Report of the 19th Meeting of ATNP WG2
27 Sept. – 1 Oct. 1999
Gran Canaria, Spain

0.   Meeting Organizational Issues

Mr. Jones, Rapporteur opened the meeting and welcomed the members and advisors. Mr. Cid welcomed the WG2 members to the Gran Canaria meetings hosted by Aeropuertos Españoles y Navegación Aérea. He explained an office had been set up in support of the meetings. After introductions of the WG2 participants, the working papers were collected and assigned working paper numbers. The list of working papers is provided as attachment 2.

1.   Approval of the Agenda (WP528)

The agenda, WP528 and attachment 1 to this meeting report, was reviewed approved with an editorial correction.

2.   Review and Approval of the report of 18th Meeting of WG2 (Naples– WP529)

The group reviewed WP529, the report of the 18th meeting of WG2 held in Naples, Italy. The group approved the report with only minor editorial corrections.

3.   Inputs/Issues from other ICAO Bodies (e.g., Panel Secretary, CCB, WG1, AMCP, etc.)

Although Mr. Paydar, the ATNP secretary, was unable to attend the working group meeting he provided WP533 discussing several items of interest to the working groups. His working paper reported that a round of consultation with the rapporteurs and subgroup chairs has reconfirmed that materials will be ready for ATNP/3 in February 2000. Accordingly, Mr. Paydar has submitted a paper to the Air Navigation Commission proposing the need, agenda, dates and administrative arrangements for ATNP/3. The tentative dates for ATNP/3 are 7-18 February 2000. He further reported that no inputs from bodies other than IATA have been received in response to the outstanding communiqués produced at previous ATNP WG meetings. Note that the discussions on two inputs from IATA are provided under agenda items 7.1 and 10. Note that subsequently two communiqués from AMCP WG-D were received during the course of the WG2 meeting. He reported that amendment 1 to Doc 9705, as provided by the CCB out the Naples meeting, will result in a complete re-publication of Doc 9705 as the second edition. Thus, the version being prepared by the ATNP working groups for presentation at ATNP/3 is the draft third edition of Doc 9705. He also reported that draft Doc 9739 (i.e., CAMAL) is now in the publication cycle for publication in late 1999. Mr. Van Trees noted there are several out-of-date paragraphs and some errors in the draft CAMAL. The working group members were asked to review the draft CAMAL and provide comments to Mr. Van Trees.

Near the end of the WG2 meeting inputs were received from the AMCP WG-D by way of a FAX from Mr. Capretti on behalf of Mr. Paydar. These AMCP inputs were in response to two outstanding communiqués from ATNP to AMCP. These were provided to the WG2 members and reviewed on the final day of the WG2 meeting.   The Rapporteur of AMCP WG-D, Mr. van der Boogaard, attended the final day of the WG2 meeting and introduced the two papers from the AMCP WG-D. One input from AMCP (WG2/19 Flimsy 4) was in response to the ATNP WG2 flimsy 5 from the 18th meeting in Naples. This concerned the status of the VDL Mode 3 SARPs and the use of compression with the frame mode of VDL Mode 3. The AMCP response indicated an intent to progress the VDL Mode 3 SARPs, including provisions for the Frame Mode Interface, for approved at the AMCP/7 meeting in first quarter 2000 for publication in a similar timeframe with the ATN updates in late 2001. As for the frame mode interface the AMCP responded that the "VDL Mode 3 has been defined to easily allow different subnetwork interfaces to be used with the link layer services, so installing a stream mode compression scheme, if it is determined to be beneficial for the desired applications, could easily be inserted. As such, the AMCP would find it beneficial for the ATNP to define the requirements for their stream mode compression scheme in such a manner that it could be easily referenced from the VDL technical material….." WG2 concluded that Sub-Volume V will need to include the SNDCF for the Frame Mode of VDL Mode 3. Mr. Whyman had previously agreed to provide these provisions to the IDG. However, the WG2 was concerned with the AMCP position related to the stream

compression scheme. It was felt to be very important that this function is supported and the introduction of optional enhanced stream compression techniques, to be accommodated in the planned Sub-Volume V enhancements, raises additional issues with the stated AMCP position of having the subnet internally support stream compress rather than having it in the mobile SNDCF. Mr. Cardwell prepared Flimsy 6 as response to the AMCP WG-D to indicate the plans of the ATNP to allowed for additional stream compression options and to express the need to support such a capability. The working group agreed, after some revisions, to provide Flimsy 6 as a communiqué to the AMCP WG-D.

The second input from AMCP WG-D was in response to flimsy 4 from the 18th meeting of WG2 in Naples. The AMCP input indicated "VDL Mode 4 will be validated against ADS-C requirements. In order to transmit this information the ATN capability of this VDL Mode is used……..It should be pointed out that there are no efforts within the VSG on VDL Mode 4 to validate VDL Mode 4 against requirements for point-point applications other than ADS-C. The VSG does not have the expertise to solve this problem but understands there may be solutions such as using topology restrictions (ie, a separate A/G router) or through the use of a new ATSC class, but they also understand that these solutions have drawbacks. We would be interested in the views of the ATNP as to how to solve this problem should a requirement emerge to allow segregation of application types within the ATSC class." The WG2 discussions on this topic concluded that no changes to Sub-Volume V are needed at this time. Restricted routing topologies could be used for early VDL Mode 4 introduction and the role of VDL Mode 4 within the overall ATN framework will need to be more clearly defined before any changes to Sub-Volume V should be considered.

Mr. Bigelow presented WP537, the report of the ATN security subgroup, to the joint session of WG2 and WG3. He reported that significant progress had been made since Naples and Sub-Volume VIII is now complete but requires additional, mainly editorial revisions. He noted that the security subgroup has held three meetings since Naples as well a coordination activities with other subgroups. He reported that a more efficient mechanism for security has been defined than what was originally considered. As a result the number of security levels offered to the applications have been reduced. Responding to a question from Mr. Asbury, Mr. Bigelow and the representatives from the organizations conducting the security validation activities indicated that the validation will not be completed until June 2000.

Mr. Moulton reported that the systems management JSG will have, by the conclusion of their meeting during the second week in Gran Canaria, a draft Sub-Volume VI that will be ready to put under configuration control. Profiles using full OSI upper layers and the ATN upper layers will be defined. The structure and format of the MIB tree is defined. The ongoing JSG work is still progressing definition the MOs that are to go into Sub-Volume VI. The JWG meeting planned for the second week in Gran Canaria would focus on completing the remaining areas of Sub-Volume VI. Mr. Camus asked if a system manager is required on the aircraft. Mr. Moulton indicated that a manager is not required, nor precluded, on the aircraft. Mr. Moulton indicated that much of Sub-Volume VI will be validated by ATNP/3, due in large part to the use of off-the-shelf standards and products. However, the operational validity of the specific information defined by the MOs will require additional validation and coordination beyond ATNP/3.

4.   Review Status of Action Items from the 18th Meeting of WG2 including the Report of the ICS Drafting Group (IDG)

Mr Jones asked the group to review the 3 actions documented in WP529. The status was reported as listed below:

Action 17/9 – Mr. Moulton to prepare and coordinate a first draft WP for ATNP/3 on multicast architecture for review by WG2 in May 1999 with an final WP out of the Oct. WG2 meeting.

> *Status – Closed: presented to WG2 as WP544.*

Action 18/1   Mr. Jones to provide copies of the communiqués from WG2 to AMCP and IATA to the panel secretary.

> *Status – Closed: provided to Mr. Paydar*

Action 18/2   Mr. Paydar to convey the WG2 communiqués to the AMCP and IATA.

Status – Closed: provided to AMCP and IATA

Mr. Jones also noted additional actions were, in effect, being addressed through the WG2 tasking to the IDG. Mr. Cardwell, the IDG chairman, presented WP532 reporting on the progress of the IDG. He reported the IDG had met twice since it was formed by WG2 during the Naples WG2 meeting. He summarized the products produced by the IDG that were being presented to WG2 for review. He also summarized the status of the ongoing activities of the IDG against the tasking from WG2. He discussed the open action items from the second IDG meeting. He reported that significant progress had been made as the IDG as evidenced by the draft Sub-Volume V 3rd edition provisions provided to WG2 in WP530. The review of WP530 is provided under agenda item 7.1 below and the status of the guidance material is discussed under agenda item 5 below.

5.   Preparations for ATNP/3

Mr. Jones presented WP536 proposing the WG2 inputs to the Dec. 1999 Working Group of the Whole meeting and to the subsequent ATNP/3. The proposal in the working paper was an update to the list of WG2 deliverables reviewed and accepted by WG2 at its prior meeting in Naples. There was agreement that a complete, mature draft of Sub-Volume V, third edition must be available for review and approval at the Dec. 1999 Working Group of the Whole meeting. There was considerable discussion in the working group on the likely status of the validation activities by the time of the planned Dec. 1999 Working Group of the Whole meeting. This Working Group of the Whole meeting will be tasked with putting together the validation report as will be presented to ATNP/3. There was also related discussion on what was expected from WG2 related to the need for a Working Group of the Whole in the June 2000 timeframe to finalize the validation report for SV-5. Mr. Van Trees pointed out ATNP/3 will be looking for a clear indication that the validation of the proposed enhancements to the Core ATN SARPs have progressed to the point that the proposed core SARPs are mature and stable and the subsequent Working Group of the Whole will be focused on 'fine tuning' the proposed Doc 9705 based on additional validation results. The group agreed that a flimsy should be prepared from WG2 to WG1 expressing a need for a Working Group of the Whole meeting in the June 2000 timeframe to review the additional validation results and to made any necessary corrections to the draft Doc 9705 Sub-Volume V. Mr. Jones drafted Flimsy 1 to convey the position of WG2 on the need for a Working Group of the Whole meeting in the June 2000 timeframe.

The working group agreed it was desirable to have a mature draft out of this WG2 meeting of a WP to ATNP/3 on the proposed multicast architecture. However, the working group felt this topic should not be given undue emphasis within ATNP/3 and could be introduced, by being referred to by the rapporteur's report to ATNP/3 and by the proposed work programme beyond ATNP/3. See the discussion below under agenda item 7.4 on the draft working paper on multicast.

ACTION 19/1 – Mr. Jones to include an introduction to multicast architecture working paper within the WG2 Rapporteur's report to ATNP/3.

After considerable discussion it was concluded that complete guidance material, in the form of proposed changes to the CAMAL, could not be prepared in time for review by ATNP/3. However, Mr. Van Trees expressed the opinion, supported by some of the other WG2 members, that it is important to identify where existing guidance material will be proposed for elimination due to a corresponding change in the Doc 9705 provisions.

The proposed input to ATNP/3 on the Internet Communications Service provisions for backward compatibility was discussed and Mr. Hennig suggested that WG1 should consolidate the inputs of the three working groups on this topic. There was some discussion on whether a simple statement that backward compatible is accommodated for all areas except for those specifically brought to the attention of ATNP/3 would be sufficient or the alternative of describing the specific means by which backward compatibility was achieved for each functional enhancement would be more appropriate. The group concluded that a middle ground approach would be appropriate where there would descriptive text describing those areas for which a version roll would be required to indicate incompatibility between the Package 1 and Package 2 provision, and additional text describing how backward compatibility has been achieved for certain of the major enhancements, such a security, being introduced with Package-2.

The discussions on the remaining proposed ATNP/3 inputs are described in the following sub-paragraphs as well as under agenda item 8.

5.1 Package 2 ICS documentation for ATNP/3

The draft Sub-Volume V, third edition was produced by the IDG and reviewed at this meeting. The working group agreed that the IDG is to finalize the document for review at the Dec. WG2 meeting.

ACTION 19/2 – Mr. Graf, as Sub-Volume V editor, is to incorporate all revisions in the draft 3rd edition of Sub-Volume V as agreed at the 19th meeting of WG2 and submit to the third meeting of the IDG.

ACTION 19/3 – The IDG is to review the draft Sub-Volume V as submitted by Mr. Graf as well as other proposed revisions to Sub-Volume V associated with the WG2 authorized functional enhancements. The IDG is to prepare a revised, complete draft of the 3rd edition of Sub-Volume V for review at the 20th meeting of WG2, scheduled for 3 December 1999. The revised draft of the 3rd edition of Sub-Volume V is to be distributed electronically to the WG2 members 2 weeks in advance of the WG2 meeting.

5.2 Report of the ICS Drafting Group (IDG)

Mr. Cardwell reported that in addition to the draft Sub-Volume V the IDG has collected a number of inputs that could be used as the basis to start the development of the guidance material associated with the Package-2 ICS enhancement. After some discussion it was concluded that the guidance material will not be complete by the time of the planned December 1999 Working Group of the Whole. Therefore, it would be appropriate to report to ATNP/3 that the guidance material associated with the ICS will require additional time to finalize and would be an appropriate work programme item for a working group to pursue post-ATNP/3. See action under agenda item 5.4 below.

5.3 ATNP WG2 Report to ATNP/3

Attachment 2 to WP536 presented the draft rapporteur's report ATNP/3. This report is to be finalized at the December 1999 Working Group of the Whole meeting. The working group reviewed the draft report and provided comments.

ACTION 19/4 – Mr. Jones to provide an updated WG2 Rapporteur's report for review at the December 1999 Working Group of the Whole meeting.

5.4 Working Group Organization and Work Programme post ATNP/3 (i.e., for ATNP/4)

Attachment 1 to WP536 was the proposed work programme for ATNP/4 to progress the ICS provisions. This was an update of what had been produced and reviewed at the 18th WG2 meeting in Naples. The group agreed that WG1 should consolidate the WG2 proposal the future work programme proposals from WG1 and WG3 and prepare a submission for review/approval at the December 1999 Working Group of the Whole meeting. The working group made some additions to what was proposed in Attachment 1 and was finalized under agenda item 8.

6. Package-1 ICS Documentation

6.1 ICS SARPs (consideration of requests from the CCB and/or ICS SME).

Mr. Graf presented WP531, the SME report on the CCB activities related to Sub-Volume V. He reported that the CCB reviewed the draft version, as provided by the panel secretary, of the 2nd edition of Doc 9705 to ensure that it correctly incorporated Amendment 1 into the first edition of Doc 9705. Several minor editorial corrections were made and the changes provided back to the panel secretary. He provided copies of 5 PDRs related to Sub-Volume V that have submitted to the CCB since the WG2 meeting in Naples. Mr. Hennig objected to the proposed change to Sub-Volume V proposed in PDR 9909002 as it would require a change to Package-1 implementations in order to accommodate forward compatibility with later versions of the ICS technical provisions. He contended that the proposed approach violated the tasking from ATNP/2 that Package-2 must be backward compatible with Package-1 implementations and requiring a change to Package-1 implementations would have serious cost and schedule consequences. The alternative of having a version roll was discussed as an alternative to the change proposed in the PDR. The working group decided this PDR will need to be reviewed by the CCB and would be further considered after the CCB review. Subsequent to the CCB meeting Mr. Graf reported the CCB agreed with the

defect in PDR 9909002 but did not agree with the proposed solution. They believe any solution must be backward compatible with Package-1 implementations. Therefore this PDR is still open awaiting a acceptable change proposal. Mr. Graf reported he had requested the CCB not attempt to resolve PDR 99070005 until feedback is received from the CCB members and/or WG2 experts. Mr. Tamalet indicated that he expected to be proposing an alternative solution to the defect and requested the CCB delay resolving this PDR until after the IDG meeting. Mr. Graf objected to this approach and the working group agreed that any inputs related to this PDR should be made directly to Mr. Graf as soon as possible.

ACTION 19/5 – All WG2 members to review PDR 99090002 and provide recommended Sub-Volume V changes to Mr. Graf.

Mr. Graf reported that the CCB had resolved PDR 9909001 by accepting the proposed change.

Mr. Van Trees presented the report of the CCB, WP549, to the joint session of WG2 and WG3. He reported that amendment 1 to Doc 9705, as reviewed at the Naples working group meetings, is being processed as a complete re-publication of Doc 9705 as the second edition. Each sub-volume includes a chart that indicates the areas where that sub-volume has had additions, modifications or deletions from the first edition. He noted that the ICAO edited CAMAL is currently being reviewed by the CCB members and publication will be held back until the corrections from the CCB are submitted to ICAO. He noted that a working version of Doc 9705 is expected at ATNP/3 with a final version at the June 2000 Working Group of the Whole/CCB meeting. He reviewed the status of the eleven PDRs that have been submitted since the Naples working group meeting.

6.2   Additional Validation Results

There were no working papers presented under this agenda item.

6.3   Implementation Plans

Mr. Tran presented WP542, an information paper, to the joint WG2/WG3 session describing the plans for implementation of en route CPDLC services in the United States. An initial Build 1 is planned for deployment Miami while a Build 1A, with an expanded CPDLC message set, is planned for national deployment. A service provider will be used for the Build 1 and 1A VDL Mode 2 air-ground subnetwork services. The FAA en route ATC end system will connect via an X.25 wide area network to an FAA operated ATN ground-ground router and via an X.25 wide area network to the service provider's ATN router. Eventually when the FAA implements NEXCOM, using VDL Mode 3, the FAA will add air-ground ATN routers within each en route air traffic control center while also maintaining connectivity via the service provider's VDL Mode 2 subnetwork.

7.   Package-2 ICS Documentation

7.1   Review draft Sub-Volume V, 3rd edition as submitted by the IDG

Mr. Graf presented WP541 that provided the traceability between the functional enhancements to Sub-Volume V and the specific paragraphs being modified between the 2nd edition and the draft 3rd edition. WP530, the draft 3rd edition of Sub-Volume V, was reviewed. Mr. Graf presented each proposed change and related each to the associated functional enhancement. A point was raised on the addition of a mobile subnet requirement for transit delay vs. ATSC traffic class. The group agreed that the associated subnet loading should be specified. Mr. McParland raised the point that it might be possible to combine the enhanced functions being indicated by the mobile subnet capability parameter and the IDG was asked to investigate this possibility. Mr. Tamalet raised an issue with the proposed form of the ATN Authentication Parameter by pointing out that a length field is required by the ISO specification of the ISH PDU. Mr. Graf agreed to correct this in the next draft of the document. The discussion of the detailed requirements associated with IDRP security were deferred until after the discussions on WP534 (IDRP Authentication Scenarios).

ACTION 19/6 - The IDG is to investigate the potential for combining the functions being indicated by the mobile subnet capability parameter.

ACTION 19/7 - The IDG is to add the associated subnet loading to the mobile subnet transit delay requirement.

ACTION 19/8 - Mr. Graf to correct the form of the ATN authentication parameter to include a length field.

There was considerable discussion on how Doc 9705 will present the enhancements associated with the third edition while still allowing implementations conformant to prior editions of Doc 9705. Specifically, in the cases of the new provisions for systems management and security simply indicating these are options was not considered appropriate as this would allow implementations without these capabilities to claim conformance to the 3rd edition of Doc 9705. The group felt that an acceptable approach is needed across the sub-volumes to require 3rd edition conformant implementations to support the enhanced functions while at the same time providing recognition for implementations conformant to prior versions of Doc 9705. WG2 agreed to raise this should as a discussion topic at the joint WG2/WG3 session and to further provide inputs to WG1. WG3 members indicated they had not given serious consideration to this issue, but encouraged WG1 and WG2 to pursue developing a solution to this problem. Mr. Van Trees noted that this is breaking new ground with ICAO where Annex enhancements invalidate prior versions. Mr. Moulton noted that we may also face problems of documenting corrections to defects reported against a prior edition once a new edition is published.

ACTION 19/9 – Mr. Jones to raise an issue at the WG1 meeting in Gran Canaria of finding an acceptable approach across the sub-volumes to require 3rd edition conformant implementations to support the enhanced functions while at the same time providing recognition for implementations conformant to prior versions of Doc 9705.

Mr. Cardwell presented WP545 as a result of an action item from the second IDG meeting. This paper proposed text for draft Doc 9705 SV-5, 3rd edition to define a timer within the mobile SNDCF that would suppress processing of a Join Event that is received within a parameter length of time after receipt of a Leave Event from the same mobile subnetwork. This is intended to reduce Join/Leave Event processing when aircraft are in a fringe area of coverage of an air-ground subnetwork. Several issues were raised with the proposal mainly requesting additional qualifiers such as the proposed timer is only needed for the SNDCF's associated with mobile subnets that do not have internal mechanisms to suppress the issuance of unnecessary Join Events. Mr. Cardwell agreed to modify the working paper to reflect the comments of the working group. Subsequently Mr. Cardwell presented a revised version of WP545. The group generally agreed with the modified proposal but felt that some editorial refinements and additional text was required in the requirements definition.

ACTION 19/10 - Mr. Cardwell is to provide an updated proposal, based on WP545, to the IDG with direction for the IDG to review the revised proposal and to incorporate the appropriate provisions into the draft Sub-Volume V for submission to the WG 2 in December 1999.

Mr. McParland presented WP534 providing IDRP authentication scenarios. He presented a detailed review of the process, including the individual steps for performing IDRP authentication. This was an update to a paper presented to WG2 in Naples. He described the process for both mutual entity authentication and for single entity authentication. Provisions are provided to afford backward compatibility, without authentication, with "Package-1" BISs. For the air-ground case, support for IDRP security is signaled to the peer BIS using a parameter in the ISH BISPDU. The working paper also covered the simpler ground-ground case. Mr. McParland pointed out the related provisions in the draft 3rd edition of Sub-Volume V as provided in WP530. Mr. Graf noted that there are still some required provisions that are not fully defined in the draft text.

ACTION 19/11 - Mr. McParland to provide the missing IDRP related security provisions at the next IDG meeting and the IDG will provide a draft Sub-Volume V with complete security provisions for review at the December 1999 WG2 meeting in Japan.

Mr. Whyman provided an input, via an e-mail message to the Rapporteur, that was provided to the working group a Flimsy 2. He raised issues surrounding the dependency of the proposed IDRP security on having a directory service. Mr. McParland discussed Flimsy 2 indicating that the draft technical provisions now allow the flexibility for the aircraft to downlink its certificate for the case where the air-ground BIS does not have access to a directory service. Mr. McParland expressed the opinion that Mr. Whyman's core concerns have now been addressed by the latest draft security provisions. The working group concurred with this opinion. Flimsy 2 included a final point related to an IATA concern with the essential role that CM assumes in the ATN security architecture. Mr. Hennig summarized the IATA concern. The group felt this was not a WG2 issue but rather is an issue for the security subgroup of WG1 and Mr. Bigelow, as the WG1/SG2 chairman, accepted to address this issue.

Mr. Cardwell introduced WP546 describing a transport/application frozen timing problem. This was a resubmission of a paper presented at the WG2 17th, meeting in Honolulu. Mr. Cardwell indicated that based on offline discussions he felt the issue raised by the working paper may have been resolved, but he wanted the opportunity to further review this topic. He concluded there is not a standards problem. Rather there was an implementation problem with a specific implementation.

ACTION 19/12 – Mr. Cardwell will further investigate the issue reported in WP546 and submit draft guidance material to the IDG if appropriate.

Mr. Tamalet presented WP550 proposing enhancements to the ISO 8208 mobile SNDCFs. The working paper proposes a mechanism for maintaining a deflate history window during handoff between ISO 8208 virtual circuits. When such a handoff occurs the peer Deflate mechanisms may loose synchronization. With the current Doc 9705 provisions the Deflate History Window is reset when a handoff occurs. The paper proposes an enhancement to allow the de-compressor to resynchronize after a handoff. The paper also proposed a mechanism for negotiating the use of pre-stored Deflate compression dictionaries. Mr. Graf reported the CCB had accepted the need for these functions but had rejected the basic approach proposed in this working paper as it is not backward compatible with Package-1 implementations. These was some discussion on the applicability of such a resynchronization function to the VDL Mode 3 frame mode, not just ISO 8208 based subnetworks.

ACTION 19/13 - The IDG is to investigate backward compatible approaches for allowing enhanced SNDCF compressions mechanisms to be added in the future.

Mr. Tamalet presented WP551 discussing a potential problem with the ground interface to the mobile subnetworks. Mr. Hennig pointed out the AEEC is developing standards (drafts 631A and 637A) for the VDL Mode 2 interface to the air-ground router. Mr. Tamalet indicated that might resolve the immediate issue faced by air-ground router manufacturers. Mr. Hennig offered to provide electronic versions of the draft AEEC standards.

ACTION 19/14 – Mr. Tamalet agreed to review the AEEC documents 631A and 637A, to be provided by Mr. Hennig, and if there are SARPs related issues he will prepare a submission to the WG2 meeting in December 1999.

Mr. Hennig introduced WP539, an IATA reply to a WG2 communiqué on the airline requirement for subnetwork selection. The IATA position is the requirements for air/ground subnetwork selection is evolving and that it is premature to request ICAO to change ATN SARPs at this time. Mr. Henning offered his opinion that it is appropriate to add this topic as a future work programme item for post-ATNP/3 activities of ATNP. However, this topic did raise an issue with the current Sub-Volume V provisions in sections 5.6 and 5.8 on the definition on the use of the security label. Unused values are not indicated as reserved in the current document.

ACTION 19/15 - Mr. Graf to update the draft Sub-Volume V to indicate that unassigned values of the CLNP and IDRP security parameters are reserved.

Mr. Jones raised the issue of allowing for mobile subnetwork that will have a leave event latency of greater than 600 seconds. The current draft Sub-Volume V text does not specifically allow for an ATSC traffic type for such a subnetwork.

ACTION 19/16 – The IDG is to investigate how to accommodate mobile subnetworks with a Leave Event latency of greater than 600 seconds.

7.2   Review proposed, or identify needed changes to Core ATN SARPs and Sub-Volume I related to ICS enhancements (e.g., new references, new definitions, new system level requirements, etc.)

At the Rapporteur's request this agenda item was taken as a off-line activity of a few of the WG2 experts to review the draft 3rd edition of Sub-Volume V and make proposed changes and/or editions to the Core and Sub-Volume I to track the proposed enhancements to Sub-Volume V.

7.3   Review draft Sub-Volume V validation report

Mr. Jones presented WP538, the draft Sub-Volume V validation report. The proposed format for the report is based heavily Package-1 validation reported presented to ATNP/2. The working group concurred with the proposed structure of the document. The descriptions of the validation programs, including the validation tools employed, and the validation results can only be included within the report as the actual validation activities progress. Ms. Ricci agreed to serve at the coordinator for the completion of the validation report. Mr. McParland will coordinate with Ms. Ricci to advance the completeness of the validation report for review at the 3 December 1999 WG2 meeting. The report presented to that meeting will need to have a draft cover working paper to ATNP/3. It is anticipated the Sub-Volume V validation activities will continue until June 2000.

ACTION 19/17 – Ms. Ricci will serve at the coordinator for the completion of the validation report and to prepare a coordinated draft for review at the 3 December 1999 WG2 meeting. Mr. McParland will support this activity.

7.4   Review draft working paper(s) to ATNP/3

Mr. Moulton presented WP544 on the proposed Multicast Architecture. This is a draft of material proposed to be submitted for review at the Dec. 2000 Working Group of the Whole meeting and submitted to ATNP/3. There were no specific comments on the working paper. Mr. Moulton took the following action to produce the proposed working paper for the ATNP/3:

ACTION 19/18 – Mr. Moulton to review prior working papers on multicast that he produced as well as WP460, submitted by Mr. Whyman, and prepare the proposed ATNP/3 working paper for review at the WG2 December 1999 meeting in Japan. The working paper is to be electronically distributed to the WG2 members at least 2 weeks prior to the WG2 meeting.

7.5   Security Mechanisms

IDRP security was discussed under agenda item 7.1 within the context of proposed Sub-Volume V enhancements.

7.6   Systems Management

The group reviewed the draft Sub-Volume VI prepared by the Joint Sub-Group. Mr. Kerr presented WP552, the draft Sub-Volume VI. This was the first opportunity that most of the WG2 members had to review the draft Sub-Volume VI. Unfortunately, the document was not made available to the WG2 members until late in the WG2 meeting. There were a number of specific comments, many of which were outside the scope of the WG2 direct area of responsibility. It was decided that remaining comments from the WG2 members should be made directly to the Joint Sub-Group which would be meeting the following week.

7.7   Multicast/Broadcast Functions

There were no papers presented under this agenda item.

7.8   Additional and/or revised SNDCFs for mobile and/or ground subnetworks

New SNDCFs were only discuss under agenda item 7.1 in the context of the proposed Sub-Volume V enhancements.

7.9   ATN ICS Subsets

There were no papers presented under this agenda item.

7.10   Enhancements to the ICS SARPs/GM based on New or Revised User Requirements

There were no papers presented under this agenda item.

7.11   Enhancements to the ICS SARPs/GM based on Operational Experience

There were no papers presented under this agenda item.

8.   WG2 Inputs to Working Group of the Whole, ATNP/3 and other ICAO Bodies

Mr. Jones presented WP536 proposing the inputs to ATNP/3. This working paper was first introduced and discussed under agenda item 5 and the attachments were reviewed and finalized under this agenda item. Attachment 1 was a draft communiqué to ATNP/WG1 expressing the WG2 view of the needed work programme items to progress the ICS related technical provisions and guidance material after ATNP/3. Two additional work programme items were added to the list based on inputs from the WG2 members. The proposed communiqué was revised and is provided as attachment 4 to this meeting report.

Mr. Jones presented Flimsy 1, a draft communiqué to WG1 expressing the WG2 position that a Working Group of the Whole meeting is needed in the June 2000 time frame to: a) review the additional validation results; b) develop any necessary changes to the draft Doc 9705 based on problems uncovered by the validation activities; and c) progress the ICS related guidance material. The working group approved the proposed communiqué with only an editorial correction.

Mr. Jones presented Flimsy 3, a draft communiqué to WG1 expressing the backward compatibility provisions of the draft third edition of Doc 9705 Sub-Volume V. The working group approved the proposed communiqué without any changes.

ACTION 19/19 – Mr. Jones to provide communiqués to WG1 based on the draft communiqués in WP536, Flimsy 1 and Flimsy 3

Mr. Jones presented WP535a, a proposed communiqué to AMCP describing the new requirements of the draft 3rd edition of Sub-Volume V for mobile subnet maximum transit delay and maximum latency is issuance of leave events. The working group approved the proposed communiqué without any changes.

Mr. Cardwell presented WP540 that had been submitted by Mr. Whyman and was a update of a flimsy from the second IDG meeting. The working paper was a proposed communiqué to AMCP that recommended one possible approach for a VDL Mode 2 enhancement to support improved leave event latency. Mr. Tamalet indicated there may be an alternative ATN solution. However the group felt this alternative should only be pursued if the AMCP is unable to define a means of achieving acceptable leave event latency. The group approved the communiqué to AMCP with the addition of a "recommendation" paragraph.

As discussed under agenda item 3, a communiqué was prepared as Flimsy 6, to the AMCP WG-D related to the use of steam mode compression schemes with the Frame Mode of VDL Mode 3 subnetworks.

ACTION 19/20 – Mr. Jones to provide the communiqués contained in Flimsy 6, WP 535a and WP540 to the secretary with a request that they be conveyed to the AMCP. Mr. Jones to also provide an informal copy of WP540 to the AMCP Working Group rapporteur and/or VDL Mode 2 subgroup chairman.

9.   Future Work Plan

9.1   Plans for IDG meeting

Mr. Cardwell, the IDG chairman, informed the working group that the third meeting of the IDG will be meeting in London at the UK NATS facilities, near London's Gatwick airport, 3-5 November 1999.

9.2   WG2 position on ATNP/3 and subsequent Working Group of the Whole schedules

The working group reviewed the proposal for ATNP/3 and indicated their support the planned 7-18 February 2000 dates.

The working group has identified a need for a Working Group of the Whole meeting (the forth) in the June 2000 time frame to review the additional validation results, to prepare any needed changes to Sub-Volume V and to progress the related guidance material. The proposed meeting location and dates will need to be finalized at the December 1999 Working Group of the Whole meeting.

9.3   Plans for 20th meeting of WG2

The working group agreed to convene a one half day WG2 meeting in Japan on 3 December 1999 (i.e., the Friday prior to the Working Group of the Whole meeting). This meeting will commence at 1pm (1300) and continue to 6pm (1800). Mr. Hennig agreed to end the WG1 meeting before that time on Friday and WG2 will use the same conference facilities as planned for WG1.

9.4   Plans for Working Group of the Whole meeting in December 1999 in Japan

The third Working Group of the Whole meeting of ATNP will be convened in Tokyo 6-10 December 1999. Mr. Kuzuya presented WP543 providing the details of the hotel and meeting arrangements in Japan. Individual working groups will be held the first week (1-3 December 1999) and the Working Group of the Whole meeting the second week (6-10 December). It is anticipated that working group breakout sessions will be held on Tuesday and Wednesday during the Working Group of the Whole meeting.

The meeting location is:

> Shinagawa Prince Hotel
> 10-30, Takanawa 4-choume, Minato-ku
> Tokyo 108-8611
> Japan

Reservations must be made through:

> Japan Tour Systems Co. Ltd.
> Tele: +81-3-5436-6781
> Fax: +81-3-5436-6794

Reservations must be made by 28 October 1999. A reservation application form was provided as an attachment to WP543.

9.5   Post ATNP/3

A Working Group of the Whole meeting (the 4th) is tentatively planned for the June 2000 timeframe. This will need to be requested and approved by ATNP/3 and the ANC. Also the working group structure post-ATNP will need to be approved by ATNP/3 and the ANC.

10.   Any Other Business

Mr. Hennig presented WP548 to the joint WG2/WG3 session. This paper expresses the position of IATA on the mandated use of routers. The IATA policy included language that "Aircraft operators …… shall not be constrained in their choice of ATN service providers and routing of ATSC traffic exchange" and "States shall approve the use of air/ground routers from all ATN service providers that meet the performance requirements for ATSC traffic exchange…" The working group noted the concerns of IATA but felt that there were other related issues, both technical and economic, not adequately addressed by the draft IATA policy statement. Mr. Asbury suggested that the members coordinate the draft IATA policy with their administrations and further discuss this at the December Working Group of the Whole meeting.

11.   Conclusions and Action List

ACTION 19/1 – Mr. Jones to include an introduction to multicast architecture working paper within the WG2 Rapporteur's report to ATNP/3.

ACTION 19/2 – Mr. Graf, as Sub-Volume V editor, is to incorporate all revisions in the draft 3rd edition of Sub-Volume V as agreed at the 19th meeting of WG2 and submit to the third meeting of the IDG.

ACTION 19/3 – The IDG is to review the draft Sub-Volume V as submitted by Mr. Graf as well as other proposed revisions to Sub-Volume V associated with the WG2 authorized functional enhancements. The IDG is to prepare a revised, complete draft of the 3rd edition of Sub-Volume V for review at the 20th meeting of WG2, scheduled for 3 December 1999. The revised draft of the 3rd edition of Sub-Volume V is to be distributed electronically to the WG2 members 2 weeks in advance of the WG2 meeting.

ACTION 19/4 – Mr. Jones to provide an updated WG2 Rapporteur's report for review at the December 1999 Working Group of the Whole meeting.

ACTION 19/5 – All WG2 members to review PDR 99090002 and provide recommended Sub-Volume V changes to Mr. Graf.

ACTION 19/6 - The IDG is to investigate the potential for combining the functions being indicated by the mobile subnet capability parameter.

ACTION 19/7 - The IDG is to add the associated subnet loading to the mobile subnet transit delay requirement.

ACTION 19/8 - Mr. Graf to correct the form of the ATN authentication parameter to include a length field.

ACTION 19/9 – Mr. Jones to raise an issue at the WG1 meeting in Gran Canaria of finding an acceptable approach across the sub-volumes to require 3rd edition conformant implementations to support the enhanced functions while at the same time providing recognition for implementations conformant to prior versions of Doc 9705.

ACTION 19/10 - Mr. Cardwell is to provide an updated proposal, based on WP545, to the IDG with direction for the IDG to review the revised proposal and to incorporate the appropriate provisions into the draft Sub-Volume V for submission to the WG 2 in December 1999.

ACTION 19/11 - Mr. McParland to provide the missing IDRP related security material at the next IDG meeting and the IDG will provide a draft Sub-Volume V with complete security provisions for review at the December 1999 WG2 meeting in Japan.

ACTION 19/12 – Mr. Cardwell will further investigate the issue reported in WP546 and submit draft guidance material to IDG if appropriate.

ACTION 19/13 - The IDG is to investigate backward compatible approaches for allowing enhanced SNDCF compressions mechanisms to be added in the future.

ACTION 19/14 – Mr. Tamalet agreed to review the AEEC documents 631A and 637A, to be provided by Mr. Hennig, and if there are SARPs related issues he will prepare a submission to the WG2 meeting in December 1999.

ACTION 19/15 - Mr. Graf to update the draft Sub-Volume V to indicate that unassigned values of the CLNP and IDRP security parameters are reserved.

ACTION 19/16 – The IDG is to investigate how to accommodate mobile subnetworks with a Leave Event latency of greater than 600 seconds.

ACTION 19/17 – Ms. Ricci will serve at the coordinator for the completion of the validation report and to prepare a coordinated draft for review at the 3 December 1999 WG meeting. :Mr. McParland will support this activity.

ACTION 19/18 – Mr. Moulton to review prior working papers on multicast that he produced as well as WP460, submitted by Mr. Whyman, and prepare the proposed ATNP/3 working paper for review at the WG2 3 December 1999 meeting in Japan. The working paper is to be electronically distributed to the WG2 members at least 2 weeks prior to the WG2 meeting.

ACTION 19/19 – Mr. Jones to provide communiqués to WG1 based on the draft communiqués in WP536, Flimsy 1 and Flimsy 3

ACTION 19/20 – Mr. Jones to provide the communiqués contained in WP 535a and WP540 to the secretary with a request that they be conveyed to the AMCP. Mr. Jones to also provide an informal copy of WP540 to the AMCP Working Group rapporteur and/or VDL Mode 2 subgroup chairman.

Agenda for the 19th Meeting of ATNP WG2
27 September – 1 October 1999
Gran Canaria, Spain

0.   Meeting Organizational Issues

1.   Approval of the Agenda (WP528)

2.   Review and Approval of the report of 18th Meeting of WG2 (Naples – WP529)

3.   Inputs/Issues from other ICAO Bodies (e.g., Panel Secretary, CCB, WG1, AMCP, etc.)

4.   Review Status of Action Items from the 18th Meeting of WG2 including the Report of the IDG

5.   Preparations for ATNP/3

      5.1   Package 2 ICS documentation for ATNP/3
      5.2   Report of the ICS Drafting Group (IDG)
      5.3   ATNP WG2 Report to ATNP/3
      5.4   Working Group Organization and Work Programme post ATNP/3 (i.e., for ATNP/4)

6.   Package-1 ICS Documentation

      6.1   ICS SARPs (consideration of requests from the CCB and/or ICS SME).
      6.2   Additional Validation Results
      6.3   Implementation Plans

7.   Package-2 ICS Documentation

      7.1   Review draft Sub-Volume V, 3nd edition as submitted by the IDG
      7.2   Review proposed, or identify needed changes to Core ATN SARPs and Sub-Volume I related to ICS enhancements (e.g., new references, new definitions, new system level requirements, etc.)
      7.3   Review draft Sub-Volume V validation report
      7.4   Review draft working paper(s) to ATNP/3
      7.5   Security Mechanisms
      7.6   Systems Management
      7.7   Multicast/Broadcast Functions
      7.8   Additional and/or revised SNDCFs for mobile and/or ground subnetworks
      7.9   ATN ICS Subsets
      7.10   Enhancements to the ICS SARPs/GM based on New or Revised User Requirements
      7.11   Enhancements to the ICS SARPs/GM based on Operational Experience

8.   WG2 Inputs to WGW, ATNP/3 and other ICAO Bodies

9.   Future Work Plan

      9.1   Plans for IDG meeting
      9.2   WG2 position on ATNP/3 and subsequent WGW schedules
      9.3   Plans for 20th meeting of WG2
      9.4   Plans for WGW meeting in December 1999 in Japan
      9.5   Post ATNP/3

10.   Any Other Business

11.   Conclusions and Action List

WG2 19th Meeting Attendance

Gran Canaria, Spain 27 Sept. – 1 Oct. 1999

NAME	ORGANIZATION	ADDRESS	PHONE/FAX	E-MAIL ADDRESS
Abrams, Marshall	MITRE	1820 Dolly Madison Blvd. McLean, VA 22102 USA	+1 703-883-5316 +1 703-883-1397	abrams@mitre.org
Bigelow, Michael	ARINC	MS-4213 2551 Riva Rd. Annapolis, MD 21401 USA	1-410-266-4378 1-410-266-2820	mpb@arinc.com
Cardwell, Brian	NATS	C31, Spectrum House, Gatwick Road, Gatwick Airport South, West Sussex, UK RH6 0LG	44-1293-576 401 44-1293-576 399	brian.cardwell@nats.co.uk
Graf, Klaus-Peter	CONNECT (for DFS)	Harodoerfer str. 4 81669 Muenchen, Germany	+49/89/6004-4123 +49/89/6807-3513	klaus.graf@unilbw-muenchen.de
Hatakenaka, Masami	NEC Corp.	29-23, SHIBA 5-CHOME Minato-Ku, Tokyo 108 JAPAN	81-3-3456-7743 81-3-3456-7747	hatakenaka@atc.mt.nec.co.jp
Hennig, Paul	Staff Engineer IATA (United)	United Airlines WHQKO 1200 Algonquin Rd Elk Grove IL 60007	1-847-700-4312 1-847-700-4477	paulhennig@aol.com
Jones, Ron	FAA	ASD-140 800 Independence Ave. SW Washington, DC 20591 USA	1-202-358-5345 1-202-358-5386	ronnie.jones@faa.gov
Kuzuya, Shigeyoshi	JCAB	2-1-3 Kasumigaseki, Chiyoda-ku, Tokyo 100 Japan	+81-3-3580-7566 +81-3-3581-5849	SHIGEYOSHI-KUZUY @so.motnet.go.jp
McParland	BCI/FAA	BCI 6712 Washington Ave, Suite 101 Egg Harbor Twp, NJ 08234 USA	+1 609-485-5929 or +1 609-641-9698 +1 609-641-0203	Thomas_CTR_McParland@tc. faa.gov
Moulton, James	ONS.	22636 Glenn Drive, Suite 305 Sterling, VA 20164 USA	1-703-481-9590 1-703-481-9509	moulton@ons.com

NAME	ORGANIZATION	ADDRESS	PHONE/FAX	E-MAIL ADDRESS
Phrukkumwong, Chanyut	AEROTHAI	102 Ngamduplee, Thungmahamek, Sathorn Bangkok 10120 Thailand	+662 285 9248 +662 285 9253	chanyut@aerothai.or.th
Platz, Klaus	DFS	Paul-Ehrlich-Str. 37-39 63225 Langen, Germany	+49 6103 707 783 +49 6103 707 741	klausplatz@t-online-de
Tamalet, Stephane	STNA	1 Av Dr M Grynfogel B.P.1084 31035 Toulouse, Cedex, FRANCE	33-5-62-14-54-83 33-5-62-14-54-01	tamalet_stephane@ccmail.dgac.fr
Ricci, Christine	STNA	1 Av Dr M Grynfogel B.P.1084 31035 Toulouse, Cedex, FRANCE	+33 5 62 14 54 82 +33 5 62 14 54 02	ricci_christine@stna.dgac.fr
Sayadian, Leon	FAA	ASD-140 800 Independence Ave. SW Washington, DC 20591 USA	+1 202-358-5316 +1 202-358-5386	leon.sayadian@faa.gov
Schade, Thomas	DFS	Paul-Ehrlich-Str. 37-39 D-63225 Langen, Germany	+49 6103 707 783 +49 6103 707 742	schade@se.dfs.de
Supanundha, Nuttawat	AEROTHAI	102 S01 Ngamduplee Thungmahamek, Sathorn, Bangkok 10120 Thailand	+662 285 9247 +662 285 9253	nuttawat@aerothai.or.th
van der Boogaard, Kors	IATA	800 Place Victoria Montreal, Canada	+1 514-874-0202 X3405 +1 514-874-2611	kors@iata.org
Van Trees, Stephen	FAA	AIR-130 800 Independence Ave. SW Washington, DC 20591 USA	+1 202-267-9567 +1 202-267-5173	stephen.vantrees@faa.gov

ATNP WG2 19th Meeting
27 Sept. – 1 October1999
Gran Canaria, Spain

LIST OF WORKING PAPERS

WP No.	Agenda Item	Presenter	WP Title
528	1	R. Jones	Agenda for the 19th Meeting of ATNP WG2
529	2	R. Jones	Report of the 18th Meeting of ATNP WG2
530	7.1	K-P Graf	Draft Sub-Volume V, Third Edition
531	6.1	K-P Graf	SME V (ICS) Status Report
532	4	B. Cardwell	WG2/IDG report
533	3	M. Paydar	ATNP Secretary Report
534	7.1	T. McParland	IDRP Authentication Scenarios
535	8	R. Jones	Proposed Communiqué to AMCP on Requirements for Leave Event Latency
536	8	R. Jones	WG2 Inputs to ATNP/3
537	3	M. Bigelow	WG1/SG2 Security Sub-Group Report
538	7.3	R. Jones	Draft Sub-Volume V Validation Report
539	3	P. Hennig	IATA Reply to the ATNP WG2 Communiqué on Airline Requirement for Subnetwork Selection
540	8	T. Whyman	Proposed Communiqué to AMCP on VDL Mode 2 Leave Event reporting
541	7.1	K-P Graf	ICS Enhancements and Change Control Log for 3rd Edition of Sub-Volume 5
542 (IP)	10	S. Tran	Enroute CPDLC Status Overview (Briefing from U.S.)
543 (IP)	9.4	N. Sakaue/Kuzuya	3rd Working Group of the Whole (Working Group of the Whole/3) Meeting on ATNP in Tokyo (Japan)
544	7.4	J. Moulton	Proposed Multicast Architecture (draft ATNP/3 working paper)
545	7.1	B. Cardwell	Draft SARPs to Address Join/Leave Event Churn
546	7.1	B. Cardwell	Transport/Application Frozen Reference Timing Problem
547 (IP)	1	J. Rodriguez	Welcome to Las Palmas
548	10	P. Hennig	IATA Policy on ATN Air-Ground Subnet Topology
549	6.1	S. Van Trees	CCB Report
550	7.8	S. Tamalet	Enhancements to the ISO 8208 Mobile SNDCF
551	7.1	S. Tamalet	Ground interface to the mobile subnetworks
552	7.6	T. Kerr	draft Doc 9705 Sub-Volume VI
553			
Flimsy No.			
1		R. Jones	Need for a Working Group of the Whole in May/June 2000 time frame – Communiqué to WG1
2		T. Whyman	Security Concerns
3		R. Jones	Backward compatibility provision of the draft third edition of Doc 9705 Sub-Volume V
4		AMCP/WG-D	Communiqué to ATNP on the VDL Mode 3 Frame Mode Interface
5		AMCP/WG-D	Answer to ATNP (AMCP VSG Flimsy Z)
6		B. Cardwell	Communiqué to AMCP in response WG-D Flimsy Y
7			
8			

Proposed Work Programme Items to Progress the ICS Provisions Post-ATNP/3

	Work Programme Item - Title	Sample Description	WG2 Reference
01	Review additional validation results for draft Doc 9705 third edition, Sub-Volume V and finalize the Validation Report	Review papers from those States and organizations that are participating in the validation of Doc 9705 third edition, Sub-Volume V and update the draft Sub-Volume V validation report	WG2/fl 19-1
02	Prepare an set of corrections to the draft Doc 9705 third edition, Sub-Volume V to correct defects identified by the validation activities	Prepare a paper for all corrections to the baseline draft Doc 9705 third edition, Sub-Volume V as presented to ATNP/3	WG2/fl 19-1
03	Prepare enhancements to the Doc 9739, ATN guidance, to account for the enhanced functions introduced by Doc 9705 third edition, Sub-Volume V	Prepare a proposed update to Doc 9739 to provide guidance to implementors of the provisions of Doc 9705 third edition, Sub-Volume V	WG2/fl 19-1
04	Enhancements to the ATN SARPs and Guidance Material based on new and/or revised user requirements	Additional requirements for subnetworks, ISs and/or ESs based on Required Communications Performance (RCP). Also potential further enhancements to the mobile SNDCF for the handling of changing mobile subnetwork connectivity	WG2/18 WP510
05	Enhancements to the ATN SARPs and Guidance Material based on operational experience	Enhancements to the connection oriented transport service to better cope with the loss of TPDUs that will result from changes in mobile subnet connectivity	WG2/18 WP510
06	Provision of subnetwork dependent convergence functions (SNDCFs) within the ATN SARPs and Guidance Material for additional subnetwork types	Support for new mobile subnetworks (e.g., VDL 4, asynchronous transfer mode, frame relay, broadcast subnetworks, etc.)	WG2/18 WP510
07	Investigate the provision of quality of service (QoS) management functions service	QoS routing and performance management enhancements (beyond Doc 9705 3rd Edition)	WG2/18 WP510
08	Provide Guidance Material on financial accounting mechanisms, including the identification of network cost parameters	ATN accounting management elements and requirements are closely tied with systems management provisions	WG2/18 WP510
09	Enhance Doc 9705 third edition, Sub-Volume V to introduce flexible, extendable means of supporting mobile subnetwork route selection	Support selection of routes for AOC using new mobile subnetworks.	WG2/18 flimsy 7 WG2/19 WP539
10	New ATN SARPs and Guidance Material based on the multicast architecture adopted at ATNP/3	Following the ATNP/3 adoption of the multicast architecture, prepare Doc 9705 proposed changes for ATNP/4	WG2/18 WP510
11	Address issues related to backwards compatibility of SARPs enhancements with existing ATN SARPs	Working paper needed for ATNP/4	WG2/18 WP510
12	Investigation of provision of data/voice service integration	Delivery of digitized voice via the ATN	ATNP/2 report
13	Investigate improved mobile SNDCF data compression techniques	Use of pre-stored DEFLATE dictionary	WG2/WP550
14	Aid for global ATN implementations	Provide inputs to States and Regional Planning Groups as requested by ICAO	