

PARC Member F2F Summary
October 18-19, 2006
Orlando, FL

18 OCT 2006

The Meeting began with introductions and a review of the Agenda for both days. Representatives from NetJets were welcomed as new PARC Members.

RNP Criteria Working Group Briefing - BURNS

The RNP Criteria Working Group update was provided by Roger Burns. Final comments from the PARC were received and Roger was tasked with drafting a letter with the WG recommendations for the PARC by Nov. 10th. Once the PARC receives the letter from Roger Burns the recommendations will be sent forward to the FAA.

ACTION ITEM: Roger burns will draft a letter from the PARC by NOV 10th to be forwarded by Dave Nakamura to the FAA

RNP SAAAR Benefits Interaction AT-CRAMER

The Basic RNP and RNP SAAAR Benefits Interaction Action Team ToRs were provided for PARC review and comment. Mike Cramer explained that this is a new action team and that its main focus was the potential for adverse interaction between Basic and RNP SAAAR operations in close proximity. Questions came up regarding the team being properly bound and if so to make sure that the two operations do not conflict. The PARC will move forward on the action. The team was requested to come up with its final ToR's by the week of Oct 22 PARC was requested to submit comments on the ToRs to Mike Cramer by Friday, October 27. The ToR's will be discussed at the next week's telecom.

ACTION ITEM: The action team is requested to come up with final ToR's by the week of OCT 22.

* The Meeting then adjourned until after lunch so that the PARC Members could attend the *NBAA/FAA/GAMA Update on Implementation of RNP/RNAV/SAAAR for Business Jets*, which was moderated by Jeff Williams.

FASDAWG Update- DEMOSTHENES

When the meeting reconvened, Ted Demosthenes provided an update on the FASDAWG activities and recommendations. He briefed the PARC on the W/G completed recommendations and explained that about 20% of the work would require further study through various other working groups. After a review of the FASDAWG critical decisions and issues, Ted was tasked with drafting the FASDAWG final recommendations and remaining work by Oct. 25th. The recommendations are posted on the KSN site for review. The current recommendations will be submitted to the FAA and the remaining issues will be discussed on future telcons.

ACTION ITEM: Draft final recommendations to be forwarded to the FAA by OCT 25.

ACTION ITEM: Follow up on remaining FASDAWG actions not covered by the current list of recommendations.

ADS-B Briefing- CAPPEZUTO/SPEIR

Both the FAA and Industry overviews of the ADS-B program were provided next by the program co-chairs. Vincent Capezuto provided the FAA overview and Ken Speir continued on with the industry perspective. A lot of the discussion centered on the benefits of ADS-B in the future NAS. Many questions came up regarding the cost feasibility of the new system and Vinnie Capezuto pointed out that many detailed cost benefit studies had been performed on the issue which backed up the case for the new systems feasibility. An interim report will be made available in November on ADS-B. Ken Speir took an Action to provide an ADS-B White Paper to the PARC for their review.

Third Party Procedure Development- MCGRAW/WILLIAMS

John McGraw and Jeff Williams provided an update on the FAA's Third Party Procedure Development program. Feedback from PARC members was received indicating that the FAA was not moving fast enough on the issue and that Industry wanted more control over Third Party Procedure Development (TPPD). John McGraw explained that plans were in place for a three phase roll-out of Third Party Development; one that would meet legal compliance issues through an "Other Transaction Agreement." John and Jeff explained that this method would provide the swiftest process and was in legal compliance for the process to commence and that PARC participation was welcomed. The FAA requested an immediate recommendation from the PARC that would indicate where the PARC felt gaps in service were and where funding would come from. A need exists for input from the PARC on how a parallel course of action will be undertaken with the FAA. An Action Team was requested to be formed with a two week turnaround for the recommendations so that the existing FAA schedule can remain on track. John and Jeff iterated that if too many new considerations are requested the existing schedule for the implementation of third party procedure development would have to be pushed back.

A summary of the presentation is listed below:

3rd Party Procedures Development

- Established internal FAA working group
- Co-Leads
- Jeff Williams (Air Traffic Organization)
- John McGraw (Aviation Safety, Flight Standards)
- Working to develop legal framework to allow third parties the ability to design, flight check, and implement RNP approach procedures
- Establishing an Other Transaction Agreement (OTA)
- Estimate initial capability in place by Spring 2007

Other Transaction Authority

- The FAA's "other transaction agreement" (OTA) is the best vehicle for third party procedure development

- OTA is an enforceable agreement, which means that we can identify qualified vendors, engage them under written agreements that specify their procedures and activities, and FAA reserves the right to terminate
- OTA is appropriate when the FAA receives a direct or tangible benefit from the arrangement (e.g. accelerating procedure development)
- The FAA would oversee vendor performance in a manner similar to how we currently oversee contractual arrangements
- FAA currently has the statutory authority to enter into these agreements
 - Implementing the agreements is faster than creating a regulatory scheme
 - The agreements are flexible in that the FAA can be very specific as to the terms of the agreements
 - The FAA can define the circumstances under which they are terminated and can negotiate modifications if and when changes to the program are needed
- The OTA solution would permit us to move expeditiously ahead with an end-to-end (full life cycle) solution
- The implementation strategy for granting approvals to 3rd party developers is proposed in three phases

Implementation in Three Phases

Phase 1

- Empower 3rd party to develop the procedure and submit to the FAA for quality assurance, flight inspection, and publication (FY2007)

Phase 2

- Permit the 3rd party to perform quality assurance and flight inspection functions and submit to FAA for publication (timing TBD)

Phase 3

- Includes approving the 3rd party to perform all functions; development, quality assurance, flight inspection, and maintenance of procedures (except NOTAM and publication services)

Why Limit 3rd Party Development to RNP Procedures?

- Industry initially targeted RNP procedures
- RNP does not require ground infrastructure investments (e.g., DME, ILS, etc)
 - Other procedures (including RNAV) might require additional costs for ground equipment (moving DME's, etc.)
- Enables FAA/Industry to evaluate 3rd Party process before expanding to other procedure development capabilities

New FAA Flight Plan Goal

- Provide third parties the ability to design, flight check, and implement RNP approach procedures

Proposed Schedule

- Initial draft OTA requirements by October 31, 2006
- Requirements review with potential experienced vendors, November 2006
- Finalize the OTA, December 2006
- Complete legal review and award, February 2007
- Begin vendor qualification with identified vendors, March 2007
 - Schedule driven by vendor capability to meet OTA requirements
 - Initially limit participation to two experienced vendors to solidify third party process
 - Plan to extend participation to additional vendors by March 2008

ACTION ITEM: Action Team will draft a list of items detailing a parallel course of action with the FAA on Third Party Procedure Development within two weeks.

Critical Decisions Working Group- MCGRAW

The recommendations of the Critical Decisions Working Group were presented by John McGraw. Final feedback on the recommendations was given by the PARC, which will be forwarded to an incorporated by Jerry Davis. AOPA has some as yet unresolved issues with the recommendations, as does Boeing. The recommendations will move forward. For future CDWG work the group membership will be examined to ensure proper representation to work PARC issues.

ACTION ITEM: Working Group will finalize recommendations and forward to the FAA.

Air Traffic Aviation Safety Oversight Group- DULA

The first day concluded with a briefing from Peter Dula on the Air Traffic Aviation Safety Oversight Group. The group organization and current activities were briefed.

ICAO Requirement November 1, 2001

- Required member States to establish and implement formal safety management procedures for ATC services by Nov. 2003
- Required independent oversight of ATC service provider
- 188 Member States began the process of transitioning to safety system

FAA Safety Oversight Organization

- Air Traffic Safety Oversight Service, AOV
- Under Associate Administrator for Aviation Safety, AVS
- AOV is the “regulator” overseeing ATO, the “service provider”
- AOV has authority for safety issues involving ATC services within FAA
- ATO responsible for system safety

Organizational Relationship: AOV & ATO

- Collaborative but “arms length”
- AOV can issue safety directives and stop a procedure if safety issue is involved

- AOV operates much the same way as AFS oversees airlines

Current Activity

- FAA Order 1100.161 signed by FAA Administrator in March, 2005 to formally establish AOV
- FAA Order 8000.86 signed by FAA Administrator in June, 2005 to formally establish AOV's Compliance Process
- Finalized SMS Requirements
- Approved SMS version 1.1 Sep '05
- Developed an air traffic credentialing program IAW FAA Order 8000.90
- Bi-weekly safety committee meetings
- Monthly meetings with VPs
- Ad hoc program briefings
- Review of safety risk management analysis for selected programs

Summary

- ATO
 - A performance based provider of air traffic services
 - Responsible for primary safety quality assurance
- AOV
 - Independent (under AVS) safety oversight
 - “Regulator”
 - Issue requirements / verify compliance
 - Approve / accept changes to the NAS and safety standards
 - Review safety risk management analysis for selected programs

The briefing concluded with a short Q & A.

19 OCT 2006

JPDO/NGATS - BRADFORD

Steve Bradford kicked off day two of the meeting with an update to the PARC on JPDO/NGATS activities. The PARC requested that the JPDO remain involved in PARC meetings and activities to ensure future interaction and proper coordination between the groups.

RNP Program Office and ICAO RNP SORG - WILLIAMS

An update on RNP Program Office activities and the ICAO RNP SORG was given by Jeff Williams. The overview included an update on the Roadmap for Performance Based Navigation, RNAV/ RNP Accomplishments and Plans, International Harmonization Efforts and Ongoing Challenges. A detailed briefing is included on the KSN website for viewing.

RTCA/ATMAC - SPEIR

A briefing was given that the Airspace Working Groups are currently looking at the following airports;

- NY
- West Coast
- Alaska
- FLL / MIA effort
- NY EIS
- MACE
- OAK Center
- ABQ Center
- An Anchorage Center reorganization is in the works; FAA NAV Evolution Roadmap under review; OEP Review; ATMAC tasked to review by FAA

The next R&P Committee scheduled for 14 November at RTCA and the next ATMAC meeting 22 February at FAA. It was re-iterated that the ATMAC stay in close contact with the PARC.

AC 90-100 Action Team - ALEXANDER

Frank Alexander reviewed the Boeing comments on AC 90-100, and further comments were received. It was recommended that the AC be adopted, with the understanding that AOPA has some unresolved issues at a level above the AC regarding how it will be interpreted. Frank Alexander was tasked to coordinate with Randy Kenagy to resolve the AOPA issues as a parallel activity with the AC being prepared for forwarding to the FAA.

ACTION ITEM: Send letter to FAA adopting AC 90-100.

ACTION ITEM: Coordinate with Randy Kanagy at the AOPA to work issues regarding the AC in parallel.

FMS Standards Action Team - ALEXANDER

An update on the FMS Standards Action Team was provided by Frank Alexander.

Dual purpose

- Identify issues affecting existing FMCs that are having an adverse impact on U.S. RNAV terminal procedures
 - No effort to fix current issues, just make community aware of them
- Develop a set of standards for future FMCs that will be compatible with activities of JPDO NGATS and SESAR future airspace systems
 - Standards will be required on all FMCs built after 20XX
 - Does not restrict additional capabilities; just insures that required set are available on all FMCs and they all do them the same way
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Issues for current FMCs

- Lack of standardized turn performance when transitioning between two straight legs
- Lack of a standard means by which to apply initial segments of RNAV Departure Procedures
- A disconnect between procedure design criteria on initial segments of RNAV departure procedures and the capabilities of current Flight Management Systems
- Lack of Radius-to-a-Fix (RF) leg in a larger % of the RNAV population
- Route Type 3 STAR segments
- Variability between FMCs with regard to transitions to different phases of flight

Future FMC capabilities

- Common trigger points for phase of flight
- Turn performance
- Fly-by path construction
- Account for acceleration during climbing turns
- Speed constraints
- Sequencing constraints (speed & altitude)
- VNAV performance
 - Criteria for earth centered VNAV (?)
- Time of arrival control
- Availability of Intent (with and without vertical)
- Dynamic re-routing
- Offsets
- Wind information and propagation

- RNP implementation for VLJ & UAS
- Flight plan assembly
- Consistent application of speed constraints with & w/o an altitude
- Treat AT, AT or Above and AT or Below the same way

OTHER CONSIDERATIONS

- Incorrect runway selection alerting
- Vector on to an RF leg

FOLLOW ON ACTIVITIES

- Brief NGATS and SESAR to determine compatibility
- Refine the list
- Get industry (OEM, Vendor) consensus
- Determine best means to accomplish

RNP Parallel Approach Transition RPAT - PORTER

Don Porter briefed the PARC on RNP Parallel Approach Transition (RPAT) activities. The RPAT Concept document was provided for review. The intent of the program was stated to be to move forward at selected sites and measure the benefit gained there, while considering all inputs.

ACTION ITEM: Move forward with the concept and testing at selected sites.

Flight Deck Automation Working Group - RAILSBACK

Paul Railsback provided an update on the Flight Deck Automation Working Group.

Joint PARC/CAST Working Group

- Update the 1996 FAA HF Team Report on modern aircraft
- Review operational use of, and training for, onboard systems for flight path management
- If appropriate, develop an automation management training aid
- Potentially, revise appropriate FAA Advisory Circulars or create a new AC on automation training and procedures for automation management

Tasks

- Analyze incident/accident data from past 10 years (where we are and what has changed?)
- Identify training/qualification requirements
- Develop training aid
- Develop recommended guidelines for operational use, policy, philosophy, procedures, etc.

Membership

- Co-chaired by Air Transport Association, Air Line Pilots Association and Federal Aviation Administration

- Regional Airline Association
- Manufacturers (Boeing, Airbus, Bombardier, Embraer, Honeywell,)
- Delta Air Lines
- Skyway Airlines
- Human Factors researchers
- FAA Aircraft Certification and Flight Standards

First Phase – Data Analysis

- Accidents
- Incidents
- FOQA, LOSA, ASAP, other
- Current practices for training and operational use of autopilot, FMS, flight director
- Automation design and operational philosophies
- Instructor feedback
- Assumptions about future operations

Subgroups

- Subgroup A (Sam Miller/Dave McKenney) prototype of the analysis
- Subgroup B (Mike New) analysis using categorization scheme (~1500 events)
- Futures subgroup (Mark Steinbicker) identify assumptions about future operations
- Process subgroup (Beth Lyall) – process for analyzing multiple dissimilar data sources

Changes in Last 10 Years (examples)

- Reduction of technical engineering/pilots within operator organizations
- Change in role of general aviation in driving changes to technology
- OEMs are outsourcing specifications, not just fulfillment of specifications
- Requirements for coordination and management of vendors have increased
- Expertise in some areas (HF and other) in vendors/suppliers less than in OEMs
- Financial health of industry has declined – may have been accelerated by Sept 11
- Air traffic system is more saturated
- ATS method of managing aircraft has not changed substantially
- Pace and tempo of change has increased

Upcoming Meetings

- Nov 28 - Dec 2, 2006 Houston & Austin, TX (Continental Airlines and LOSA Collaborative)
- January 23-25, 2007 Phoenix, AZ (Honeywell)
- March 13-15, 2007 Toulouse, FR
- May 8-10, 2007
- July 10-12, 2007
- September 11-13, 2007
- November 13-15, 2007

Vertical Flight Working Group - HICKOK

Steve Hickok provided an update on the Vertical Flight Working Group. He requested feedback on the possibility of working SAAAR solutions in addition to the work the Group was already doing. It was recommended that the Group work on SAAAR solutions only if the Group could still keep its original schedule. Steve Hickok was tasked with providing a response to the FAA's question regarding whether the review of .42B could be done in six weeks. A schedule for completion of the review and the requirements was requested from Steve by Friday, Oct. 27th.

PARC VFWG 8260.42B Action Team Progress

- FAA Order 8260.42B provided in Sep '06 is essentially a new order v. revision of the order released for public comment in Feb '04.
- FAA Order 8260.42B introduces additional sections and new criteria and changes that modify existing criteria, and additional changes compared to previous versions of the order.
- FAA requested the PARC VFWG to submit its recommendations within 6 weeks (by Nov 4). This is an unrealistic request.

ACTION ITEM: Send letter to FAA requesting an extension to the timeline needed for the group to complete its work. (This has been followed up on a subsequent telcon)

Human Factors Working Group - PRUCHNICKI

The new co-chair of the Human Factors Working Group, Shawn Pruchnicki, provided an update on the Group activities. It was recommended that the HFWG coordinate their activities with the FMS Standards AT.

Two specific items to brief:

- Closer examination of loss of flight path adherence problems in RNAV operations.
- Joining a RNP approach between waypoints.

RNAV & loss of flight path adherence

- Not only a ATL & DFW problem
- Expected to continue
- Requires closer examination before further mitigation strategies can be developed.

Not only a ATL & DFW problem

- Deviations from path seen at numerous facilities.
- Expected to continue as these operations are implemented throughout the NAS.
- Mitigation strategies may be facility specific.

What's needed?

- The closer examination of the specific factors related to the loss of flight path adherence in RNAV operations is an important step in arriving at a better understanding of why these events continue to occur in the NAS.

Steps for closer examination

- Understanding of design and functionality of these operations
- Programming of FMC/FMS and specific issues
- Differences between these systems
- Event specific details

Conclusion

- Without a methodical approach and closer analysis of the details related to these specific events by persons with operational and subject matter expertise, the development of effective mitigation strategies will be extremely difficult.

Joining a RNP approach between waypoints

- Brought to the HFWG by ALPA
- The issue: Work load concerns and correct RNP value?

Workload

- This is not like intercepting a localizer
 - The FMC steps required to join between waypoints are workload intensive
 - Programming errors
 - May occur at a time when many other events are being handled by the crew.
 - Aircraft configuration
 - Communication
 - Checklists

Correct RNP value?

- Intercepting the approach between waypoints on some FMS/FMC will cause the RNP alerting to be incorrect for that segment.

Communications Working Group - NAKAMURA

Dave Nakamura provided an update on the Communications Working Group. The group recommends that the formation of a Performance-Based Communications Program Office be a top priority of the FAA. The briefing included the following topics:

Performance-Based Communications Program Office

Roadmap for Performance-Based Communications

- Operational capabilities, benefits, & implementation considerations, including
 - Enabling criteria – Rules and guidance material
 - Harmonization initiatives – Standards
- Intended to be used to
 - Build consensus among aviation stakeholders
 - Assess cost, benefit, and investment
 - Measure success of implementation programs

Recommendations (1 of 2)

- Data link strategy – expedite, continue voice, and establish target dates for implementation
- Use performance-based communications approach
- Priority 1 for near term operational capabilities
 - Tailored arrival procedure (TAP) at SFO, LAX, JFK, and ANC
 - Terminal Area – PDC and D-ATIS
 - Oceanic – improved communications leading to reduced separations, user-preferred trajectories (UPRs), reroutes, dispatch relief of HF voice, increased airspace capacity
- High priority for mid term → domestic ATC data link
 - Globally seamless operations (Oceanic, Europe)
 - Accommodate data link-capable aircraft, including a significant fleet of FANS 1/A aircraft, that will exist at the time of implementation

Recommendations (2 of 2)

- Highest priority – Establish Performance-Based Communications Program Office
 - Coordinate, oversee, and ensure timely implementation
 - By end of 2007, implement performance-based communications approach for near term implementation initiatives
 - By mid 2008, Define migration path and implementation strategy

Status

- Industry Coordination Draft (Final Draft, 25-Jul-06) is available
- PARC (Dave Nakamura) submitted to FAA (Nick Sabatini) on July 31, 2006
- FY-07 Business Plan objectives
 - (AIR/AVS Core)

Next Steps

- Respond - FAA to publish Roadmap for Data Link by Dec 2006
 - Gain industry confidence; signify FAA Commitment
 - Enable effective coordination (inside and out)
 - Tie to FAA ATO Implementation Programs (airport, en route, terminal & oceanic)
 - Tie to enabling criteria - FAA AVS rulemaking, guidance material, etc
 - Tie to harmonization initiatives - ICAO, RTCA, EUROCAE, etc

- Execute the recommendations
- PARC to complete an industry-coordinated Roadmap for Performance Based Communications by September 2007
 - Subsume the Roadmap for Data Link
 - Develop scenarios for operational use of RCP
 - Voice and Data communications to increase capacity
 - Oceanic and domestic (en route, terminal area, airport)
 - Operating in airspace with a basic level of service and, for eligible operators, with higher levels of service
 - Some existing communication capabilities and performance are suitable only for basic level of service
 - Monitoring and alerting, based on RCP type
- Identify points of contacts for “Lead” operators and other aviation stakeholders for PARC CWG Core Group
 - Recruit Core Group - Early (Jan/Feb) 2007
 - Have them commit to support CWG and attend meetings
 - Airlines, Manufacturers, Vendors, FAA
- By the end of November 2007
 - Get comments back from AVS Internal Review of the CWG Roadmap
 - Respond to comments
 - Coordinated by CWG Chairs
 - Proceed to coordinate with ATO Organization
 - Provide an interim response to PARC
 - Plan the next meeting
 - Include newly recruited stakeholders
 - CWG Chairs to meet in November

ACTION ITEM: Request to FAA that a Performance-Based Communications Program Office be formed immediately.

Roadmap Milestones and Commitments – SHAHIDI

Hassan Shahidi provided a briefing on New Roadmap Milestones and Commitments:

By End of 2010:

- At least 25 RNP, 300 LPV per year
- 23 Q Routes
- T routes and Lower MEAs
- RNP & reduced separation in Oceanic domain
- Criteria for “Basic” RNP
- Criteria for RNP-1 SIDs & STARs
- By 2008, issue Rulemaking for RNAV & RNP mandates
- Policy for delegation of authority for procedure development
- Policy for cancellation of conventional procedures
- Concept development for 3D, CDAs and time of arrival control

By End of 2015

- RNAV SIDs & STARs at OEP airports
- RNAV-2 at FL180 & above
- RNP-2 at FL290 & above
- Improved sequencing for arrival and departures
- Controller tools for complex merges in terminal airspace
- At least 50 RNP & 300 LPV approaches per year
- Cancellation of conventional procedures
- New separation standards
- Additional rulemaking for mandates in the Long Term

Summary

- Framework has been developed in Microsoft Project
 - Drill down on several commitments completed as prototypes
 - Tool now available for PARC/FAA use
- Additional recommendations coming from CDWG/PARC
- Question: How should progress on *Roadmap* commitments and dependencies be managed and monitored

*** Conclusion of the meeting**