

**Summary of Discussions
Forty-third Meeting of the
Informal Pacific Air Traffic Control Coordinating Group
(IPACG/43)**

September 27 & 28, 2017
Tokyo, Japan

1.0 Background

- 1.1 The Forty-third Meeting of the Informal Pacific Air Traffic Control Coordinating Group (IPACG/43) was held at the Mita Kaigisho in Tokyo, Japan on Wednesday, September 27 and Thursday, September 28, 2017. 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 air traffic control (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 Division, Air Navigation Service Department, Japan Civil Aviation Bureau (JCAB) and Ms. Coleen Hawrysko, Manager, Oceanic & Offshore Operations Group, Federal Aviation Administration (FAA).
- 2.2 Mr. Masuda welcomed the meeting participants to Tokyo and hoped that they would enjoy their stay in Japan. Ms. Hawrysko said it was a pleasure to visit Japan and that she was looking forward to a productive IPACG meeting. She noted that this was her first time co-chairing the meeting and thanked Mr. Masuda and JCAB for the warm welcome. Mr. Masuda paid tribute to the recent passing of Mr. Mike Bishop of U.S. Forces Japan and vowed to continue his work to strengthen the U.S./Japan relationship.
- 2.3 All IPACG/43 attendees introduced themselves to the meeting. Mr. Masuda introduced the meeting interpreter, Ms. Reiko Kurachi.

3.0 Submitted Papers

- 3.1 The following working and information papers were presented to IPACG/43 and were available on the IPACG website and shared among the meeting participants:

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

Paper Number	Agenda Item	Title	Presented by
IP/05	2	PARC CWG Updates	FAA
IP/19	2	Cross Polar Working Group/23 and Oceanic Working Group Meeting Updates	FAA
IP/02	5	PBCS Implementation	FAA
IP/06	5	PBCS Global Charter	FAA
IP/14	5	PBCS	IATA
IP/01	5	ADS-C CDP	FAA
IP/03	5	Equipage Update	FAA
IP/17	5	Renewal of Oceanic ATC Data System on 22 nd Feb 2018	JCAB
IP/15	6	Monitoring Agency Activity in North Pacific Airspace	FAA/ JCAB
IP/09	6	BAMOK UPR	FAA
IP/10	6	PAZA NOPAC UPRs	FAA
WP/01	6	NOPAC Route Design Review	IATA
IP/12	6	Speed Changes	FAA
IP/16	6	Dynamic Airborne Reroute Procedures (DARP) Operations	JCAB
IP/18	6	Dynamic Airborne Reroute Procedures (DARP) Operations	ANA
IP/04	6	Issues Related to Large RPAS	FAA
WP/02	6	Operational Trail for the use of East-Bound high altitude User Preferred Route (UPR) between Asia and North America	JCAB
WP/03	6	Operational Trail for the use of West-Bound high altitude User Preferred Route (UPR) between Asia and North America	JCAB
IP/07	6	Operations above FL600	FAA
IP/08	6	Deep Water Ditching	FAA
IP/13	6	Commercial Space	FAA

Wednesday, September 27, 2017

4.0 Agenda Item 1: Review and Approve Agenda

4.1 Mr. Masuda drew the meeting's attention to the agenda and timetable for the IPACG/43 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	Other Business

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

5.1 IP/05 Highlights from PARC CWG

Ms. Theresa Brewer presented this paper for the FAA which provided relevant outcomes and discussion points from the recent 38th meeting of the performance-based operations aviation rulemaking committee (PARC) communications working group (CWG) held in Washington, DC, United States from 29–31 August. Ms. Brewer noted that she was very thankful to have had JCAB participation at the PARC CWG. The meeting co-chair, Mike Matyas of Boeing, who had also attended the meeting, also thanked JCAB for their participation and hoped that it would continue. Ms. Brewer reviewed the items in the groups “project workbook” that she thought would be of most interest to IPACG participants. She noted that, as discussed in the FIT the previous day, the FAA has some performance challenges with Hawaiian aircraft using SwiftBroadband in the Oakland FIR that are not being observed in Fukuoka FIR.

5.2 IP/19 Outcomes from CPWG/23 and OWG 6/23/17

Mr. Steve Kessler presented this paper for the FAA which provided a brief update on the recent Cross Polar and Oceanic Work Groups (CPWG and OWG). The 23rd meeting of the CPWG was held in Arlington, Virginia, United States on May 30th thru June 1st, 2017. The meeting was well attended with representatives from several airlines, Air Navigation Service Providers (ANSPs) and industry. A wide range of topics were discussed at CPWG/23 and included: planned changes in Japanese FIR airspace, implementation of new ATS routes through Russia Federation airspace, and the implementation of the FAA’s Advanced Technologies and Oceanic Procedures (ATOP) automation system for ATS provision in the Anchorage Arctic FIR. FAA suggested that two topics, Duplicate Waypoint Naming and Cost Index Flight Planning, might be of special interest to IPACG. The briefings from the meeting are currently available on the CPWG website located at: http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systems/mops/ato_intl/cross_polar/ The final report for CPWG/23 will be posted to this same website in the near future.

The latest meeting of the OWG was held in Vancouver, Canada on June 21, 2017. Like CPWG, the meeting was well attended with representatives from airlines and industry as well as from FAA and Canada’s Air Traffic Service Provider (ATSP) Nav Canada. A notable take away from the meeting was Nav Canada’s presentation on the “Use of ATS Surveillance Systems in a Procedural Control Environment”. After reviewing recent ICAO work on Space-Based Automatic Dependent

Surveillance – Broadcast (Space-based ADS-B), the presentation described the use of ATC surveillance in remote and Oceanic airspace. Copies of the materials presented at the meetings are available at this website:

https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/air_traffic_services/artcc/oakland/kzak/owg/

The next meeting of the OWG is scheduled for January 24, 2018 and will be held at Rockwell Collins’s “ARINCDirect” facility in Livermore, California, USA.

6.0 Agenda Item 3: Report on Outcomes from Providers Meeting

Overview of 25 September 2017 Providers Meeting (PM) Report

6.1 On behalf of JCAB and FAA, Ms. Hawrysko indicated that the Providers Meeting was very productive. She provided the following summary of discussions from the meeting.

- User Preferred Routings
 - The FAA provided an update on the current status of UPRs in its airspace. Currently 14 of the 20 Pacific Organized Track System (PACOTS) tracks now have UPRs.
 - Discussed re-evaluating or potentially eliminating certain tracks.
 - FAA UPR guidance has been updated and altitudes are now first-come, first-served.

- NOPAC Realignment
 - The FAA and JCAB discussed a proposal for the phased realignment of the North Pacific (NOPAC) ATS route system and the Pacific Organized Track System (PACOTS) predicated on the Required Navigation Performance 4 (RNP-4) lateral separation minima.
 - The FAA and JCAB will continue to work together to further study this proposal.

- Proposal of Necessary Processes for Route Configuration Change of NOPAC
 - The Electronic Navigation Research Institute (ENRI) presented a proposed process for making route configuration changes in NOPAC airspace and the results of an analysis to show the characteristics of recent North Pacific oceanic traffic flow.

- Generating West-bound Tracks at ATMC
 - Westbound PACOTS tracks are normally generated by the FAA using its DOTS+ system. JCAB presented on their capability to generate westbound PACOTS tracks as a contingency measure when DOTS+ is unavailable.

- PBCS Implementation
 - The FAA presented an update on Performance-Based Communications and Surveillance (PBCS) implementation activities, including:
 - State approval readiness update,
 - The availability of RCP240/RSP180 compliance information for Boeing “legacy” aircraft,
 - Communication Service Provider (CSP) compliance,
 - The availability/uniformity of performance data,
 - Processes for reporting/resolving underperforming aircraft, and
 - The relationship between PBCS and collision risk modelling (CRM)

- Operational Trials for the use of East-Bound and West-Bound high altitude User Preferred Route (UPR) between Asia and North America
 - JCAB presented papers on the possibility of expanding the use of high altitude UPRs between Oakland and Fukuoka FIRs.

- Renewal of Oceanic ATC Data System on 22th Feb 2018
 - JCAB presented an update on their schedule for implementing the new Trajectorized Oceanic Traffic Data Processing System (TOPS) and the upgrades the system will provide.

7.0 **Agenda Item 4: Report on the Outcome of the FANS Inter-operability Team Meeting (FIT)**

Mr. John Roman reported on the outcomes of the FIT/30 meeting held on Tuesday, September 26, 2017 that he co-chaired with Hiroyuki Takata. Boeing shared problem reports in its role as the Central Reporting Agencies (CRA) for the FAA. The FAA and JCAB affirmed that they will work in close cooperation to investigate and resolve issues. The FAA and JCAB also reported on PBCS monitoring. The International Air Transport Association (IATA) presented on their concerns with PBCS implementation, particularly with the lack of participation by other Asia-Pacific states in IPACG or the Informal South Pacific ATS Coordination Group (ISPACG). Some operators present expressed concern about trans-Pacific ferry flights of aircraft used for domestic operations, and they were assured that they would be accommodated to the degree possible using separation standards that do not require PBCS certification.

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

8.1 **IP/02 Status of PBCS Implementation in the United States**

Ms. Brewer presented this paper for the FAA. She noted that the FAA is progressing the implementation of PBCS in accordance with the guidance provided in ICAO Doc 9869, Performance-based Communication and Surveillance (PBCS) Manual, Edition 2, Appendix A, PBCS Implementation Plan – Checklist. The paper provided details on the implementation status of each of the activities. Ms. Brewer also reviewed the draft PBCD Concept of Operations as part of presentation.

Mr. Takata thanked Ms. Brewer for the paper and noted that it was also presented during the FIT meeting as well as at the Providers Meeting. He expressed gratitude to the FAA for their leadership in PBCS and noted that the FAA and JCAB have had good coordination on this issue. He also noted that there are still some concerns on the state/regulator side. He said that the entire world is waiting for the FAA Advisory Circular to be published and that once it is, all states will be in alignment and we will start seeing movement. He asked for the FAA's continued cooperation and support. Ms. Brewer stated that the Advisory Circular will be shared as soon as it becomes available and apologized for the delay.

8.2 IP/06 Status of PBCS Global Charter Development

Ms. Brewer presented this paper for the FAA which discussed the PBCS Global Charter being developed by members of the ICAO operational data link working group (OPDLWG) PBCS project team (PT). Communication service providers (CSPs) and satellite service providers (SSPs) have expressed concern over adding PBCS requirements to binding contracts or agreements, explaining that the nature of the communication system is such that there are factors outside of the CSP/SSP domain that impact performance, preventing their ability to guarantee a certain performance to individual ANSPs and operators. In addition, they feel that it would take significant cost/effort to re-negotiate individual contracts currently in place. As an alternative to the individual contract/agreement, the CSPs have proposed the use of a "PBCS Charter," which all data link users/providers would sign and collectively agree to meet their allocated requirements. The PBCS Global Charter is being developed through the OPDLWG PBCS PT. Mr. Takata from JCAB asked how the ICAO secretariat is going to announce it to the ICAO member States. Ms. Brewer said that a State Letter has been discussed but that she would need to confirm with ICAO. The FAA Advisory Circular will also mention the PBCS Charter, hopefully helping States to use it as a reference. The charter will also be available as a means of compliance.

8.3 IP/14 PBCS Implementation (IATA)

Mr. David Rollo from IATA delivered this paper which presented issues and concerns regarding the implementation of PBC (globally and in Asia-Pacific) that require resolution prior to the agreed regional implementation deadline, which is currently no later than 29 March 2018. A similar paper had also been presented to the ICAO FIT-ASIA/6 & DGCA 54 meetings. He highlighted IATA's six major issues for concern:

- Lack of State readiness to issue operational approvals for PBCS,
- Lack of RCP / RSP Statement of Compliance (SOC) for "legacy" aircraft,
- An alternative to the requirement for commercial contracts between operators and CSPs,
- The role of Enroute Monitoring Agency (EMA) and Regional Monitoring Agency (RMA) organizations regarding PBCS,
- Lack of a global standardized requirement for PBCS data collection and monitoring, and

- The readiness of ANSPs to process, transfer and use PBCS flight plan codes.

Mr. Rollo acknowledged that work is ongoing to address some of these concerns, but stated that it was clear at the recent APANPIRG meeting that there was reason for concern. IATA is seeking support from FAA/JCAB as the two leading PBCS implementers in the Asia-Pacific region to help the rest of the region. He stated that IATA will hold a special meeting in December to discuss regional readiness and wished the FAA/JCAB to support it if possible. Mr. Takata noted that JCAB is in complete alignment with the FAA and would be happy to assist neighboring ANSPs. He asked IATA to use their power to support countries to implement PBCS regionally. Mr. Rollo said that IATA would make the point to airlines at the upcoming regional meeting that they need to stress the importance of focusing on the approval process to regulators. Ms. Brewer said she would attend the December workshop. Ms. Hawrysko noted that Mr. Harrie Copeland recently attended a meeting in Dakar, Senegal for the Civil Air Navigation Services Organisation (CANSO) on this issue and that it had been recommended that the FAA work with CANSO partners.

8.4 IP/01 ADS-C Climb/Descend Procedure Project Update

Mr. Copeland presented a paper on the FAA's activities associated with the Automatic Dependent Surveillance – Contract Climb/Descend Procedure (ADS-C CDP). Implementation of the ADS-C CDP automation will benefit ADS-C equipped aircraft. Non-equipped aircraft will continue to receive the current level of service. ADS-C CDP separation calculations will be performed by the ATOP automation system. Oakland ARTCC implemented the ATOP automated procedure on August 29, 2016. Anchorage Air Route Traffic Control Center (ARTCC) implemented the ATOP automated procedure on October 12, 2016. New York ARTCC implemented the ATOP automated procedure on February 14, 2017. The paper focused on data that had been provided by these facilities. Mr. Copeland noted that in May and June, Anchorage Center had a software issue that resulted in a false conflict alert and had to stop using CDP. Mr. Blair Cowles from IATA thanked the FAA for the presentation and noted that the usage shown in the data is a good indicator of the value of CDP to the industry. He asked if the procedure would remain available to aircraft without PBCS approvals but which had ADS-C CDP equipage. Mr. Copeland replied that that would not be the case, noting that even though not based on RNP value it is based on a figure of merit and without PBCS compliance an aircraft would not be eligible for CDP. Japan Airlines asked how many different operators have used the procedure and if any were non-U.S. carriers. Ms. Julia Fuller replied for the FAA that a wide variety of carriers have utilized the procedure including some foreign carriers. JCAB noted that they plan to start using CDP in the second half of 2019 and will ask the FAA's help in preparing for challenges/controller training.

8.5 IP/03 Datalink Equipage in the Oakland and Anchorage Flight Information Regions (FIRs)

Ms. Brewer presented an update on the data link usage and equipage observed within the Oakland and Anchorage oceanic airspaces. The statistics provided were for the period from January 2016 to June 2017. It was noted that the percentage of flights using FANS 1/A data link in the aggregate Oakland oceanic FIR has increased nearly ten percent, between January 2016 and June 2017. The percentage of flights filing RNP4 had surpassed the percentage of flights using data link around July 2015, and has further increased to approximately 84 percent in June 2017. For the Anchorage oceanic FIR, it was noted that both the percentage of flights filing RNP4 and the percentage of flights using FANS 1/A data link have held fairly constant at approximately 95 percent and 88 percent, respectively. The inclusion of the “% Filing RSP180/RCP240” statistic has been added to begin tracking the aircraft receiving RCP240 and RSP180 approvals and indicating eligibility for performance-based separation standards, as defined in the 16th amendment of the PANS-ATM, ICAO Doc 4444 (November 2016).

8.6 IP/17 Renewal of Oceanic ATC Data System on 21st Feb 2018

Mr. Takehiro Oumi presented a paper for JCAB that provided information about the renewal of their Oceanic ATC Data System. At IPACG/42, JCAB reported that the Trajectorized Oceanic Traffic Data Processing System (TOPS) is scheduled to replace the current Oceanic ATC Data Processing System (ODP) in February 2018. Further, the Air Traffic Control Data Exchange system (ADEX) is scheduled to replace the Multi-purpose ATS Data Communication Equipment (MADE) in February 2018, at the same date of the transition from ODP to TOPS. At IPACG/43, JCAB discussed the operation impacts of the transition to the new systems. The transition date will be 21 February 2018. The start time of transition from ODP to TOPS/ADEX is scheduled for around 21:00 UTC. ATS data link service will be out of service between 20:40 UTC and 21:20 UTC. (The exact time will be announced by a Notices to Airmen (NOTAM) bulletin.) The ATS Inter-Facility Data Communication (AIDC) service between FAA and JCAB will be out of service between 20:00 UTC and 21:20 UTC. Mr. Oumi also discussed the benefits of the new systems. TOPS will be compliant with the PBCS framework from the start of operations and will use PBCS indicators in the flight plan (FPL) to determine aircraft eligibility for performance-based separations from March 29, 2018 in accordance with the Asia / Pacific Region PBCS Transition Strategy. ADS-C CDP and ADS-B ITP (In-Trail Procedure) will be supported from the second half of FY2019. There will also be a change to the Controller-Pilot Data Link Communication (CPDLC) procedure. The transition time was chosen as the period when oceanic traffic is lightest. TOPS applies performance-based longitudinal separations only between aircraft with both of the following descriptions in their FPLs:

- “P2” in item 10a; and
- ”RSP180” in item 18 following the indicator “SUR”.

IATA thanked JCAB for their hard work on the system and asked what separation standard would be used to those flights not filing as indicated above. JCAB replied

it would be 10 or 15 minutes. The FAA noted it would be the same in their airspace and that this separation is no different than that applied today if flights do not file their flight plans correctly. IATA expressed concern that delays in the registry certification may result in flights defaulting to 10-minute separation if the proper fields in the flight plan are not completed. Ms. Brewer noted that it might be helpful to provide statistics on how often these separation standards are being applied. IATA also expressed concern that aircraft could be penalized even if they file FPLs correctly because state certifications have not been completed. This coupled with the inability to use procedures like ADS-C CDP could cause a loss of efficiency. IATA emphasized that this is more of a regulator issue than an ANSP issue. JCAB noted again that they plan to take action to approach regulators so they will have a higher level of awareness. JCAB expressed that for the next six months, they want to work hard with ANSPs and IATA so States can address this problem properly and meet the March 29, 2018 deadline.

9.0 Agenda Item 6: ATM Issues

9.1 IP/15 Monitoring Agency Activity in North Pacific Airspace

Ms. Brewer presented this paper for the FAA that provided the meeting with a summary of relevant safety monitoring activities conducted for North Pacific Airspace by two ICAO-endorsed monitoring agencies. The Japan Airspace Safety Monitoring Agency (JASMA) and Pacific Approvals Registry and Monitoring Organization (PARMO) provide EMA and RMA services for North Pacific Airspace. The purpose of this information paper was to increase awareness of the monitoring agency activities. JCAB noted that their subject matter expert was not present but that they would like to continue to cooperate with the monitoring agencies.

9.2 IP/09 BAMOK Eastbound UPR

Mr. Kessler for FAA Anchorage ARTCC provided an update to the UPR restrictions for eastbound flight over the BAMOK fix. UPR requirements for flight planning to and from the Russian Far East (RFE) entry / exit fixes were last updated at the ninth meeting of the Pacific Project Team (PPT/9). The paper reported a change to the UPR restrictions for BAMOK. During IPACG/42 in Seattle, Washington, United Airlines and IATA presented IP/03, High Altitude UPR Trials Across the Pacific. During the presentation it was noted that the current requirement for eastbound aircraft overflying BAMOK was restrictive. United noted that the ability to begin the UPR segment closer to BAMOK would facilitate flight planning a closer to great circle route for certain destinations. In response to United's request, Anchorage Center has collaboratively determined with the controllers labor union, that the BAMOK restriction will be modified, effective October 12, 2017, so as to only require eastbound aircraft to follow route B932 until MORLY. This change will allow aircraft overflying BAMOK to begin their UPR routing 500 miles further west than previously. The sole element at Anchorage ARTCC which makes this change possible is its Advanced Technologies and Oceanic Procedures (ATOP) automation system. Due to a modification in the way ATOP's Conflict Prediction and Reporting (CPAR) results are displayed, controllers will be able to see potential conflicts before

the eastbound UPR aircraft reaches MORLY. United thanked the FAA for its support and study of this UPR chain. United also asked if there were flight level or time restrictions on BAMOK. Mr. Kessler answered that it had been determined that they were not needed. United expressed its appreciation of this and stated that they anticipated 15–20 minutes savings on flights from Beijing to San Francisco. JCAB noted that their new TOPS system should have similar capability to ATOP and expressed its desire to do more to increase the usage of UPRs going forward.

9.3 IP/10 UPRs and the NOPAC

Mr. Kessler presented a review of UPR requirements active within the Anchorage Flight Information Region (PAZA FIR). He showed slides reviewing Anchorage Center’s NOPAC UPR requirements in order to ensure operators’ awareness of the UPR possibilities and to elicit their suggestions for improvements where and when they may be possible. The presentation, along with the current NOTAMs, is available on the Anchorage Center website

(https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/air_traffic_services/artcc/anchorage/pilots/).

9.4 WP/01 Airline Input Regarding a NOPAC Route Restructure Review

Mr. Cowles of IATA presented a paper for consideration by the meeting of a consolidated airline view detailing proposals and recommendations for optimization/reorganization of the NOPAC route structure, including making currently one-way ATS routes bidirectional. The paper was in response to an action item from IPACG/42. Mr. Cowles noted that access to UPRs is improving year over year. In the interest of improving collective system capability and performance, IATA believes that it would be beneficial to organize an in-region UPR flight planning workshop targeting operators with little exposure to UPR flight planning concepts, particularly those operators new to trans-Pacific operations. Cathay Pacific has offered to host the workshop in Hong Kong in 2018. Mr. Kessler asked IATA if they foresee the PACOTS continuing as they are today. Mr. Cowles said the discussion has been framed around the NOPAC only and IATA has not considered the PACOTS at this point. Mr. Kessler noted that the PACOTS are intertwined with the NOPAC and was curious to know how operators would see a reduction of separation between the PACOTS. The FAA and JCAB had already discussed the bi-directional routes request at the Providers Meeting, and asked IATA why they thought that approach would be best. IATA said that the bidirectional use of the ATS routes would likely be time bound to take advantage of peaks and troughs in the traffic flow, but acknowledged it may be difficult for the ANSPs to manage and that it is not a hard and fast requirement. IATA proposed further discussing the issue in a small group, and requested that FAA/JCAB provide a timeline and structure for further discussions on this issue to ensure it moves forward. IATA also informed the meeting that the NOPAC route restructure issue is a “top 10 priority” and subject to reporting to its Global Operations Committee. The FAA suggested having further discussions with JCAB on the morning of day two and then report them back to IATA to start the second day’s session. IATA thanked them and accepted this proposal.

9.5 IP/12 Variations in Airspeed in Controlled Airspace

Mr. Byerly provided an update on the implementation of a trial of operator procedures for unannounced speed changes within the Pacific Oceanic Flight Information Regions. Data shows that there has been a reduction in the number of un-cleared/announced speed changes since beginning the trial, but the numbers are still high. The FAA will continue to work with the operators to reduce the number of un-cleared speed changes and gain more compliance with the procedure. Mr. Byerly thanked Delta Air Lines for their hard work to push for improvements in this area.

Thursday, September 28, 2017

9.6 NOPAC Restructure Discussion

In response to IATA's request for a timeline/structure commitment to future discussions on the NOPAC redesign, the FAA and JCAB met in the morning prior to the full plenary session to discuss the request further. Acknowledging that budget approvals needed to be obtained, the group decided to hold a meeting in conjunction with the upcoming Cross Polar Working Group meeting in Paris in December. The meeting will take place on December 11. The morning session will be an opportunity for the FAA and JCAB to agree on the best format for redevelopment and come to a mutual understanding. The afternoon session will include IATA and several operators to share these plans. The FAA and JCAB plan to have internal discussions in the period up to the meeting and will see if any fast time simulations can be conducted ahead of the meeting. The FAA and JCAB reported this plan to IATA once the full plenary reconvened. IATA expressed that it considered the plan to be good, and thanked them for their work.

9.7 UPR Update (FAA/JCAB)

Mr. Byerly and Ms. Makoto Ishida presented for FAA and JCAB on updated UPR guidance. Only two westbound PACOTS tracks (C & J) remain without UPR, while only Track 2 remains Eastbound. In total, 14 of the 20 PACOTS tracks now have UPR. In response to a request from operators in November for UPR guidance to loosen restrictions, the phrase *UPR aircraft do not have priority for altitude assignment over aircraft on an existing PACOTS or CEP route* was removed from the guidance, and altitudes are now first-come, first-served. The UPR guidance has been updated on the Oakland Center website: (https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/air_traffic_services/artcc/oakland/kzak/). JCAB noted that although in Japan the PACOTS are regarded as primary and UPR secondary, in practice it is also first-come, first-served, and they will also consider revising their guidance in light of the FAA change. The FAA and JCAB are also looking at eliminating some PACOTS tracks and discussions will continue. IATA welcomed the change in wording to the guidance as a very positive development and expressed its appreciation for the ongoing efforts. United Airlines thanked both the ANSPs as well and noted that they would also like to see additional flexibility from the U.S. west coast to Singapore in the future. The FAA replied that they would consider this.

9.8 IP/16 Dynamic Airborne Reroute Procedures (DARP) Operations (JCAB)

Mr. Akimitsu Sakurai provided an update on the operational DARP trial between Oakland, Anchorage Air Route Traffic Control Centers (ARTCC) and Fukuoka Air Traffic Management Center (ATMC). The paper presented the conditions for DARP as well as a list of DARP requests that had been submitted and the clearances that had been issued in Fukuoka FIR from September 2016 through August 2017.

The number of DARP requests has followed a similar trend for a few years. In order to promote DARP operation and improve utilization, DARP operation will start on March 29, 2018 after being amended for domestic regulations and in the Aeronautical Information Publication (AIP) JAPAN. DARP operations will not require pre-coordination by the operator. IATA noted that this type of presentation would be very useful in their proposed UPR workshop in Hong Kong. ENRI asked if JCAB had any plans to negotiate with operators to enhance DARP. JCAB said that so far they do not, but that they will continue to disseminate information and noted that of the Japanese operators, All Nippon Airways (ANA) is using DARP frequently.

9.9 IP/18 Feedback on the Advantages of DARP Operations (ANA)

Ms. Ayako Matsumoto gave a presentation for ANA that shared the latest data from their ongoing DARP operations between Honolulu and Japan and also DARP evaluation between Japan and the west coast of the U.S. (LAX/SFO/SJC). Although DARP has been effective on flights between Honolulu and Japan and also between Japan and the west coast, the implementation rate is currently low. This has been attributed in part to an increase in dispatcher workload. ANA will study internally ways to reduce this workload to increase DARP utilization. Delta thanked ANA for the presentation and asked if any fleet in particular is utilizing DARP more than others. ANA reported that currently DARP is being executed mainly their international Boeing 787 and 777 fleets. JCAB said they will continue to study DARP from the ANSP perspective. ENRI thanked ANA for the data and said they would continue to study as well. JCAB affirmed its desire to expand DARP going forward, and hoped that other airlines will study ANA's presentation.

9.10 IP/04 Issues of Significance Related to Large Remotely Piloted Aircraft Systems (RPAS)

Ms. Hawrysko gave a presentation highlighting the main areas of significance identified in ATMOPS/WG/4-WP011 for large RPAS: Communication Lag between Air Traffic Control (ATC) and the Remotely Piloted Aircraft (RPAS) - Latency; Lost Link procedures effectively relayed and known to ATC; Re-routes due to incorrect filing or mission change; Reliability of Command and Control Link; RPAS need to replicate/exceed "See and Avoid" (DAA); RPAS performance characteristics versus manned; and Current Large RPAS fleet not designed for US National Airspace System (NAS) integration. Ms. Hawrysko noted that the paper asks more questions than it provides answers. Gary Brown from the U.S. Marine Corp Air Station at Iwakuni noted that he had previously worked on RPAS integration in foreign countries and had been able to work through several of these issues. He noted that Japan has had success with "file and fly" with large RPAS. He said that the issue of how to communicate flight plans and contingency plans with ATC was a challenge. He said that while it had taken a lot of work and many

meetings with JCAB, Letters of Agreement had been created for each facility that detailed procedures. He offered to provide contact information for U.S. Pacific Air Forces. Oakland Center noted they do a lot of work with the Global Hawk. They have encountered issues with the COA being negotiated at a national level with a domestic environment in mind. They should consider facilities like Oakland that are not just domestic. Oakland Center felt that the number of RPAS operations in the Pacific will only grow.

9.11 WP/02 Operational Trial for the use of East-Bound high altitude User Preferred Route (UPR) between Asia and North America

Mr. Sakurai for JCAB presented a paper summarizing the possibility of expansion for the use of high altitude User Preferred Routes (UPRs) between Oakland and Fukuoka FIR. The operational trial for west-bound high altitude UPR began on 31 March 2016. It is not influenced by the restrictions that are applied to former UPRs. Considering IATA's request to carry out an operational trial for east-bound high altitude UPR at IPACG/42, JCAB proposed an operational trial concept at IPACG PM19. JCAB proposed a concrete plan for east-bound high altitude UPR at IPACG/43 in order to improve efficiency. A large-scale update of JCAB's oceanic control system is scheduled in February 2018. Therefore, they expect that the operational trial for east-bound high altitude UPR will be carried out in the spring of 2018. The proportion of high-performance aircraft in the oceanic sectors of Fukuoka FIR has been increasing. They need to revise the conditions of the operational trial properly. IATA thanked JCAB for their presentation and for considering the request and setting the parameters for an operational trial. IATA also acknowledged the need to wait for the new TOPS system to come online.

9.12 WP/03 Operational Trial for the use of West-Bound high altitude User Preferred Route (UPR) between Asia and North America

Mr. Sakurai presented a paper summarizing the possibility of expansion for the use of high altitude User Preferred Routes (UPRs) between Oakland and Fukuoka FIRs. A trial of west-bound high altitude UPRs has been operated since 31st March 2016. It was originally applied to aircraft able to fly at or above FL400 at 180E. However, double the aircraft can apply for the trial on condition that they are able to fly at or above FL380 at 180E. Therefore, JCAB amended the relevant Aeronautical Information Circular (AIC) to ease the altitude restriction on 13 October 2016. At the beginning of the operational trial, not many aircraft that satisfied the conditions. The trial resulted in altitude separation between recent high-performance aircraft types and earlier types. No issues have been raised so far by operators. JCAB believes it is unnecessary to add instant restrictions to the trial of west-bound high altitude UPR, but whether to expand the available gates for UPRs to include EMRON and KALNA requires careful consideration. JCAB stated its intention to strive to give further consideration to the operations of high-performance aircraft in Fukuoka FIR in order to improve efficiency. IATA thanked JCAB again for their presentation. United Airlines said they are looking forward to implementation next year. JCAB replied they would do their best. ANA remarked that there may be congestion at lower altitudes when high altitude UPR

aircraft cannot climb due to bad weather, and asked which would take precedence in such cases. JCAB answered that there are many factors and it would vary according to circumstances, but that the basic principle is first-come, first-served.

9.13 IP/07 ATC Services Above FL600

Ms. Hawrysko presented a paper that discussed the expansion of aerial activity to altitude strata above what is considered as the “conventional” National Airspace System (NAS). While numerous operations occur in the NAS above 45,000 feet (FL450), they are generally below FL600. However, industry’s desire to operate at higher altitudes is increasing. The FAA has recognized that the operations forecast for extremely high altitude flight will challenge the conventional application of Air Traffic Control (ATC) services, and regards expanding its capacity as an ANSP to accommodate the next generation of manned and unmanned activities a priority issue. The purpose of the information paper was to identify challenges and provide possible recommendations to facilitate better services in the upper altitude stratum. As the need for additional services above FL600 increases, so does the need to reevaluate standards to ensure the safety of users at these higher altitudes. The reconsiderations include, but are not limited to, altitude stratum, surveillance, communications, procedural applications, navigation, mission requirements, Class E structure, resources and New Entrants. In research carried out for this paper, numerous shortfalls and challenges were explored and summarized. Several complications have been identified and initial solutions brought forward through NextGen research. Other challenges include the fundamental issues of Communications, Navigation and Surveillance, all of which could be overcome by technological advancements and their implementation in the upper strata of the NAS. CAB noted that they are still lagging behind the U.S. in this area and look forward to updates at future meetings.

9.14 IP/08 Deep Water or Icepack Ditching in the Event of a Lithium Ion Battery Fire

Mr. Copeland presented a paper for the FAA on the work being done to establish a procedure necessitated by the increased number of lithium batteries being transported. The paper provided an overview of conceptualized deep water or icepack ditching procedures in the event of an on-board lithium ion battery fire. Since 2006, three airframes (an Asiana cargo aircraft in the sea off Korea, a United Parcel Service (UPS) aircraft in Philadelphia and another UPS aircraft in the United Arab Emirates (UAE)) have been lost due to (suspected) lithium ion battery fires in their cargo holds. Thinking proactively, UPS began working on a standardized ditching protocol over the ocean or remote ice packs. UPS engaged the FAA to assist with this procedure. Shipping lanes underlie many transoceanic flight paths. Ships are usually spaced 25–50 nautical miles apart, and with 16+/- minutes of flying time available, a ship will usually be in range of an aircraft in distress. A streamlined checklist was developed that starts with the controller and is handed off to the front-line manager who obtains critical information from the Coast Guard and then returns it to the controller for relay to the aircraft. The FAA is currently ready to run test scenarios involving Anchorage ARTCC, Coast Guard Anchorage, and additional resources.

9.15 IP/13 Commercial Space

Mr. Byerly gave a presentation that provided a glance at the growing impact of Commercial Space operations within Pacific Ocean FIRs. Commercial Space operations are expanding within Oakland Oceanic FIR and are becoming more frequent. The airspace requests for potential operations can negatively impact traffic depending on location, time of day and duration. The hazard areas often affect routine traffic flows creating reroutes which increase the workload for controllers and air crews. In order to alleviate or reduce impacts to air traffic, Oakland is striving to work with the Air Traffic Command Center Space Operations Office and the FAA Office of Commercial Space on future agreements. The goal is to learn how to integrate these operations and mitigate negative impacts to air traffic with a focus on safety, which will minimize current reactive efforts when dealing with space operations. Mr. Byerly showed the group a video of several launches. IATA thanked Oakland and Anchorage Center for working to minimize the impact to airspace users during these launches. They also noted that they have been impressed with JCAB's warnings following recent unexpected launches. Mr. Takashi Yokoyama noted that JCAB also has to deal with space launch activity, but to a lesser degree than the FAA. Like the FAA, they work to confirm the affected area and coordinate to mitigate impact on air traffic. They hope to share their scheme at the next IPACG meeting.

10.0 Agenda Item 7: Other Business

- 10.1 Ms. Hawrysko announced that IPACG/44 would be held in a still to be determined location in the U.S. in late August 2018.
- 10.2 Mr. Masuda thanked the IPACG delegates for a fruitful meeting. He noted that there were multiple examples of the ANSPs working hard to provide benefits.
- 10.3 Ms. Hawrysko thanked the meeting delegates for the successful conclusion of another IPACG meeting. Ms. Hawrysko praised the personal dedication and enthusiasm of all the IPACG participants, noting that a lot of work had been accomplished during the meeting.
- 10.4 Mr. Masuda officially closed the IPACG/43 meeting.

Ms. Coleen Hawrysko
Co-chair for FAA

Mr. Toshiyuki Masuda
Co-chair for JCAB