



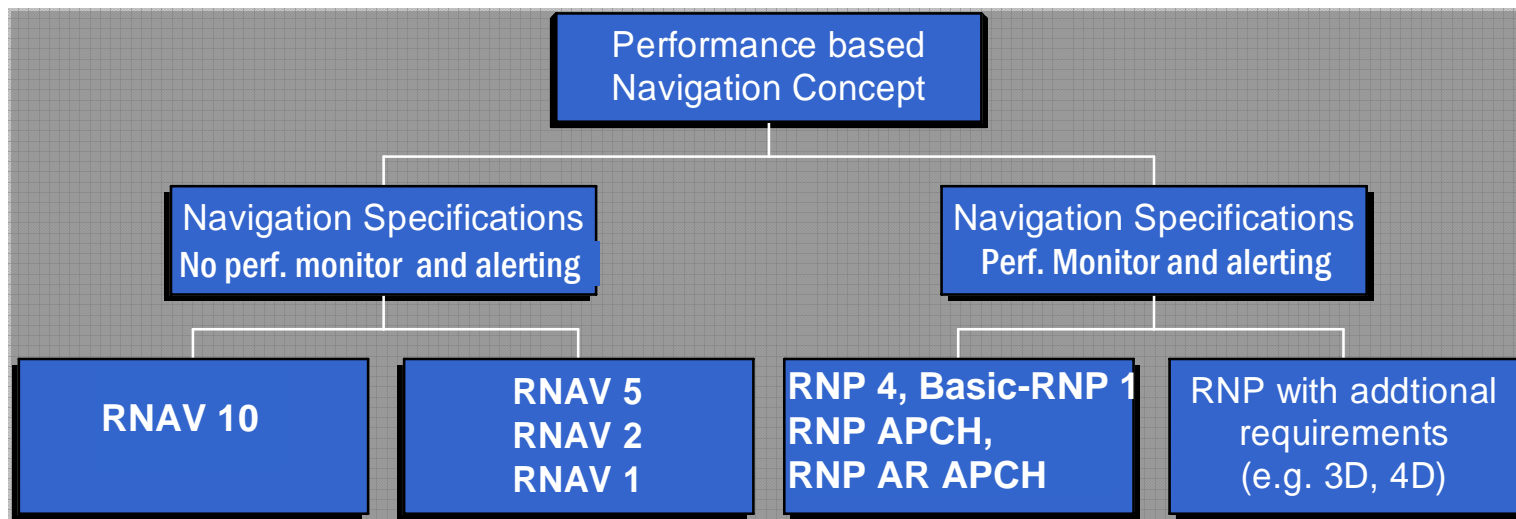
Performance Based Navigation Update Briefing

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Performance Based Navigation Concept



Performance Based Navigation (PBN)

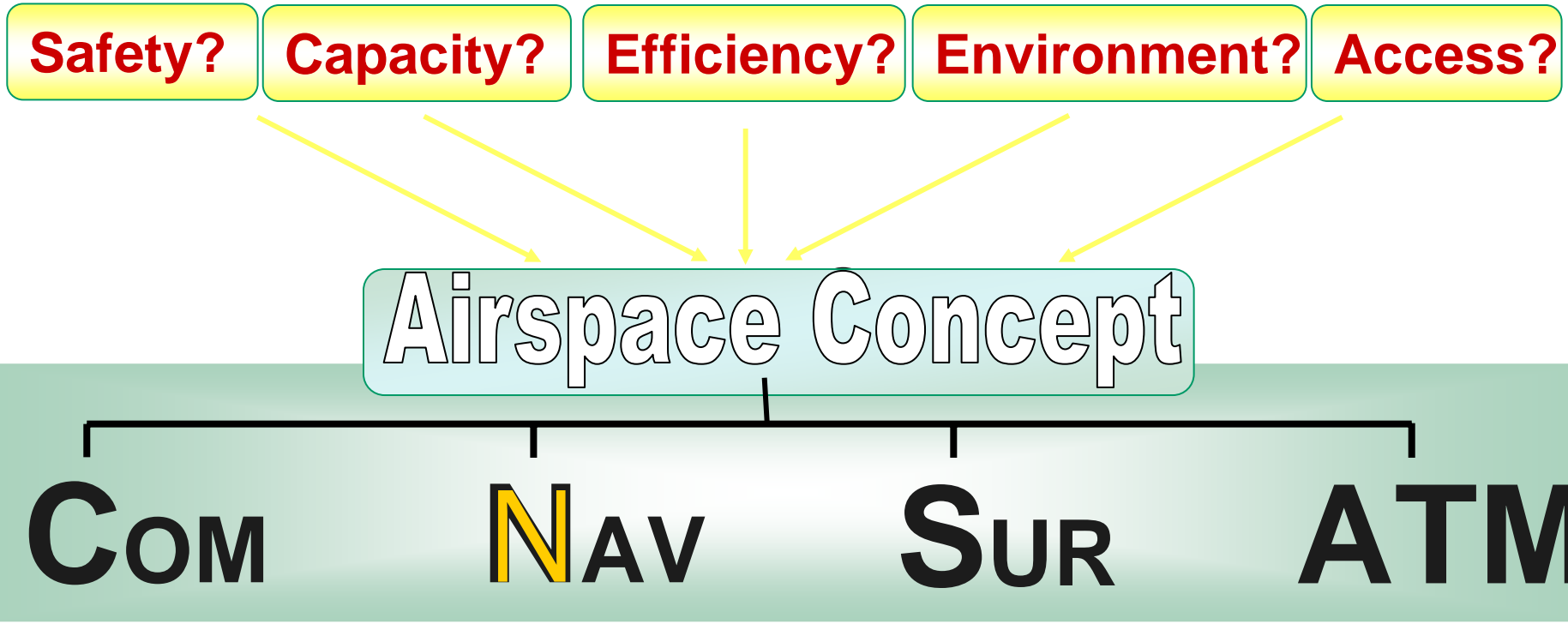
Area navigation based on performance requirements for aircraft that are described in navigation specifications





PBN

Role in Global ATM concept





ICAO implementation goals (as contained in A36-23)

States and/or regions to develop an **implementation plan** by 2009 to achieve the following goals:

- where RNAV operations are required, implementation of enroute (oceanic and continental) and terminal ATS routes to be implemented according to PBN,
- all instrument runway ends to have an approach procedure with vertical guidance (APV), either as the primary approach or as a back-up for precision approaches by **2016**
- States are encouraged to develop APV's for runways that are currently non-instrument runways and operated by aircraft in excess of 5700 kg.

Shared responsibility of ICAO, Regions, States and stakeholders





ICAO leadership role

- Establishment of ICAO PBN programme
 - Development and maintenance of standards, procedures and guidance
 - Familiarization, education, training
 - Establish and work with Regional PBN Task Forces
 - Development of regional roadmap
 - Assist in implementation of PBN
 - Monitoring, review and take remedial actions
- Global PBN TF – Partnership with Industry





Global PBN TF



OVERALL OBJECTIVES

- Provide platform for global coordination of PBN initiatives to achieve a harmonized and accelerated implementation
- Develop a common understanding of industry benefits
- Build on and cooperate with current activities by States and other stakeholders





Global PBN TF Teams



- **Promotion Team**
 - Develop and execute a strategy to promote PBN, both at the policy/decision making level and at the working level
 - Develop an Industry Declaration supporting PBN
- **Implementation Support Team**
 - Develop the checklist for implementation of PBN,
 - Identify and coordinate development of guidance or reference material that may not be available
 - Develop, plan and schedule training and workshops to support PBN implementation
- **Implementation Management Team (GO Team)**
 - Develop and deliver a detailed implementation plan and tool set individualized to the specific needs of the State/stakeholder in order to allow them to initiate the implementation
- **Core Team – Coordinating role**





Promotion Team





Promotion Team

Deliverable 1: Declaration



Aviation Community Declaration

- Draft complete
- Paris Air Show - June (or earlier event)



Implementing Performance Based Navigation

We, as representatives of the air transportation community,

Affirming our joint responsibility to seek continual improvements to the safety, access, capacity, efficiency and environmental sustainability of the air transportation system,

Recognizing that Performance Based Navigation provides the catalyst for these improvements to air traffic operations, while enabling a seamless and cost effective solution throughout the entire flight,

Recognizing the work of ICAO in formulating and publishing a single set of globally harmonized Area Navigation (RNAV) and Required Navigation Performance (RNP) Standards, now known as Performance Based Navigation (PBN),

Recalling that Resolution 36/23 of the 36th ICAO General Assembly whereby States are urged to implement PBN procedures in accordance with the established timetable,

We resolve:

To support the timetable set out by ICAO for the global implementation of PBN,

To collectively work to ensure that our respective disciplines do all that is necessary to facilitate the implementation of PBN, and

To assist States and regions in their development and execution of a complete PBN implementation plan.

Therefore:

Our declaration and petition to all leaders of the air navigation system, for the reasons stated above, is from this day forward to fully support air navigation that abides by the ICAO global standard and schedule for PBN.

Signatures

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International Organizations

- ICAO
- IATA
- CANSO
- IFALPA
- IFATCA
- IBAC
- ACI
- ICCAIA
- FSF
- IFHA

Invitation

- Regional Associations
- CAA's
- ANSP's
- Operators
- Industry
- Airframe manufacturers
- Avionic Manufacturers
- Procedure Design
- Training Institutions
- Etc.



Deliverable 2: Promote PBN



High Level Brochures

- BC - ANSP's/CAA's
- BC - Airlines
- Layman's version of PBN

PBN TF Newsletter - Quarterly

PBN Web Page

- Reference Library
- Where PBN has been implemented
- PBN Point of Contacts (Deliverable 3)
 - CAAs, ANSPs, airlines/operators, supporting industry

Roll-out date: April



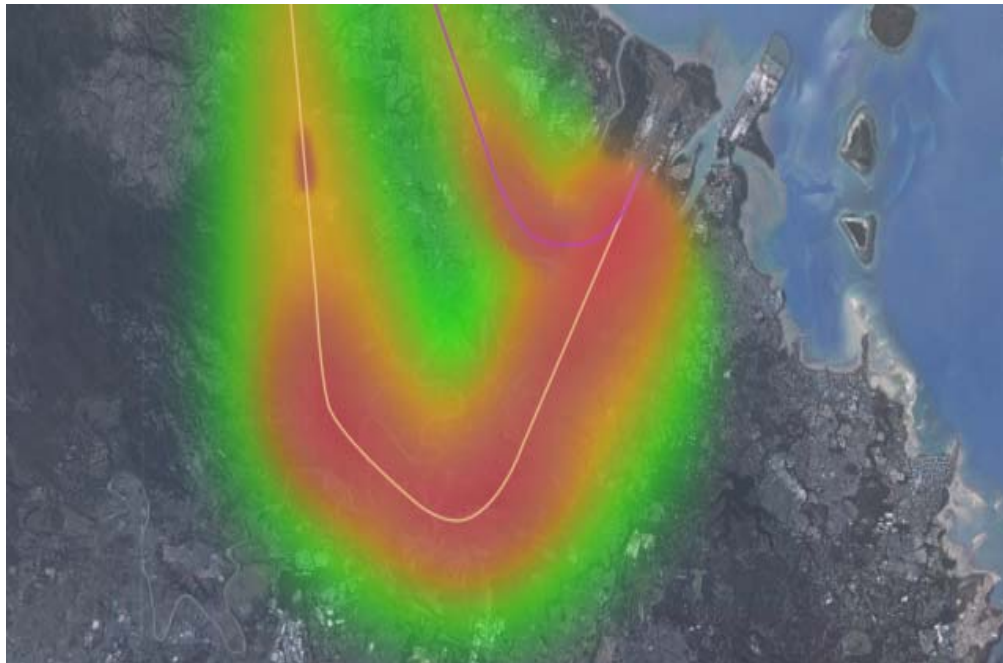


PBN

Areas of Implementation in Asia Pacific



Brisbane RNP Approach



Brisbane: RNP Approach vs Traditional ILS

- 1612 RNP IFR Approaches (B737-800)
 - 17,300 less track miles
 - 200 tonnes fuel saved
 - 650 tonnes CO2 saved
 - Greatly reduces noise path (depicted in red)





Financing

- Lending institutions, e.g. World Bank, etc.
 - Environmental savings
 - Promote national GDPs
 - Reduction of ground based infrastructure
 - Save ailing air transportation industry
 - Regional Air Navigation Agreement
 - Community Declaration

ACTION: IATA/ICAO to introduce subject with WB





Implementation Support Team





Implementation Support Team Action plans



Action plans:

Phase 1: Development of Action plans	April 2009
Phase 2: Addition of links to guidance	May 2009
Phase 3: Dissemination	May 2009





Gaps in guidance/education



- IST reviewed the list of guidance/education needs
- Identified additional areas where no or insufficient guidance/education was available
- Showstoppers were identified
- For each showstopper the following was established
 - Type of guidance/education needed
 - Responsibility
 - Timelines





Gaps in guidance



- GNSS Legal framework
- Airspace concept and strategic objectives
- Ops Approval
- Route Spacing
- Controller Guidance
- Charting SIDs and STARs





Gaps in Education



- Airspace planning
- GNSS Legal framework
- OPS approval
- Pilot training
- Controller training
- Flight Validation





Implementation Management Go Team





Implementation Management Activities



- Project Focused
- Near term (3 year or less time frame)
- Must result in real PBN implementation
- Looking for early success
- Phase 1: GO Team visit resulting in detailed Implementation Work Plan
- Phase 2: Implementation
 - Implementation monitoring/coordination
 - Implementation support available from commercial or other sources
- First (pilot) visit targeted for July 2009





Criteria for GO Team Visit



- States applying should be willing to be regional leaders
- Resource availability
- Complete or relatively advanced status/maturity of National PBN Implementation Roadmap.
- Key stakeholders committed to participating in project
- Targets & Benefits to be derived from project (**must have a common understanding between GO Team and State/stakeholders**)





Implementation Management Funding Issues



- Credible and sustained program to accelerate implementation of PBN will require significant resources
- Funding or other resources required for:
 - GO Team activities
 - Promotion Team activities
 - Other global and regional implementation initiatives
 - Management and coordination of global effort





Implementation Management Funding Proposal



- Build business case to support broad sustained global effort
 - Based on quantifiable environmental, efficiency, and safety benefits
- Using business case, pursue funding using a 2-phase approach:
 - Phase 1 to support limited set of activities in the 1st year
 - Phase 2 to support a broad sustained global effort





Implementation Management Role of Regional Offices/TFs



- Feedback to GPBN TF on what has been and is being done in the States and Regions
- Regional Focal Point for PBN
- Participate in Go Team visits
- Implementation monitoring
- Take on a more proactive role in implementation?





Next steps



- Develop funding
- Build programme structure
- Develop guidance and best practices to support whole effort

