

## **TERMS OF REFERENCE**

### **What, Where, Who' (WWW) Subgroup**

#### **Reporting to Working Group(s): *WG1***

1. **Leadership:** Jack Fearnside, MJF Strategies, L.L.C. [jfearnside@mjfstrategies.com](mailto:jfearnside@mjfstrategies.com)
2. **Scope:** For each user class, define needed capabilities and locations for these capabilities. The output of this product will be used against criteria developed by the criteria subgroup to determine a prioritized list that makes up a viable business case for each user class. Ultimately we will ask for which specific users will participate in accumulating benefits using each identified capability. Give consideration for current equipage in choice of capabilities as this too will play in the criteria for determining cost and ultimate prioritization of activities.
3. **Tasking:** Using inputs from operational and business oriented representatives from General aviation, Business aviation, Regional, Commercial, Military, and other (UAS, Helicopter...) classes of user, produce the following:
  - A. Generate a list of capabilities (not tools) in concert with NextGen improvements to the NAS that would convince operators to agree to participate and invest in NextGen improvements.
  - B. Identify locations where capabilities listed in 'A' would need to be implemented in order to attract participation of at least one user class.
  - C. Develop an initial product set of at least two capabilities and locations for each user class.
4. **Process:** Process is open to the sub group lead but needs to consider inputs from each user class. Need to ensure the inputs from these classes of users are provided from both the operational perspective and business perspective. Work with the criteria subgroup on formats to automate exchange of data between groups. Identify any informational needs, not available to the group, to the chair of the Knowledge subgroup. The What, Where, Who (WWW) subgroup will closely coordinate, and meet jointly where appropriate, with the Present Equipage subgroup.
5. **Inputs:** Guidance from NGIP for planned capabilities and the FACT2 report to align with identified NAS problem areas. Consider capabilities that can take advantage of existing equipage.
6. **Schedule & Deliverables:** To be delivered to Working Group Leaders and/or presented at WG meeting.

<b>Deliverable</b>	<i>Description</i>	<b>Date</b>
Progress report on technique for developing capabilities and locations with an initial list	Outline an initial list by user class of 2 operational capabilities and location for these capabilities.	Mar 20
List of capabilities and locations	Final Draft - Outline a prioritized list by user class of operational capabilities and location for these capabilities (Presented at Apr 2 <sup>nd</sup> WG Mtg)	Mar 27

7. **Termination of Committee:** Group will be terminated with the acceptable deliverable of their report.

## **TERMS OF REFERENCE**

### **SubGroup: Present Equipage**

#### **Reporting to Working Group(s) Joint work groups 1 and 2**

1. **Leadership:** Ken Speir, Delta Air Lines [Ken.Speir@delta.com](mailto:Ken.Speir@delta.com)
2. **Scope:** Utilization of present ground or airborne equipment that is presently available and certified for use to achieve early and mid-term benefits. Includes equipage currently installed but lacking user training or operational approvals can be included. This list will be developed in conjunction with the WWW subgroup.
3. **Tasking:** Using the MITRE study on present avionics equipage as an initial input:
  - A. Define the performance level of equipage in the current fleet of the NAS (both U.S. and foreign operators).
  - B. Define additional or expanded use of present processes and/or procedures which could provide capacity improvements and facilitate transition to the end-state NextGen. Define any environments where airborne equipage does not have a complementary ground infrastructure or vice versa. (e.g., ATC automation systems, controller decision support tools, dispatcher decision support tools, additional training or procedures).
4. **Process:** Equipage not currently certified will not be considered.
5. **Inputs:** MITRE Equipage Study, NextGen Implementation Plan, Enterprise Architecture.
6. **Schedule & Deliverables:** To be delivered to Working Group Leaders and/or presented at WG meeting.

<b>Deliverable</b>	<b>Description</b>	<b>Date</b>
Capabilities of Existing and Available Equipage	Current performance level and usage of equipage	Draft:
	Expansion prospects	Mar 26
	Other requirements to achieve benefits	
	(Presented at April 2 <sup>nd</sup> WG meeting and April 7 <sup>th</sup> Plenary)	April 7

7. **Termination of Committee:** Group will be terminated with the acceptable deliverable of their report. Group could be tasked with follow on deliverables by TF Leadership.

## TERMS OF REFERENCE

### Subgroup ‘Evaluation Factors’

#### Reporting to Working Group(s) *Joint work groups 1 and 2*

1. **Leadership:** Fred Messina, Booz Allen Hamilton, Inc., Debby Kirkman, MITRE/CAASD
2. **Scope:** Once a list of capabilities from the “What, Where, Who” and “Equipage subgroup is established, a mechanism for evaluating one capability over another is needed. The scope of this subgroup is to develop a list of criteria that can be applied to the capabilities to accomplish this task. The list should ensure the needs of each stakeholder are considered and as such the team should include representatives from each stakeholder. To be consistent with the guiding principles provided in the opening plenary meeting, the sub-group should consider benefits and cost, and users’ willingness to commit to participate in using a specific capability. As no two criteria are equal, develop a methodology for scoring capabilities based on assessment of the criteria. This methodology will be used by a later sub-group to develop a prioritized list of capabilities. The recommended criteria and methodology must be able to accomplish this objective.
3. **Tasking:** Considering that the product will be applied to a list of capabilities provided by the ‘what, where, who’ and ‘Equipage’ subgroup, and possibly considering inputs from the Elements subgroup:
  - A. Generate a list of criteria that when applied to a list of capabilities, will provide guidance on the ‘value’ of implementing this capability. The criteria or evaluation factors should include, at a minimum, the benefits, the risks and the costs associated with implementing the capability. As much as possible, quantitative criteria will be used and applied.
  - B. Once a list of criteria is generated, recommend a repeatable methodology for evaluating and integrating across criteria to assess the overall value of a given capability.
  - C. Establish a format to automate this process so that as new data or capabilities are added a new assessment can be rapidly reproduced.
4. **Process:** Process is open to the sub group lead but shall ensure that each user groups’ interests are considered, guiding principles outline at the plenary session are applied, can be automated to the maximum extent possible and specific criteria can be quantified.
5. **Inputs:** The output from the “WWW + Equipage”, plus possible guidance from the Elements subgroup.
6. **Schedule & Deliverables:** To be delivered to Working Group Leaders and/or presented at WG meeting.

<b>Deliverable</b>	<b>Description</b>	<b>Date</b>
List of criteria	Product contains SG recommendations for a repeatable methodology and set of criteria that can support the assessment of relative value among candidate capabilities	Criteria List- April 17, Repeatable methodology – June 2

7. **Termination of Committee:** Group will be terminated with the acceptable deliverable of their report.

# Task Force on NextGen Mid-Term Implementation

## TERMS OF REFERENCE

### Sub-Group: ‘Tutorial/Knowledge’

#### Reporting to Working Group(s) *Joint work groups 1 and 2*

1. **Leadership:** Mike Ball, Northrop Grumman and Dennis Koehler, SAIC
2. **Scope:** Members of the work groups have varied knowledge about all of the relevant subject areas, issues and available resources that may be addressed by the Task Force. For the Task Force to address these issues thoroughly and efficiently, the work groups and their sub-groups need accessible relevant background information, reports, and studies and be briefed on certain critical technical, policy and process issues. In that way, all members will have a baseline exposure, knowledge and understanding of these critical areas considered by the task force. Background information would be collected in a library on the RTCA website and include a complete listing of “what is out there” on the subjects. This would include studies, reviews of FAA and industry programs and demonstrations. Briefings would be conducted by selected subject matter experts from government or industry. The briefings would be available for all work group members. Access to the briefings should be available in person or via “Webex” or other computer based meeting facilitating device. The Chairs of this sub group would coordinate all these activities.
3. **Tasking:** Considering that the briefings and knowledge collection will potentially involve a broad range of issues and subject areas and be added to over the course of the task force period due to discussions and surfacing of other problems, the sub-group leader and team shall:
  - A. After consulting with the working group and sub group chairs, prepare a list of subject areas that need to be briefed, quickly find the best resource to present the brief, and schedule briefings convenient to the group and aligned with group meetings as much as possible.
  - B. Seek continued input from the groups on other subject areas that need to be briefed
  - C. Serve as a clearinghouse to facilitate the collection of relevant information, studies, papers, reports relevant to the work of the task force. Make sure this library of relevant information is accessible on the RTCA website as much as possible.
4. **Process:** Process is open, the sub group leads shall ensure that each user group leader and the member interests and suggestions for briefings or background materials are fully considered and acted upon.
5. **Inputs:** Suggestions for subjects for briefings and background materials to catalogue on the website will come from the work group and sub group chairs after discussion with their members.
6. **Schedule & Deliverables:**

<b>Deliverable</b>	<b>Description</b>	<b>Date</b>
Briefings for the	Relevant subject areas will be briefed to work	Throughout



# Task Force on NextGen Mid-Term Implementation

## TERMS OF REFERENCE

### ELEMENTS SUBGROUP

#### Reporting to Working Group(s) *Work group 1*

1. **Leadership:** David Strand, American Airlines
2. **Scope:** Previous work by other Sub-Groups will generate a list of capabilities. Each capability will be comprised of several elements and each needs to be identified. These elements will require individualized work themselves to identify technical risk, policy, procedures, issues etc. This sub-group is formed to identify each element required to fully implement each identified capability. The sub-group is initially composed of experts in airspace, integration, rules and regulations, flight planning, ATC automation, certification, communications, FMS/Navigation, surveillance, TFM, weather, etc.
3. **Tasking:** Using the task force terms of reference:
  - A. For each capability, generate a list of airborne and ground elements of that capability, i.e. training, equipage, procedures, policies, regulations, etc..
  - B. The sub-group will identify the risks and challenges for each element including at least all of the following:
    - i. Confidence rating based on the ability to implement
    - ii. Technical risk
    - iii. Planning risk
    - iv. Policy/Procedures/Institutional risk
    - v. Changes in roles risk
    - vi. Certification and Operations Approval
    - vii. Training
    - viii. Airspace
    - ix. Procedures
    - x. Mixed Equipage
    - xi. Other...
4. **Process:** Each operational capability needs to be examined to determine its elements. The elements sub-groups are not to solve technical issues. Instead they are to determine and evaluate the element(s) and form a risk assessment (format will be provided). The elements output will later be used to determine a cost factor for each capability. The risk output along with cost will be used with other evaluation factors to evaluate the priority or selection of the element/capability. Where mitigation techniques are known, SG could include them as recommendations. SG might divide into sub-sub groups to accomplish its mission.
5. **Inputs:** Guidance from the RTCA Task Force 5 TORs and plenary briefings on concept of approach and guiding principles should be the basis for measuring successful outputs. The output SG01, Operational Capabilities List by other sub-groups

#### 6. Schedule & Deliverables:

Deliverable	Description	Date
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## Task Force on NextGen Mid-Term Implementation

Identified elements and challenges for each operational capability	List of all known elements/ challenges associated with full implementation of each operational capability provided	May 12
For each operational capability, recommend any known mitigation strategies for resolving identified challenges identified element	Suggested mitigation strategies	June 9

- 7. Termination of Committee:** Group will be terminated with the acceptable deliverable of their report.