IATA
User Requirements for Air Traffic Services (URATS)
"NAVIGATION"

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Our mission is to represent, lead and serve the airline industry.

IATA at 30,000 ft

- Founded in Havana, Cuba on 1945
- 274 airline members
- Representing 84% of total air traffic
- 63 offices in 60 countries worldwide,
- 1420 employees
- Three major association roles:
  - Representation
  - Standard setting
  - Industry leadership
- Provider of aviation solution

*Mission to **represent**, **lead** and **serve** the airline industry*

IATA User Requirements for Air Traffic Services

- The objective of this presentation is to **complement** the ICAO Global Air Navigation Plan (GANP) and to **provide guidance** to aviation stakeholders based on the international **airlines' perspective**. There are many technological "solutions" for air traffic services. However, unless they conform to global standards and are justified by mutually agreed cost-effective benefits and implementation plans, such technologies are of limited value to international commercial aviation. For technologies that are being introduced, it is essential that **each implementation undergo** a thorough process demonstrating that it supports an agreed-upon operational concept in a **cost-effective manner**. In addition to the airline investments in on-board capabilities**, operational and efficiency improvements are therefore expected from on-going and future investments on technologies**. This requires appropriate investment decisions and implementation strategies through collaborations among all aviation stakeholders.

Navigation

- Navigation infrastructures are an important backbone of Air Traffic Service (ATS) alongside communication and surveillance systems. Aircraft navigation has come a long way from those early days. From legacy ground-based navigation aids such as Distance Measuring Equipment (DME) and VHF Omni-directional Range (VOR) to satellite-based navigation aids such as the Global Navigation Satellite System (GNSS), pilots now have multiple means to safely navigate the sky.
- It is important to recognize that Airspace Users now operate flights globally on a daily basis. It is therefore of utmost importance that ANSPs and regulators adopt a global and regional look at route and airspace design and management, with harmonization throughout all phases of flight from gate-to-gate and a collaborative approach involving Airspace Users during all levels of decision making.
- This collaboration is crucial in the navigation aspect of ATS as it links directly to aircraft equipage investments, safety and efficiency in flight operations.
- The following sections outline industry's positions on different navigation infrastructures and applications.

Performance-Based Navigation (PBN)

- PBN is a global set of area navigation standards, defined by ICAO, based on navigation performance and functionality required for the proposed operation. PBN concept encompasses two types of navigation specifications:
  - RNAV Specification – Navigation specification based on area navigation that does not include the requirement for on-board performance monitoring and alerting, e.g. RNAV 5, RNAV 2 and RNAV 1.
  - RNP Specification – Navigation specification based on area navigation that requires on-board performance monitoring and alerting, e.g. RNP 4, RNP 2 and RNP APCH.
- It is expected that all future navigation applications will identify the navigation requirements through the use of performance specifications, rather than defining equipage of specific navigation sensors.
- The use of PBN avoids the need to purchase and deploy navigation aids for each new route or instrument flight procedure, allows for the design of routes and procedures that are not limited by ground-based infrastructure and facilitates the operational approval process for operators by providing a limited set of navigation specifications intended for global use.

Performance-Based Navigation (PBN)

- The safety benefits of PBN are significant, as even airports located in the least privileged areas of the world can have runway-aligned approaches with horizontal and vertical guidance to any runway end without having to install, calibrate and maintain expensive ground based navigation aids.
- In line with ICAO Assembly Resolution A37-11, Airlines support rapid deployments of vertical-guided approach procedures using RNP APCH navigation specification, enabled by GNSS and barometric vertical navigation (Baro-VNAV) to all instrument runways.
- Despite several ICAO Assembly Resolutions, including Resolution A37-11, and an industry-wide joint declaration providing full support and calling for the rapid implementation of PBN, some States and ANSPs have been slow to act.

IATA Position on PBN:

- As a matter of high-priority, support the implementation of ICAO PBN in all phases of flight, as well as support the deployments of Approaches with Vertical Guidance (APV) based on RNP APCH procedures with Baro-VNAV. These procedures should include LNAV/VNAV minima and should not rely on ground-based conventional navigations.
- Do not support mandating specific PBN navigation specifications without corresponding operational benefits. Requirements for PBN navigation specifications should be based on agreed operational and safety improvements, short and long term planning and projection of fleet equipage. While aiming towards regional and global harmonization, ANSPs and regulators should work closely with airlines and other airspace users to determine an appropriate navigation specification for specific airspace based on targeted ATM operations, airspace concept and separation standards to be applied.
- Support the use of GNSS as the primary navigation infrastructure supporting current and future applications and enhancements of PBN.

IATA Position on NDB:

- Support rapid decommissioning of all NDBs for navigation services. For airports with only NDB non-precision approach, the NDB-based ADF procedure should be replaced by a GNSS-based RNP APCH with Baro-VNAV procedure. The use of NDBS for en-route should be replaced by PBN waypoints.

IATA Position on DME:

- Support the use of some existing DMEs as contingency navigation aids supplementing GNSS for RNAV operations. Support the use of DME as a part of ILS where applicable. Where considered economically beneficial and following a successful consultation with relevant airspace users, ANSPs are encouraged to publish a rationalization plan for unnecessary DMEs with an agreed timeline.

IATA Position on VOR:

- Support the transition to GNSS as the primary means of navigation and recommends minimum reliance on VOR as contingency for the GNSS. Where considered economically beneficial and following a successful consultation with relevant airspace users, ANSPs are encouraged to plan and publish a rationalization plan of unnecessary VORs under an agreed timeline.
- Additionally, in line with ICAO Assembly Resolution A37-11, States and ANSPs should develop a GNSS-based RNP APCH with Baro-VNAV procedure for all instrument runways with only VOR non-precision approach procedure.

IATA Position on TACAN:

- Do not support civil implementations of TACAN because of the lack of civil aviation requirements.

IATA Position on ILS:

- Support continued deployment and use of ILS as the primary means of precision approach. In most cases, ANSPs should continue supporting ILS operations to the highest level of service.

IATA Position on GNSS:

- With the continuous advancement in GNSS technologies and its demonstrated capabilities and operational benefits, support deploying and use of GNSS as the primary radio navigation aids for all phases of flight and as the primary enabler of PBN and RNP.

IATA Position on MLS:

- Do not support future implementations of MLS.

IATA Position on ABAS:

- Support using ABAS as the preferred augmentation system for en-route and terminal-area navigation using GNSS. In line with ICAO Assembly Resolution A37-11, for approach operations, ABAS should be used in combination with Baro-VNAV to provide horizontal and vertical guidance, respectively.

IATA Position on GBAS:

- Support GBAS with geometric vertical guidance as a viable candidate to supplement ILS for Precision Approach Operations. GBAS infrastructure and GLS procedures should be implemented as appropriate based on a positive business case and consultation with airlines. Airlines with GLS avionics should approach their regulators to obtain operational approval as necessary.

IATA Position on SBAS:

- Airlines who are equipping with SBAS technology are doing so based upon their individual operational requirements and business case.

- IATA member airlines who are not planning to utilize SBAS are concerned that they may be adversely impacted by its implementation. Three essential requirements for SBAS implementation are:

  1. no mandatory requirements by regulatory authorities to fit SBAS equipment to aircraft;
  2. no unjustified restrictions to operations due to a lack of SBAS equipment; and
  3. no costs related to SBAS being imposed directly or indirectly to airspace users who do not use such technology.

Navigation

Technology / Application	Support	Maintain	Neutral	Do not support
PBN	X			
WGS-84	X			
NDB				X
DME		X		
VOR		X		
TACAN				X
ILS	X			
MLS				X *(LHR only)*
GNSS	X			
ABAS	X			
GBAS	X			
SBAS			X	
DFMC GNSS	See note 1			

Navigation

- Further technical and operational researches to substantiate the benefits of DFMC GNSS are encouraged. IATA discourages any attempt to discriminate against the use of any GNSS constellations that meet ICAO requirements. Additionally, States should refrain from issuing any unilateral, prescriptive mandate to airlines.
- The dual-frequency, multi-constellation (DFMC) GNSS capability upgrade for SBAS are now being developed under ICAO and should be available by 2025.

Airline Runway PBN priorities

Airport	Runway	Published Approach	PBN/RNAV Need
OMAL	01/19	VOR/ILS-1	y
OMRK	16	VOR/ILS-34	Y
OIMM	13L/R	VOR/ ILS13L/R	y
OISS	11 L/R	VOR/ILS-29L	Y
HEBA	14	ILS-32 GNSS-32	Y-14
ORMM	14	VOR/ILS-32	Y
ORBB	15L/33R	VOR & ILS-15L/33R	y- Recently both ILS & VOR was off simultaneous and RWY15R/33L was CLSD
OIIE	11L/R	VOR 11L/R,	Y
OIBK	09L	VOR - RWY09L	Y
OISS	11L/R	VOR/ILS 29L	Y
OIFM	08L/R 26L/R	VOR & ILS 26R	Y 08L/R & 26L
OITT	12L/R	Circle to land RWY12L/R (ILS - 30L/R available)	Y RWY12L/R

Thank you


To represent, lead, and serve the airline industry
Our vision
To be the force for value creation and innovation driving a safe, secure and profitable air transport industry that sustainably connects and enriches our world
What do we want to be?
the force for
VALUE
creation and
INNOVATION
What do we strive to do?
DRIVE
a safe, secure and profitable air transport industry
What will we achieve?
an industry that sustainably
CONNECTS & ENRICHES
our world
Our values
Put our people first
Deliver results with speed
Think innovation
Embrace change
Work as a team
Use cultural intelligence
Act with integrity
Be a leader