

NAS Operations Subcommittee | MINUTES

Meeting date & time: *March 12-13, 2014*

Meeting location: *JMA Solutions, Washington D.C.*

Purpose: NAS Ops Subcommittee, Review FY 2016 Portfolio and Provide Recommendations

DFO: Eric Neiderman

Next Meeting: *August 5-7, 2014, Washington, DC*

Minutes from Day 1 – March 12, 2014

Presentation *Review of REDAC Recommendations, Responses and Open Actions*

Presenter *Steve Bussolari/Eric Neiderman*

Discussion: Steve discussed the status of REDAC NAS Ops recommendations from 2012 and 2013 meetings, as well as those recently approved by the FAA Administrator, and Steve's intent to discuss the status of each during appropriate briefings. Eric introduced his successor as Designated Federal Officer (DFO) of the NAS Ops Subcommittee, Maureen Molz, to take effect immediately following this meeting. Eric discussed her background in research, previously with Department of Defense programs, and currently as Manager of ANG-C43 (Advanced Operational Concepts Division / Concept Development and Validation Branch) at the William J. Hughes Technical Center.

Presentation *Holistic View of R&D for FAA*

Presenter *Cathy Bigelow*

Discussion – Cathy discussed the need to develop a holistic view of R&D priorities to integrate and improve coordination across the Agency. Research priorities are currently assigned along FAA lines of business and broader considerations are required due to declining budgets. Dennis Filler, Director of the William J. Hughes Technical Center, posed the question to the R&D Executive Board (REB) to develop a more strategic, forward looking process with an integrated Agency-wide view of R&D. Dennis is expected to brief the FAA Executive Council on this plan. Discussion included emphasis on importance of a research strategy and the broad goals of the National Aviation Research Plan (NARP).

Presentation *Budget Overview*

Presenter *Mike Gallivan*

Discussion – Mike discussed the FY 2014 Research, Engineering and Development budget request and the appropriation of \$158.79M, signed on January 17. Budget conference language addressed Centers of Excellence for UAS, Alternative Fuels and Commercial Space, as well as the lack of funding for JPDO. The briefing included discussion of future budget concerns, election year issues and potential sequestration in FY16. Current FAA reauthorization is valid through FY2015 and FAA has started work on the draft reauthorization for coordination with OST and OMB.

Presentation Air Traffic Control (ATC)/Technical Operations (Tech Ops) Human Factors (RE&D A11.i)

Presenter Jason Demagalski

Discussion – Jason briefed the Subcommittee on the R,E&D ATC/Tech Ops Human Factors Program. Goals of the program include generating requirements for human interface characteristics of future air traffic workstations, improving safety by arresting trends related to human performance, and reducing the time and cost to train air traffic controllers and maintenance personnel. FY 2016 research is expected to include efforts in human-centered design, training and facility placement, and human factors in safety and operations. Specific outputs include human-automation guidance to enhance the Acquisition Management System (AMS) process, improved methods of screening controllers, and reducing human performance risks at the facility level

Presentation NextGen ATC/Tech Ops HF (F&E 1A08A)

Presenter Rachel Seely

Discussion – Rachel discussed the NextGen ATC/Tech Ops Human Factors budget line, as unique within FAA, with cross-cutting efforts and visibility across multiple programs. The goal of the program is to assess the role of human performance in the context of the operational performance of the NAS, as human performance issues have direct impacts on most NextGen Operational Improvements. Discussion included funding issues for safety, engineering, and training areas. Outputs for 2016 include development of NextGen Segment Bravo safety metrics and benefits assessment for air traffic, and an assessment of NextGen hazards for TechOps.

Presentation NextGen System Development, New Air Traffic Management Requirements

Presenter Steve Bradford

Discussion – Steve’s briefing focused on prospective funding data for FY 2015 and FY 2016. Further budget information will be released as it becomes available.

Presentation Weather Program (RE&D A11.k)

Presenter Steve Abelman

Discussion – Steve presented an overview of the Weather Program and specific initiatives supporting Operational Improvements in the NextGen Implementation Plan. The weather team’s work includes collaborative and complimentary initiatives with National Weather Service to transition legacy capabilities and meet current and future requirements. It also includes focused initiatives to help mitigate safety and efficiency issues associated with documented weather problems. The FY 2016 core Weather Program Portfolio includes research into inflight icing, turbulence, convective storms, ceiling and visibility, model development and enhancement, and advanced weather radar techniques. The Weather Program feeds requirements into the prioritization process and balances short-term research initiatives and longer term NextGen concepts. Steve discussed hazardous weather mitigation and the evolution of current capabilities. He also addressed the FY 2013 REDAC finding and recommendation on safety benefits to general aviation (GA) and the development of better forecast tools or cockpit display of weather to substantially reduce the GA weather-related accident rate. He presented the weather challenges specific to CFR Part 91 aircraft and weather research focused on safe GA flight operations in Alaska.

Presentation Operational Weather Requirements

Presenter *Matt Fronzak* (MITRE)

Discussion – Matt’s briefing focused on Operational Weather Needs Analysis (OWNA), a formal analysis process that is repeatable for different scenarios and Air traffic Management (ATM) capabilities. The goal is to identify weather information needs based on operational decision-making by the ATM community. OWNA includes discussions with ATM experts, focused on domain-specific capabilities and processes for weather-impacted operational decision-making. These efforts are used to identify weather information attributes which are recorded, interpreted, compared and reported out. Matt discussed 8 portfolios’ Operational Improvements and 115 NSIP increments aligned with OWNA capabilities. The briefing included a description of Collaborative Airspace Constraint Resolution (CACR) weather information and shortfall analysis.

Presentation NextGen - Weather Technology in the Cockpit (RE&D A12.e)

Presenter *Gary Pokodner*

Discussion – Gary discussed NextGen - Weather Technology in the Cockpit (WTIC) research to develop, verify, and validate requirements for WTIC standards; and identify requirements to improve the meteorological (MET) information in the cockpit. Program objectives include resolving GA safety risks before they become accidents, enabling safe implementation of NextGen Operational Improvements and advanced concepts, and resolving operational inefficiencies due to gaps in cockpit MET information. Gary briefed potential benefits of the program, which includes effective weather decision making by pilots, enhanced crew management of turbulence, reduction in short-term deviation requests from pilots, and consistent NextGen operations (e.g. Optimized Profile Descents) in adverse wind conditions. The brief included discussion of the MITRE report, [Aligning Data Link Weather Capabilities with NextGen](#), Oct 2013, by Elisabeth Kim. Results of the MITRE analysis may contribute to the WTIC ConOps, to develop scenarios based on pilot perspective and to identify research shortfalls. A functional analysis will be performed on WTIC ConOps to develop high-level requirements.

Presentation Special Topic – Reduction in GA Accidents

Presenter *Gary Pokodner*

Discussion – Gary discussed quantifying benefits to GA safety in the context of NextGen - Weather Technology in the Cockpit. Research tasks include identification of causal factors for the high weather-related accident rate for GA aircraft. Specific areas include shortfalls in pilot understanding and proper use of meteorological information; minimum weather service for GA aircraft to enable effective pilot decision-making in adverse weather; minimum information needed in the cockpit; and willingness of GA owners to spend on aircraft equipment and services. Gary presented a project overview of the impacts of uncertainty information on pilot decision-making. Next steps include research to verify minimum weather service for GA operations, weather-related factors associated with GA accidents, and development of specific display design parameters.

Minutes from Day 2 – March 13, 2014

Presentation NextGen Wake Turbulence (RE&D A12.b), NextGen – Wake Turbulence – Re-categorization (F&E 1A08E)

Presenter *Paul Strande*

Discussion – Paul gave an overview of the R&D and NextGen Wake Turbulence programs. Program funding supports the development of procedures-only wake avoidance solutions, procedure design for wake avoidance solutions with automation and data-driven safety assessments. Their efforts also support development and validation of requirements for wake turbulence solutions. Benefits include wake turbulence mitigation for departures and new wake re-categorization standards. There was extended discussion regarding national rule change 7110.308 on dependent staggered approaches to parallel runways spaced less than 2500 feet and Paul addressed Safety Risk Management for the program. Plans for FY 2016 include continued development of feasible application of dynamic wake separations in ATC (NextGen and Single European Sky ATM Research (SESAR)) and determination of required wake separations for newly developed aircraft.

Presentation Operations Concept Validation Modeling (F&E 1A08C)

Presenter *John Marksteiner*

Discussion – John discussed the focus of the Operations Concept Validation Modeling (OCVM) budget line, the effects of expected budget limitations, and the role of ANG-C4 (Advanced Operational Concepts Division) in the FAA pre-implementation research process. OCVM supports development of updates for end-to-end and lower level ConOps, and validation of 2nd and 3rd level operational concepts. Plans for FY 2014 include development of the Dynamic RNP concept, TMI Attribute Standardization for Tracking and Simulation, Unmanned Aircraft Systems concept development, Space Vehicle Operations concept development, and Remote Tower research (in conjunction with the SBS office). In FY 2015 and 2016 ANG-C4 will support continued research in these areas, as well as Optimized Route Capability, NextGen Trajectory Negotiation, Vertical Conformance Verification, and NextGen Trajectory Negotiation.

Presentation Operations Concept Validation and Infrastructure Evolution (F&E 1A01C) – Advanced Technology Development and Prototyping

Presenter *Rob Hunt*

Discussion – Rob addressed the role of Advanced Technology Development and Prototyping (ATDP) and AJV-73 (Technical Analysis and Operational Requirements Group) in the research process and associated organizational relationships. AJV-73 supports technical analysis and validation of operational concepts and scenarios, including prioritized operational requirements; conduct of analyses, modeling, and simulations; documenting shortfall analyses, concept development, and concept validation; and development of operational and functional requirements. ATDP goals include validation of emerging operational concepts to improve the capacity and efficiency of the NAS, mitigating operational integration concept challenges, and optimizing integration among emerging concepts and existing NAS capabilities. Anticipated research in FY 2014-2015 for the Operations Concept Validation and Infrastructure Evolution budget line includes Unmanned Aircraft Systems (UAS) Concept Maturation, Operational Integration Analysis, Enterprise-Based Information Delivery and Dissemination, National Special Activity Airspace (SAA) Concept Maturation, Advanced Interval Management Concept Exploration, and RTCA Support. In addition to these efforts, work in FY 2016 may include Performance Based Navigation (PBN) Optimization.

Presentation Runway Incursion Reduction (F&E 1A01A)

Presenter *Rob Higginbotham*

Discussion – Rob discussed the Runway Incursion Reduction Program (RIRP). RIRP success is measured by the completion of the goals identified in the Research Management Plan (RMP) for each prototype activity. Initiatives that successfully complete identified RMP Goals are presented as candidates for acquisition or presented for Airport Improvement Program (AIP)-funding eligibility. This program partners with MIT Lincoln Laboratory to research safety logic development and engineering and human factors issues. Anticipated research activities in FY 2014 and 2015 include planned flight check and operational evaluation of eFAROS (Enhanced Final Approach Runway Occupancy Signal), Runway Incursion Prevention shortfall analysis for airports within the NAS (FY 2014), and evaluation of new RIRP technologies to address the outcome of the shortfall analysis (FY 2015). Rob discussed products expected during FY 2014-2015, to include requirements and cost-benefit documents for eFAROS, and a Research Management Plan for new RIRP technology. The results from the current RIRP market survey and the shortfall analysis will be used to identify emerging technologies that can be evaluated for inclusion in the RIRP portfolio in FY 2016 and beyond.

Day 1 - ACTIONS:

- Due March 2014 - Distribute copy of NextGen Equipage Strategy to Subcommittee members – **(Eric Neiderman/John Marksteiner)**
- Due April 2014 - Dennis Filler to present holistic research strategy at April full REDAC meeting and August NAS Ops Subcommittee meeting, pending Steve Bussolari's coordination with John Hansman **(Dennis Filler/Cathy Bigelow/Steve Bussolari/Gloria Dunderman)**
- Due April 2014 - Discuss REDAC support of holistic R&D concept and possible REDAC working group prior to full REDAC meeting **(Steve Bussolari/Cathy Bigelow/Gloria Dunderman)**
- Due April 2014 - Distribute weather publications and study results to Subcommittee members **(Steve Abelman/Gary Pokodner)**
- Due April 2014 - Distribute WTIC Conops and industry perspective to Subcommittee members **(Steve Abelman)**
- Due August 2014 - Coordinate briefing of PEGASUS specialty areas at August NAS Ops Subcommittee meeting **(Gary Pokodner)**

DAY 2 -ACTIONS:

- Due March 2014 - Distribute list of demo projects to Subcommittee members **(Maureen Molz)**
- Due March 2014 - Provide list of completed Conops on file with ANG-C4 **(Maureen Molz)**
- Due April 2014 - Provide benefits estimate delay of Wake Turbulence program efforts for planned sites during FY 2015; results will be used in a new finding and recommendation **(Paul Strande)**
- Due April 2014 - Engage with John Hansman on how JPDO functions after recent budget cuts **(Steve Bussolari)**
- Due April 2014 - Provide status briefing on JPDO at the full REDAC meeting in April **(Gloria Dunderman coordinate with Ed Bolton)**
- Due May 2014 - Schedule telcon in May with Subcommittee to discuss NextGen Equipage strategy **(Steve Bussolari)**
- Due June-July 2014 - DFO and NAS Ops Subcommittee Chair meet @one month prior to August meeting to discuss accomplishments and objectives for next meeting **(Steve Bussolari/Maureen Molz)**
- Due July 2014 - Distribute Trajectory Based Operations ConOps **(John Marksteiner)**; Subcommittee members homework includes review and comment prior to the August 2014 meeting **(Subcommittee members)**
- Due August 2014 - NAS Ops Subcommittee Chair to meet with Human Factors Subcommittee Chair to align human factors issues between the two subcommittees **(Steve Bussolari)**
- Due August 2014 - Provide an update at the August 2014 meeting on the Research Plan **(John Marksteiner)**
- Due August 2014 - Provide deep-dive at August meeting on FAA Plan for Mixed Equipage **(Ron Stroup)**; Members homework will include reviewing and commenting on the 2011 version for the document prior to the August 2014 meeting **(Subcommittee members)**
- Due August 2014 - Provide deep-dive for August meeting on Runway Incursion Reduction, to include objectives, benefits, safety case, funding **(Rob Higginbotham)**

NAS Ops Subcommittee Agenda

Date: Wednesday, March 12, and Thursday, March 13

Location: JMA, 600 Maryland Avenue, SW – Capital Gallery – Suite 400E, Washington, DC 20024

Meeting Purpose: Review of FY 2016 Proposed Portfolio and Provide Recommendations

Day One

<u>Topic</u>	<u>Time</u>	
Welcome/Overview	0830-0845	Steve Bussolari/Eric Neiderman
Review of REDAC Recommendations, Responses and Open Actions	0845-0915	Steve Bussolari/Eric Neiderman
Holistic View of R&D for FAA Discussion	0915-0945	Cathy Bigelow
Break	0945-1000	Subcommittee Members
Budget Overview	1000-1015	
ATC/Tech Ops Human Factors (RE&D A11.i)	1015-1045	Mike Gallivan
NextGen ATC/Tech Ops HF (F&E 1A08A) (Controller Efficiency/Air Ground Integration)	1045-1115	Jason Demagalski Rachel Seely
<i>-Questions / Findings / Recommendations</i>	1115-1130	Subcommittee Members
Lunch	1130-1245	
NextGen System Development	1245-1330	Steve Bradford
New Air Traffic Management Requirements		
Weather Program (RE&D A11.k)	1330-1400	Steve Abelman
<i>-Questions / Findings / Recommendations</i>	1400-1415	Subcommittee Members
Operational Weather Requirements	1415-1445	Matt Fronzak (MITRE)
<i>-Questions / Findings / Recommendations</i>	1445-1500	Subcommittee Members
Break	1500-1515	
Weather Technology in the Cockpit (R&D A12.e)	1515-1545	Gary Pokodner
<i>-Questions / Findings / Recommendations</i>	1545-1600	Subcommittee Members
Special Topic – Reduction in GA Accidents	1600-1630	Gary Pokodner
<i>-Questions / Findings / Recommendations</i>	1630-1645	Subcommittee Members
Review of Findings, Recommendations and Actions	1645-1715	
Dinner – location TBD	1830	

Day Two

<u>Topic</u>	<u>Time</u>	
Review Day 1 Findings and Recommendations	0830-0845	Steve Bussolari/Eric Neiderman
NextGen Wake Turbulence (RE&D A12.b)	0845-0915	Paul Strande
NextGen – Wake Turbulence – Re-categorization (F&E 1A08E)		
<i>-Questions / Findings / Recommendations</i>	0915-0930	Subcommittee Members
Operations Concept Validation (F&E 1A08C)	0930-1000	John Marksteiner
NextGen – Ops Concept Validation-Validation Modeling		

- <i>Questions / Findings / Recommendations</i>	1000-1015	Subcommittee Members
Break	1015-1030	
Operations Concept Validation and Infrastructure Evolution (F&E 1A01C) – Advanced Technology Development and Prototyping	1030-1100	Rob Hunt
- <i>Questions / Findings / Recommendations</i>	1100-1115	Subcommittee Members
Runway Incursion Reduction (F&E 1A01A)	1115-1145	Rob Higginbotham
- <i>Questions / Findings / Recommendations</i>	1145-1200	Subcommittee Members
Review of Findings, Recommendations and Actions	1200-1245	Subcommittee Members

Subcommittee Members in Attendance:

Steve Bussolari (Chair)
Joseph Bertapelle
John Cavolowsky
Bruce Holmes
Deborah Kirkman
William Leber
Andres Zellweger
Eric Neiderman (FAA, DFO)
Maureen Molz (FAA, DFO)

Others in Attendance:

Steve Abelman, FAA
Candice Albert, JMA
Cathy Bigelow, FAA
Steve Bradford, FAA
Jason Demagalski, FAA
Gloria Dunderman, FAA
Matt Fronzak, MITRE
Mike Gallivan, FAA
Rob Higginbotham, FAA
Walt Hogan, Booz Allen Hamilton
Rick Heuwinkle, FAA
Rob Hunt, FAA
Ed Johnson, FAA
Paul Krois, FAA
Nick Lento, FAA
John Marksteiner, FAA
Gary Pokodner, FAA
Rachel Seely, FAA
Nick Stoer, Stoer & Associates
Paul Strande, FAA