

TERMS OF REFERENCE
ATMAC Requirement & Planning Work Group
Trajectory-Based Operations Sub-Work Group

REQUESTORS:

Organization	Person
FAA	Peggy Gilligan

A letter of request that addresses the elements listed below will be maintained on file at RTCA.

WORK GROUP LEADERSHIP:

Position	Name	Affiliation	Telephone	Email
Co-Chair	Dave Nakamura	Boeing	dave.nakamura@boeing.com	(425) 266-2236
Co-Chair	Bill Leber	Lockheed Martin	william.s.leber@lmco.com	(651) 456-3761
Co-Chair	John Pyburn	MITRE	jpyburn@mitre.org	(703) 983-5546
Secretary	Ray Glennon	RTCA	rglennon@rtca.org	(202) 330-0652

BACKGROUND: The trajectory-based operation concept is a cornerstone to NextGen and SESAR. The overarching concept will define the allocation of roles, responsibilities and functionality among the communication, navigation, surveillance and air traffic management components of NextGen and SESAR. The lack of a well-articulated concept that enjoys government/industry consensus has spawned a number of uncoordinated activities defining the concept and describing specific applications, operational requirements, technical requirements, performance standards, functions, air/ground functional allocations, and air/ground integration. Among the group activities attempting to undertake one or more aspects of Trajectory-based Operations (TOPs) are the NextGen JPDO Aircraft and ANS Work Groups, FAA NextGen Enterprise Architecture, RTCA Special Committee 214, SESAR Joint Undertaking, and FAA Performance based operations Aviation Rulemaking Committee (PARC). These efforts should continue in close coordination with this work group.

All of the activities underway are well intentioned. However, lacking a unifying concept and set of specific applications and operational requirements, it is unclear what changes or enhancements are necessary in the aircraft and on the ground to meet the operational expectations. This means that parts of the aviation community are proceeding with significant risk, lacking any assurance of what types of operations are planned, what technical performance standards are necessary, what the operational implications are regarding aircraft capability, how trajectory-based operations can evolve from today's baseline aircraft capability, and ground capabilities and what notional benefits will need to be examined to establish a clear business case for operational implementation. Other parts of the community will take no action until more specifics and answers are available, thus impeding the transition to NextGen.

DELIVERABLES:

Product	Description	Due Date	Change
Concept of Use for Trajectory-based operations	Trajectory-based operations Recommendations and Report	April, 2010	

SCOPE:

The Working Group will develop an integrated operational concept and objectives for trajectory-based operations, considering existing material and plans including material from the RTCA Task Force on NextGen. The operational framework task will:

1. Describe and frame the types of trajectories envisaged through the mid-term (now through 2018),
2. Consider and document any potential evolution of trajectory-based operations from 2018 through 2025,
3. Identify the non-technical capabilities, (e.g., ability for an aircraft to adhere to an RTA at an arrival point, ability of ATC automation system to calculate weather reroutes for multiple aircraft and uplink, etc.) required for aircraft systems and ground automation systems,
4. Identify any areas of regulatory change that may be needed to support the concept.

USE OF DELIVERABLE(S)

The envisaged use of the deliverables is to establish a single, coordinated view regarding the extent and types of trajectory-based operations, and define what types of changes may be needed for aircraft systems, ground automation and services. The output of this activity will also be used by the RTCA PMC's Integration and Coordination Committee (ICC) to develop and deliver related guidance to SC-214, and other SC's who are developing guidance and standards related to the role of the pilot and cockpit in trajectory-based operations. This guidance could also include the recommendation to the FAA to establish of a new Special Committee to develop guidance and standards materials for performance-based navigation (follow on to the work of SC-181).

SPECIFIC GUIDANCE:

The Working Group will consider inputs from other organizations as necessary, such as:

- FAA Federal Aviation Administration
- ICAO International Civil Aviation Organization
- EUROCONTROL European Organization for the Safety of Air Navigation
- PARC Performance Based Operations Aviation Rulemaking Committee

- *Coordination* – This group will coordinate with ongoing performance-based navigation, communications and surveillance activities with RTCA committees and ATMAC subgroups, as well as related ARCs and the PARC as necessary.
- *Initial Documentation*

Documents	Intended Use
JPDO Aircraft WG Avionics Roadmap and appendices	Guidance
FAA White Paper on TBO	Guidance
RTCA NextGen Mid-Term Implementation Task Force Interim Report, June 2009	Guidance, including report and associated evaluation materials
RTCA NextGen Mid-Term Implementation Task Force Final Report, August, 2009	Guidance, including report and associated evaluation materials
<i>Initial 4D: CTA Operational Technique Document</i>	Guidance
<i>Others...</i>	

TERMINATION:

This Working Group will terminate its activities when the ATMAC accepts the R&P Work Group's final document. Any change/extension of the work program requires prior ATMAC approval.