

FAA Navigation Services



Federal Aviation
Administration

FUTURE OF GROUND BASED NAVIGATION AIDS (IMPACTS TO AIRPORT PLANNING)

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Conference**

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Future of Ground Based Navigation AIDS

- Transition from a NAS defined by Ground Based NAVAIDS to one defined by Satellite Navigation
- There will be a network of Ground Based NAVAIDS as a backup
- Support Area Navigation and Required Navigation Performance
- Focus efforts to achieve necessary actions for transition, including divestment and discontinuance of service
- The emphasis is on providing navigation services vice components
- Seeks aviation community views through the Navigation Evolution Customer Council (NECC)
- Is an integral part of the FAA Strategic Planning Process



Discontinuance Strategy- Milestones

Very High Frequency Omni Directional Radar (VOR):

2007 – Decision to begin discontinuance of VOR service

- Develop discontinuance criteria for VOR's

- Assess and validate the location and required number of VOR's.

- Shutdown not expected to begin until 2011.

2015 - Decision on further discontinuance



Discontinuance Strategy- Milestones

Instrument Landing System (ILS) CAT I:

2008 – Decision on next generation Cat I landing system

- Satellite Based Augmentation System (WAAS) LPV
- Ground Based Augmentation System (LAAS)

-Begin developing criteria for CAT I drawdown

2012 – Begin ILS Cat I drawdown – limited backup at OEP airports

2020- Mandate execution



Discontinuance Strategy Milestones (Continued)

ILS CAT II/III

2009 – Decision on next generation CAT II/III service mandate, pending feasibility & schedule of potential LAAS evaluations and risk mitigation strategies

Develop criteria for CAT II/III drawdown

2012– Begin drawdown of ILS Cat II/III services

- CAT II/III service provision transitions to airport & operator
- Airports responsible for all lighting cost

2020 – Mandate execution



Discontinuance Strategy – Progress Report

Non Directional Beacon (NDB) - Discontinuance (Underway)

Middle Markers – Discontinuance (Underway)

Very High Frequency Omni directional Range (VOR)

- 2007 – Assess and validate discontinuance of service
- Considering reduction of current equipment from 950 to approximately 450

Distance Measuring Equipment (DME)

- Backup for large air carriers equipped with Flight Management Systems (FMS)
- Additional DME's needed to provide coverage

Instrument Landing System (ILS)

- FAA is emphasizing the benefits of LPV approaches
- FAA has added 300 LPV approaches a year for a total of 700 approaches thus far.
- LPV is capable of achieving 200 feet minimums.



What We Are Doing...

Wide Area Augmentation System (WAAS)

- Is now operational to provide approach and landing services with precision approach level of performance at a reduced cost
- To improve availability and reliability, the FAA has established reference stations in Mexico, Canada and Alaska
- LPV (Localizer Performance with Vertical Guidance)
- Can provide the same 200 foot decision altitude as the current ILS



What We Are Doing...

- Developing a Precision Approach policy
- Developing VOR criteria for divestment
- Developing DME optimization network and budget needs for 2009
- The FAA briefed the aviation community on its plans for Ground Based Navigation in July 2006
- Coordinating with Euro Control's plan for the transition from Ground Based Navigation network to Satellite Based Navigation network



Instrument Approach Update

- **LPV**
 - For FY 07 goals -- 300 procedures per year at non ILS runway ends
- **Local Area Augmentation System (LAAS)**
 - R&D
 - Fully engaged with the Government of Australia to develop a CAT I capable system
 - FAA's plan is to evaluate the system as a non-fed at Memphis Airport, TN
- **NDB**
 - Total reduction to date of 401



Relevance to Airports

- Consider in Airport development planning process
- FAA will recommend an LPV as a more cost effective precision approach solution instead of an ILS
- Opportunity to obtain Instrument Approach Procedure faster
- Enhanced accessibility to airport
- Achieves lower minimums without major infrastructure investment; however, approach minimums (200/1/2) will require some infrastructure investments
- Congressional Earmarks may be going away
- Encourage users to equip with WAAS receivers versus adding more ground equipment
- LPV has lower capital and operating costs



Conclusion

- Navigation Services plays an important role in setting the stage for “performance based” National Airspace System (NAS)
- Ground-based NAVAIDS services will decrease as SBAS and GBAS services increase
- Transition will be accomplished in collaboration with airspace user community
- Intent is to maximize service delivery while reducing costs and maintaining safety
- Collaboration is paramount. The Navigation Evolution Customer Council (NECC) is being formed under the Federal Advisory Committee Act as a channel for interested parties to provide input and coordination with the FAA



More Information?

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Questions?

Comments?

Discussion?

