BBFM/RTA Based Path to NextGen/Sesar

Present Day (within 3 to 5 years)

Requires no new aircraft equipment or ATC equipment

- Current ATC procedures, separation and safety standards
- User driven, ATC coordinated, enroute Business Based Flow Management (BBFM), based on speed driven, RTAs to current arrival fixes, issued once airborne, 300 NM to 1,000 (or more) from landing, inputs business criteria into the aircraft arrival flow
- Integration of enroute BBFM RTA and TMA/TSAS/AMAN processes, allowing enroute BBFM Exchange to pre-sort the arrival flow so that the local ATC TBFM process can more accurately fine tune the arrival sequence (FAA Task J proved a combined BBFM/TMA system increased benefits above what each of them provide separately)
- Required Time of Arrival (RTA) as Universal Unit of Currency within ATC system
- ATC to act as the "*Honest Broker*" to accept users RTA request and equitably merge competing BBFM RTAs from users (i.e., airlines, GA) at the top airports
- Density allocation process
- Transition from GDP/MIT/CFMU operations to RTA based BBFM/AMAN operations
- Slow removal of structure around airports by moving the arrival fixes closer to the airport
- FMS to meet RTA, +/- 30 second accuracy
- RTA process to allow Constant Descent to 5 NM final at small, less busy airports
- ILS augmented with RNP/PBN for approach and landing precision
- Expand BBFM time horizon such that the arrival BBFM Exchange RTA is coordinated prior to departure, 2nd RTA coordinated and issued shortly after takeoff to a point 30 NM from airport and 3rd RTA coordinated and issued (if required) 1 to 2 hours prior to landing for fine tuning the arrival flow, based on constantly updating the business criteria, winds, airport configuration, etc.
- Best Equipped, Best Trained, Best Served using easily measured RTA compliance metrics

Future (within 5 to 8 years)

Requires NextGen/Sesar technologies:

- Enhanced ATC procedures and separation standards
- 4D trajectory based operations (TBO = RTA plus 3D path) using RTA as the Universal Unit of Currency within the ATC system
- Reduced separation standards for operators who equip and train (Best Equipped, Best Trained, Best Served), based on aircraft specific RTA/PBN/RNP and comm capabilities
- Equip aircraft with NextGen/Sesar avionics based on rapid ROI using proven benefits
- New FMS, +/- 5 to 10 second RTA accuracy, real time winds, new wind grid (especially for descent)
- Slot allocation process
- ADS-B position and intent
- Computerized Conflict Probe for ATC controllers to identify all 4D conflicts (i.e., provide angular separation during climb and descent), manual conflict resolution
- RTA based, constant Descent arrival to 5 NM final
- ILS augmented with PBN/RNP for approach and landing precision

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