the intention of this work item is to study interworking between the 3GPP system and fixed broadband in the same way as has been undertaken for 3GPP-WLAN interworking from Rel-6. However, this is not clear from the content of the proposed WID in SP-040531.

- Linked Work Items

  The All-IP Network Feasibility Study (SP-040303) is mentioned as a linked work item within section 2 of the proposed WID in SP-040531with the caveat that the actual relationship between these two activities

will depend on the outcome of the feasibility study being undertaken within SA1. As stated within the WID for the All-IP Network Feasibility Study (SP-040303) approved at TSG SA#24 the work for the All-IP Network Feasibility Study is currently limited to SA1 only and it is too early to judge whether these two work items are linked. For this reason it is not appropriate for the All-IP Network Feasibility Study to be listed within section 2 of SP-040531 even with the explanatory note.

- Scope of NGN-related work within SA2

  Despite the request of TSG SA to update the WID presented to TSG SA#24 in SP-040328 the scope of the work item remains unclear. One interpretation of the some of the text within the proposed WID, such as 'This work item intends to study and intends to implement the necessary enhancements to IMS within 3GPP for NGN' and 'The objective of this work item is to provide possible architectural enhancements necessary in the 3GPP system to support NGN based on IMS, for NGN release 1 (ETSI TISPAN release 1)' could be interpreted as stating that 3GPP, i.e. SA2, is to undertake work to standardise the NGN architecture. The scope of 3GPP is to standardise technology for mobile networks and therefore 'fixed' networks including fixed access networks are out of scope of 3GPP. Therefore, it would be inappropriate for 3GPP to standardise a fixed network system such as NGN. If the intention of the WID presented in SP-040531 is to undertake work to standardise NGN it would imply a change to the scope of 3GPP. The scope of 3GPP is an issue to be addressed within the PCG and the WID should not be approved until this issue is discussed and resolved within the PCG.

  Furthermore, the conclusion of the workshop between ETSI TISPAN and 3GPP states that ETSI TISPAN will define NGN session control using IMS (as defined by 3GPP) as a platform and that 3GPP will not define NGN but work to enable re-use of IMS within NGN as defined by ETSI TISPAN. Therefore, the output of the workshop appears to be a principle of 3GPP enabling re-use of IMS, as defined by 3GPP, within NGN, as defined by ETSI TISPAN, not a principle of 3GPP taking on responsibility for standardisation of NGN. Based on the text of the WID in SP-040531 it is not clear if the principles agreed within the workshop between ETSI TISPAN and 3GPP are being adhered to or not hence it is necessary that this aspect be clarified before SP-040531 is approved by TSG SA.

- Other aspects of NGN besides session control.

  The result of the workshop between ETSI TISPAN and 3GPP appears to be that IMS is to be utilised for session control within NGN but other aspects of NGN are outside the scope of the collaboration between ETSI TISPAN and 3GPP. However, within the proposed WID in SP-040531 it is not clear whether the proposed expansion of IMS for NGN is limited to the current scope of IMS as currently defined within 3GPP or whether new areas not currently considered within IMS are within the scope of the proposed activity. It is assumed that issues outside the current scope of IMS within 3GPP are not relevant to this activity and should be resolved separately within the appropriate forum i.e. 3GPP/ETSI TISPAN. However, this issue requires formal clarification within TSG SA and should be explicitly stated within the proposed WID in SP-040531 before it is approved.

- Work within SA1 and method for undertaking work to expand IMS for NGN

  The opinion of SA1 regarding NGN-related work within 3GPP is stated within SP-040490 and it is not the intention to repeat the content of the SA1 Liaison Statement in this contribution. However, the role of SA1 within NGN-related work in 3GPP requires clarification before any new work items for NGN-related work within 3GPP can be approved.

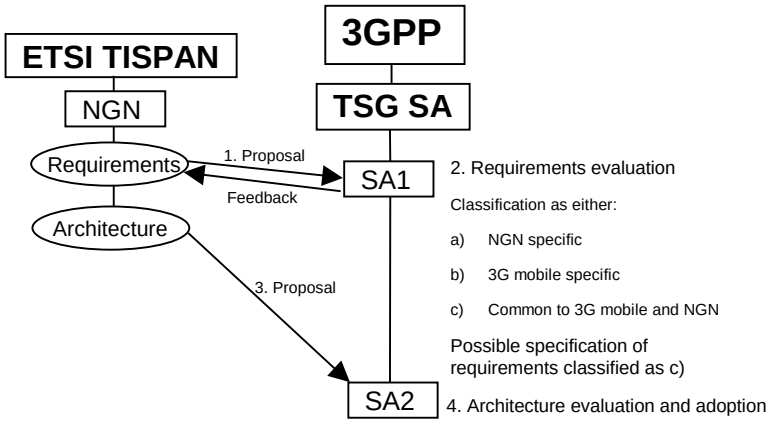
  In section 5 of the proposed new WID presented in SP-040531 it is stated that the NGN requirements impacting the 3GPP service requirements have to be analysed by SA1. However, as the proposed WID was produced by SA2 it is assumed that the proposed work item is primarily for architectural, i.e. stage 2, work. As stated in the LS from SA1 in SP-040490 NGN-related work within 3GPP should follow the established 3 stages of 3GPP specification work i.e. Requirements (Stage 1) → Architecture (Stage 2) → Protocols (Stage 3). The implication of the proposed new work item in SP-040531 would be that architectural work be undertaken before or in parallel to analysis of the requirements. This does not seem appropriate and may in fact turn out to be inefficient as the requirements analysis may well result in the architectural work becoming redundant if some NGN requirements are not adopted as new IMS requirements by 3GPP.

  Furthermore, the method for undertaking NGN-related work needs to be clarified in order for this work to progress efficiently and effectively. If NGN-related work is to be carried out within 3GPP then an analysis of the relevant NGN requirements and the IMS requirements needs to be undertaken within SA1 to classify each relevant NGN requirement as either 3G mobile specific, NGN specific or common to both 3G mobile and NGN. The proposed WID in SP-040531 appears to describe that the specification for the requirements common to 3G mobile and NGN would be produced by 3GPP. However, it is not yet clear which group, 3GPP or TISPAN, will produce the specification for NGN specific requirements. Also, it is not clear either how to reflect them within the existing IMS specifications. There are several methods

that could be considered for this work such as that presented in the figure below and a formal decision regarding the method of collaboration between 3GPP and ETSI TISPAN needs to be taken at TSG SA before this work progresses.

Possible method for expanding IMS for NGN:

1. NGN requirements submitted to SA1 from ETSI TISPAN
2. Evaluation of NGN requirements by SA1 and classification of the requirements as either: NGN specific, 3G mobile specific, or common to both IMS and NGN. If agreed by SA1 it would be possible to specify requirements judged to be common to both NGN and 3G mobile within 3GPP. The result of this analysis should then be provided to ETSI TISPAN by SA1.
3. IMS Architecture expansion for NGN developed in ETSI TISPAN based on requirements feedback from SA1 and submitted to SA2.
4. Evaluation of IMS Architecture expansion proposal from ETSI TISPAN in SA2 and adoption of proposal as appropriate



3. Conclusions and recommendations

TSG SA is asked to consider and discuss the points raised in section 2 of this contribution regarding NGN-related work within 3GPP and come to a conclusion regarding the method for progressing work in this area.

More specifically TSG SA to endorse the following principles regarding NGN-related work within 3GPP and requests that proposed WID presented in SP-040531 be updated accordingly:

- Recognise the need for a common and globally applicable definition of NGN.
- Issue of collaboration with SDOs including all 3GPP organizational partners for NGN-related work within 3GPP to be referred to the PCG.
- Issue of IMS being used as the basis for the core network of NGN Release 1 within ITU-T Focus Group for Next Generation Networks to be referred to the PCG.
- Issue of access to IMS via fixed broadband to be referred to the PCG if the intention of the WID in SP-040531 is to specify access to IMS using fixed broadband as a 3GPP technology contradicting article 3 of the 3GPP working procedures.
- Removal of the All-IP Network Feasibility Study (SP-040303) from the list of linked work items within the proposed WID in SP-040531.
- If the intention of the proposed WID in SP-040531 is to specify the NGN architecture within 3GPP refer this issue to the PCG due to the implied change of scope of 3GPP.
- If the intention of the proposed WID in SP-040531 is not to specify the NGN architecture within 3GPP, clarify that NGN-related scope of work within 3GPP is to enable the re-use of IMS as a platform for NGN session control only. All other aspects are outside the scope of NGN-related work within 3GPP.
- Clarification that SA1 is required to evaluate any new requirements for IMS introduced by this work and that normal 3GPP working practices and procedures i.e. i.e. Requirements (Stage 1) → Architecture (Stage 2) → Protocols (Stage 3) method of working is to be strictly adhered to.
- Recognition of the need for an agreed method of interaction between ETSI TISPAN and 3GPP for NGN-related work within 3GPP to ensure that too great a burden is not placed upon 3GPP to carry out this work.

Based on endorsement of the above principles it is hoped that a method for progressing NGN-related work within 3GPP can be resolved during TSG SA#25.