FANS Interoperability Team Meeting Report (FIT/29)

Virtual Meeting
10-11 August 2022

Introduction

The twenty-ninth meeting of the ISPACG FANS Interoperability Team (ISPACG FIT/29) was held by Video Teleconference from 10 to 11 August 2022.

Ms. Lisa Bee chaired the meeting. Ms. Bee opened the meeting by welcoming all participants.

Messrs. Ahmad Usmani and Todd Kendall, Co-chairs of the ISPACG, each welcomed the participants.

Participants – FIT 29 was well attended with 35 participants, including ANSP representatives from: Australia, Fiji, Japan, New Zealand, and the United States; a representative from CAA New Zealand; Operators including Air New Zealand, American Airlines, Qantas, and United Airlines; as well as representatives from Airbus, Boeing, Collins, Inmarsat, and Iridium. A complete list of participants may be found in Attachment A.

Agenda Item 1 – Central Reporting Authority (CRA) Problem Report Briefings

- **FANS CRA Report:** The CRA reported that FANS stakeholders submitted 229 Problem Reports (PRs) via the website between FIT/28 and preparation of the FANS CRA Report for FIT/29. 19 of the PRs (8%) occurred in the South Pacific region, 9 of which were significant. Detailed updates were provided on all new PRs and 6 older PRs that occurred in the South Pacific, as well for 2 new significant PRs that occurred outside the region but were relevant to the ISPACG FIT. The FANS CRA Report and a related attachment is posted to the ISPACG website.

- **Airbus Update:** Airbus reported on FANS related developments and the status of 6 PRs assigned to Airbus by the DLMA. Details were provided on 5 of the 6 PRs, while one is still under analysis. Airbus invited participants to request a copy of the Airworthiness Approval Summary documents that are released every time a new FANS S/W version is certified on a given A/C family. Additionally, the FMS CPDLC Loading Rules document has been released, and is available. These documents contain in particular the list of known deviations & clarifications to the standard, as well as various ground & airborne recommendations. The Airbus FIT29 Update is available on the ISPACG website.

Agenda Item 2 – Regional Monitoring and PBCS Performance

- **ISPACG Regional PBCS Report:** The ISPACG Regional PBCS Report for 2021 was provided to FIT Asia at their meeting in July. FIT Asia will submit the report to the RASMAG, which is scheduled to meet on 22 August. Normally, ISPACG FIT meets prior to FIT Asia, so Members may review and discuss the proposed report prior to its submission to FIT Asia. However, this year the report was coordinated by Airways New Zealand, with inputs from the contributing ANSPs without review by the ISPACG FIT

meeting. The ISPACG Regional PBCS Performance Report is available for access on the ISPACG site. It was noted that while the ISPACG is an informal group, the ISPACG FIT report is provided as an important input to the formal PBCS report prepared for the ICAO Asia-Pacific region. Therefore, it should be considered a standing contribution from ISPACG FIT each year. It was noted with appreciation that Airways New Zealand would prepare the ISPACG report for 2022 on behalf of the ISPACG FIT.

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- **PARMO Update:** A review was provided of the Regional Monitoring Agencies (RMA) and Enroute Monitoring Agencies (EMA) for the ICAO Asia Pacific region, and their varying responsibilities. Relevant RASMAG/26 Conclusions include: (a) States are urged to implement a FANS 1/A CPDLC latency timer value of 300 seconds on a trial basis and report outcomes to FIT-Asia, and; (b) RVSM MMR Update (contained in Appendix C to the RASMAG/26 Report) be utilized by RMAs and States as appropriate.

  Traffic data indicate full recovery from pandemic impacts in CEP and NOPAC airspace and recovery underway in the other airspace regions. Updates were given of the vertical and horizontal safety reports submitted and collision safety risk estimates, as well as a "hot spot" in the CEP airspace, where increasing numbers of category E LHD events have been reported. A detailed PARMO Update presentation, which includes guidance about the key information needed in occurrence reports to help determine underlying causal factors and duration/magnitude, is available on the ISPACG site.

  Proposed Action: ISPACG Member ANSPs/States are requested to:
  - Provide annual traffic sample data to the designated RMA
  - Provide vertical, lateral, and longitudinal occurrence reports to the designated monitoring agency (internal investigation reports can be attached)

  A concern was raised that ANSPs do not receive feedback when they file reports of PBCS noncompliance with PARMO. Therefore, they are unsure of whether and what actions are taken. It was acknowledged that the current flow was one-directional and does not include a feedback loop to the ANSP. A suggestion was made that the appropriate documents to include the guidance would be ICAO Doc 9869 or the regional guidance document, *Guidance Material For End-To-End Safety And Performance Monitoring Of Air Traffic Service (Ats) Data Link Systems In The Asia/Pacific Region,* which was published in 2011 and is in need of updating. The regional guidance document has been posted to the ISPACG meeting site as *Data Link End-to-End Performance Monitoring*.

  Proposed Action: FIT ANSP Members to discuss a strategy to provide appropriate guidance for feedback to ANSPs that file reports of noncompliance with their designated RMA (e.g., AAMA/PARMO).

Agenda Item 3 – Feedback from operators

- **Air New Zealand:** Traffic is returning to pre-pandemic levels, but it is still below normal. In the past year, ANZ has experienced fewer problem reports: the CRA Report covered most of them. ANZ is experiencing success with the CRA process due to having implemented an ACARS template in the cockpit for filing PRs. This makes it very easy for pilots. ANZ are happy to share the template with other operators in the region.

- **American Airlines:** AAL congratulated Boeing on delivering its first 787 to AAL on a flight from Charleston to Victorville. AAL will provide a more detailed update to the ISPACG Plenary.

- **Qantas Airlines:** Seasonal flu and Covid have resulted in staffing shortfalls and related impacts, as others in the industry have experienced.

- **United Airlines:** In the next few months, UAL is anticipating a busy season in the South Pacific, with routes into Brisbane, beginning in October, and to Auckland, and looking forward to a good recovery.

Agenda Item 4 – Feedback from ATSUs

- **Australia**: ASA introduced a 300-second latency monitor. There were no major issues. The most frequent issue was with uplinks coming up too quickly when an aircraft entered coverage. ASA is examining a software fix to their ground automation. Another issue experienced was with multiple latency monitor messages with aircraft crossing multiple FIRs. A software fix is being developed for this as well. Most of ASA's neighboring FIRs are using latency monitoring.

- **Airways New Zealand**: Traffic is currently about 70% of pre-pandemic levels, with a rapid increase over the last couple of months. The number of PBCS Charter Members, showing on the CRA website is at 2135, with overall website account registrations at 2882, an increase of 500 on last year. In July 2022, 69% of airline fleets and 46% of IGA and military aircraft were filing PBCS RCP240/RSP180 status in FPL. Airways provided information on the functions of an on-line tool, https://pbcsanalysis.herokuapp.com, that is relied on to assist with time consuming PBCS analysis. Airways implemented a 300-second Latency Monitor in June 2018, and have experienced no major issues. Data was provided on Latency Monitor messages, uplink delay time analysis, and latency rejects. PBCS performance data was provided in aggregate, by media type, and by operator and aircraft type. A review of 2021 Availability performance showed that requirements were not met when examining outages that could have caused an operational impact. Availability requirements, with the exception of outage notification, were met when examining outages that did result in an operational impact. Airways noted that new ICAO guidance is proposed to count all CPDLC messages rather than just messages used for ATC intervention. The driver for this is overall usability rather than measuring pure separation invention capability. This will appear as an ACP degradation at the 99.9% level and may increase work for the ANSPs. The NZZO Feedback presentation has been posted to the ISPACG site.

- **Fiji Airports**: Fiji is experiencing a significant impact from Covid. However, traffic is continuing to recover, growing from 730 movements in July 2021 to 2446 movements in 2022. Fiji Airports is currently implementing ADS-B in domestic airspace, and are experiencing good coverage and performance. The plan is to roll-out surveillance services on 3 October 2022, initially during periods of high traffic density. Airways New Zealand is assisting with Fiji Airports' transition to surveillance services. Fiji Airports provided information on LOAs signed and on AIDC trials with ASA. A detailed presentation from Fiji Airports has been posted to the ISPACG site.

- **Niusky Pacific**: Niusky provided an update on its implementation of ADS-B and space-based ADS-B, its ATM transition to the Topsky system for all sectors except the tower, and its communications capabilities. Surveillance is now accomplished with ADS-B, radar and ADS-C, and UPRs are available FIR-wide. Niusky is using GNSS separation standards rather than DME, and plan to begin applying RNP4 separation shortly. The Niusky Update is available on the ISPACG site.

- **FAA**: FAA provided a PBCS Monitoring report for Oakland oceanic airspace. Performance data was provided in aggregate and by media type. A summary report for

individual aircraft compliance and analysis of performance issues observed by media delivery path was also presented. Overall, FAA is observing good performance in the satellite and VHF paths, with continued performance issues over HF data link and in areas with VHF/SAT media transitions. FAA also discussed an issue with ADS-C positions delivered over AOE6/XXN paths, and suggested that operators ensure proper configuration of the ORT table to maximize availability of SATCOM services.

A question was raised regarding whether analysis had been conducted on aircraft that implemented the new RAT1 ACARS protocol timer (which is intended to preserve CPDLC transaction time performance and ADS-C delivery time performance across transitions from VHF to SATCOM) to confirm that the timer is having a positive impact on performance. Boeing confirmed that implementation of the timer has resulted in visibly improved performance on its 777X flight test airplanes. Boeing indicated that the timer will become available for existing 777 airplanes in Q1 2023 with AIMS-2 BPV18 software and that it should be able to indicate when particular aircraft registrations install that software. Airbus indicated that they could provide a list of aircraft tail numbers equipped with the software. Some ANSPs would like to see any available analysis. Analyses that demonstrate improved performance from the software fix, would be a success story of how feedback from the PBCS monitoring process can result in improved avionics design.

Proposed Action: FIT recommends: ATSPs coordinate with airlines operating B777 as to timing for the implementation of BP18 and the new RAT1 ACARS protocol timer on individual airframes; monitor performance, particularly in the VHF-satcom transition areas, before and after the implementation; report analysis results to FIT.

Agenda Item 5 – Feedback from Communication Service Providers

- **Collins Aerospace:** A question was asked about the status of 1-stage voice dial-up service. Collins discussed its recent implementation and integration activities and stated that they would be ready to begin call validation in the next month or so.

- **Inmarsat:** Inmarsat provided an update of its aeronautical satellite safety communications services, w/ CPDLC and ADS-C meeting RCP240/RSP180, AOC ACARS and 2 channels of prioritized cockpit voice, which can support 1-stage VoIP dial up service, an enabler for DCPC, over both the Classic Aero and SwiftBroadband-Safety (SB-S) networks. SB-S entered service in 2018 and added secure IP-based communications to its safety services. SB-S 2.0, which offers expanded security (PKI mutual authentication and VPN) entered service in 2022 and serves as the foundation for SB-S Iris, Inmarsat's Performance Class B satcom solution (RCP130/RSP160), which is planned to be commercially available, globally, for ATN/OSI, beginning Q2 2023, and for ATN/IPS in 2027. SB-S Iris will enable ATS B2 i4D and full 4D trajectory-based operations. It will also provide command and control links for uncrewed aircraft systems (UAS). The detailed Inmarsat Update has been posted to the ISPACG site.

- **Iridium:** Iridium presented an evolution of its pole-to-pole satellite aviation safety services, focusing on Iridium Certus, which will provide AMS(R)S services and offer IP Broadband services, including background IP data, and VLAN Segmented IP data, and cockpit voice with up to 3 independent lines. Certus will be implemented in phases. Phase 1 plans include RCP240/RSP180 and RCP400V voice services, as well as single stage dialing for both its legacy ATS platform and Certus. Iridium is working with SITA and Collins to integrate single stage dialing in Q3 2022. Phase 2 includes enhancements required for aviation AMS(R)S for RCP130/RSP160 and for ATN OSI/IPS. Phase 1 is scheduled to begin FAA evaluation in Q3 2023 under the FAA

PARC CWG. Phase 2 is planned for 2025 – 2026. Iridium bench testing of the Phase 2 network is demonstrating that it meets RCP130/RSP160. The Iridium Evolution presentation provided detailed information on the Certus architecture, on each of the development phases, and on regulatory an\d industry coordination that Iridium is engaged in to ensure that Certus will be approved for AMS(R)S services. The Iridium presentation is available on the ISPACG site.

Agenda Item 6 – Operational Data Link Working Group (OPDLWG) Update

- The OPDLWG update included information about the ICAO ANC Roundtable, CP-OPDLWG Project Teams, and information from OPDLWG/11. The first meeting of the ANC Roundtable was held on 21 February 2022. It is intended to become annual or bi-annual. At the first meeting, a review of Panel Chair survey results was conducted and consequential initiatives undertaken in response. The next meeting is planned to include a cross-cutting technical theme (e.g. performance-based standards, cybersecurity, system-wide information management, trajectory-based operations). Information was provided on the four OPDLWG Project Teams: A-G Data Link; PBCS; G-G Data Link, and; Voice. The A-G Data Link PT has been developing consequential Proposals for Amendment to Annexes and PANS documents, which was the focus of the OPDLWG/11 meeting. The PBCS PT has been experiencing difficulty in progressing the draft Edition 3 due to time and resources constraints for those working on the draft document but hopes to present a draft of ICAO Doc 9869 ed3 to the Joint PT/5 in Q2 2023. Updates to Doc 9869 will clarify CSP allocations and compliance; address RCP130 in coordination with SC214/WG78, and improve safety requirements in coordination with SC214/WG78. The Voice PT is tasked with revisions to SATVOICE guidance materials, developing recommendations and guidance materials for use of dual SATVOICE as sole means LRCS, and developing RCP specifications for voice, pending ANC approval of a new Job Card for the Voice RCP and an amended Job Card for dual satcom as sole means LRCS. The G-G Data Link team is addressing AIDC. Document amendments scheduled for review at OPDLWG/12 in 2023 include the SATVOICE Guidance Manual and Proposals for Amendment to Annexes and PANS for G-G Data Link. The OPDLWG Update briefing, which is posted on the ISPACG site, includes detailed information on OPDLWG schedules, current issues, and activities.

Agenda Item 7 – Working Papers: No additional working papers were presented.

Agenda Item 8 – Information Papers

- **IP01 Airbus FelloFly**: Airbus provided status on its FelloFly program to assess automated formation flights in commercial air transport as one of the most efficient means to reduce fuel burn and CO2 emissions with no additional ground infrastructure or aircraft sensors. Several workshops were conducted with EASA, ANSPs and supportive airlines to prepare test campaigns, and three flight tests were conducted: the most recent in September 2021. This test was followed by an operational flight trial across the north Atlantic (NAT) airspace in November 2021. The flight trial involved a round-trip demonstration from Toulouse (LFBO) to Montreal (CYUL), in both domestic and oceanic airspace. Rendezvous and split maneuvers were performed in domestic airspaces. The operational trial was successful, demonstrating fuel savings of at least 2 tons (6T of CO^2) during each flight, and confirming global fuel saving efficiency to be around 5%. Feedback from the tests and trial will be used to further the concept of operations (e.g. phraseology, datalink). Airbus has started discussions regarding implementation with NAT HLA stakeholders through the NAT POG (Procedure and Operations Group), SOG (Safety Oversight Group), IMG (Implementation Management

Group) and SPG (System Planning Group). Airbus is preparing a working paper for the 41st ICAO Assembly to seek further implementation support.

- **IP02 Airbus ATS B2:** Airbus provided information on its program to implement capabilities for ATS B2 services (B2), which are supported by the Aeronautical Telecommunications Network (ATN), and considered as the long-term target by ICAO for worldwide harmonisation of ATC data link. Currently the ATN network can only be accessed over VHF Datalink Mode 2 (VDL2). Work is underway to allow access to the ATN network via SATCOM, to enable worldwide coverage. Airbus plans to certify the first capable solution, for the A320 & A330 fleets, by end 2022/beginning 2023, using the IRIS system via Inmarsat's SB-S network to connect to the ATN network.

  The major immediate benefit expected for Oceanic ATC will be the B2 ADS-C capacity, in particular the Extended Projected Profile (EPP) frame, which allows downlinking a very complete set of FMS data and providing ATCOs with avionics-based predictions up to 128 points ahead of the A/C, as well as information (e.g., current A/C gross weight and currently engaged guidance modes) that can enable the ground system to "re-build" the FMS predicted 4D trajectory of the A/C. IP02 provides detailed information on the Airbus Iris flight test program and B2 implementation in Europe.

Agenda Item 9 – Any Other Business

The FIT Chair queried the team about producing a report and assigning action items. The FIT agreed that a report would be useful. The FIT agreed that actions should be assigned to a responsible party and tracked. Some action items would more appropriately to the ISPACG Plenary than the FIT, and a suggestion was made that the report be presented to the Plenary, as had been done in the past. The Plenary Co-chair agreed to include time in the agenda for the FIT report.

A consolidated ISPACG FIT Action Item list can be found in Attachment B.

Attachment A

ISPACG FIT/29 PARTICIPANTS

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ATTACHMENT B

ISPACG FIT ACTION ITEMS

ACTION	ACTIONEE	DUE
Provide annual December traffic sample data to the designated RMA.	ISPACG Member ANSPs/States	By 1 February of each year
Provide vertical, lateral, and longitudinal occurrence reports to their designated monitoring agency (e.g. AAMA/PARMO). Internal investigation reports can be attached.	ISPACG Member ANSPs/States	At the completion of the occurrence investigation
FIT ANSP Members to discuss a strategy to provide appropriate guidance for feedback to ANSPs that file reports of noncompliance with PARMO.	P. Radford, T. Brewer	ISPACG FIT/30
FIT recommends: ATSPs coordinate with airlines operating B777 as to timing for the implementation of BP18 and the new RAT1 ACARS protocol timer on individual airframes; monitor performance, particularly in the VHF-satcom transition areas before and after the implementation; report analysis results to FIT.	ISPACG FIT Member ANSPs	ISPACG FIT/30