March 21, 2006

Mr. Nicholas Sabatini
Associate Administrator for Aviation Safety
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

Dear Nick:

The PARC is pleased to submit the enclosed government/industry consensus recommendations for critical high level policy decisions on the implementation priorities that are needed for the Performance based NAS. These implementation priorities are for the performance-based navigation concepts and capabilities recommended in the letter PARC sent to you on 30 August 2005.

PARC tasked its Critical Decisions Working Group (CDWG) to develop recommendations that could be used as the basis for developing a government/industry consensus on the critical high-level policy decisions FAA needs to make for implementation priorities for the route-to-route separation and obstacle clearance separation standards recommended by PARC.

The CDWG recommendations were reviewed in detail and a government/industry consensus on those recommendations was developed during the PARC Face-to-Face meeting on 16 – 17 November 2005. This letter outlines PARC recommendations regarding implementation priorities for the performance-based instrument flight operations recommended in the earlier PARC letter.

The report represents a significant milestone in the continued implementation of a Performance based NAS. It is the result of the leadership provided by Jerry Davis and the significant efforts of the members of the CDWG.

PARC appreciates your continued support of our activities and invites you to join us in a discussion of these recommendations at your convenience. Please call me if you have any questions or would like to set up a discussion.

Sincerely,

Dave Nakamura
Chairman
Performance-based operations Aviation
Rulemaking Committee

Attachment

PRIORITIES FOR IMPLEMENTATION OF PERFORMANCE-BASED INSTRUMENT FLIGHT OPERATIONS

PARC is pleased to report that during its Face-to-Face meeting on 16 – 17 November 2005 it achieved a government/industry consensus on implementation priorities for the Performance-based NAS concepts and capabilities recommended in its letter of 30 August 2005 to the Associate Administrator for Aviation Safety. This attachment outlines PARC recommendations regarding implementation priorities for the performance-based instrument flight operations that were recommended in the 30 August 2005 PARC letter.

First and foremost, PARC recommends that FAA continue to expand current RNAV, RNP, and RNP SAAAR implementation efforts to additional locations and routes that provide benefits by improving safety, capacity, operating efficiency, and predictable access to airspace and airports.

PARC further recommends that FAA adopt the following priorities for implementing additional recommended concepts and capabilities in the *Near Term* (2006 – 2010), *Mid Term* (2011 – 2015) and *Far Term* (2016 – 2025).

Existing Initiatives - *Near Term* (2006 – 2010)

In its August 30 2005 letter, PARC noted that FAA had not yet established national policies for the route-to-route separation standards and obstacle clearance criteria for the performance based operations that are currently being implemented using RNAV-2 for transiting Class B airspace and en route operations, RNAV-1 for SIDS, and RNP-2 for operations transiting Class B airspace. PARC also noted that national policies had not yet been established for route-to-route separation standards for the RNP SAAAR and "ILS-like" approaches that are currently being implemented.

To expedite national implementation of the concepts and capabilities recommended in its letter of 30 August 2005, PARC recommends that FAA finalize national policies for these operations:

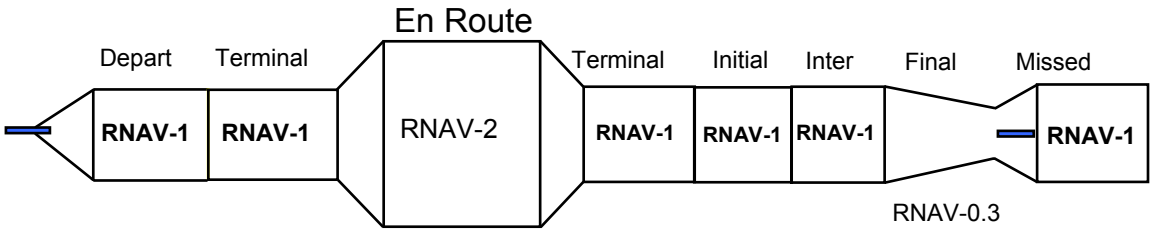
- By establishing, as *First Priority*:
  - 4 x RNAV as the route-to-route separation standard and ± 2 x RNAV obstacle as the clearance criteria for RNAV-2 en route operations and RNAV-1 SIDS (when Radar is used as an operational mitigation).
  - 4 x RNP as the route-to-route separation standard and ± 2 x RNP as the obstacle clearance criteria for operations using RNP-2 to transit Class B airspace (without an operational mitigation, such as Radar).
- By establishing, as *Second Priority*:
  - 4 x RNP route-to-route separation for RNP SAAAR approaches with performance values as low as RNP-0.1.

- By establishing, as *Third Priority*:
  - Route-to-route separation standards for ILS and "ILS-like" (angular) approaches, both with and without Radar (ASR and PRM).

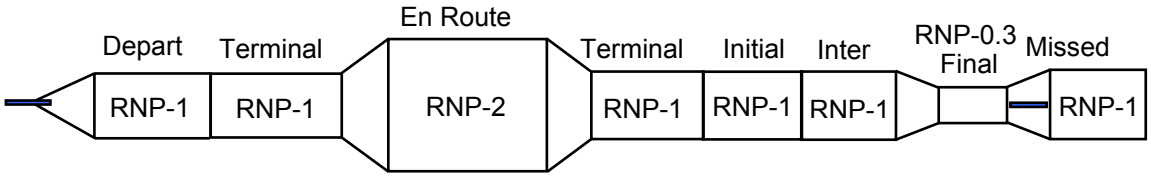
New Initiatives – *Near Term* (2006 – 2010)

PARC has recommended that FAA implement, in the *Near Term*, several new initiatives and establish national policies for route-to-route separation standards and obstacle clearance criteria for these operations, including the navigation performance required. To expedite implementation of these concepts and capabilities, PARC recommends that FAA finalize national policies for these operations:

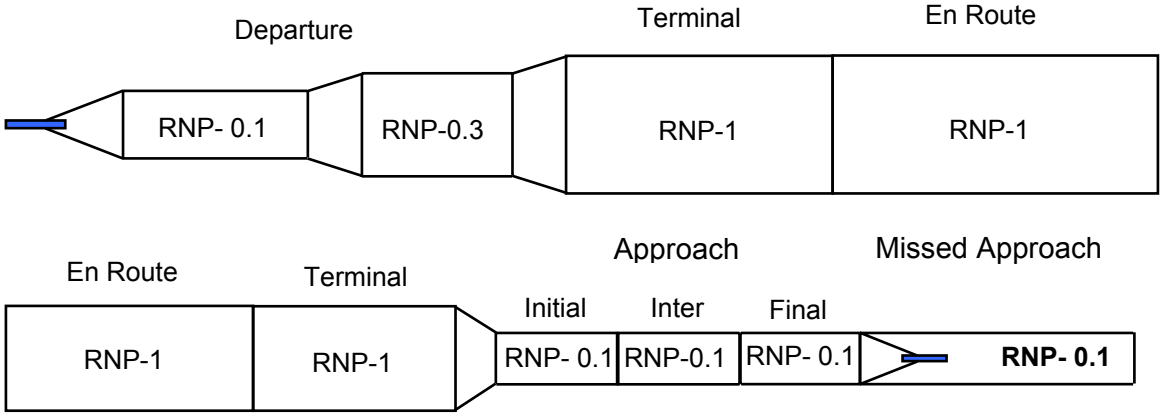
- By establishing, as *First Priority:*
  - New performance-based definitions for RNAV, RNP, and RNP SAAAR that incorporate the operational and functional characteristics discussed in its 30 August letter and enable implementation of the following airspace and obstacle clearance principles:



Note 1: RNAV operations may require operational mitigations, such as Radar.



Note 1: RNP operations should not require operational mitigations, such as Radar.



Note 1: RNP SAAAR operations can use RF Legs in any segment.

Note 2: RNP SAAAR operations can scale the RNP in any segment.

- FAA should also coordinate these definitions with ICAO, JAA, and EASA.

- By establishing, as *Second Priority*, 4 x RNP route-to-route separation standards and ± 2 x RNP obstacle clearance criteria for:
  - RNP "everywhere" for approaches (with LNAV/VNAV) using RNP-1, RNP-1, RNP-0.3, RNP-1 (for Initial, Intermediate, Final, Missed Approach, respectively).
  - RNP "everywhere" for arrivals and departures using RNP-1.
  - RNP SAAAR "where beneficial" for departures with RNP as low as RNP-0.1.

- By establishing, as *Third Priority*, 4 x RNP route-to-route separation and ± 2 x RNP obstacle clearance criteria for:
  - RNP SAAAR "where beneficial" for approaches (for Initial, Intermediate, Final, Missed Approach segments).
    - RNP-0.3, RNP-0.3, RNP-0.3, RNP-1 (for single fits and MEL dispatch)
    - RNP-0.1, RNP-0.1, RNP-0.1, RNP-1 (for single fits and MEL dispatch)
    - RNP-0.3, RNP-0.3, RNP-0.3, RNP-0.3
    - RNP-0.1, RNP-0.1, RNP-0.1, RNP-0.1

- By establishing, as *Fourth Priority:*
  - The *First Step:*
    - A program to quickly complete research and testing on ILS / RNP and RNP / RNP Simultaneous Independent Parallel and Simultaneous Independent Converging approaches.
    - "Step 1" Simultaneous Independent Parallel ILS / RNP approaches with RNP-0.1 (using the existing "blunder scenario").
  - The *Second Step:*
    - 4 x RNP route-to-route separation and ± 2 x RNP obstacle clearance criteria for RNP-2 "everywhere" for en route (without Radar).
  - The *Third Step:*
    - 4 x RNP route-to-route separation and ± 2 x RNP obstacle clearance criteria for RNAV-1 for Terminal Routes (with Radar).
  - As *Fourth Step:*
    - 4 x RNAV route-to-route separation and ± 2 x RNAV obstacle clearance criteria for: "ICAO RNP-4" (30 / 30), which is approaching implementation.

***Mid Term* (2011 – 2015)**

PARC has also recommended that FAA implement, in the *Mid Term*, several new initiatives and establish national policies for route-to-route separation standards and

obstacle clearance criteria for these operations, including the navigation performance required. To expedite implementation of these concepts and capabilities, PARC recommends that FAA finalize national criteria for these operations:

- By establishing, as *First Priority:*
  - "Step 2" xLS / RNP and xLS / xLS Simultaneous Independent Parallel Approaches using a new "blunder scenario" (both with and without PRM).
  - "Step 3" RNP / RNP Simultaneous Independent Parallel Approaches using a "RNP blunder scenario" (without PRM).
- By establishing, as *Second Priority:*
  - RNP-1 "where beneficial" for Terminal Area (Radar not required).
- By establishing, as *Third Priority:*
  - RNP-1 "where warranted" for En Route.
- By establishing, as *Fourth Priority:*
  - xLS / RNP Simultaneous Independent Converging Approaches.
- By establishing, as *Fifth Priority:*
  - RNP-4 for Oceanic and Remote Areas.

Far Term **(2016 – 2025)**

PARC further recommended that FAA implement, in the *Far Term*, RNP / RNP Simultaneous Independent Converging Approaches as a new initiative and establish national policies for route-to-route separation standards and obstacle clearance criteria for these operations, including the navigation performance required. To expedite implementation of these concepts and capabilities, PARC recommends that FAA finalize national policies for these operations as soon as the necessary operational analysis and testing is completed and the operating practices and procedures are established.

PARC has also noted that performance-based navigation, surveillance, and communication are inextricably linked in this timeframe. However, implementation of performance-based surveillance and communication capabilities is dependent on significant infrastructure investments by the service providers and the operators; both nationally and internationally. Also, to a certain extent, performance-based surveillance and communication capabilities are likely to be closely linked to the performance-based navigation capabilities that are widespread when the initial operating capabilities of performance-based surveillance and communication are implemented.

Therefore, realistic implementation timeframes for the additional operational capabilities that can be achieved with a new performance-based surveillance and communication infrastructure are not likely to become clear until these concepts mature and the magnitude of the investments and the additional benefits that can be realized by the synergy between the performance-based navigation infrastructure and the new surveillance and communication infrastructure are better known.