

PARC Face-to-Face Summary

August 8-9, 2007

Aug. 8th

The meeting began with a welcome to the PARC from Boeing. Administrative details for the meeting were discussed, and introductions were made.

ERAM

Arrighi

Expected Results: Status of ERAM and the potential impact on procedure implementation in the NAS.

The briefings opened with an update on the transition to En Route Automation Modernization, ERAM, by Jim Arrighi. The ERAM program, with a goal of seamless ICAO compliance, started NAS equipment replacement in March 2006 and achieved considerable progress in the past few weeks. The NAS HOST system allows for preferential routing based on suffixes using the Equipment Restricted Route (ERR) processing. After the switch, ERAM will equip the HOST system with Route ICAO Equipment Eligibility (RIEE) which utilizes ICAO equipment identifiers. Unfortunately, some NAS suffixes do not have an equivalent ICAO code. Since ICAO format will become primary once the HOST system is switched, the system is automatically international air carrier compliant but some NAS operators could be adversely affected. A discussion developed on the effect of incompatible NAS flight plan data. This will mostly impact operators who file Slant E or Slant J suffixes, many of which are Top 10 users. The incorporation of suffixes is an issue to be resolved between ICAO and the NAS and some possible solutions have been identified.

The plan is to change HOST to ICAO processing on June 5, 2008 and resolve issues prior to ERAM IOC in October. This may begin to show up in the AIM after the first of next year. Jim stated that the FAA was looking for input from the PARC on the program, and invited PARC Members to participate in the group's weekly meetings. PARC Members interested in participating in the meetings and providing input on the program should contact Jim Arrighi.

OEP Update

McGraw

Expected Results: OEP update.

Next on the Agenda was an update on the OEP program presented by John McGraw. Version 1 of the OEP has been published and copies were distributed to the PARC Members. All future Roadmaps will be rolled into the OEP. A question was raised regarding where the elements of the Performance Based Navigation Roadmap were in the OEP. Jeff Williams stated that at the next F2F meeting the OEP update brief would present a map of where the PBN Roadmap elements are located in the OEP. All elements of the PBN Roadmap are planned to be included in the OEP. This will be added to the PARC action items.

OTA**Williams**

Expected Results: Update to the PARC on Third Party OTA action.

Jeff Williams provided an update on the FAA's Third Party Procedure Development program. The issue of third party procedures developed for other countries was discussed. The FAA will treat third party developed procedures the same way they treat other procedures in foreign countries today. Quito, Ecuador was highlighted as an example. The FAA has no formal oversight over foreign procedures. If there is a problem with a procedure in a foreign country, the FAA can only step in at the request of that government. The FAA can provide their knowledge and experience with procedure development, and will also maintain a list of US approved third party procedure developers that foreign countries can reference. The upcoming Performance Based Navigation seminars that the FAA will be conducting in foreign countries were stated to cover third party issues in great detail.

SRMD Track-to-track Panel**Williams**

Expected Results: Update to the PARC on the Panel's preliminary work.

Jeff Williams continued briefing the PARC, moving on to the Safety Risk Management process and Area Navigation (RNAV) Track-to-Track Separation Standards. First, the SRM process requirements and the Safety Risk Management Document (SRMD) were introduced and explained. Then SRM was presented using the SRMD for Track-to-Track Separation Standards as an example. The Track-to-Track Separation Standard is the first effort to move through the SRM process. The process is intentionally thorough to ensure that opportunities for risk mitigation are available. An update on the initial outcome is expected by the November F2F meeting. More detail on the approach to determine and analyze risk was requested for the November update. This will be added to the PARC action items.

GP/IRU**Alexander**

Expected Results: Discussion on having inertial capability to support RNP and RNAV in the NAS for low end users.

Frank Alexander presented a Discussion Paper on low cost Inertial Reference Units. The paper came about over concern that there is not a backup system for a pure GPS structure, and recommended that high performance inertial sensors which are low cost be developed. The question is whether an aircraft could experience a large scale GPS outage and still safely land. There was concern among PARC Members that the recommendation was a mix between high performance and low cost units, but Frank felt that it was important to keep them tied together. Since they are theoretical limits, it was recommended that the 2nm/hr and 8nm/hr drift rates be analyzed to determine their accuracy as the minimum performance value. Real data would have to be gathered to determine true performance, and operational issues would have to be resolved before increased performance could be utilized. Dave Nakamura requested that the issues be

broken down and prioritized. Frank Alexander agreed to work offline with Bruce DeCleene to revise the paper. This will be added to the PARC action items.

Approach lighting requirements for CAT III approaches Alexander

Expected Results: PARC discussion of issues.

Frank Alexander then presented a second Discussion Paper on approach lighting requirements for Cat III approaches. His recommendation was that the requirement for approach light systems be removed for Cat IIIb and c operations. Ted Demosthenes, Jerry Davis, and Brian Will were among those who agreed to provide input to Frank. No other action was required by the PARC at this time.

Operational implications of RNP procedure production Rivas

Expected Results: Informational briefing and discussion of future PARC position paper.

Pedro Rivas presented a briefing on the operational implications of RNP procedure production. The concern is that rather than producing a certain number of RNP procedures, the focus should be on adding operational value to the specific sites chosen. By only producing procedures that improve opportunities for the user, crucial time and resources of AVN are safeguarded. Plus, the number of charts that Jeppesen has to print and that pilots have to carry will be minimized. Through careful selection, all could achieve the greatest benefit from RNP procedures produced in the future. The response from the FAA was that there are many ways to determine the benefit of a new RNP procedure, and all of them must be taken into account. The FAA also stated they are very open to suggestions on the best locations to develop new RNP procedures. It was mentioned that inputs have already been received, e.g. NBAA. Dave pointed out that the Benefits Implementation activity was being restarted to address the recommendations, benefits and priorities for follow-on and future application. The Benefits Interaction activity will be added to PARC agendas and action items.

Document Strategy Working Group

Nakamura

Expected Results: PARC discussion on starting activity.

The All Weather Operations Document Strategy Working Group draft ToRs were presented for PARC review. The WG plan is to respond to the need for a high level strategy in government and industry for documents pertaining to performance based navigation. As documents multiply there will be a need to prevent both conflicting and redundant information. Coordination with JPDO will be necessary. The ToRs will be uploaded to the PARC KSN site for further review and a discussion of the ToRs will be added to the Agenda for the next PARC telecon. There was a concern that the "All Weather Operations Document Strategy" title was not all-inclusive enough, and it needed to express that the group consider a superset of both All Weather Ops and Performance Based Navigation documents. Jerry Davis will begin working on a strawman for the Group. It is expected that a draft will be ready prior to the next meeting. This will be added to PARC action items.

Performance Based Nav Database**Cox**

Expected Results: PARC discussion on future database usage.

John Cox provided the PARC with an update on the Performance Based Navigation Database. Concerns expressed by the PARC at the May F2F had been mostly addressed, yet there was still some concern that the database is attempting to supersede the current process that is working definitions. The PARC was again assured that this is not the intent of the database. The database is still evolving, with new terms being added and hyperlinks being incorporated. John Cox requested that PARC Members begin using the database and provide feedback on its usefulness. The PARC requested a universal login that all PARC Members could use to access the database. John Cox stated he would look into the possibility of providing a single login for all PARC Members. The PARC formally agreed that the database will be treated as an available reference tool. It was noted that usage is voluntary, and does not constitute an endorsement of the database. This completes this item, no future discussions are planned at this time.

Vertical Flight Working Group**Hickok**

Expected Results: Status of .42B.

Steve Hickok briefed the PARC on the Vertical Flight WG activity on FAA draft Order 8260.42B. Their work is nearly completed, with only two critical and one substantial issue left to address. There was concern from the WG that the publication of .42B would be held up while the FAA updated other Orders, but the FAA stated this was not the plan. This will be confirmed at the next PARC telecon. The WG also wondered if .42B would have to go out for comment again after the changes they had coordinated with the FAA had been put in place, but the FAA stated that the Order would not have to go back out for comment. No further WG or PARC action is planned at this time.

Viability of RF legs for non-SAAAR RNAV (RNP)**Roberts**

Expected Results: Restate to the FAA the previous PARC recommendation that RF legs be permitted in all approach segments of Basic and Advanced RNP/RNAV IAPs.

The final briefing of the first day was The Viability of RF Legs for Non-SAAAR RNAV (Basic/Advanced) RNP, presented by Wally Roberts of NBAA. There was general agreement among the group that RF legs were desired because they increase flexibility and allow approaches where they could not previously exist. The question to be answered is how to handle them operationally in regards to regulation of aircraft and aircrews. The FAA stated that they would continue to work with the PARC to figure out how to progress from here on RF legs. One of the key aspects of the follow on work is the definition of what is basic and what is advanced. The RF, basic and advanced guidance and definitions will be an action that will be addressed through the Basic RNP WG led by Roger Burns, and will be added to the PARC action items.

Aug. 9th

PARC Strategic Planning

Williams

Expected Results: New Issues for PARC Action.

Jeff Williams started off the second day of the meeting with a briefing on Strategic Planning Considerations. The transition to RNP highlights the challenges of aligning our system with ICAO and balancing today's equipment with future capabilities. Basic versus advanced RNP Operations and RF legs were discussed. The need to consolidate existing policy and planned policy into a common document strategy was discussed, and the PARC was solicited for input on Trajectory Based Operations (TBO). TBO is the genesis of free flight. Today we fly in a structure, track to track. TBO would be the next step. Specifically, the FAA requested PARC input on determining the path definition requirements for TBO. It was mentioned that the JPDO is working on TBO, but that the work was not very far along and that we would require faster progress.

RAIM Prediction Tool

DeCleene

Expected Results: Information to the PARC and request for input.

Bruce DeCleene briefed the PARC on GPS Receiver Autonomous Integrity Monitoring (RAIM). RAIM is required for GPS navigation and RAIM availability depends on operation and constellation geometry. The FAA is seeking input on what information is wanted by dispatchers and operators so that they can make the RAIM prediction tool as useful as possible. Lou Volchansky was tasked with drafting the ToRs for a PARC Action Team to discuss issues. This will be added to the PARC action items.

Flight Deck Automation Working Group

Abbott

Expected Results: PARC discussion of issues, work tasks, current views and planned actions, and key activities. Discuss schedule for completion of deliverables.

The Flight Deck Automation WG update was provided by Kathy Abbott. An overview of the process, data source selection, philosophy behind data gathering, and key findings were presented. She answered numerous questions regarding the categorization of data and the analysis procedures of the WG. The WG plans on releasing their initial report this September to both the PARC and CAST. This will be added to the PARC action items.

Human Factors Working Group

Abbott

Expected Results: PARC discussion of issues, work tasks, current views and planned actions, and key activities. Discuss schedule for completion of deliverables.

The update on the Human Factors WG was very brief. Kathy Abbott stated that the Group has been inactive, but they are beginning to organize themselves to restart their activities. A detailed Work Plan will be developed at the upcoming WG meeting to be held in Denver. They plan to include the Air Traffic Controller's input in the group. They are still deciding on a new name for the Group to more accurately reflect the work

being done to incorporate their focus on pilot-controller systems and procedures integration.

RNAV Substitution

Buergel

Expected Results: Ensure that RNAV Substitution not be linked to AC 90-100A.

Rick Buergel presented a briefing on RNAV Substitution Issues with recommendations from NetJets. The briefing highlighted confusion in terminology of RNAV substitution with regards to GPS and the definition of “alternate means”. The need for operators to have clarification and simpler terms was stressed. It was stated that these issues need to be submitted to Frank Alexander’s AC90-100A Action Team for discussion. Rick provided numerous backup slides to his presentation highlighting conflicting guidance, background information, and recommendations. The backup slides were not presented at the meeting, but are available in the briefing uploaded to the PARC Members KSN site. The AC90-100A action item task will be added as a part of the PARC Action items.

AC 90-100A

Alexander

Expected Results: Update on issues with the release of the AC.

The Action Team held a meeting the previous week to work issues, and expect to hold a few more future meetings before being able to provide recommendations at the November F2F. They would like to set a deadline for vendors without Type 2 LOAs to present a plan for compliance or declare their inability to comply. Lou Volchansky will be working with vendors to reach a solution. This will be added to PARC action items.

Navigation Evolution Customer Council

Alexander

Expected Results: Information provided to the PARC.

Frank Alexander provided an informational briefing to the PARC on the Navigation Evolution Customer Council (NECC). The key objective of the group is to balance the financial goal of phasing out ground based navigational aids while ensuring availability of essential navigation services. He provided information on issues the group have with the Navigation Evolution Roadmap and stated that their initial report on the Roadmap will be completed in time for their public meeting to be held on Sept. 11th.

RNP SAAAR Update Action Team

Rivas

Expected Results: AT schedule and review of AT issues.

The RNP SAAAR Update Action Team briefing was presented by Pedro Rivas on behalf of Mike Cramer, who was unable to attend. The AT is currently revising and discussing FAA Order 8260.52 and AC 90-101 but they have been unable to conduct many meetings due to unavailability of members. The briefing sparked a few discussions. The question of why LNAV/VNAV minimums are higher in some cases was posed. The answer dealt with the specific accuracy codes and obstacle criteria involved in those types of approaches. Another discussion recommended navigational chart and approach plate changes to encourage clarity. Finally, PARC members discussed suggested training and

evaluation criteria for the RNP SAAAR program. The AT has provided their work plan and working papers on the KSN website. It was noted that the items discussed were still a work in progress. More discussion and review is expected before final recommendations will be forward to PARC. This AT activity will be retained on the PARC action items.

Draft Order 8260.54a

Webb

Expected Results: PARC discussion of Order and accompanying documents.

Mike Webb provided an update on the status of draft Order 8260.54a. No briefing slides were presented. The internal FAA and external industry coordination is complete, and the FAA is working on consolidating and processing the comments received. A response is planned to be ready in 2-3 weeks. Pedro Rivas asked who provided comments on the Order, and Mike Webb stated that he would get that information and provide it to Pedro. It was stated that the Order would not contain a definition of Advanced RNP as it is still only a concept at this time and does not have navigation specifications, yet.

New Business/Future Meetings

Nakamura

The Meeting concluded with a discussion of New Business. These items will be added to the PARC action items list.

- Roger Burns will be contacted in regards to his RNP WG beginning discussions on Basic and Advanced RNP issues.
- Jerry Davis will decide whether the Document Strategy WG will be a new separate Group or if it will be placed under his existing Critical Decisions WG.
- Steve Albers will create any new KSN sites required.
- Dave Nakamura will coordinate with JPDO on TBO issues while Jeff Williams and Roger Wall will coordinate with RTCA. TBO discussions will be added to future PARC telecon Agendas.
- Mike Cramer will be contacted for a copy of the Mitre report on FMS Vertical Differences that was planned for completion on July 31st.
- It still needs to be determined whether or not it is desirable to hold another PARC Public Meeting.
- The November PARC F2F meeting will be held in the Washington, DC area. Steve Albers has secured a meeting site.
- A date of March 12-13 was proposed for a PARC F2F meeting, location TBD.