

**Summary of Discussions of the
Twentieth Meeting
of the
Informal South Pacific Air Traffic Services Co-Ordinating Group
(ISPACG/20)**

**Honolulu, Hawaii, USA
30 January – 1 February, 2006**

1 Background

1.1 The Twentieth Meeting of the Informal South Pacific Air Traffic Services Co-ordinating Group (ISPACG) was hosted by the Federal Aviation Administration (FAA) and held at the Renaissance Ilikai Waikiki Hotel, Honolulu, Hawaii USA from 30 January – 1 February 2006.

1.2 **Ms. Leslie McCormick**, Senior International Program Officer, Air Traffic Organization (ATO) Operations Planning International of the FAA, and **Mr. Geoff de Bazin**, Operations Manager, Oceanic, Airways New Zealand (Airways) served as co-chairs of the meeting. **Ms. Stacey Herishen-Smith** of BAE Systems provided Secretariat support services to the meeting.

1.3 The meeting was attended by participants representing South Pacific Air Traffic Service Providers (ATSP) and regulatory authorities, airlines, International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA), International Federation of Air Line Pilots' Associations (IFALPA), International Federation of Air Traffic Controllers' Associations (IFATCA), representatives from communications service providers, and airline and equipment manufacturers. A list of participants is included in Appendix C to this report.

1.4 Leslie McCormick opened the meeting and welcomed the participants. She expressed appreciation to Andrew Tiede for his attendance as representative of the ICAO Asia Pacific Office. She also welcomed Alberto Fernandez, representing DGAC Chile, who attended to learn more about the progress of ISPACG on matters relating to implementation of automatic dependent surveillance (ADS) and controller pilot data link communications (CPDLC).

1.5 Leslie read an email from Ron Rigney, former co-chair from Airservices Australia (Airservices), which announced his resignation. Although Airservices would no longer designate a co-chair of ISPACG, technical representatives from Airservices would continue to attend.

1.6 Geoff de Bazin acknowledged the depth of aviation expertise gathered at the meeting. However, he expressed concern that the wide range of expertise hasn't consistently been present at recent ISPACG meetings. Leslie introduced the FAA support staff, including Stacey Herishen-Smith, and Jerry Bellamy and Hope Johnson of Bellamy Management Services. General introductions were made around the room.

Adoption of the Agenda

1.7 The meeting adopted the following Agenda for the meeting:

Agenda Item 1: Review and approve Agenda

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Agenda Item 2: Updates from ATS Providers

Agenda Item 3: Review relevant work conducted since the last meeting

- a. Report on relevant outcomes from APANPIRG/16
- b. Report on Joint IPACG/ISPACG FIT Meeting
- c. Report on 30/30 Implementation Task Force

Agenda Item 4: Review progress on Open Action Items

Agenda Item 5: Identify future work programs

- a. Review and update Capacity Enhancements Table
- b. Discussion of priorities
- c. Work program development

Agenda Item 6: Review and establish terms of reference for working groups/task forces

Agenda Item 7: Other Business

Meeting Documentation

1.8 The meeting considered 18 working papers and 23 information papers which were posted on the FAA web site at the following address: <http://www.faa.gov/ats/ato/ispacg.htm>

PAPER	AGENDA ITEM	TITLE	PRESENTED BY
WP/01	1	Proposed Agenda	Co-Chairs
WP/02	3	Report on relevant outcomes from APANPIRG/16	FAA
WP/03	4	Review of open action items from ISPACG/19	Co-Chairs
WP/04	5a	Review of capacity enhancements table	FAA
WP/05	4	Update on FAA HF Regression Activities	FAA
WP/06	5	ATS Interfacility Data Communications Version 2.0	FAA
WP/07	2	CPDLC Waypoint Reporting in the Oakland FIR	FAA
WP/08	7	Airport Air Traffic Control Facilities Notification (AFN) Logons	FAA
WP/09	7	Review Proposal for Amendment of Regional Supplementary Procedures – Doc 7030/4 (Serial No. APAC-S 03/10 – MID/ASIA/PAC RAC)	FAA
WP/10	4	Overview of activities and plans of the ICAO Flight Plan Study Group (FPLSG)	FAA
WP/11	4	HF Pre-Flight and SELCAL Checks	FAA

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PAPER	AGENDA ITEM	TITLE	PRESENTED BY
WP/12 REV	4	Report on the Implementation of 30/30 in Oakland FIR	FAA
WP/13		WITHDRAWN	
WP/14	4	Proposed Restructure To Action Item List	FAA
WP/15 REV	7	US Aeronautical Information Publication (AIP) International Flight Planning Requirement	FAA
WP/16		NOT ASSIGNED	
WP/17		WITHDRAWN	
WP/18	4	Action Item 16-13: Implementation Of The “Rule Of 11”	Airways New Zealand
WP/19	4	HF Congestion	Airways New Zealand
WP/20	4	Comments from ICAO HQ on Proposal for Amendment of Regional Supplementary Procedures – Doc 7030/4 (Serial No. APAC-S 03/10 – MID/ASIA/PAC RAC	FAA
WP/21		NOT ASSIGNED	
WP/22	4	Australian ADS-B Update	Airservices Australia
IP/01	7	New Zealand’s Aviation Spectrum Group	CAA New Zealand
IP/02	4	ATS Data Link Gateways	FAA
IP/03	7	Utilization of Block Altitudes in the Oakland FIR	FAA
IP/04	7	Required Communication Performance and Performance-Based Operations Aviation Rulemaking Committee (PARC)	FAA
IP/05	2	FAA’s Implementation Strategy for the Implementation of the 50NM Longitudinal Separation Standard based on ADS	FAA
IP/06	2	Status Of Advanced Technologies And Oceanic Procedures OCEAN21 System Implementation	FAA
IP/07	7	FAA Interim Guidance for Airbus A380 Separation	FAA
IP/08		NOT ASSIGNED	
IP/09	2	Cancellation of Airborne Collision Avoidance System/Traffic Collision Avoidance System (ACAS/TCAS) In trail Climb/In trail Descent (ITC/ITD) Procedure	FAA
IP/10	4	Global Air Traffic Interoperability Program	FAA

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PAPER	AGENDA ITEM	TITLE	PRESENTED BY
IP/11	4	Safety And Performance Requirements (SPR) Standards For Data Link	FAA
IP/12	7	Guidance Material In Regard To Wake Vortex Aspects Of A380 Aircraft	FAA
IP/13	7	Required Communication Performance (RCP) Concepts – An Introduction	ICAO Asia Pacific Regional Office
IP/14	7	Draft Document 9859 – ICAO Safety Management Manual	ICAO Asia Pacific Regional Office
IP/15	3a	Funding Arrangements For Regional Airspace Safety Monitoring	ICAO Asia Pacific Regional Office
IP/16	7	ICAO Language Proficiency Provisions	ICAO Asia Pacific Regional Office
IP/17	2	Mode-S SSR Upgrade	Airways New Zealand
IP/18	2	Wide Area Multilateral Trial	Airways New Zealand
IP/19	4	Airways New Zealand ADS-B Technical Trial	Airways New Zealand
IP/20	2	Auckland Oceanic Update 2005	Airways New Zealand
IP/21	4	Pilot Time Revisions	Airways New Zealand
IP/22	4	Pre Departure Clearances	Airways New Zealand
IP/23	4	RNP in New Zealand Domestic Airspace	Airways New Zealand
IP/24	3	30/30 Task Force Progress	Airservices Australia

2 Updates from Air Traffic Service (ATS) Providers

2.1 The representative from **Airservices** provided a brief status of work. Since the last meeting, they had implemented flex tracks. Automatic Dependent Surveillance – Broadcast (ADS-B) software was under development with slight delays due to ground station infrastructure and communications problems. Enhancements to oceanic automation were ongoing. Progress had been made on ATS Interfacility Datalink Communication (AIDC), which had been implemented with Nadi Area Control Center (ACC). While plans were underway for Airservices to provide ATS in Moresby Flight Information Region (FIR), the date was at yet uncertain.

2.2 **Airways** reported that the stability of the Oceanic Control System (OCS) had improved significantly through 2005. In 2006/2007 they would be making architecture changes to the platform to further enhance the system and enable seamless datalink operation from the OCS reserve platform. During 2005 they introduced AIDC with both Nadi and Tahiti ACCs. Generally, AIDC was working well, however there were still software issues to be resolved in 2006. They were completing final testing

of our AIDC Version 2 software for the OCS, which would be released on 15 March 2006. Further Dynamic Airborne Route Planning (DARP) reroute testing was completed during the year with both Boeing and Airbus test benches to validate the latest ISPACG DARP procedures. Airways introduced the 30NM lateral and 30NM longitudinal separation (30/30) standard in the South Pacific in conjunction with Nadi and Brisbane FIRs in January 2005; however the application of the standard was withdrawn between 13 October and 1 December 2005 because of system availability issues caused by problems at the Perth Ground Earth Station (GES). Airways also provided information on their radar modernization program to extend the life of current secondary surveillance radars (SSRs) and primary surveillance radars (PSRs), as well as upgrading all SSRs to Mode S capability. In conclusion, Airways reported on their plans to trial a wide area multilateration system in early 2006

2.3 **Tahiti ACC** reported that the VIVO4 system would be in force in March 2006. Sigma V13 version had been operating since December 2005. The 2NM lateral offset would go into effect from March 2006 – and implementation of required navigation performance (RNP) 10 was also planned for March, followed by 50NM lateral separation in September 2006. Two domestic airports would be equipped in June 2006 for area navigation (RNAV) global navigation satellite systems (GNSS) procedures. Tahiti Faa'a runways 04 and 22 would be equipped in mid 2007. The Tahiti monopulse radar would be operative as planned in late 2007 or early 2008. A new ATC system named "TIARE" would be operative in 2008, and plans are underway for ADS-B implementation between 2009 and 2010.

2.4 **Fiji** reported that they intended to raise the upper limit of their FIR from flight level (FL) 460 to FL 600 on 16 March 2006. Similarly, the 2NM lateral offset would be implemented on 16 March 2006.

2.5 The FAA announced that the Ocean 21 system had been successfully implemented in October 2005, allowing the application of 50NM longitudinal separation. 30/30 was implemented in December 2005 in Oceanic Sector 3, which accommodated flight between the US west coast and the South Pacific. AIDC without the requirement for voice communication was implemented with Anchorage FIR, and it was hoped that this could be expanded to additional FIRs during 2006.

3 Review of Relevant Work Conducted Since the Last Meeting

16th Meeting of the Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/16)

3.1 The meeting reviewed relevant conclusions and decisions from APANPIRG/16. These included Conclusion 16/4 (Traffic Sample Data Collection); Conclusion 16/5 (No implementation of reduced separation unless compliant with Annex 11); Conclusion 16/6 (Non provision of safety related data by States); Conclusion 16/10 (Review of ATS Route Catalogue by States); Decision 16/14 (Contingency Plans on ATS Coordination Group Agendas); and Decision 16/16 (Civil Military Coordination). These conclusions and decisions affected the work of ISPACG and other ATS coordination groups.

3.2 A question was raised regarding Conclusion 16/6, questioning whether any South Pacific States had been identified as deficient. The chair responded that deficiencies would be identified by future meetings of the Regional Airspace Safety Monitoring Advisory Group (RASMAG). Prior to the conclusion of the meeting, information on provision of safety monitoring data was received from the Pacific Approvals Registry and Monitoring Organization (PARMO) and made available to those interested.

3.3 The meeting agreed to add “Review of relevant route requirements in the Asia/Pacific ATS Route Catalogue” and “Civil Military Coordination” as standing agenda items, and to continue to address air traffic management (ATM) contingency plans at each meeting. Future ISPACG agendas will be prepared accordingly.

3.4 The ICAO Asia/Pacific Regional Office informed the meeting of the status of funding arrangements for regional airspace safety monitoring. APANPIRG/16 recognized the urgent need to develop feasible and sustainable funding solutions for regional safety monitoring so that on-going initiatives to carry out trials and to implement communications, navigation, surveillance and air traffic management (CNS/ATM) systems in the Asia/Pacific Regions would not be delayed and that safety and efficiency were not compromised. Recalling that APANPIRG’s CNS/ATM technical experts had previously found it difficult to resolve the complex legal, financial and organizational issues involved in establishing a regional safety monitoring agency, the meeting considered that this matter should be addressed by States’ experts in these specialist fields.

3.5 In light of the foregoing, APANPIRG/16 formulated the following Conclusion:

Conclusion 16/2 – Funding arrangements for regional airspace safety monitoring

That, a study group be convened to develop a feasible and sustainable proposal to equip States to organize and finance necessary safety monitoring mechanisms for the provision of safety services for the international airspaces in the Asia/Pacific region and that States be represented at that meeting by their appropriate legal, financial and organizational experts who would be best equipped and empowered to resolve any difficulties. The study group should report to RASMAG not later than the end of June 2006

Action Item 16-5: Report of the Joint FANS Interoperability Team (FIT) Meeting

3.6 The action items from previous FIT meetings, both Informal Pacific Air Traffic Control Coordination Group (IPACG) and ISPACG, were reviewed.

3.7 As has been the custom in the ISPACG FIT, all attendees were offered an opportunity to highlight accomplishments and concerns of the previous year. The meeting congratulated Oakland Air Route Traffic Control Center (ARTCC) for their successful implementation of the Ocean21 system, the introduction of 30/30 and the application of 50NM longitudinal separation.

3.8 The meeting discussed the lack of stability and need for upgrades to the GES at some length. Since failure of a single GES could have an immediate degrading effect on the separation minima in use, it was considered critical from both economic and safety points of view that redundancy be provided. It was agreed that the airspace users should try to develop better failure-mode notification and switch-to-backup procedures. Currently a GES failure usually results in failure of data link, with no simple or consistent way for flight crews to switch to a backup GES. It was noted that the Japanese system does use two satellites and four GES, providing double redundancy.

3.9 Detailed discussions were held on the following subjects, summarized in the full FIT Report. The meeting was advised that all working and information papers and presentations would be posted on the IPACG and ISPACG websites.

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- a. Methodology for validation of ADS reports
- b. JCAB CRA activity
- c. HF data link use in the Auckland Oceanic FIR
- d. Cruise climb requests
- e. CPDLC route clearances
- f. Update on failed CPDLC connection requests
- g. South Pacific Problem Reports
- h. HF data link use for FANS communications
- i. AIB CPDLC route clearance
- j. HFDL AIB
- k. System performance criteria
- l. Minimum content requirements for CPDLC waypoint report downlinks
- m. MTSAT AMSS program update
- n. Report of Data Link Operational Trial
- o. Use of predicted altitude in ADS downlink reports
- p. Lateral deviation event contracts
- q. Flight crew procedures for DATALINK LOST
- r. Long-term viability of FANS
- s. Data link on the Boeing 787
- t. Iridium
- u. Weather deviations

3.10 The FANS-1/A Operations Manual (FOM) was amended based on the review and acceptance of 12 proposals, and the FIT agreed to publish the FOM on a semi-annual publication schedule to coincide with the first Aeronautical Information Regulation and Control (AIRAC) date occurring in May and November each year. These were chosen to follow the Spring and Fall FIT meetings.

3.11 The full FIT Report, including status of action items and Appendices, has been made available on the ISPACG and IPACG web sites.

Action Item 16-8: Implementation of 30/30

3.12 The FAA informed the meeting of the recent implementation of operational trials for 30/30 in Oakland Oceanic Control Sector 3 (OC3). Based on validation of the success of these trials through ongoing system performance monitoring, full OC3 implementation is planned for early 2007. A schedule will be developed for expanded application of 30/30 in other portions of US-controlled oceanic airspace supported by Ocean21.

3.13 Concerns were raised by the airlines on the appropriate ADS reporting rate in airspace where 30/30 could be applied. Oakland ARTCC advised the meeting that the 14 minute reporting rate was automatically applied to all aircraft for which RNP4 was filed in the flight plan. A software upgrade was under investigation, but a cost benefit analysis was required before a change could be implemented. Airlines attending the meeting expressed their concern over the added costs and asked that a solution be identified as quickly as possible. The FAA agreed to continue to work this matter and find a satisfactory solution.

3.14 The utilization of the 30/30 standard across the South Pacific since 20 January 2005 had been minimal due to the number of aircraft with the appropriate RNP 4 approvals. However the Australian regulation CASR 91 Sub-part U became effective in January 2006 and it was expected that the number of RNP 4 approvals would increase significantly as a result.

3.15 A 30/30 post implementation review (PIR) for the Tasman area would be conducted by the co-chairs of the 30/30 Working Group in March 2006. The results of the PIR will be circulated to the ICAO Air Navigation Bureau, the ICAO Asia Pacific Regional office, and to the ATS providers and regulators in the Pacific.

3.16 During October and November 2005 the SATCOM availability level dropped to an unacceptable level due to technical issues related to the GES. Airports Fiji Limited, Airways and Airservices agreed to not apply the 30/30 standard in their State administered airspace from the third week in October. The refurbishment of the GES satisfactorily restored the availability level and the decision to reinstate 30/30 was taken by Airservices, Airways and Airports Fiji Limited with effect from 1 December 2005.

3.17 This issue reinforced the level of system and safety monitoring that was instigated during the 30/30 Working Group and proved the value of a high level of operational vigilance. It was noted that the application of 30/30 still required a more robust system of lateral deviation monitoring. The current reliance on ATS providers' incident report monitoring was considered to be adequate but not optimal.

3.18 A discussion ensued on GES and datalink service provider (DSP) backup capabilities and flight management system requirements. The Perth (POR1) GES outages experienced by Oakland ARTCC caused a complete loss of data link capabilities. Oakland ARTCC attempted to clarify what back up coverage was available when a satellite, GES or service provider incurred an outage. A new action item 20-5 was developed to address problems with SATCOM.

4 Review Progress on Open Action Items

4.1 The meeting reviewed the remaining ISPACG/19 Open Action Items. The revised list of Open Actions is shown at Appendix A.

Action Item 16-1: Funding for Continuation of Central Reporting Agency (CRA) Activities

4.2 The meeting was informed that an ad hoc meeting had been held on 26 January 2006 to discuss continuation of CRA funding. The FAA reported that the cost of Boeing's provision of FIT/CRA services for the South Pacific was approximately US\$160,000 per year. It was agreed that FAA would fund US\$80,000, approximately half of the annual cost. Boeing agreed to work out an arrangement for collecting the remaining US\$80,000 from the other South Pacific ATS providers. Discussions would continue. Boeing agreed to provide the co-chairs with more information by 31 March 2006.

4.3 It was further noted that the matter of funding for regional safety monitoring agencies for reduced vertical separation minima (RVSM), RNP and ADS/CPDLC would be raised at the ALLPIRG/5 meeting in Montreal on 23-24 March 2006.

Action Item 16-4: ATM Contingency Plans

4.5 The meeting considered the matter of ATM contingency plans. Brisbane and Auckland ACCs have reviewed contingency arrangements and were unable to progress them further due to issues regarding shared information on traffic. Airways planned to enhance internal contingency arrangements. Further progress would be reported at the next meeting.

Action Item 16-6: Regional Lateral Offset Procedures

4.6 Strategic lateral offset procedures had been implemented in all but Tahiti FIR. Tahiti had planned to implement a 2nm lateral offset effective 16 Feb 2006; however, in order to standardize the procedure with ICAO guidance, Tahiti would further consider amending their procedure to include 1 and 2NM offsets. New Zealand had implemented an up to 2NM offset, but would also consider amending their procedure to reflect 1 and 2NM offsets. Operators were reminded of the need to automatically fly the offset.

Action Item 16-7: Aircraft Loss of Communications Procedures

4.7 In regards to the proposed amendment developed for loss of communications, the FAA informed the meeting that comments had been received from the ICAO APAC Office and ICAO Headquarters.

4.8 The information received indicated that New Zealand had identified a conflict between PANS-ATM and the proposed amendment. It was further noted that the procedures for air-ground communication failure were a separate set of procedures from those for in-flight contingencies in oceanic airspace. The proposal to incorporate the offset for air-ground communication failure would change the way that ICAO has traditionally dealt with communications failure.

4.9 It was requested that the proposing States (Australia, Fiji, France, Japan, New Zealand, Philippines and United States) reconcile the proposed amendment with PANS-ATM.

4.10 The comments had been discussed during the 24th Meeting of IPACG, held immediately prior to ISPACG/20. An ad hoc working group of experts had convened to consider ICAO's comments and had developed a resolution.

4.11 The information prepared by IPACG/24 was considered by an ad hoc working group of experts and further changes were made based on new information received from ICAO HQ during the meeting. Specifically:

- a. the 15nm offset was eliminated in order to help expedite the material through the ICAO process;
- b. clarifications were made regarding ADS equipped aircraft vs. non-ADS equipped aircraft; and
- c. the 60 minute rule for pilots was maintained.

4.12 The FAA agreed to coordinate these changes with States as appropriate following the meeting.

Action Item 16-13: Application of "Rule of 11" in Oceanic Airspace

4.13 Airways advised the meeting that they had delayed the implementation of the "rule of 11" outside of radar coverage primarily due to the high incident rate of aircrew failing to revise their estimates for

compulsory position reports. They planned to implement the procedure as detailed in PANS-ATM during the first quarter of 2006.

4.14 Technical questions regarding the interpretation of this separation standard as detailed in PANS-ATM were raised and resolved during the meeting.

Action Item 17-1: Implementation of 50nm Lateral and 50nm Longitudinal Separation (50/50) in RNP Airspace

4.15 Tahiti reported plans to implement 50NM lateral separation in Sept 2006. 50NM longitudinal separation was to be introduced subject to a precision survey following the successful introduction of VIVO 4. VIVO 4 will be introduced in Mar 2006.

4.16 Airways presented an update on the project initiated over a year ago to provide a pathway for the introduction of RNP into New Zealand domestic airspace. Early in 2006 a 2015 plan showing an RNP route structure for New Zealand would be published. The year 2015 was chosen as it was neither too far away to be ignored nor too close to be unrealistic in terms of implementation.

4.17 While the 2015 plan is being finalized, work was underway on an implementation plan, as Airways could not go from a conventional navigation based route structure to an RNP environment overnight. This implementation plan will focus on RNAV (navigation accuracy without on-board containment alerting) for all routes above 11,000 feet, and RNAV standard instrument departures and standard terminal arrival routes at major airports.

4.18 IFALPA and Qantas both expressed their appreciation to Airways for the introduction of RNP approaches and the subsequent benefits that they provided.

Action Item 17-2: User Preferred Routes (UPRs)

4.19 Airservices addressed issues concerning their implementation of flex tracks across Australian domestic airspace. These tracks were implemented last year using the DOTS+ track generation system. While it was noted that some problems had been encountered by Airservices in domestic airspace, feedback from the airlines indicated that they were pleased with the benefits provided by the flex tracks.

4.20 Problems with oceanic flex tracks were raised during the meeting, specifically insufficient internal coordination and too many aircraft coming into one gate. Airservices reported that their conflict probe software was expected to be implemented in July/August 2006.

4.21 Airways reported that they were using UPRs for most long hauls in the Pacific, and that DARP trials were planned between Auckland and Brisbane.

4.22 It was noted by one airline representative that UPRs could be a double edged sword, especially in Southeast Asia. Aircraft flying into Sydney have had issues with not having a definite ground clearance. There had been many instances where aircraft were held for 20 minutes prior to receiving clearance to land. It was also noted that more airlines were consolidating their flight plan systems resulting in different airlines potentially having the same flight plans.

4.23 Oakland ARTCC noted that Ocean21 would enable them to apply UPRs anywhere within the Oakland FIR, and that there were plans to conduct UPR trials with American and/or United Airlines on the Central East Pacific (CEP) tracks between the US west coast and Hawaii.

Action Item 17-5: Automatic Dependent Surveillance – Broadcast (ADS-B) Implementation

4.24 Airservices presented an update of the progress of the ADS-B project during the last 12 months. The meeting was informed that the Australian Civil Aviation Safety Authority (CASA) had authorized the use of a 5NM separation standard using information derived from ADS-B reports between aircraft participating in the ADS-B trial at Bundaberg. This authorization permitted the application of a 5NM separation standard between two or more ADS-B OUT equipped aircraft participating in the trial; or between an ADS-B OUT equipped aircraft participating in the trial and a radar-identified aircraft.

4.25 Up to date information on the Australian ADS-B project is located at the following address on the Airservices web site: <http://www.airservicesaustralia.com/adsb>.

4.26 Airways presented a summary on the Mode S ADS-B Ground Station model (AS680) made available to Airways by Thales ATM on a temporary basis for a three month evaluation. The supply included equipment installation, commissioning, and training for selected Airways staff.

4.27 The key benefits from this trial were focused around the achievement of first hand knowledge and skill - particularly in showing a full understanding of the issues, costs, resources, and work packages required for Airways to be able to deploy and use ADS-B operationally.

4.28 The ADS-B Trial observed flights from Christchurch, Wellington and Dunedin. Scheduled international flights also operated from Auckland, Hamilton and Palmerston North Airports. It was noted that the New Zealand avionics fitment was lower than expected – about 0.5% of the total fleet. Airways suggested that for international traffic, ADS-B may be useful for busy tracks about the domestic boundary, or at strategic sites in the Pacific.

Action Item 19-6: In-trail procedure based on ADS-B

4.29 Airservices reported on their cooperation with the US National Aeronautics and Space Administration (NASA) to plan a joint trial of ADS-B for in-trail climb (ITC) procedures in remote and oceanic airspace beyond the coverage of radar or ADS-B ground stations. This is a procedure by which an ADS-B IN aircraft can climb through the altitude of higher traffic (equipped with ADS-B OUT) with a separation less than could be offered using procedural separation methods. The commencement date of the trial was yet to be finalized (possibly December 2006). This was expected to be the first of many future applications for the use of cockpit display of traffic information (CDTI) in Australia.

4.30 The FAA provided information on the Global Air Traffic Interoperability (GATI) Program. The GATI program was designed to help promote safe, affordable, and rapidly implemented innovations in next-generation ATM. To this end, the objectives of GATI are to:

- a. Demonstrate near-term improvements in ATM related to capacity, efficiency, noise, and emissions
- b. Foster collaboration among North American, European, and Asia/Pacific air navigation service providers and airlines for global interoperability

- c. Test concepts for future performance-based operations that can dramatically increase global airspace capacity
- d. Provide a focusing program framework for the practical implementation of the emerging Joint Program Development Office/Next Generation Air Transportation System and European Single European Sky ATM Research (SESAR) plans

4.31 The operational benefits of GATI would be derived from practical, low-risk, near-term implementation of concepts that utilize existing and expected future aircraft capabilities. These near-term concepts directly support capabilities required to meet future capacity needs.

4.32 Three near-term operational trials were currently envisaged under the FAA GATI program. The emphasis for these trials is placed on development of innovative near-term concepts that could be globally accepted and coordinated internationally for maximum interoperability. The initial trials that would illustrate advanced operations on oceanic routes included the following.

- a. **Oceanic Tailored Arrivals** trials would demonstrate means of planning, communicating, and flying highly-efficient arrival trajectories from cruise altitude to the runway threshold. These strategic, trajectory-oriented, arrival solutions were designed to satisfy ATM constraints associated with separation, spacing, and sequencing, while allowing pilots to rely upon the flight management system to manage and execute continuous, minimum fuel, descent profiles.
- b. **ADS-B Enabled In-Trail Procedures (ITP)** operational trials would demonstrate non-radar procedures for ADS-B enabled in-trail climb-through and descend-through maneuvers to attain more optimum altitudes. Initial benefits analyses indicated that significant fuel savings (and in some regions, an increase in high-value cargo) could be obtained by airlines that chose to equip with an ADS-B receiver and ITP decision-support software.
- c. **Oceanic Waypoint Traffic Management** operational trials would demonstrate initial four dimension (4D) trajectory traffic management implementation using waypoint scheduled times of arrival for oceanic entry and exit fixes. Enhanced aircraft sequencing and spacing at oceanic entry and exit points would lead to increase track loading efficiency and predictability.

4.33 The vision for the GATI program is to execute the three proposed flight trials in either the Atlantic and/or Pacific regions within the next 18 to 24 months.

Action Item 17-6: Oceanic Safety Performance Standards for Data Link

4.34 The FAA presented an update on Oceanic Safety Performance Requirements (SPR) Standards for Data Link. It was intended that implementations and technologies shown to comply with the Oceanic SPR Standard, when so enunciated by the statutory authority, would satisfy regulatory and air navigation service provider safety and performance requirements for certification, approval, provision, and use. The meeting noted that requirements related to use of a particular technology were provided by appropriate interoperability standards, such as EUROCAE ED-100A/RTCA DO-258A. The next meeting of RTCA SC-189/EUROCAE WG-53 would be held 7-10 March 2006 at EUROCAE in Paris, France. Tom Kraft (FAA) at tom.kraft@faa.gov or Serge Bagieu (Airbus) at serge.bagieu@airbus.com could be contacted for more information.

Action Item 17-8: Reduced Vertical Separation Minimum (RVSM) Traffic Movement Sample

4.35 Based on the information provided on APANPIRG/16 Conclusion 16/4, Traffic Sample Data Collection, the meeting agreed that it was no longer necessary to carry this as a standing action item, therefore this item was closed.

Action Item 17-9: Pre Departure Clearances (PDC)

4.36 Airways reported the completion of a business case into the introduction of PDC at Auckland, Wellington and Christchurch Airports. The business case supported the introduction of PDC, via the airline host, in the short to medium term, with DCL (ARINC 623) being a longer term solution as fleet equipment increased. The requirements specification was being written with a planned completion date of the ATM functionality by July 2006, and trials at Christchurch later in 2006. For the future, a move to DCL would be contemplated as fleet compatibility increased, and Airways decided on a long-term datalink communications strategy.

4.37 The FAA presented information on the operational issues that arise due to aircraft establishing data link connections with Oakland ARTCC (KZAK) prior to departure. The FAA explained that when an aircraft sends the initial AFN message, the Ocean21 system establishes both a CPDLC and ADS connection. The Ocean21 system begins extrapolating an aircraft's position once a data link connection is established. This is done based on the filed flight plan. When data link connections are established well before the aircraft departs, an extrapolated track can appear to reach the KZAK boundary even though the aircraft has not yet departed. This can create additional controller workload to determine the status/location of the aircraft.

4.38 The FAA requested that aircraft not log on to data link until airborne when departing an airport outside of the Oakland FIR, when the Oakland FIR will be the first data authority. The FAA noted that this was not known to be an issue at New York ARTCC.

4.39 Further discussions regarding this matter continued during the FIT meeting. Although there may be a future Ocean21 software upgrade to resolve this problem, it was agreed that the Oakland ARTCC would submit a Request for Change (RFC) to the FANS Operations Manual to provide a near-term solution.

Action Item 17-11: ATS Interfacility Datalink Communications (AIDC)

4.40 Airservices presented information concerning AIDC Interface Control Document (ICD) Version 2.0. Airservices requested that ISPACG members consider the need for the AIDC FAN and FCN messages, and determine what amendments would be required to the definition and format of these messages. It was also recommended that representation be made to the ICAO Asia/Pacific Office to reconvene the AIDC Task Force for the purpose of finalizing the format of the FAN and FCN messages in the AIDC ICD as well as updating the AIDC ICD in accordance with these and any other changes required.

4.41 Andrew Tiede, ICAO, suggested that the reconvening of the AIDC task force was believed to fall under the ATS/AIS/SAR SG. A new action item was opened to address this matter.

4.42 A small ad hoc group met during the meeting to develop a plan for AIDC messages. Work would continue following the meeting and be reported to ISPACG/21.

Action Item 17-12: Terminal Procedures

4.43 Airservices provided an update on the Programmed Time of Landing (PTL) Program. In an attempt to minimize delay in the last 200 miles of flight for aircraft arriving Sydney between 0600 and 0700 local time, a trial in which aircraft were issued PTLs up to 11 hours in advance of arrival was conducted during September to November 2005.

4.44 The Central Traffic Management System (CTMS) was used to determine PTLs from its data base of scheduled traffic, and these times were issued to participating airlines via email or fax.

4.45 As this trial was conducted using non operational staff it was always intended to cease the trial, review the outcome and determine if and how a sustainable operational procedure could be implemented.

4.46 Results of trial: Airservices representatives detailed the amount of delay during the trial that had been moved from the last 200 miles of flight to earlier in the flight. This was measured against a two month benchmarked period of July/August 2005. This showed that during the benchmarked period an average of 182 minutes delay per day was recorded in the last 200 miles of flight. During the trial (pre daylight saving), this fell to an average of 123.7 minutes per day. This represents a movement of 58.3 minutes of delay from the potentially costly latter stages of flight to the cruise stage of flight

4.47 Outcomes: It was agreed that while the trial showed the potential for savings, the variables of flight after the issuance of a PTL 11 hours in advance with no further review till tactical traffic management takes over at about 40 minutes from landing presented too many difficulties for only a moderately small fuel return.

4.48 Future Participation: It was noted that not all airlines participated in the recent trial and that for any future system to work based on the outcomes above, all airlines involved in operations at this time of day would need to be involved. All airlines present agreed that this involvement should be actively supported by IATA's Singapore Office.

4.49 Tahiti reported on plans to introduce RNAV non-precision approaches at two domestic airports in Jun 2006. These would include an RNAV RWY 04 and 22 non-precision approach based on GNSS at Faa'a Airport.

4.50 The chair noted that this action item had been on the ISPACG agenda for the last three meetings, however, based on limited resources, it had been difficult for most ATS providers to bring people with terminal expertise to the meetings to actually progress any work. Airways reminded the group that the action item resulted from an airline request. After some debate, the meeting agreed to continue to track this action item, but to revise the wording to focus on *monitoring* terminal procedure activities undertaken by the ATS providers.

Action Item 18-1: ATS Data Link Gateways

4.51 The FAA reported that work was still in progress within RTCA SC-189/EUROCAE WG-53, the ICAO Data Link Steering Group (DLSG), under the auspices of the ICAO European and North Atlantic Office in Paris, and the US Performance-Based Operations Aviation Rulemaking Committee (PARC). SC-189/WG-53 was developing a FANS-1/A-Aeronautical Telecommunications Network (ATN) Interoperability Standard, which would provide a standardized interoperability solution for accommodating FANS-1/A aircraft in ATN based airspace and accommodating ATN aircraft in FANS-1/A airspace.

4.52 SC-189/WG-53 intended to work closely with the ATN Accommodation Drafting Group (ADG), which will develop an interoperability solution for accommodating ATN aircraft in FANS 1/A airspace. The ADG was established by the ICAO DLSG in September 2005, and will operate under the auspices of the DLSG.

4.53 It was expected that the FANS 1/A-ATN Interoperability Standard would be used predominantly by air navigation service providers throughout the world as a basis for their data link implementations and recognized by aircraft manufacturers and operators, equipment suppliers, communication service providers, and regulatory authorities as a basis for certification and approval.

4.54 SC-189/WG-53 intended to complete the FANS 1/A-ATN Interoperability Standard by October 2006. The next meeting of RTCA SC-189/EUROCAE WG-53 would be held 7-10 March 2006 at EUROCAE in Paris, France.

4.55 The meeting was invited to note that any ATN accommodation solution would need to be coordinated to ensure a viable solution for all FANS-1/A airspace throughout the world. It was expected that the ADG would closely cooperate and coordinate with SC-189/WG-53 regarding the interoperability solution, which would be incorporated into the FANS 1/A-ATN Interoperability Standard.

Action Item 19-1: Flight Plan Issues

4.56 An overview of the work currently being undertaken by the ICAO Flight Plan Study Group (FPLSG) was presented by the FAA. The initial activity of the FPLSG was to identify ambiguities in the PANS-ATM (ICAO Doc 4444) and opportunities for changes that would improve the ATM system within the construct of the current flight plan. Those activities were coming to closure. The next step would be the development of what may be termed the “next generation” ICAO flight plan. The effort had been organized into four Focus Areas

- a. **Focus Area 1** – What does the community want to know about a flight?
- b. **Focus Area 2** – What does the flight wish to do?
- c. **Focus Area 3** Discussion – What does the system want to do to the flight?
- d. **Focus Area 4** – What are the automation/communication mechanisms necessary to exchange the content identified in the first three focus areas?

4.57 The meeting noted that the ICAO Concept of Operations articulated the endorsed vision of the future ATM system that is seamless and interoperable globally; that the envisioned operating environment is critically dependent on common information; that the flight plan represents a significant first step on the information path; and that changes to the flight plan format, processes and supporting mechanisms will require substantial changes by all ATM System participants.

4.58 It was recommended that meeting participants review ICAO Doc 9854 and identify inputs for the FPLSG.

Action Item 19-2: Draft Guidance Material for End-to-End Performance Monitoring of ATS Data Link Systems in the Asia/Pacific Region

4.59 The Chair advised the meeting that this document had been circulated and comments received for consideration by RASMAG. No further action was required and the action item would be closed.

Action Item 19-3: ISPACG Letter of Agreement

4.60 The Letter of Agreement had not yet completed the process of being circulated and signed by all ATS providers. The FAA and Airports Fiji Ltd had not yet received the letter for signature. The original documents were provided to the FAA for processing.

Action Item 19-4: High Frequency (HF) Regression Activities

4.61 FAA reported that little progress had been made in furthering high frequency (HF) regression. Significant technical and operational issues would have to be resolved. It was agreed that this action item should be closed. At such time as further progress could be made, the meeting would be invited to reconsider this item.

Action Item 19-5: Analysis of Contingency Procedures

4.62 Based on the publication of Amendment 4 to the PANS-ATM, it was agreed that this action item would be closed.

Action Item 19-7: HF Pre-flight and SELCAL Checks

4.63 The FAA reported that they had investigated the HF pre-flight and SELCAL procedures and determined that it is the responsibility of operators to ensure that they meet the Minimum Equipment List (MEL) for a given airspace before an aircraft departs. Oakland ARTCC did not have an operational requirement that would mandate an HF pre-flight or SELCAL check. However, aircraft entering the Oakland FIR were advised to contact Oakland ARTCC on HF. This allowed aircraft to confirm two-way HF capability and to receive HF frequencies the remainder of their flight within the Oakland FIR.

4.64 There is a requirement for CPDLC aircraft to have a HF voice backup. Oakland ARTCC has an operational requirement to be able to contact CPDLC aircraft via HF when CPDLC fails.

4.65 The meeting was invited to, where possible, adopt a common set of procedures/requirements for HF pre-flight and SELCAL checks.

4.66 Airways advised the meeting that they were currently in discussions with operators regarding SELCAL checks for flights using HF as the primary means of communication. A typical trans-Tasman flight from New Zealand to Australia would often undertake a SELCAL check on the ground during pre-flight, again when airborne entering the Auckland Oceanic Control Area and then once more when entering an adjacent FIR. If SELCAL checks in this example were able to be reduced from 3 to 1 then the saving in radio telephony time would begin to reduce HF congestion. The airlines confirmed that HF congestion is a problem in the South Pacific. Airways agreed to lead a working group to analyze and address this issue of HF congestion in the South Pacific and a new action item 20-4 was raised.

4.67 The meeting discussed the need for SELCAL checks. There were mixed opinions in the group. Some airline representatives indicated a desire to eliminate initial and multiple checks where it can be done. IFALPA stated that eliminating SELCAL checks altogether must be considered carefully. It was noted that

if these types of checks were eliminated, then another procedure should be put in place. ARINC remarked that it is easier for radio operators to find an aircraft if a pre-flight SELCAL check was conducted.

4.68 ATS providers agreed to refer to and utilize the provisions of ICAO Annex 10 and Regional Supplementary Procedures, and reduce the number of SELCAL checks to the minimum necessary. The meeting agreed to review the progress within the next 6 months. A new action item was developed.

5 Identify Future Work Programs

5.1 The Capacity Enhancements Table was updated by the meeting and is provided at Appendix B.

5.2 Concerns had been raised at the last meeting that ISPACG was no longer as productive as it had been in previous years. It was suggested that more work could be accomplished both during and between meetings.

5.3 In order to better identify priorities and goals for ISPACG future work programs, the meeting convened two working groups, one which consisted of representatives from the airlines and industry, and the other consisting of representatives from the ATS providers.

Reports from Working Group Sessions

5.4 Neil Jonasson, IATA, served as spokesperson for the **airlines and industry working group** and provided the meeting with information on the outcome of their session. The group identified the following tasks which they believed required further work by this forum:

- a. As a first priority, **SATCOM issues** - including GES and satellite capacity for IMARSAT and MTSAT;
- b. **ICAO standards**;
- c. **Dynamic air rerouting program (DARP)** – including issues on messages arising from interoperability between data link service providers and operators;
- d. Continued **expansion of 30/30 and ADS reporting rates**;
- e. **Harmonization of non-normal oceanic activities**;
- f. **FANS-1/A and convergence with ATN**;
- g. **HF issues**;
- h. **UPR**;
- i. Procedures for **in-trail climbs** using ADS;
- j. **Terminal required time of arrival (RTA) and PTL programs**;

k. **Collaborative Decision Making (CDM)**; and

l. **Airborne separation system applications.**

5.5 The working group had also considered a proposal for formation of a FANS Planning Group, led by airlines and ATS providers, which would address some SATCOM issues.

5.6 Kevin Chamness, FAA, represented the **ATS providers**, and provided the priorities developed during their working group session:

- a. **Seamless Operations:** RCP; air-ground communication; gate-to-gate operations; AIDC; sharing operational data/information; consistent application of separation standards and procedures; defining common service provisions and specifications
- b. **Reliability:** Air-ground communication redundancy specification; HF DL considerations, RCP development, AIDC improvement, Surveillance (development of required surveillance performance)
- c. **Predictability:** Gate to gate operations, tailored arrivals, PDC, 4-D profile management, terminal transition, consistent application of separation standards and procedures, improved wind models and trajectory models for predictability, and defining common service provisions and specifications
- d. **Flexibility:** HF data link, RCP, In-Trail Procedures, DARP, treatment of multi-service level environments
- e. **Collaboration:** Sharing data, AIDC, seamless integration of applications through domain, civil military collaboration
- f. **Administrative concerns** included maintaining close ICAO coordination and inter-regional coordination.

5.7 The meeting noted that although the two working groups used differing formats for presenting their priorities, there were many subjects in common. Neil Jonasson and Kevin Chamness agreed to coordinate and progress development of a method to begin the work outside the meeting.

6 Review and Establish Terms of Reference for Working Groups/Task Forces

6.1 The meeting agreed there was an urgent need to create a SATCOM working group. Neil Jonasson will circulate a letter requesting representation to all ISPACG participants following the meeting.

6.2 In order to provide a framework for this initiative, the meeting developed proposed terms of reference for the SATCOM Working Group. It was agreed that the working group shall:

- a. Urgently examine the reasons for the GES and satellite capacity limitations of INMARSAT and MTSAT as they are used for ATS. Determine the timeframe for any limitations leading to capacity problems;
- b. Review the current ICAO Annex 10, Volume III, aeronautical mobile satellite service (AMSS) standards and recommendations for applicability to the current and estimate use of INMARSAT for ATC services. Particularly consider the reliability requirements of ATC;
- c. Review the FOM standards with regard to SATCOM data link delivery times and make recommendations for change or confirmation of the standards;
- d. Study the satellite, GES and inter-network upgrades being carried out and planned by service providers and report on the effect of these upgrades on the planned use by aircraft;
- e. Review the airline and ATC demand for SATCOM service voice and data link services
- f. Determine the document the priorities being given by communications service providers to ATS in the Pacific;
- g. Study the usefulness of alternative SATCOM systems such as Iridium for the future;
- h. Study the new INMARSAT SATVOICE and SATRADIO service; and
- i. Report to ISPACG/21.

6.3 Based upon the lengthy list of remaining issues, the meeting did not have time to hold detailed discussions on a method for progressing them. Kevin Chamness agreed to work with the co-chairs and with IATA to develop priorities and terms of reference for these activities, and solicit participation by ISPACG members.

6.4 The Chair suggested that a revision of the existing structure of the action item list may be appropriate to better categorize action items. It was agreed that the co-chairs and Secretariat would further consider this matter.

7 Other Business

Utilization of Block Altitudes in the Oakland FIR

7.1 Oakland ARTCC presented information on the utilization of block altitudes in the Oakland FIR. Block altitude clearances provide a means for aircraft to cruise climb to the next altitude thereby increasing fuel burn efficiency. Block altitude clearances are not issued when they will negatively impact another operator. A discussion as to the benefits of this procedure took place, with some airline representatives stating that they did not wish to be offered block altitudes; pilots would request them if it was beneficial.

7.2 The representative from IFATCA stated that Oakland controllers go out of their way to use block altitudes. He also noted the difficulty to use block altitudes with adjacent FIRs. Oakland ARTCC agreed to address these issues off line with individual airlines.

Chile's ATS Modernization Programs

7.3 Alberto Fernandez, DGAC Chile, presented information on Chile's ATS modernization programs, including meteorological automation program, en route ACC modernization, enhanced capabilities program, aeronautical fixed telecommunications network (AFTN) to ATS message handling services (AMHS) migration and safety management. By the end of the year they planned to operate out of three ACCs, moving some sites in the process. The meeting congratulated Chile on their progress and urged DGAC Chile to continue participating in future meetings.

Flight Plan Requirements of the US Aeronautical Information Publication

7.4 The FAA provided information to the meeting regarding problems that have arisen over confusion on filing international flight plans, resulting, in some cases, in relevant flight plans being deleted from the US domestic air traffic control automation system. Detailed information can be found in the US Aeronautical Information Publication (AIP), GEN 3.4 Communication Service, paragraph 4.3. International flight plans into US domestic airspace (excluding Alaska) should ONLY be sent to the FIRST US domestic ARTCC. Controllers will then enter it into the US domestic system and forward the flight plan to subsequent US domestic ARTCCs. Flights entering Anchorage FIRs shall send flight plans to Anchorage ARTCC and to the first US domestic ARTCC. Airlines and airspace users were urged to note the information provided and comply with the requirements of the US AIP.

8 Closing

8.1 Closing remarks were made by the co-chairs, noting the work of the group and the outcomes that had been reached during the meeting. They expressed their appreciation for the efforts of the working groups to identify priority work in order that ISPACG continue to be a useful and productive group.

8.2 SEAC Tahiti offered to tentatively host the next meeting of ISPACG during the week of 26 February-2 March 2007 in Tahiti. Further details will be notified closer to the meeting dates.

/s/ Leslie S. McCormick
Leslie S. McCormick
Federal Aviation Administration
Chair, ISPACG/20

3/28/2006
Date

Appendices:

- A – Open Action Items
- B – Updated Capacity Enhancement Table
- C – List of Participants