Research, Engineering and Development Advisory Committee
Federal Aviation Administration
800 Independence Avenue, SW Washington, DC
March 5, 2008

Meeting Minutes

On Wednesday, March 5, 2008, the Federal Aviation Administration (FAA), Research, Engineering and Development Advisory Committee (REDAC), held a meeting in the Round Room, at 800 Independence Avenue, S.W., in Washington, DC. Attachments 1and 2 provide the meeting agenda and attendance, respectively.

Welcome and Introductory Remarks

Mr. Barry Scott, REDAC Executive Director read the public meeting notice. He thanked the members for all the work in the past months reviewing the OEP. He asked members to offer suggestions on how we could improve the process. Barry suggested holding a telcon with members to get their input.

Dr. John Hansman, REDAC Chair, welcomed the members and audience participants. He too expressed his appreciation to the subcommittees for their efforts they have put into the OEP review. Recognizing the time constraints to review an enormous amount of information and respond.

Dr. Hansman turned introductions over to Ms. Ruth Leverenz, Acting Deputy Administrator. Ruth welcomed everyone and announced that Barry Scott is official, Director of Research Technology and Development. She commented that Bobby was planning to attend but was preparing for a Hill visit. She expressed her gratitude for the great work and reports presented by the Committee.

Next Gen/JPDO Update – Robert Pearce

Mr. Robert Pearce, Deputy Director of the NextGen JPDO, briefed the members on the JPDO and NextGen.

Mr. Pearce began is briefing stating the briefing represents a point in time.
- Based primarily on the Integrated Work Plan (IWP) 0.2 (including the mapping of R&D plan content).
- IWP will not be "base lined" until fall, after extensive analysis with agencies. Need to resolve alignment between agency plans and the IWP in the 5-year budget window.

He discussed the following:
- NextGen Evolution
- NextGen Vision
- How the IWP is Structured
- Trajectory-Based and Performance-Based Operations

- Major NextGen Strategic R&D Issues
- How do we get there

The Committee discussed the following:

- Unclear on the procedural architecture, understands the role of the JPDO is planning and coordination but there needs to be a clear architecture to pursue what needs to be done and prioritize the work.

- Leadership needs to come from JPDO and the time has come to take a stance.

- Laying out the high-level options would be clearly useful.

- Timeline is out of sync--decisions are being made because of the need to move forward in the programs, trying to figure out how this can help drive this activity in the OEP. Run the risk of losing a lot of flexibility.

- Who's responsible for crosscutting and integration?

- When can we expect to see the top priority critical research needs for NextGen identified from the top-down?

Jaiwon Shin (NASA) stated the JPDO has worked hard to produce key documents and it's a good start. Jai was happy to see progress in working together (agencies) as a team. He commented that prioritization after gap analysis is critical and need to extract what is most important now.

Dr. Hansman liked the NextGen Evolution chart. There's a need to take this massive data and boil it down to a higher-level of extraction.

NextGen Portfolio Management Process (Update) – Barry Scott

Mr. Barry Scott, Director, Research & Technology Development updated the Committee on the NextGen portfolio management process. He reviewed: the Planning and Coordination Functional Organization; the R&D and NextGen funding sources; the total NextGen/R&D funding and the R,E&D Legacy Program Budget. Barry provided a status of the Project Level Agreements (PLAs), so far. PLAs have been or soon will be signed. The NextGen Service Level Agreements (NSLAs) are not being used yet. PLAs are being used for fiscal and programmatic reporting. He stated we are, assessing needs for labs. Contract to assess FAA Labs has been awarded. We are identifying skill sets required to implement NextGen—NAPA Phase one assessment is complete.

Dr. Hansman asked about the skill set requirement to implement for NextGen. Can you tell us what they said? Vicki Cox stated that it did not get as detailed as had hoped it would be. They took a broad view. Second half of report, asked to recommend skills and where to find them.

Dr. Hansman asked that of the 30 projects that you are anticipating are NextGen related, will all new NextGen projects go this process? Mr. Scott replied yes. There's a little more pushback from the service units--it's not adversarial, it's constructive. Vicki Cox commented the real message is that it allows the centralized management of the NextGen budget.

Mr. Scott finished with summarizing the FY 08 lessons learned. The paper portfolio process is labor-intensive and we are evaluating the use of FAA's Corporate Work Plan System.

Subcommittee on Aircraft Safety – Mike Romanowski

The subcommittee identified focus and priority for the FAA Safety R&D:
- NextGen
- Data-based safety issues (of particular concern were CAST, JSC and IHST)
- Improved identification and assessment of emerging safety issues
- Enabling insertion of new technologies into certified civil aviation products and their operations

NOTED: FAA did an excellent job working to address these areas in the 2010 planning.

Key process issues from the subcommittee's review were: lack of NextGen R&D requirements definition; improvements to integrated R&D planning; improved subcommittee visibility to full safety-related program needed; and the top priority programmatic concerns of weather, software and digital systems, and fatigue and lifting related proposals. The most pressing issue is the lack of NexGen R&D requirement definition. The subcommittee believes that increase in the NextGen R&D is necessary--the JPDO has not provided detailed program based NextGen R&D requirements and highlights the need for interagency planning (e.g. FAA to NASA transition).

There was much confusion of what the elements of the weather program are and where it's going.

ACTION: Ken Leonard will give same weather briefing to Safety Subcommittee that he gave to NAS Operations Subcommittee.

RECOMMENDATION: John Hansman would like to revisit weather at the next meeting. Peggy Gilligan suggests getting the right people together to look at it before the next meeting and recommend on how to align the program. Terry Allard recognizes that weather is hugely crosscutting and suggests expanding that conversation with Barry Scott's leadership team.

RECOMMENDATION: John Hansman stated that software systems safety should be higher priority. We should push harder to figure out a strategic move on this. This is an opportunity to collaborate with NASA. This is a national shortfall. Come up with a way to incentivize people to work this problem. Push the NASA/FAA effort—having collaboration, identify real problems and how we could do certification process better.

NAS Operations Subcommittee – Sarah Dalton

The subcommittee's overall comments on the R&D program in the OEP to support NextGen were:

- Facilitating NextGen should be a major focus of the R&D program
- The R&D program elements were not clearly mapped to the NextGen relevance
- NextGen system analysis is not detailed enough for quantitative evaluation of the R&D efforts

Subcommittee identified gaps in Probabilistic TFM, UAS impact on ATM, operational requirements, equipage, and policy.

Overall, subcommittee was pleased with briefings on the budget and human factors research. Pleased with selection of a new Aviation Research Director. Liked the plan of putting all weather in one office and that office having a good understanding of the overall needs.

Dr. Hansman commented: Regarding separation standards for adjacent airports, is that an R&D problem, near term gaps are more policy/procedures rather than technical? How would you incorporate this type effort? Is it R&D? Who's responsible? Peggy Gilligan stated that AVS owns separation standards, but ATO asks for change. However, ATO has not always asked. We are mindful of this now. May not require a change in separation standards but need to talk about deconflicting. We are becoming aware of the need to integrate better. Vicki Cox stated that it would be appropriate to put some appropriate language in the "capabilities" boxes because it applies to everyone. Not just an ATO issue; but an entire issue for the FAA.

ACTION: Agam Sinha said that MITRE is not funded through the R&D program so MITRE work is not shown. He offered to brief the activities at a future meeting.

Dr. Hansman agreed it should be integrated into the next meeting of the NAS Operations Subcommittee.

Subcommittee on Human Factors – Amy Pritchett

In reference to the subcommittee's recommendation, FAA needs to develop a clear road map of NextGen human factor challenges. Dr. Hansman inquired should it be an FAA road map, JPDO, or integrated effort with NASA? Amy Pritchett identified there's a need to have within the agency, as well as cross agency. Dr. Hansman asked who's got the ball on human automation issues? Terry Allard stated that it depends on time frame. Room for both organizations.

ACTION: Need to make related decisions at some point, would like an integrated road map. Amy Pritchett and Terry Allard to meet in the following week to discuss.

Subcommittee on Airports— Ed Gervais

The Airports subcommittee stated the amount of research underway supporting the solution sets is impressive and seems appropriate to achieve NextGen goals. Supportive of research that could lead to better runway utilization by reduced arrival separation, better operations on closely spaced parallel runways and on research in reducing delays from weather. Airport research addresses key areas of airport safety that will be essential to safely handle project increases in air traffic activity. About half of the airport technology research funding is for pavement research. Although it does not directly support NextGen, the research in pavement is essential for improved pavement design and construction that will improve pavement life, reduce construction costs and improve pavement maintenance.

Following questions were discussed.

Has the cost of longer life pavement has been evaluated/compared to the expense of the frequency of putting down pavement?
Have you done the analysis to compare the cost of pavement now to the cost of longer life pavement?
How much capacity do we lose each year due to runway maintenance time?

Mr. Gervais responded that cost is not a direct factor. The money element is not a deliverable to the airport. Airports are sensitive to minimize time that a runway is down, work is done at night. Also, working on overlay and runway roughing techniques.

Dr. Hansman suggested that it would be worth thinking about soliciting ideas of runway/taxiway maintenance.

Subcommittee on Environment & Energy – Steve Alterman

Expressed subcommittee's concern of conflicting research results because of earmarks.

Noise complaints have changed from what was in the past—now comes from people 15-20 miles away. Had never done that research before, so now we need to do that and have asked the FAA to come back to the subcommittee in August.

The subcommittee is excited about commercial alternative fuels.

RECOMMENDATION: Regarding ACRP topic suggestions—Jim White stated the TRB solicits for topics and people from industry and academia, etc.; if the committee has topics to submit, we recommend you do that because it will be decided in July.

Committee Discussion

Dr. Hansman will prepare cover letter with the approved subcommittee recommendations as an attachment.
Letter will include the following.

1. Issue of JPDO requirements flow down.
2. Issue between research and certification approval in flight standards. Needs to be looked at as a system.

Regarding the software integration issue. Peggy Gilligan is asking for help. Dr. Hansman recommended that it needs to move up a notch in terms of an incentive strategy. This is a national policy approach. Suggested Peggy meeting with someone at NSF.

Regarding the JPDO flow down, there are key/critical decisions that need to be made at a certain points. Sarah Dalton questioned if they're doing research before key decisions are made. Identified at least 2 key decisions: Human automation and Airborne vs. ground Research. Concerns of doing research prior to making key decisions could be wasteful.

Dr. Hansman stated that weather products should be developed in the context of the decisions that need to be made.

CLARIFICATION: For future reviews, only review what is related to subcommittees and tweak questions that we ask to respond to.

ACTION: John Hansman asked Barry Scott to come up with format for a 1-pager in the recommendations. Would like to standardize to make it easier to respond.

Dr. Hansman thanked the members and adjourned the meeting.

Attachment 1

Research, Engineering and Development Advisory Committee
800 Independence Avenue, SW – Round Room (10th Floor)
Washington, DC 20591

March 5, 2008

Agenda

9:00 a.m.	Welcome	John Hansman Barry Scott, FAA
9:15 a.m.	Comments	Ruth Leverenz, FAA
9:30 a.m.	Progress - NextGen – JPDO	Bob Pearce, JPDO
10:30 a.m.	Break	
10:45 a.m.	NextGen Portfolio Management Process (Update)	Barry Scott, FAA
11:45 a.m.	Lunch	

Subcommittee Presentations of Recommendations

1:00 p.m.	NAS Operations Subcommittee	Sarah Dalton
1:30 p.m.	Subcommittee on Human Factors	Amy Pritchett
2:00 p.m.	Subcommittee on Airports	Ed Gervais
2:30 p.m.	Break	
2:45 p.m.	Subcommittee on Environment & Energy	Steve Alterman
3:15 p.m.	Subcommittee on Aircraft Safety	Mike Romanowski
3:45 p.m.	Committee Discussion - Recommendations for FY 2010 - Future Activity	John Hansman
4:30 p.m.	Adjourn	

REDAC Attendance – March 5, 2008

Members

John Hansman, Chair	Steve Alterman	Sarah Dalton
Edward Gervais	Michael Romanowski	Jaiwon Shin
Agam Sinha		

Other Attendees

Denise Davis, FAA	Monique Morris, FAA	Victoria Cox, FAA
Gloria Dunderman, FAA	Barry Scott, FAA	Kelli Willshire, FAA
Susan Conry, FAA	Jim White, FAA	Bob Pearce, JPDO
Cathy Bigelow, FAA	Paul Krois, FAA	Lee Olson, FAA
Terry Allard, FAA	Mike Gallivan, FAA	Jay Dryer, NASA
William Leber, NWA	Art Shank, DOT/OIG	Joseph Hanu, DOT/OIG
Sandy Liu, FAA	Patrick Lewis, FAA	Casey Kinost, GAMA
Amy Pritchett, NASA	Bob Pearce, JPDO	Nick Stoer, NCAR
William Davis, FAA	Charles Ruehle, FAA	Colin Mecliff, Eurocontrol
Frank Mangine, FAA	Mike Basehore, FAA	Nancy LoBue, FAA
Susan Mertes, AIA	Elizabeth Hoffman, APA	Robert Pappas, FAA
John Rekstad, Rekstad Consulting	Robert Jacobsen, Sierra Aviation	