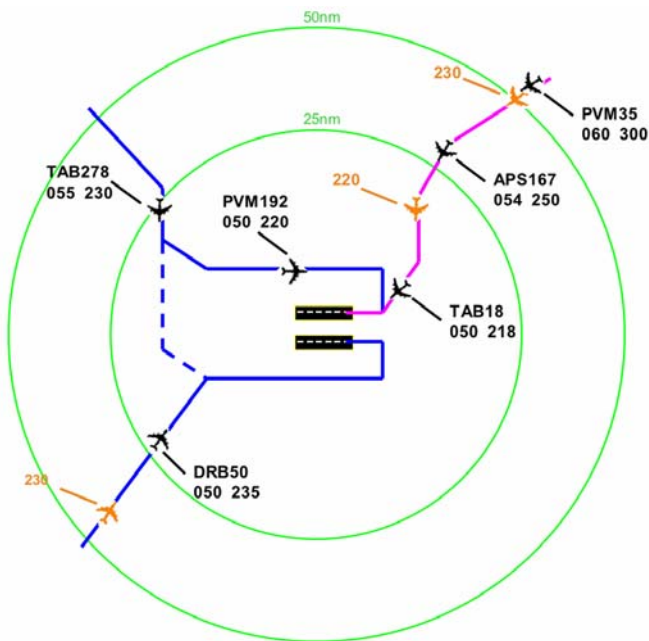




RNP RNAV Route Coordination

The current terminal area airspace design philosophy centers on defining point-to-point area navigation (RNAV) routes. For arriving aircraft, these routes extend the Standard Arrival Routes (STARs) farther into the terminal area with the routes terminating on the downwind or at an initial approach fix—a benefit which takes advantage of the predictability and repeat ability of RNAV equipped aircraft flying the routes, resulting in a reduction of needed controller vectoring of aircraft aidless required air-to-ground communications. This results in increased safety and efficiency in the terminal area.



These benefits will accrue only if aircraft stay on their RNAV routes and the control procedures are such that communications are minimized.

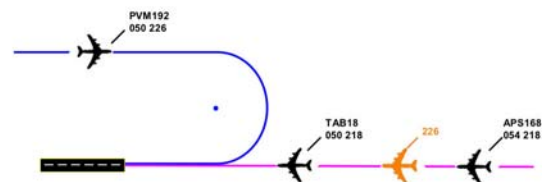
Several high demand airports have routes that merge in the terminal area before joining the final approach. If this doesn't occur, almost all high demand airports have routes that merge just prior to the final approach unless the airport has a unique geometry where each entry

point to the terminal area can be assigned its own runway.

The Roadmap for Performance Based Navigation has as an implementation strategy “in terminal areas with merging RNAV arrival streams, implements flow management through metering and tactical controller tools that maximize the efficiency and throughput for RNAV arrival operations.” The MITRE Corporation's Center for Advanced Aviation System Development (MITRE/CAASD) has researched different tools to address this need.

The Relative Position Indicator (RPI) is a tool that can assist both the controller and the traffic management coordinator (TMC) in managing the flow of traffic through a terminal area merge point.

RPI places a symbol or marker on the controller's or TMC's display to indicate where the aircraft on the merging route is currently positioned. The tool takes into account all of the non-linear segments and turn arcs of both routes prior to the merge point.



With the use of RPI, the TMC can determine early in the coordination process whether the two flows of traffic can be merged without undue control actions. Similarly, controllers can also determine what early control actions can be taken, such as speed control that will keep the aircraft from being vectored off its route.

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