3GPP TSG Services And Systems Aspects　　　　　　　　**SP-000344**
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Agenda Item: 7.7

Source:　　　　AT&T, Nortel Networks, BT, Vodafone-Airtouch, Telia, NTT DoCoMo, France Telecom, Ericsson, Siemens, Nokia

Title:　　　　IETF Management Strategy

Document:　　Discussion/ Decision

As part of the "All-IP" standardization strategy, it was agreed to strengthen co-operation between 3GPP and IETF. A three-step approach was agreed:

- Form a high level agreement between IETF and 3GPP.
- 3GPP WGs to identify RFCs for wireless adaptation and propose modifications/additions to IETF
- Appoint a Rapporteur to provide an overview report on IETF activities of interest to 3GPP, as a starting point

<u>3GPP-IETF Agreement</u>

A mutually agreed set of guidelines and principles will improve communication procedures and the ability for cooperation. Attached is a draft Framework proposal for a high level agreement between 3GPP and IETF. The proposal is based on discussions and the conclusions reached both at the SA plenary and in working groups. The conclusions on the work process discussion from the joint S2/N1 Helsinki meeting can be found in Tdoc S2-000662 and presented here to the SA plenary (SP-000342)

TSG-SA is requested to endorse the framework so that it can be formally presented to PCG during July 17-19 and subsequently to IETF. The objective is to have IETF and 3GPP officially endorse and publish this framework.

Further, Section J of the 3GPP working procedures outlines the basis for external relations. See Annex-A below. The recommendation is to describe the IETF relations also in the 3GPP working procedures, according to the Framework agreement.

<u>TSG-SA IETF coordination Function</u>

AT&T has volunteered to undertake the 3GPP IETF coordination function. The coordinator will report directly to TSG-SA.

The 3GPP IETF coordinator shall be the contact person for matters pertaining to the 3GPP-IETF cooperation. The role is described in section 5 of the draft framework document.

To facilitate easy and regular access to key IETF members, and to ensure a smooth transition towards a cooperation with IETF, the appointment of the 3GPP IETF coordinator to the IPv6 Forum's technical directorate is proposed.

3GPP-IETF Work program

The R00 architectural work in S2 would be one of the core activities that will identify the IETF RFCs to be adopted by 3GPP. A sample is attached. The intention is for the TSG-SA IETF coordinator to coordinate with all the relevant 3GPP working groups and maintain an uptodate 3GPP work program with respect to IETF, as part of the 3GPP project plan.

Please note that although the actual RFC development will be carried out within IETF, the proposal is to identify a specific 3GPP WG to be a sponsor/driver for one or more RFCs. The identified WGs are responsible to provide coordinated input from 3GPP and to monitor progress in IETF.

The proposed additions/modifications of selected IETF standards shall be endorsed by the relevant 3GPP WGs and TSGs before driven in IETF.

There might also be a need for additional 3GPP documents that describes the IETF options to be supported by 3GPP.

In conclusion, TSG-SA is urged to approve:

- The 3GPP-IETF standardization framework for submission to PCG.
- The creation of an IETF coordination function at SA level.
- Seek advice from PCG to update the 3GPP working procedures

Attachment

Annex-A – Affected portion of the 3GPP working procedures

Annex-B – Draft Framework
Annex-C Sample 3GPP-IETF work program

Annex-A Affected portion of the 3GPP working procedures

SECTION J: EXTERNAL RELATIONS

Article 51:   Relationship with the ITU
3GPP results should be submitted to the ITU as appropriate.
3GPP will not contribute directly to the ITU. Formal contributions to ITU Study Groups shall be made by Individual Members who are also members of the ITU. 3GPP Technical Specifications and Technical Reports may be taken as the technical content of such contributions.
Article 52:   Relations with other groups
TSGs and WGs are encouraged to liaise directly with the relevant technical bodies within the Partners as appropriate.
The PCG shall maintain a list, based on proposals received from the TSGs, of other organizations with whom the TSGs are authorised to liaise directly

Draft
3GGP - IETF

Standardization Framework

Basis for collaboration between 3GPP and IETF to secure the timely development of wireless-internet standards

1 Introduction

The Internet and Mobile networks are two of the fastest growing markets that are on a convergence course. Third generation mobile systems will broaden the Internet. The power of mobility and the convenience of mobile devices for short sessions are driving the growth of "wireless-internet" at an astonishing rate. The number of wireless Internet capable devices is expected to exceed the number of PCs by 2003.

The third generation partnership project (3GPP) is a collaborative effort among worldwide standard development organizations (SDOs) including ETSI (Europe), T1P1 (US), ARIB/TTC (Japan), TTA (Korea) and CWTS (China) to develop globally applicable 3G mobile standards. 3GPP has recently finalized the first set of specifications. Capitalizing on this success, 3GPP has already undertaken the task to further evolve the standards to realize the full vision of wireless-internet. The so called "All-IP" based mobile networks are envisioned to facilitate not only the evolution of wireless-internet but to enable the service convergence, i.e. same end user services over different access forms.

3GPP intends to continue to leverage Internet technology as one of the means to realize the wireless-internet vision. Leveraging Internet technology simply means to use existing Internet standards whenever possible. This would involve amendments or extensions and the creation of new Internet standards.

This framework serves as the basis for collaboration and outlines the principles and guidelines agreed by both 3GPP and IETF to secure the timely development of the wireless-internet standards.

2 The Basis of Collaboration

IETF is the centre for Internet competence. 3GPP holds the radio and mobility expertise and the systems responsibility for wireless systems including the evolution of wireless IP. As leaders of the two fastest growing industries, IETF and 3GPP can significantly contribute to the development of wireless-internet standards.

The basis of co-operation is that both IETF and 3GPP mutually recognize:

- The need for radio and mobility expertise for the adaptation of IP to the wireless environment.
- The importance of common IETF mechanisms to specify end user services irrespective of access type, i.e. to facilitate the service convergence,
- The need for timely completion of the standards to ensure the commercial success of Mobile systems complying to the 3GPP standards.

The 3GPP role therefore is to define the service requirements, establish the architecture, evaluate and validate the use of, and identify any changes to, the Internet standards.

The IETF role is to develop, review and approve the Internet standards.

An IETF coordination function is established within 3GPP to co-ordinate the Internet standards evaluation in 3GPP, development in IETF and to facilitate the establishment of direct relations between 3GPP and IETF.

3 Guidelines and Principles

The Internet standards development process is described in the <u>RFC 2026</u>. The 3GPP process is outlined in the 3GPP working. The following is intended to serve as a general guideline.

- 3GPP defines the service requirements and the architecture (e.g. reference model, information flows and protocol architecture including selected IETF protocols), and the security features.

- Based on the architecture and requirements, 3GPP evaluates the Internet standards (RFCs) and identify the RFCs to be used, amended or created. The modifications should guarantee backward compatibility.

- Proposals for extensions or modifications to the existing RFCs are carried out in IETF. 3GPP Individual Members will submit the proposals to the appropriate IETF working group, as early as possible. It is important that IETF is involved from the problem identification to its resolution.

- In case of proposed new Internet standards, 3GPP shall develop and the 3GPP Individual Members will submit the rationale and motivation for the new RFC. The appropriate Area directors should be approached with the details of a BOFs if a new IETF work group would be required.

- IETF develops, reviews and approves the RFCs according to its normal process. 3GPP develops its specifications according its own procedures and drafting rules. However, the architectural work in 3GPP and the RFC development work in IETF could proceed in parallel.

- 3GPP is responsible for technical specifications for a complete 3G mobile system including the <u>standardization of the use of Internet standards by referencing</u> specific RFCs and specifying the functionality that shall be supported. 3GPP also needs to keep track of the RFCs referenced by different releases.

- With respect to terminals (UEs), 3GPP shall guarantee the stability and backward compatibility of the radio interface protocols including multimedia. These protocols should also be part of the 3GPP test specifications. Other multimedia aspects such as the real-time radio

bearers and codecs to be mandated in a UE shall also be standardized by 3GPP.

- IETF and 3GPP Individual Members are encouraged and invited to attend relevant meetings hosted by the respective organizations so as to develop a better understanding of the issues and concerns.

4 Handling Exceptions

The preferred 3GPP approach is to utilize the Internet standards. That is, 3GPP shall not standardize a "3GPP version" of an Internet standard (existing RFCs or draft/proposed standards).

However, in the exceptional case where the selected Internet standards do not satisfy the 3GPP requirement (e.g. remove or modify mandatory requirement to of a specific codec in an RFC), and it is felt that for some reason IETF could not finalize the RFC (in time), 3GPP may elect to develop or extend an alternative standard to deliver the required 3GPP functionality.

Consequently, 3GPP would seek to influence the relevant IETF working group and incorporate the identified 3GPP requirements into the Internet standards.

5 3GPP IETF coordination Function

To coordinate the Wireless-Internet standards development, an IETF coordination function is established in 3GPP.

The 3GPP IETF coordinator shall be the contact person for matter pertaining to the 3GPP-IETF cooperation. The role of this function include:
- Official representation of 3GPP interests in key IETF meetings, with respect to 3GPP-IETF relations
- Ensure that the relevant 3GPP WGs and TSGs produce RFC development Strategies and incorporate them into the 3GPP project plan
- Establish and maintain a working relationship with IETF, i.e. with key members from IAB, IESG and ISOC and with relevant, Area Directors and IETF Work groups
- Facilitate the identification of IETF issues within 3GPP
- Communicate 3GPP approved positions externally. Approval of the 3GPP positions lie within the sponsoring WG and the corresponding TSG, according to 3GPP approval rules.
- Support the creation of new BOFs
- Compile and maintain a 3GPP IETF program as part of the 3GPP project plan
- Review the IETF work program and ensure that 3GPP needs are incorporated
- Report progress on IETF matters to the relevant 3GPP meetings (SA Plenary)

6 Recommended Action

Both 3GPP and IETF agree to:

- **Adhere to the principles outlined in this framework,**
- **Take necessary steps within their respective organizations to implement this framework and**
- **Continue to cooperate to further improve this collaboration.**

7 Contacts

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RFC	Title	IETF WG	3GPP WG	Possible Impact/ Status
Internet protocol				
791	Internet Protocol (IPV4)	standard		
2460	Internet Protocol Version 6 (IPV6)	Draft		
IPv4-IPV6 transition				
	A number of RFCs for tools/mechanisms that might be used for transition to IPv6	ngtrans		
Real-time Transport protocol				
1889	RTP: A Transport Protocol for Real-Time Applications:	mmusic		
Real-time Streaming Protocols				
791	Internet Protocol (IPV4)	standard		
Session Initiation Protocol				
2543	SIP: Session Initiation Protocol	SIP		
Session description Protocol				
2327	SDP: Session description Protocol	Mmusic		
Domain Name System				
1034	Domain names - concepts and facilities	Standard		
1035	Domain names - implementation and specification	Standard		
1101	DNS encoding of network names and other types	Unknown		

RFC	Title	IETF WG	3GPP WG	Possible Impact/ Status
1183	New DNS RR Definitions	Experim		
1348	DNS NSAP RRs	experim		
1876	A Means for Expressing Location Information in the Domain Name System	Experim		
1982	Serial Number Arithmetic	Dnsext		
1995	Incremental Zone Transfer in DNS	Dnsext		
1996	A Mechanism for Prompt Notification of Zone Changes	Dnsext		
2065	Domain Name System Security Extensions	prop std		
2136	Dynamic Updates in the Domain Name System	dnsext		
2137	Secure Domain Name System Dynamic Update	dnsext		
2181	Clarifications to the DNS Specification	dnsext		
2308	Negative Caching of DNS Queries	dnsext		
2535	Domain Name System Security Extensions	dnsext		
Network Address Translator				
2663	IP Network Address Translator (NAT) Terminology and Considerations	nat		
2776	Network Address Translation - Protocol Translation (NAT-PT)	(prop std)		
Telephone uniform resource locator				
2806	URLs for telephone calls			
Security				
2246	The TLS Protocol Version 1.0	tls		
2401	Security Architecture for the Internet Protocol	ipsec		

RFC	Title	IETF WG	3GPP WG	Possible Impact/ Status
2401	IP Authentication Header	ipsec		
2409	The Internet Key Exchange (IKE)	ipsec		
2408	Internet Security Association and Key Management Protocol	ipsec		
2406	IP Encapsulating Security Payload (ESP)	ipsec		
2459	Internet X.509 Public Key Infrastructure Certificate and CRL Profile	pkix		
2510	Internet X.509 Public Key Infrastructure Certificate Management Protocols	pkix		
2511	Internet X.509 Certificate Request Message Format	pkix		
2527	Internet X.509 Public Key Infrastructure Certificate Policy and	pkix		
X	Certification Practices Framework			
2633	S/MIME Version 3 Message Specification	smime		
X	RFCs for IP security remote access	ispra		
x	RFCs for IP security policy	Ipsp		
Quality of service / transport				
2753	A Framework for Policy-based Admission Control	(informational)		
2748	The COPS Protocol	(prop std)		
2749	COPS usage for RSVP	(prop std)		
2702	Requirements for Traffic Engineering Over MPLS	mpls		
	RFCs for integrated services	intserv		
	RFCs for RSVP	rsvp		

RFC	Title	IETF WG	3GPP WG	Possible Impact/ Status
	RFCs for differentiated services	diffserv		
	RFCs for header compression, e.g. ROCCO	rohc		
Roaming Operations				
	RFCs for mobile hosting among IP subnetworks	MobileIP		
	RFCs for User Mobility	Roamops		
	RFCs for AAA	AAA		
Signalling Over IP Transport				
		SIGTRAN		
Media Gateway Control				
		MEGACO		