Title:

APPROVED SUMMARY OF ALL IP ADHOC MEETING
for the period of 5/18-19/00 in Las Vegas, NV

Source:

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Abstract:

This document provides the summary of the 3GPP2 ALL IP AdHoc meetings held at the St. Tropez Hotel in Las Vegas, NV during the period of 5/18-19/00.

Recommendation:

For review and approval.

Notice:

During the period of 5/18-19/00, a meeting of 3GPP2 All IP AdHoc was held at the St. Tropez Hotel in Las Vegas, NV. This report is intended to summarize those discussions.

The meeting was called to order on 5/18/00 at 8:35 AM local time by All IP AdHoc Co-Chairs, Mark Lipford (Sprint PCS) and Alberto Gutierrez (Motorola). The sign-in sheets indicate that approximately 55 persons were in attendance.

- The agenda was presented and approved without objection with minor modifications (ALLIP-20000518-001R1).
- Contributions (ALLIP-20000518-000R1) were assigned to agenda items - all in soft copy format only. Contribution ALLIP-20000518-007 was withdrawn by Ericsson prior to presentation.
- The meeting summary for the 4/00 meeting in Seattle, WA (ALLIP-20000518-002) was presented and approved without objection as submitted.
- CORRESPONDENCE: None.
- REPORTS:
    - 3GPP2: No report.
    - MWIF: A verbal report regarding the meeting in Osaka this week was presented by Mike Dolan (Lucent).
        - Rich Robinson (Sprint PCS) is the Vice Chair of their technical committee and is also Chairing their requirements development activities.
        - MWIF is developing their own requirements document based on the format of the requirements document being prepared in this All IP AdHoc.
        - Work is being done on network architecture and they are also battling issues related to common terminology (i.e., wireless terminology vs IETF terminology). They are breaking down their architecture into a layered planar model.
        - The MWIF goal is to provide an end architecture and requirements which are to be presented to both 3GPP and 3GPP2. It specifically does not include any implementation phasing as is being considered in this group.
        - Two (2) separate lock-down meetings are being planned for their architecture document - week of 6/12/00 and week of 6/26/00.
    - CDG: No report.

- 3GPP: The 3GPP All IP group is planning to freeze their architecture and requirements in June 2000 in Sophia Antipolis and they have adopted a SIP call model within the network. There is an intermediate drafting session at the TSG-SA meeting next week. This information will then be distributed to the other TSGs for completion of the protocols by the end of the year. IPv6 will be required in the multimedia network and it must be supported on the mobile station for the call model. Both IPv6 and IPv4 will be supported within the data network. 3GPP will then start work on release 01 in September.

- OLD BUSINESS
  - STAGE 1 REQUIREMENTS:
    - The cdma2000 All IP Requirements document v0.2.1 (ALLIP-20000518-014) was presented by the Editor. The changes included in the document were noted as follows:
      - Added cover page
      - Added notes on terminology (i.e., "shall" and "should")
      - Reorganized the requirements section (e.g., section 6) into general requirements, ANSI-41 domain requirements, and multimedia domain requirements without changing any of the specific requirements themselves.

      These changes were approved without objection as the baseline/template for future updates. However, some concern was expressed by TSG-N Chair, Robert Ephraim (GTE Wireless), regarding the term "multimedia domain" since that term may imply to external readers that the ANSI-41 protocols do not support multimedia services. The group adopted without objection the term "IP multimedia domain" as a place holder to be reviewed at a later point in time once a full definition has been provided and detailed system requirements have been determined. The Editor was directed to incorporate this change into the Requirements document.
    - The open items list v2 (ALLIP-20000518-016) was presented by the Requirements document Editor. He noted the following changes:
      - He recommended deletion for those items which generated no e-mail discussion since the last meeting. He also recommended deletion on several other items.
      - He recommended acceptance on items which seemed to achieve consensus during the e-mail discussion.
      - The other items were left as open items on the list.

      All items on this list were reviewed in detail. Changes to the recommendations proposed in the Open Items List were adopted without objection as follows:
      - Added a new requirement proposal as follows: "Service control shall be a separate function within the All IP network IP multimedia domain."

- In requirement #3: Change "core network" to "IP multimedia domain".
- Changed requirement #4 to "The All-IP reference architecture shall be defined in terms of separate functions and clear interfaces such that it is possible to separate transport from signaling." Accepted this requirement as an architectural principle.
- Changed requirement #5 to "QoS should be negotiable at session setup, at hand-off, and at any time during a session."
- Action on requirement #6 was deferred pending review of 3GPP position on this item.
- Requirement #8: Second sentence was deleted and implemented as requirement #5 (see above). The remaining first sentence was adopted.
- Added a new architectural principle as follows: "The All-IP network should be capable of supporting Quality of Service levels equal to or better than those found in legacy networks."
- Requirement #9: Deleted the recommended requirement. Added a new architectural principle as follows: "The All-IP network should be capable of supporting reliability levels equal to or better than those found in legacy networks." This text will replace architectural principle (f) in the Requirements document.
- Changed requirement #10 to: "The All-IP network shall provide interoperability with signaling of legacy 2G and 3G ANSI-41 networks in support of mobile stations that are homed in an All-IP network (roaming into legacy networks)."
- Changed requirement #13 to: "The All-IP network shall support mutual authentication."
- Changed requirement #15 to an architectural principle as follows: "The All IP network shall be functionally designed to allow and encourage cost reduction."
- Changed requirement #16 to: "It shall be possible to configure interconnection of elements within the All IP network to allow isolation from and invisibility to external networks and subscribers to promote security and manageability and to prevent performance degradation of the All IP network." This item was still left open for additional discussion.
- Changed requirement #18 to: "The All-IP network shall support hard handoff and may support soft handoff between two RANs of the same technology."
- Added new requirement as: "The All IP network may support hard handoff between two RANs of different technologies." This item was still left open for additional discussion.

- Regarding requirement #22, two (2) alternatives were added to the open issues document for further review, as indicated below:
  - "It shall be possible to implement an All IP network that includes only the capabilities of the IP multimedia domain."
  - "An implementation of the Multimedia domain of these requirements must be possible to exist with or without an ANSI-41network."
- Requirement #23 was changed to: "The All-IP network multimedia domain shall provide the ability to handoff between access networks."
- Added a new requirement as: "Service characteristics negotiation should be possible at session setup, at hand-off, and at any time during a session." A definition of "service characteristics" should be added to the terminology session. This item is left open for additional discussion.
- Requirement #24 was deleted.
- Requirement #25 was changed to: "When operating in the All IP network, any session between devices should utilize the minimum amount of bearer resources necessary to support the session." This item is left open for additional discussion.

- The cdma2000 All IP Requirements document v0.3.0 (ALLIP-20000518-018) was presented by the Editor. This document included some 6-7 items from the e-mail discussion activities which the Editor believes had achieved consensus. This contribution was noted as FYI.
- The Editor indicated that he would revise the open items list and the Requirements document based on the discussion. In addition, he would start all e-mail discussions again on the remaining open items using the language that was accepted at this meeting. Open item list requirement numbers, however, would not be consolidated or otherwise changed from the v2 numbering scheme.
- Proposed text (rev 1) for section 6.3 of the Requirements document (ALLIP-20000518-003) was presented by Lucent. This document was modified from their submission at the last meeting by a different formatting of the included table to specifically identify ANSI-41, multimedia, and dual-mode domains with associated text for each. This document specifically does not include provisions for handing off between the different domains. This contribution was left open for further discussion.
- A contribution on Stage 1 requirements terminology with an IETF twist (ALLIP-20000518-010) was presented by Sun Microsystems. Mike Dolan (Lucent) volunteered to create an All IP glossary which would incorporate this information.
- A contribution on handoff in All IP networks (ALLIP-20000518-020) was presented by Hyundai. This document was presented as FYI. The contributor was invited to suggest specific requirements for e-mail discussion.

- Cisco comments on v0.2.1 of the Requirements document (ALLIP-20000518-021) was presented.
  - The changes proposed to Section 3.1 in the definition of QoS were accepted.
  - The change proposed to Section 4 Architectural Principle (c) to reference the "final" All IP network was modified to change "an All IP network" to "the All IP network". The change was also carried forward to all other sections.
  - The proposed removal of the word "paths" in Architectural Principle (h) was rejected.
  - All changes proposed to Section 5 All-IP Network Phases were handled by changing "an All IP network" to "the All IP network".
  - The change proposed to Section 6.9 item b) was handled by modifying the text to read "The all-IP network shall have the capability to support existing E.164 local number portability."
- A contribution on the starting point of the cdma2000 All IP architecture (ALLIP20000518-006) was presented by Ericsson. The document proposes the following architectural principles:
  - **P01:** There should be a migration path from today's ANSI-41 legacy systems; as defined by ANSI-41, IOS Version 4.x, and cdma2000; towards the All IP ANSI-41 domain.
  - **P02:** There should be a migration path from today's packet core network (TSB-115, IS-835) towards the IP multimedia domain.

  The document also proposes the following additional requirements:
  - **E01**: The core network must be able to evolve to all-IP independently of the Radio Access Network.
  - **E02**: For the ANSI-41 domain, the Radio Access Network must be able to evolve to all -IP independently of the core network.
  - **E03**: Interoperability should be maintained between the identified evolution steps and sub-steps.

  These requirements were adopted as open items for further discussion

- NAM
  - Scott Migaldi (Motorola) indicated the he would no longer be able to serve as the Editor of the NAM. Chuck Ishman (Motorola) was assigned as the new NAM Editor.
  - A preliminary list of acronyms used in contributions on the NAM (ALLIP-20000518-015) was presented by the Secretary as FYI.
  - A baseline version of the NAM document (ALLIP-20000518-022) was presented by the new Editor as FYI.
  - A contribution on IP to BTS performance analysis (ALLIP-20000518-004) was presented by Lucent. This document addressed the following issues:
    - Network engineering and implementation issues associated with VoIP
    - Packet voice transport options
    - Transport capacity and efficiency issues
    - Comparison of IP and ATM backhaul options

    This document recommended an ATM backhaul for use by the All IP network. This contribution was left open for further discussion as the All IP NAM is developed.
  - Lucent's perspective on an All IP reference model (ALLIP-20000518-005) was presented. This document is a compilation of all previous NAM contributions from Lucent into the NAM reference template. Their target cdma2000 All IP reference model was illustrated in Figure 2 of that document. Lucent proposed that this document be used as the baseline to work against in the development of the NAM. This recommendation was placed on hold pending review of the other contributions.
  - The recommended architectural starting point proposed by Ericsson in ALLIP-20000518-006 (see Stage 1 requirements section) was left open for further consideration.
  - Questions and answers related to Ericsson's NRM (ALLIP-20000518-008) were presented by Ericsson. This contribution documented the questions directed to previous Ericsson NAM contributions and provided Ericsson responses to those questions. This contribution was presented as FYI.
  - A contribution on IP based mobility in the IP multimedia domain (ALLIP-20000518-009) was presented by Nortel Networks. Additional discussions on this contribution were deferred to e-mail.
  - A contribution on fast handoff in an All IP network (ALLIP-20000518-011) was presented by Sun Microsystems. This document proposed extensions to mobile IP to support fast handoff which have been submitted to IETF and it has been updated since its presentation at previous All IP AdHoc meetings. This contribution was presented as FYI.

- A contribution on AAA in an multimedia All IP network (ALLIP-20000518-012) was presented by Ericsson. This contribution was left open for further discussion.
- Hyundai's perspective on an All IP Reference Model (ALLIP-20000518017) was presented. This contribution recommended the following four (4) implementation phases:
  - Phase 1 - Separate voice and data signals - IP transport within the RAN and at the A-interface
  - Phase 2 - Integration of voice and data paths
  - Phase 3 - Extension of IP node from PDSN to BTS
  - Phase 4 - Extension of IP node to MS

  This contribution was left open for further discussion.
- LGIC's perspective on the NAM (ALLIP-20000518-019) was presented. This document included a footer which indicated "LGIC proprietary and confidential" but the contributor verbally waived those claims prior to his presentation. This contribution expanded on phases previously proposed by the contributor as follows:
  - Phase I: IP MSC - Remove MSC, modify ANSI-41 for IP transport
  - Phase II: IP RAN - IP transport to BSC, modify 3G-IOS for IP transport
  - Phase II: IP-IOS and IP-MAP - Develop globally unique IOS and MAP

  This contribution was left open for further discussion.
- A NAM focus group was formed by the All IP Co-Chairs and Mike Dolan (Lucent) was assigned as the FG Chair. This group was tasked with resolving discrepancies in the conflicting approaches for the NAM as indicated by the contributions presented. The FG Chair will attempt to focus the group in the following areas:
  - Definition of required logical function entities along with its responsibility and the service it provides. This must be done for each of the two (2) domains (e.g., ANSI-41 domain and IP multimedia domain).
  - Interrelations and interdependencies between these function entities - signaling and bearer
  - Phasing of functional implementations

  In addition, Stage 2 messages flows on each of the functions that the network must support (i.e., registration, handoff scenarios, etc.) must be completed to validate the NAM.

  All issues will be resolved using the e-mail discussion procedures currently being used to resolve requirements issues. Diagrams may be used in these discussions

for descriptive purposes only - these illustrations will not themselves be the target of consensus.

The NAM Editor, Chuck Ishman (Motorola), will monitor these discussions and incorporate the consensus decisions into the NAM document in a manner consistent with that currently being used for the Requirements document. He will also use these requirements to prepare the NAM diagram.

The specific target for the next meeting is to have the preliminary list of functional entities in an open item list for review and discussion.

In the formation of this focus group, Lucent's previous recommendation to use their proposed text (ALLIP-20000518-005) as the baseline to work against in the development of the NAM was rejected.

- REVIEW OF ASSIGNMENTS:
  - The Requirements document Editor, Phil Brown (Ericsson), noted the following documents were available on the server:
    - Updated Requirements document v0.3.1 (ALLIP-20000518-014R1)
    - Updated Requirements Open Items List v4 (ALLIP-20000518-016R2)

    All participants were directed to review these issues in preparation for on-going e-mail discussions.
  - The Requirements document Editor proposed targeting a completion of a "semifinal" version of the Requirements document at the June 2000 meeting in Vancouver, BC.
- NEW BUSINESS:
  - The updated meeting schedule for this group (ALLIP-20000518-013) was presented and reviewed by the Co-Chair.
  - A suggestion was made to expand the July 2000 meeting in Boulder, CO to three (3) full days (i.e., 7/17-19/00). This suggestion was accepted pending confirmation of space availability with the 3GPP2 Meeting Planner.
- FUTURE MEETINGS:
  - 6/8-9/00 Robin Square Conference Center in Vancouver, BC
  - 7/17-19/00* Regal Harvest House in Boulder, CO
  - 8/23-24/00 Hyatt Fisherman's Wharf in San Francisco, CA

  The Chair noted that participants should plan for two (2) full day meetings at all future sessions.

  * See note in new business section

The meeting was adjourned at 1:25 PM local time on 5/19/00.

A listing of the contributions for this meeting is itemized below:

NUMBER	SUBJECT	SOURCE
SC-ALLIP-20000518-		
000	CONTRIBUTION REGISTER	SECRETARY
001	AGENDA	CHAIR
002	Meeting summary - 4/00 - Seattle, WA	SECRETARY
003	Requirements Section 6.3 rev 1	LUCENT
004	Backhaul	LUCENT
005	Backhaul rev2	LUCENT
006	Starting point of cdma2000 All IP architecture	ERICSSON
007	WITHDRAWN	
008	Questions and answers on Ericsson's network reference model	ERICSSON
009	IP based mobility in the multi-media domain	NORTEL NETWORKS
010	IETF terminology for Stage 1 requirements	SUN MICROSYSTEMS
011	Fast handoff in an ALL IP network.	SUN MICROSYSTEMS
012	Authentication, Authorization and Accounting (AAA) functions in an All-IP network	ERICSSON
013	All IP AdHoc meeting schedules	CHAIR
014	All IP Requirements document v0.2.1	EDITOR
015	All IP Acronyms	SECRETARY
016	Open issues v2	EDITOR
017	HEI NRM	HYUNDAI
018	All IP Requirements v0.3.0	EDITOR
019	All IP NAM	LGIC
020	Handoff	HYUNDAI
021	Cisco comments on Requirements document v0.2.1	CISCO
022	NAM v0.0.2	EDITOR

