

**Summary of Discussions
Forty-second Meeting of the
Informal Pacific Air Traffic Control Coordinating Group
(IPACG/42)**

September 14 & 15, 2016
Seattle, WA

1.0 Background

1.1 The Forty-second Meeting of the Informal Pacific Air Traffic Control Coordinating Group (IPACG/42) was held at the DoubleTree by Hilton Seattle Airport in Seattle, WA on Wednesday, September 14 and Thursday, September 15, 2016. The IPACG was established to provide a forum for air traffic service providers and airspace users to informally meet and explore solutions to near term ATC problems that limit capacity or efficiency within the Anchorage, Oakland, and Fukuoka Flight Information Regions (FIRs).

2.0 Welcome and Opening Remarks

2.1 The meeting was co-chaired by Mr. Toshiyuki Masuda, Special Assistant to the Director, Air Traffic Control (ATC) Division, Air Navigation Service Department, Japan Civil Aviation Bureau (JCAB) and Mr. James (Jim) Meadows, Manager, Oceanic & Offshore Operations Group, Federal Aviation Administration (FAA).

2.2 Mr. Meadows welcomed the meeting participants to Seattle and hoped that they would enjoy their stay. Mr. Masuda said it was a pleasure to visit Seattle and that he was looking forward to a productive IPACG meeting as the first time co-chair.

2.3 All IPACG/42 attendees introduced themselves to the meeting. Ms. Reiko Kurachi introduced herself as the interpreter for JCAB.

2.4 Ms. Lalesh Nagy made the administrative announcements for the meeting.

3.0 Submitted Papers

3.1 The following working and information papers were presented to IPACG/42 and were available on the IPACG website and passed around the meeting participants on a USB flash drive:

http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/at_o_intl/ipacg/

Paper Number	Agenda Item	Title	Presented by
WP/01	1	Agenda and Schedule	FAA
IP/05	2	Summary of the Outcomes of the 21 st Cross Polar Trans East Air Traffic Management Providers Working Group (CPWG/21) Meeting	FAA
IP/11	2	Summary of Outcomes of the 9 th Volcanic Ash Exercises Steering Group for the eastern part of the EUR Region [EUR (EAST) VOLCEX/SG/9] Meeting	JCAB
IP/02	5	Datalink Equipage in the Oakland and Anchorage Flight Information Regions (FIRs)	FAA
IP/08	5	Renewal of Oceanic ATC Data System	JCAB
IP/01	5	ADS-C Climb/Descend Procedure Project Update	FAA
IP/04	6	ADS-B ITP Operational Flight Trial Project Status	FAA
IP/03	6	High Altitude UPR across the Pacific	IATA
WP/04	6	Operational Trial for the use of High Altitude UPR between North America and Asia for West-bound	JCAB
IP/10	6	Report of VOLPHIN Exercise	JCAB
IP/07	6	UPRs into the NOPAC	FAA
WP/03	6	Optimization of NOPAC Navigable Airspace: Suggestions for a Way Forward	FAA
WP/02	6	Variations in Airspeed in Controlled Airspace	FAA
WP/05	6	Dynamic Airborne Reroute Procedures (DARP) Operations	JCAB
IP/09	6	Benefits Assessment on Time Based Oceanic Arrivals to the Tokyo Metropolitan Area	ENRI

4.0 Agenda Item 1: Review and Approve Agenda

4.1 WP/01 Agenda and Schedule

Mr. Meadows drew the meeting's attention to the agenda and timetable for the IPACG/42 meeting. The following agenda was proposed and adopted by the meeting:

Agenda Item 1	Review and Approve Agenda
Agenda Item 2	Reports on Relevant Outcomes from Other Meetings
Agenda Item 3	Report on the Outcome of the Providers Meeting (PM)
Agenda Item 4	Report on the Outcome of the FANS Inter-operability Team Meeting (FIT)
Agenda Item 5	Communications/Navigation/Surveillance (CNS) Issues
Agenda Item 6	Air Traffic Management (ATM) Issues

Agenda Item 7	Review and Update of IPACG Pacific FIR Seamless Airspace Chart & Action Items
Agenda Item 8	Other Business

5.0 Agenda Item 2: Report on Relevant Outcomes from Other Meetings

5.1 IP/05 Summary of the Outcomes of the 21st Cross Polar Trans East Air Traffic Management Providers Working Group (CPWG/21) Meeting

Mr. Steve Kessler presented this paper for the FAA which provided a summary of outcomes and accomplishments from the CPWG/21, hosted by the International Air Transport Association (IATA) in Montreal, Quebec, Canada 17-19 May 2016. He noted that the next meeting will be hosted by the FAA in Anchorage, AK in October. United Airlines commented that a significant outcome of the meeting was the support for CPDLC and ADS-C in the Magadan FIR, which showed the positive outcomes possible through collaboration by ANSPs. IATA thanked the FAA and JCAB for their ongoing support of CPWG, in particular Steve Pinkerton and Leah Moebius, and noted that they hope to host one of the meetings next year.

5.2 IP/11 Summary of the Outcomes of the 9th Volcanic Ash Exercises Steering Group

Mr. Toshiyuki Masuda from JCAB presented a summary of outcomes and accomplishments from the 9th Volcanic Ash Exercises Steering Group for the far eastern part of the EUR Region (EUR (EAST) VOLCEX/SG/9) Meeting, hosted by the Russian Federation in Petropavlovsk-Kamchatsky from August 8 -10, 2016. The FAA encouraged more participation in these exercises as they ensure the ability to respond appropriately to a volcanic eruption. There are currently 150 active volcanoes in the region, and in recent years, 72 strong eruptions have occurred. IATA stated they would encourage airline participation in future VOLKAM exercises with a particular focus on airlines from mainland China. They also highlighted that their newly established liaison office within ATMB in China will have a coordinating role in any large-scale events such as volcanic eruptions.

6.0 Agenda Item 3: Report on Outcomes from Providers Meeting

Overview of 12 September 2016 Providers Meeting (PM) Report

6.1 Ms. Karen Chiodini announced that she was transitioning into a new role and that Mr. Meadows would be the new FAA co-chair for IPACG. Mr. Meadows gave opening remarks on behalf of FAA and Mr. Masuda provided opening remarks on behalf of JCAB. They indicated that the Providers Meeting was very productive and provided the following summary of discussions from the meeting.

- UPRs into the NOPAC
 - The FAA and JCAB discussed “User Preferred Routings and the NOPAC Route Structure” at the previous Providers Meeting in June. JCAB requested FAA investigate collecting data concerning

the number of aircraft utilizing UPRs to join the NOPAC at NIPPI and OMOTO. Since IPACG PM/15, Anchorage has been working to devise and implement automated programming to collect basic data concerning the number of flights utilizing UPRs to join R220 and R580. This programming is now delivering some data but has not yet been validated. Anchorage is also investigating how additional data could be generated to identify the numbers of UPR aircraft that descend due to weather and to identify different weather cases. Unfortunately, no solution has yet been determined to satisfy this query.

- AIDC performance review between Oakland and Fukuoka
 - The FAA provided an update on the current Air Traffic Services Inter-facility Data Communications Systems (AIDC) performance between Oakland and Fukuoka.
 - JCAB provided updated information on significant delays in AIDC transactions between FAA and JCAB.

- Renewal of Oceanic ATC Data System
 - JCAB presented information on the new function that was added to OTG on 22 July 2015, which made it possible to calculate the routes by profiles of B787-8, B777-300ER and B767-300ER in addition to a conventional profile of B747-400.

- ADS-C Longitudinal Separation for aircraft pairs with faster trailing aircraft in Anchorage and Fukuoka FIRs
 - The FAA recommended that Anchorage ARTCC and Fukuoka ATMC modify their joint Letter of Agreement (LOA) to establish specific distance parameters to be applied for same track, same altitude aircraft pairs when they are separated by ADS-C minima and the trailing aircraft is maintaining a faster speed.

- Traffic volumes and high altitude User Preferred Routings
 - Discussed the results of traffic volume analysis to consider the possibility of expanding the use of high-altitude UPRs in the Fukuoka FIR. JCAB and FAA will coordinate to amend the AIC starting October 13 for the change from FL400 to FL380.

- ADS-B In-Trail Procedure (ITP) Roll Out
 - ADS-B ITP has rolled out to all three of FAA's oceanic facilities. Oakland is the only facility using the procedure now; Anchorage and New York will start using it in the coming weeks.

- Variations in Airspeed in Controlled Airspace

- The FAA presented an update on the implementation of operator procedures for unannounced speed changes within the Pacific Oceanic FIRs.
- Doc 7030 – 10 Minute No Mach Speed
 - The FAA stated that their safety analysis for the PFA is not current. When the PFA was submitted to ICAO, they recommended that it go to the ICAO Separation and Airspace Safety Panel (SASP) for a Doc 4444 global change. FAA noted that the JCAB safety analysis that accompanied the PFA was excellent and stated that they would like JCAB to consider leading an effort with the SASP, to present the safety case for this change. FAA would be happy to support this effort or be a co-lead on a PFA.
- 7110.65 Chapter 8 Revision to Remove Composite Separation
 - FAA is looking for input from JCAB on the impact to their operation. JCAB stated that they had not used composite separation for a long time, so there should be no operational impact. JCAB will review and provide feedback on the possible elimination of this rule. While the FAA is still coordinating with oceanic facilities, the FAA will still like to coordinate with JCAB to publish the change in late 2017.
- Impact of Commercial Space
 - The FAA presented a briefing on the operational impact of commercial rocket launches. JCAB said they believe JAXA is preparing for four rocket launches in the near future and will inform FAA once they are notified.
- Routine Operational Telecons between JCAB ATMC and FAA
 - JCAB would like to update the phone numbers and e-mail addresses in the Letter of Agreement (LOA) for these telecons. JCAB would also like to increase the level of participation as part of this amendment to the LOA. The biggest objective for JCAB is to have an effective telecon during contingency events.
- Review of the Seamless ATM Chart
 - Each facility was asked to review and make appropriate updates following the meeting.
- Update IPACG/42 Action Item Table
 - The group reviewed the previous version and made edits as needed.

7.0 Agenda Item 4: Report on the Outcome of the FANS Interoperability Team (FIT) Meeting

Overview of 13 September 2016 FANS Interoperability Team (FIT) Report

- 7.1** Mr. John Roman, FAA Co-chair, and Mr. Hiroyuki Takata, JCAB Co-chair, welcomed the group and the participants introduced themselves. The meeting considered four (4) working papers (WP) and four (4) information papers (IP).
- Central Reporting Agency (CRA) Problem Report (PR) Briefing
 - The FAA CRA presented a summary report on new IPACG FIT PRs, and updates on existing PRs. FANS stakeholders submitted 343 PRs via the CRA website during the reporting period, of which 39 PRs occurred in the North and Central Pacific region.
 - CRA (Central Reporting Agency) Activities in Fukuoka FIR
 - Fukuoka ATMC has received 53 PRs from July 2015 to June 2016. 45 of the 53 PRs were reported by operators, and the others were reported by ANSP.
 - Practice of PBCS framework in Fukuoka FIR
 - JCAB Technical Management Center (TMC) has conducted the post implementation evaluation analysis of the data link communications performance in Fukuoka FIR based on the ICAO PBCS manual since April 2015. These evaluations are conducted by performance statistics processing equipment in the TMC based on communication data handled by Kobe aeronautical satellite Center (KASC).
 - FAA PBCS Monitoring
 - FAA presented observed performance of the data link operations conducted in Oakland and Anchorage Flight Information Regions (FIR). The analysis included performance of the Controller Pilot Data Link Communication (CPDLC) and Automatic Dependent Surveillance – Contract (ADS-C) systems.
 - The data link system availability is generally meeting the RSP180/RCP240 safety requirements but struggling to meet the reliability requirements. For both Oakland and Anchorage oceanic FIRs, the 95% criteria is met for RSP180 and RCP240, for satellite, VHF and all media types combined.
 - The Iridium paths struggle to meet both the safety and reliability requirements. During June 2016, the Actual Surveillance Performance (ASP) was not met for IG1 and IGW1 (Iridium) in both the Oakland and Anchorage FIRs.
 - PBCS Monitoring in Fukuoka FIR
 - JCAB presented the observed performance for the data link operation in Fukuoka flight information region (FIR).

- The 95% criteria for RSP180 ASP and RCP240 ACTP, ACP and PORT were satisfied in the calculation where all the media types including SAT and VHF were combined. In addition, the performance at the levels specified by the 99.9% criteria is 99.0% or better for all performance measures.
- Data Link Performance by Station Identifier shows that all the paths met the criteria for the 95% of RSP180 ASP in Fukuoka FIR, except for the path corresponding to the Iridium satellite service associated with SITA.
- FANS 1/A over SwiftBroadband Performance Analysis
 - FAA presented information on the performance related to the FANS 1/A data link operations conducted over Inmarsat I-4 SwiftBroadband (SBB) during the period from January to June 2016.
 - FANS 1/A over SBB is being used by 8 aircraft and one operator. Performance is easily meeting the RSP180 and RCP240 standards. Analysis shows 94% of reports are received within 10 seconds when delivered via SBB path.
 - Most of the remaining 6% of reports involve transitions between SBB and other paths, mainly VHF. Some lengthy delays are seen in these transitions.

8.0 Agenda Item 5: Communications/Navigation/Surveillance (CNS) Issues

8.1 IP/02 Datalink Equipage in Oakland and Anchorage Flight Information Regions (FIRs)

Ms. Theresa Brewer presented this paper for the FAA which provided an update on the observed trends in usage and equipage related to the Future Air Navigation System (FANS) 1/A data link within the Oakland and Anchorage oceanic flight information regions (FIRs) using statistics from January 2015 to June 2016.

The paper notes that the percentage of flights using FANS 1/A data link in the aggregate Oakland oceanic FIR has held fairly constant near 65 percent, and that the percentage of flights filing Required Navigation Performance (RNP) 4 surpassed the percentage of flights using data link around July 2015. The percentage of flights filing RNP4 has steadily increased and as of June 2016, is approximately 10% above the percentage of flights using FANS 1/A datalink. The percentage of flights filing RNP4 for the Anchorage oceanic FIR has increased to approximately 6 percent less than the percentage of flights using FANS 1/A datalink. JCAB stated that, for the Fukuoka FIR as of August 2016, the datalink equipage rate was 85%, and the RNP4 rate was 75%.

8.2 PPT FAA Performance-Based Communication and Surveillance (PBCS) Approvals and Monitoring

Ms. Theresa Brewer gave this presentation to highlight approvals and monitoring for Performance-based Communication and Surveillance. In response, JCAB stated that the PBCS transition strategy was approved at APANPIRG the previous week. While they were unable to show concrete plans for the approval, they confirmed that they are still studying the strategy and will work to meet the March 29, 2018 target date. JCAB also stated that it will send out details on the PBCS implementation schedule for Japan. IATA noted its concern that certain parts of the implementation would present a challenge for States other than the U.S. and Japan. It was pleased, however, of JCAB and the FAA's leadership role and the information provided for the lead-up to the March 29, 2018 target date. IATA and operators will work closely with some States to ensure they receive the required approvals on time and will work closely with JCAB to ensure less capable States are able to transition. Ms. Brewer expressed her appreciation as this was a major concern. She also mentioned that the FAA is still discussing mechanisms for sharing data with States who request information.

8.3 IP/08 PPT JCAB Renewal of Oceanic ATC Data System

JCAB presented this paper to provide information on lessons learned from past experience and development of a new ATC Data System named Integrated Air Traffic Control Data Processing System. In the new architecture, information relating to a flight, which includes flight plan, trajectory data, data link messages and others, are packed into a "Flight Object" and are stored in a Flight-Object Data Base (FODB). Each system captures and/or updates Flight Object in FODB when it is changed. All conventional systems are switching over to new generation systems in sequence, over a period of five years; starting from October 2015. The Trajectorized

Oceanic Traffic Data Processing System (TOPS) is a new generation Oceanic ATC Data System. TOPS will replace Oceanic ATC Data Processing System (ODP) in February 2018. TOPS has new features that support the PBCS framework; ADS-C Climb and Descend Procedure (CDP); and ADS-B In-Trail Procedure (ITP). Participants from United expressed anticipation for many of the new changes. ADS-C CDP and ADS-B ITP will be supported from FY2019. United believes that CDP is an efficient way of moving traffic from an operator standpoint. They encouraged JCAB to consider an earlier implementation of CDP within TOPS prior to FY2019. JCAB noted that they have received this request before and are looking to study an early implementation of the CDP function as soon as possible. IATA stated that, in addition to the support for CDP, a highlight of the paper was JCAB's implementation of AIDC with Manila. All sides of the Manila FIR boundary are regional large height deviation (LHD) hotspots, so any adjacent ANSP establishing AIDC with Manila is a good safety outcome. When asked about the use of dynamic weather data by TOPS and if it will be available on the controller display, JCAB responded that they plan to get wind speed and direction from ADS-C reports and then reflect that data on the baseline weather data. While controllers may see weather data from individual ADS-C reports, that data is not currently on the display. JCAB also stated that CDP will not be supported by TOPS by February 2018. JCAB needs to add conflict probe, so they are moving ahead cautiously and asked for support from the participants of the meeting. JCAB proceeded to address AIDC with Manila, stating that it is working to establish AIDC across the Fukuoka-Manila boundary as soon as possible. There are, however, areas where AIDC has not been established with adjacent FIRs and JCAB is currently studying the order and priority of those areas. United offered support for any trials JCAB decided to implement, and FAA stated that they anticipate the start of AIDC testing with Manila in the second half of 2017. Finally, Mr. Kessler from the FAA/Anchorage ARTCC, inquired about the input of surveillance sources and if JCAB's system will be able to ingest any surveillance other than ADS-C. JCAB responded that there was no function to process anything outside of ADS-C or conventional HF voice. The operational impacts of the transition from ODP to TOPS will be discussed in the next meeting.

8.4 PPT FAA Ops Data Policy and Management

Mr. Ahmad Usmani presented the Operational Data Policy and Management presentation on behalf of the FAA. The presentation highlighted various topics from policy versus practice to international data sharing, and security requirements for two-way data exchange. Three executive orders from May 9, 2013 were highlighted. These included: 1) Making Open and Machine Readable the new default for Government Information; 2) the Office of Management and Budget (OMB) issuing an Open Data Policy; and 3) Agencies implementing the requirements of the Open Data Policy. The presentation further highlighted Memorandum M-13-13 from May 9, 2013 and described practices in collecting, creating, building and strengthening measures in which information is managed and protected for confidentiality. Some of the current topics in the presentation included the need for improved guidance on the operational data release policy, process improvements for the NAS Data Release Board (NDRB), monitoring requirements and more active engagement between the

NDRB and other ATO programs/organizations. The presentation also stressed the need for an Air Navigation Services agreement to facilitate International Data Sharing, and stated that existing agreements continue to be reviewed to ensure compliance with the Open Data Policy. Mr. Usmani concluded the presentation with security requirements for telecommunication. This included user's guides for two-way traffic flow management (TFM) data exchange, as well as Enterprise Security Gateway VPN requirements. JCAB stated that they are working on an endeavor called Collaborative Actions for the Renovation of Air Traffic Systems (CARATS), which corresponds to the FAA's NextGen. CARATS incorporates activity from the government, industry, and academia. JCAB is coming up with provisions for handling open data and stated that this presentation provided a great reference for handling data going forward.

8.5 IP/01 FAA ADS-C Climb/Descend Procedure Project Update

Mr. Harrie Copeland presented this paper for the FAA and provided an update on activities with the Automatic Dependent Surveillance – Contract Climb/Descend Procedure (ADS-C CDP). The paper noted that Implementation of the ADS-C CDP automation will benefit ADS-C equipped aircraft and that Non-equipped aircraft will continue to receive the current level of service. ADS-C CDP separation calculations will be performed by the Advanced Technologies and Oceanic Procedures (ATOP) automation system. The controller will either issue the clearance for the climb/descend or UNABLE; thus, from the controller's standpoint there will be minimal change in operations. From a systems efficiency perspective, the proposed ADS-C CDP system will allow for increased efficiency and improved flow for properly equipped aircraft. The paper also highlighted that the automation enhancements to ATOP include capabilities for a controller to select two aircraft and check that the two aircraft are eligible for ADS-C CDP, send near simultaneous on-demand position reports to two aircraft, determine if the minimum separation distance between the two aircraft is greater than the ADS-C CDP separation distance (e.g., greater than 15 NM), display the ADS-C CDP conflict probe results to the controller, and build an uplink clearance message to the ADS-C CDP requesting aircraft. Both participants from IATA and United agreed that this endeavor has been anticipated and the work the FAA has done will have great benefit. The FAA implemented ADS-C CDP on August 29, 2016. Controller ADS-C CDP training has started and as controller training is completed, each of the FAA ATOP Centers will begin using the procedure. The FAA noted that the procedure has been used 40 times in the past two weeks with success. IATA looks forward its expansion to New Zealand, Fiji, and Fukuoka. JCAB responded that it might be a while before CDP is introduced to Fukuoka, but in the meanwhile, a standard will be developed for Japanese controllers. They asked for FAA, Anchorage and Oakland support for the endeavor. FAA stated that they will provide any support that is required.

9.0 Agenda Item 6: ATM Issues

9.1 IP/04 PPT FAA ADS-B ITP Operational Flight Trial Project Status

Mr. Ken Jones presented this paper for the FAA and provided insight to the FAA activities associated with the ADS-B In-Trail Procedures (ITP) operational trial that is being conducted in the Pacific. The FAA began an operational evaluation of ADS-B ITP along SOPAC routes in August 2011 and expanded to all oceanic airspace controlled by KZAK in December 2011. Airports Fiji, Ltd and Airways Corporation New Zealand joined the operational evaluation in 2014, which expanded the availability of ADS-B ITP to the Nadi and Auckland FIRs. When asked what could save 573 pounds per flight without using ITP, Mr. Jones explained that through pilot interviews and simulations, the FAA observed how pilots requested speed changes and climb requests based on information they had on hand. Many pilots stated that both the plan view and side display helped to better understand air traffic which, in turn, helped avoid a hold at their destination and saved fuel. There is a comprehensive designated data collection activity for the operational evaluation. The data collected is being used to enhance the understanding of the economic, safety and operational impact of ADS-B ITP. There are 100 new Boeing aircraft with the capability to execute ADS-B ITP, and many of them are for non-US airlines, so they could operate in Japanese airspace. JCAB has not introduced ADS-B ITP but requested information from the FAA's experience with safety analysis and training support. The FAA stated that it would share the information learned.

9.2 IP/03 PPT IATA High Altitude UPR Across the Pacific

Presenters Mr. Gen Schnee, Mr. Gene Cameron, and Mr. Blair Cowles represented IATA and delivered a presentation summarizing United Airlines participation in the use of high altitude User Preferred Routings (UPRs) in the Anchorage, Oakland, and Fukuoka FIRs. The presentation also included future recommendations. The paper highlighted that United Airlines has been an active participant of the high altitude UPR within Oakland/Anchorage FIRs with a growing fleet of 30 B787s since June, 2014. As of July 2016, a total of 784 flights took advantage of the west bound high altitude UPR via NIPPI and OMOTO. The airline announced that both cumulative and annual estimated fuel and average flight times were reduced – the average flight time was reduced to 2-3 minutes and fuel reduction per flight reduced to 300LBS (136KG). The cumulative fuel reduction since 2014 was 784 flights X 300LBS = 235,200LBS (106,684 KG) and the estimated annual fuel reduction was 367 flights X 300LBS = 110,100LBS (49,940 KG). United Airlines also began participating in Fukuoka ATMC's operational trial of high altitude UPR between North America and Asia for westbound traffic effective June, 2016 with B787s.

JCAB ATMC believed that 787s departing Japan 165E between Fukuoka and Oakland will have difficulty reaching FL380 or FL400. Due to this belief, JCAB has not studied eastbound high-altitudes thoroughly. Based on the recommendations provided by the presentation, JCAB will consider gate expansion for both eastbound and westbound UPRs. United expressed interest to participate in any new trials as it believes its aircraft may climb higher when coming out of Shanghai or elsewhere in China. JCAB inquired about the breakdown between United's 787-8s and 787-9s to which they responded that more of their aircrafts are

787-9s. Mr. Kessler highlighted that R580 and R220, which are unidirectional routes, cause airspace complexity at BAMOK. For the three newest eastbound fixes, Mr. Kessler revealed that time was minimized. He asked United if these fixes would be an advantage at BAMOK to which they responded that it would, indeed, be an advantage. Mr. Kessler then stated that he would take this back and begin work on taking BAMOK traffic further south. Cathay Pacific also highlighted that their new A350-900 will deploy in the region alongside the new 787. Cathay Pacific's studies showed that it would be unable to fulfill the requirement stated in United's presentation as they can only meet FL360 at 180E. Cathay Pacific supported United's suggestion because its studies showed that their A350-900 aircraft can reach the required altitude and hoped JCAB, Anchorage, and Oakland would take it into consideration. Mr. Kessler stated that he believed that FL360 would likely include most of every airline's fleet and there would have to be more studies, though he was skeptical. At the end of the presentation, IATA expressed appreciation to FAA and JCAB for support of the UPR and both agreed to continue studying the recommendations.

9.3 WP/04 JCAB Operational Trial for the Use of High Altitude UPR Between North America and Asia for West-Bound

JCAB presented this paper to summarize operators' authorization for the use of high altitude User Preferred Routings (UPRs) from the Oakland FIR to the Fukuoka FIR. IATA praised the responsiveness of both JCAB and FAA to this concept considering it was first discussed 24 months ago. Mr. Gen Schnee from United asked if higher flight efficiency could be achieved if aircraft climb higher earlier. JCAB responded that it would make ATC easier in some cases, but it was case-by-case because the aircraft may file but may be unable to climb due to traffic. JCAB also stated that due to expected increases in 787s and A350s, that also may become a problem. Mr. Gene Cameron from United highlighted that some of their flights from Asia, UA199 from Shanghai to LAX is operating on a UPR through Anchorage airspace via OPAKI, and UA35 from SFO to Osaka is on the Oakland-Fukuoka UPR at 160W at FL400. Mr. Cameron expressed his appreciation to JCAB and FAA for their support and reported that they have seen benefits in the results. JCAB concluded with the anticipation that the convenience of high altitude UPR will improve.

9.4 IP/10 PPT JCAB Report of the VOLPHIN Exercise

JCAB presented a paper that summarized a report on the outcomes of this volcanic ash exercise. Participating agencies demonstrated practices related to volcanic activity and volcanic ash during the VOLPHIN16/02 exercise, including: a) distribution of VONA, VAA/VAG, SIGMET, NOTAM and AIREP; b) coordination between ANSPs and airline operators for tactical re-routing and ATFM measures; and c) CDM processes through teleconference, website, messages or any other media. JCAB has proactively provided advice and cooperated with other participants in preparation for the VOLPHIN exercise, including providing materials (e.g. information flow diagrams) to facilitate participants' understanding about actions that need to be taken during the exercise. IATA expressed that operators in the region are grateful to JCAB for taking the

lead and planning the exercise. They will continue working with ICAO and JCAB to maximize operator participation in the exercises. JCAB provided information not related to VOLPHIN, but about an upcoming CPDLC trial with the Manila FIR. They are coordinating with Manila ACC on a trial for CPDLC auto-transfer for eastbound traffic only, possibly with ANA, JAL and Philippine Air Lines (PAL) (westbound traffic will be considered after TOPS implementation). They will soon be asking for support of this upcoming trial.

9.5 IP/07 FAA UPRs into the NOPAC

Mr. Dustin Byerly from the FAA presented this paper on the termination of a trial merging tracks C & E and replacing it with a trial of UPRs into the NOPAC. The paper described the trial that will allow users flying westbound between North America and Asia to UPR off of and remain at least 50 NM north of track E to join track C when track C is published in the NOPAC route structure. Aircraft can also UPR to remain 50 NM north of track E to join any part of the NOPAC route structure. The presentation also highlighted that aircraft choosing to UPR into the NOPAC must adhere to guidelines set forth for UPRs in the NOPAC by Anchorage ARTCC. These guidelines can be found in the Alaska Chart Supplement as well as the NOTAMs published for Anchorage ARTCC. When asked by IATA about altitude conflict resolution, Mr. Byerly responded that typically when UPR flights conflict with aircraft on PACOTS, the FAA tries to accommodate by moving the conflict aircraft higher. If the PACOTS traffic is unable to move, the UPR aircraft will be assigned a lower altitude. Mr. Byerly pointed out that while there are guidelines for UPRs, they are, at times, loosely followed. JCAB confirmed that it also does the same.

9.6 WP/03 FAA Optimization of NOPAC Navigable Airspace: Suggestions for a Way Forward

Mr. Steve Kessler presented this paper for the FAA that explains the North Pacific Route System (NOPAC) which was last modified in 1997. Since its last modification, increases in aircraft range, improved navigation capability, and increases in Air Traffic Control Communication, Navigation and Surveillance (CNS) capabilities have led to increasing demand for User Preferred Routes (UPRs). Mr. Blair Cowles from IATA stated that they would endorse this paper and work with its recommendations. Mr. Cowles also proposed that IATA present a submission answering questions raised in this paper and present the draft submission to the next IPACG provider's meeting. Participants could then review and comment and IATA would then present the formal proposal in the next IPACG plenary meeting. Because IATA does not attend the provider's meeting, Mr. Cowles asked for designated points-of-contact from JCAB and FAA with whom to liaise as IATA prepares the draft submission. JCAB and FAA suggested coordination with Mr. Masuda and Mr. Kessler, respectively.

9.7 WP/02 FAA Variations in Airspeed in Controlled Airspace

Mr. Byerly, on behalf of the FAA, presented this paper which provided an update on implementation of operator procedures for unannounced speed changes within the

Pacific Oceanic Flight Information Regions. Mr. Byerly stated that he would share the presentation with Mr. Cowles from IATA as he did not receive a copy. Mr. Cowles stated that IATA has highlighted the issue in their regional coordination group via e-mail and at its last two meetings. Many of the worst offenders were not present at the meeting and Mr. Cowles stated that he would like to have a list to present at IATA's meeting next month to share with attendees. The FAA stated that they would share the list and presentation. A meeting participant from the International Federation of Airline Pilots Association (IFALPA) identified himself as a 767 pilot for Delta. He stated that the new NOTAM is much clearer but that pilots feel the aircraft self-reports via CPDLC and ADS. For pilots, he stated, this is simply a training issue and he has been working with IFALPA to brainstorm how to disseminate this information. He thanked the FAA for providing data after last year's meeting and hoped to resolve the issue by next year. Mr. Byerly stated that he would share this information and offered support. Mr. Meadows asked if there was an awareness factor for pilots, when the autopilot reduces speed due to turbulence. American, JAL and ANA stated that there were cases in which pilot awareness, and the need to report a speed reduction, is an issue.

9.8 WP/05 PPT JCAB Dynamic Airborne Reroute Procedures (DARP) Operations

JCAB presented a paper that provided an update on the operational DARP trial between Oakland and Anchorage Air Traffic Control Centers (ARTCC) and Fukuoka Air Traffic Management Center (ATMC). United expressed their appreciation to JCAB for their support of the DARP procedures. United has had internal issues with DARP and could not participate, but they anticipate a resolution to become a regular participant. JCAB stated that it would wait on United's next action so that they may work together.

9.9 IP/09 ENRI Benefits Assessment on Time Based Oceanic Arrivals to the Tokyo Metropolitan Area

ENRI discussed the benefits of conventional Dynamic Airborne Route Procedure (DARP) operations initiated between the Fukuoka and Oakland FIRs, and the possibility of enhancing these benefits by applying the 4D-Trajectory Based Operations (TBO) concept into oceanic operations. The paper was a study that quantified the benefits of DARP from an operational perspective and to investigate the potential benefits of further enhancing DARP to 4D-TBO in oceanic operations. JCAB expressed its appreciation to ENRI for the research highlighted in this paper so that JCAB could move forward with 4-D trajectories and TBO. Mr. Ayako Matsumoto also expressed his appreciation on behalf of All Nippon Airways (ANA) and stated that ANA had only compared fuel consumption based on flight plan and meteorological data in the past. Mr. Matsumoto stated that ANA will continue to provide data toward more research. Mr. Sharif Qureshi from Adacel, Inc. asked members from ENRI if they had any recommendations for the DARP program. They responded that they had not considered modifications to the system and that it was a preliminary analysis on whether to introduce 4-D trajectories using DARP, but would be happy to present such recommendations at a future IPACG meeting.

9.10 JCAB PPT Impact on NOPAC by Russian Rocket Launch

Mr. Hiroki Ukida presented a PowerPoint presentation for JCAB on the adverse impact of Russian test rocket launches performed by the Russian Navy in July 2016. JCAB issued two Notices to Airmen (NOTAMs) due to impact on four of the five NOPAC airways, and the detour for the airways that were blocked. All four routes converge at one point. The NOTAM was postponed, so the tracks were republished. It is a challenge to receive information from Russia to coordinate in a timely manner. JCAB and FAA agreed to continue discussion at the CPWG. Japan and Russia are working on signing an ATFM agreement. This agreement includes language to ensure smooth coordination for rocket launches.

9.11 FAA PPT Impact of Commercial Space

Mr. Byerly presented this PowerPoint. JCAB mentioned that there was a condition from Oakland when PACOTS were developed in regards to a SpaceX launch, and that it was beneficial to learn from the FAA's explanation of the launch corridor. JCAB believes JAXA is preparing for four rocket launches in the near future and they will inform FAA once they are notified. JCAB and FAA believe the number of rocket and missile launches will increase in the future and that coordination with ANSPs will be very important.

10.0 Agenda Item 7: Review of Pacific Seamless Airspace Chart & Action Items

The group reviewed and updated the Pacific Seamless Airspace Chart during the September 16 Providers' Meeting.

The group also reviewed and updated the action item list from both the PM and the IPACG/42 plenary during the September 16 Providers' Meeting.

11.0 Agenda Item 8: Other Business

There were no questions, comments, concerns or suggestions.

The next IPACG PM is scheduled for March 2017 in the United States. The next IPACG Plenary will be held around September 2017 in Japan.

Mr. Masuda stated that this was his first time at IPACG co-chair. He highlighted that the big mission for this meeting was the restructuring of the NOPAC and he asked for continued support from the delegates. He thanked the IPACG delegates for their participation in the meeting. He noted that Ms. Ishikawa will probably leave the IPACG.

Ms. Ishikawa thanked FAA and the airlines and stated that next month, she will start a new position as a controller at Fukuoka tower. She hopes for further development of the ATC system in the Pacific from Fukuoka.

Ms. Chiodini said that it had been a pleasure and an honor to work with everyone at the meeting. IPACG and its participants have led the establishment of improvements and efficiencies in the region. She concluded the IPACG 42 Plenary and expressed appreciation to JCAB for their cooperation and partnership with the FAA, to the facilities responsible for implementing the new procedures, and to the co-chairs for hosting the meeting.

Mr. Jim Meadows
Co-chair for FAA

Mr. Toshiyuki Masuda
Co-chair for JCAB

Appendices:

- Appendix A: Meeting Attendees
- Appendix B: Report of FIT/29
- Appendix C: Pacific Seamless Airspace Chart
- Appendix D: Open Action Items