



## PROGRAMME

- **Day 1: Tuesday, 16th October 2012**
  - Plenary – PBN, Expediting Implementation Together
  - Session 1 - PBN from 35,000 feet: “A top down look”
  - Session 2 - Validating PBN: “What’s in it for me”
  - Session 3 - PBN Successes: Who is doing what with PBN implementation?
- **Day 2: Wednesday, 17th October 2012**
  - Plenary Session 4 - Stakeholder readiness “Putting the pieces of the PBN puzzle together?”
  - Workshop A - Practical Experiences and Air Traffic Management
    - ATM Requirements Forum
  - Workshop B - PBN and the Cockpit
    - Flight Operations Requirements Forum
- **Day 3: Thursday, 18th October 2012**
  - Workshop A (Cont’d): Practical Experiences and Air Traffic Management:
    - Technical Requirements Forum
    - Training Forum
    - Regulatory and Certification Forum
  - Workshop B (Cont’d) - PBN and the Cockpit
    - Regulatory and Certification Forum
    - Technical Requirements Forum
    - Training Forum
- **Day 4: Friday, 19 October 2012**
  - Symposium Wrap-Up: “On-Final”
  - Closing Speech



# Performance-based Navigation (PBN) Symposium and Workshops

16–19 October 2012  
ICAO Headquarters, Montreal

[www.icao.int/Meetings/PBN-Symposium](http://www.icao.int/Meetings/PBN-Symposium)

**TUESDAY, 16 OCTOBER 2012**  
**PLENARY - PBN, EXPEDITING IMPLEMENTATION TOGETHER**

09:15 - 09:25	<p>➔ <b>Symposium Opening</b></p> <ul style="list-style-type: none"> <li>• Master of Ceremony, <b>Vince Galotti</b>, Deputy Director, Standardization and Infrastructure, Air Navigation Bureau, ICAO</li> <li>• <b>Nancy Graham</b>, Director, Air Navigation Bureau, ICAO</li> </ul>
09:25 - 09:30	<p><b>Session 1 - PBN from 35,000 feet</b> <b>"A TOP DOWN LOOK"</b></p> <p>Moderator - <b>Jeff Williams</b>, Senior Vice President, Aviation Management, TERATECH</p>
09:30 - 09:45	<p>➔ <b>Keynote address</b> ➔ <b>Call for Action!</b></p> <ul style="list-style-type: none"> <li>• <b>Alan Stealey</b>, Divisional Senior Vice President, Flight Operations, Emirates Airline</li> </ul> <p><i>Why PBN and why now? What we should be doing and how we can improve the situation.</i></p>
09:45 - 10:00	<p>➔ <b>PBN: Not just Another Acronym</b></p> <ul style="list-style-type: none"> <li>• <b>Bo Redeborn</b>, Principal Director ATM, EUROCONTROL</li> </ul> <p><i>This will outline very briefly the ASBU approach and then explain PBN as a major enabler for them taking the block upgrade approach.</i></p>
10:00 - 10:15	<p>➔ <b>What's new from ICAO?</b></p> <ul style="list-style-type: none"> <li>• <b>Erwin Lassooij</b>, PBN Programme Manager, Air Traffic Management (ATM) Section, ANB, ICAO</li> </ul> <p><i>Basic review of what documents are available and what will soon be online.</i></p>
10:15 - 10:30	<p>➔ <b>Action by Industry</b></p> <ul style="list-style-type: none"> <li>• <b>Guenther Matschnigg</b>, Senior Vice President, Safety, Operations &amp; Infrastructure, IATA</li> </ul> <p><i>A high level presentation of requirements from Industry.</i></p>
10:30 - 10:45	➔ <b>Questions</b>
10:45 - 11:15	<p><b>Coffee Break</b> Sponsored by</p>





**TUESDAY, 16 OCTOBER 2012  
CONTINUED**

11:15 - 11:20	<p><b>Session 2 - Validating PBN "WHAT'S IN IT FOR ME"</b></p> <p>Panel presentations / Discussion</p> <p>Moderator - <b>Bo Redeborn</b>, Principal Director, ATM, EUROCONTROL</p>
11:20 - 11:35	<p>➔ <b>Gains for the airline operators</b></p> <ul style="list-style-type: none"> <li>• <b>Johnny Woods</b>, Head of Flight Operations &amp; Chief Pilot, South African Airways (S.A.A.)</li> </ul> <p><i>A high level presentation of overall benefits to an airline when implementing PBN, fuel, track length, safety, accessibility etc.</i></p>
11:35 - 11:50	<p>➔ <b>What can we do with the airspace?</b></p> <ul style="list-style-type: none"> <li>• <b>Lynn Ray</b>, Vice President, Mission Support Services, FAA</li> </ul> <p><i>A high level approach to the benefits of PBN for airspace design, segregated routes, CDO's, capacity etc</i></p>
11:50 - 12:05	<p>➔ <b>Impact upon Air Navigation Service Providers</b></p> <ul style="list-style-type: none"> <li>• <b>Akos van der Plaats</b>, PBN SG Lead, CANSO</li> </ul> <p><i>A high level approach to benefits as seen from an ATC perspective, flexible routes, reduced vectoring, CDA's etc.</i></p>
12:05 - 12:20	<p>➔ <b>Airports and PBN, will it make a difference?</b></p> <ul style="list-style-type: none"> <li>• <b>Angela Gittens</b>, Director General, ACI</li> </ul> <p><i>Impact upon airports environmental, capacity, safety. What if we are at capacity already?</i></p>
12:20 - 12:35	<p>➔ <b>PBN and a system of systems</b></p> <ul style="list-style-type: none"> <li>• <b>Michael Standar</b>, Chief ATM, SESAR Joint Undertaking</li> </ul> <p><i>A high level approach to how the system will utilise PBN to enable accurate navigation, predictable routing etc.</i></p>
12:35 - 12:50	<p>➔ <b>Delivering Environmental benefits</b></p> <ul style="list-style-type: none"> <li>• Presented by <b>Boubacar Djibo</b>, Director, Air Transport Bureau (ATB), ICAO</li> </ul> <p><i>A look at PBN in the basket of measures available for delivering environmental benefits with consideration of environmental interdependencies.</i></p>
12:50 - 13:00	<p>➔ <b>Panel discussion and questions</b></p> <p><i>Panel will consist of presenters to discuss issues pertinent to the presentations given and to make placeholders for further detailed discussion in the workshops.</i></p>



**TUESDAY, 16 OCTOBER 2012  
CONTINUED**

13:00 - 14:30	<p><b>Lunch Break</b> Sponsored by</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;">   </div>
14:30 - 14:35	<p><b>Session 3 - PBN Successes</b> <b>“WHO IS DOING WHAT WITH PBN IMPLEMENTATION”</b></p> <p>Panel presentations / Discussion</p> <p>Moderator - <b>Rob Eagles</b>, Director, Infrastructure Strategy, IATA</p>
14:35 - 14:50	<p>➤ <b>PBN Global Implementation Situation</b></p> <ul style="list-style-type: none"> <li>• <b>Carlos Cirilo</b>, Assistant Director, Infrastructure Strategy, IATA</li> </ul> <p><i>A focus on the big picture overview of the implementation status on a global basis.</i></p>
14:50 - 15:05	<p>➤ <b>Practical implementation PBN in China Flight Standards</b></p> <ul style="list-style-type: none"> <li>• <b>Honghai Yang</b>, Deputy Director General, CAAC</li> </ul> <p><i>Flight Standard implications for PBN implementation in China.</i></p>
15:05 - 15:20	<p>➤ <b>Practical implementation in Brazil</b></p> <ul style="list-style-type: none"> <li>• <b>Carlos Pellegrino</b>, Operations Director, ANAC</li> </ul> <p><i>Practical implementation at locations in Brazil and issues arising.</i></p>
15:20 - 15:35	<p>➤ <b>Practical implementation - Efficiency, fuel saving and track mileage reduction</b></p> <ul style="list-style-type: none"> <li>• <b>Jeff Cochrane</b>, Manager of Communication, Navigation and Surveillance (CNS) Service Design, NAV Canada</li> </ul> <p><i>A presentation of implementation of PBN, the issues arising and benefits being gained.</i></p>
15:35 - 15:50	<p>➤ <b>Practical Implementation - Safety and accessibility</b></p> <ul style="list-style-type: none"> <li>• <b>Gary Newman</b>, Manager Procedure design and Cartography, South African Civil Aviation Authority</li> </ul> <p><i>A presentation of implementation of PBN in a low density area the issues including social impact</i></p>
15:50 - 16:20	<p><b>Coffee Break</b> Sponsored by</p>
	



**TUESDAY, 16 OCTOBER 2012  
CONTINUED**

16:20 - 16:35	<p>➔ <b>Practical Implementation - Capacity gains in a complex area</b></p> <ul style="list-style-type: none"> <li>• <b>Doug Marek</b>, Operations Manager, FAA</li> </ul> <p><i>A presentation of implementation of PBN in the USA the issues arising together with improvements in capacity.</i></p>
16:35 - 16:50	<p>➔ <b>Practical Implementation - Environment requirements</b></p> <ul style="list-style-type: none"> <li>• <b>Benoit Roturier</b>, Director Programme GNSS, DGAC</li> </ul> <p><i>A presentation including implementation of PBN in Europe the issues arising together with improved environmental impact.</i></p>
16:50 - 17:05	<p>➔ <b>Practical Implementation - Japan</b></p> <ul style="list-style-type: none"> <li>• <b>Nobumichi Akagi</b>, Japan Airlines</li> </ul> <p><i>A presentation including implementation of PBN at five airports in Japan.</i></p>
17:05 - 17:30	<p>➔ Panel discussion and questions</p> <p>➔ Wrap up</p>

17:45	<p><b>WELCOME RECEPTION</b> Sponsored by</p>
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**WEDNESDAY, 17 OCTOBER 2012  
PLENARY SESSION 4 - STAKEHOLDER READINESS**

**PUTTING THE PIECES OF THE PBN PUZZLE TOGETHER**

Panel presentations / Discussion

Moderator - Steve Fulton, Technical Fellow, GE Aviation

09:30 - 09:35	➔ <b>Opening and Administration</b>
09:35 - 09:50	➔ <b>Aircraft manufacturer issues</b> <ul style="list-style-type: none"> <li>• <b>Dave Nakamura</b>, Senior Technical Fellow - Boeing Airplane Systems, The Boeing Company</li> </ul>
09:50 - 10:05	➔ <b>Legacy, turboprop and regional issues</b> <ul style="list-style-type: none"> <li>• <b>Pierre Marchi</b>, EMBRAER</li> </ul>
10:05 - 10:20	➔ <b>PBN utilisation - General Aviation perspective - private, business and VLJ issues</b> <ul style="list-style-type: none"> <li>• <b>Craig Spence</b>, Secretary General, IAOPA Headquarters</li> </ul>
10:20 - 10:35	➔ <b>PBN with ATFM and airspace</b> <ul style="list-style-type: none"> <li>• <b>Paul Frank Bijou</b>, CEO, Quovadis</li> </ul>
10:35 - 10:50	➔ <b>Any issue for the military?</b> <ul style="list-style-type: none"> <li>• <b>Alan Storm</b>, NATO</li> </ul>
10:50 - 11:20	<b>Coffee break</b> Sponsored by
	
11:20 - 11:35	➔ <b>Systems in the air - Avionics development and certification</b> <ul style="list-style-type: none"> <li>• <b>Randy Walter</b>, GE Aviation</li> </ul>
11:35 - 11:50	➔ <b>Aeronautical information and charting</b> <ul style="list-style-type: none"> <li>• <b>Michael Lewis</b>, Vice President, Government and Industry Affairs, Jeppesen</li> </ul>
11:50 - 12:00	➔ <b>Panel discussion and questions</b>
12:00 - 13:00	➔ <b>Regional Forum "Creating More Lift"</b> <ul style="list-style-type: none"> <li>• Led by <b>Bill Voss</b>, President and CEO, Flight Safety Foundation</li> </ul> <p><i>A forum discussion of ICAO Regional offices and invited guests to look at issues arising from stakeholder implementation in their regions (Including Regional Implementation Plans) and the implications of what has already been presented.</i></p> <p><i>Wrap up and conclusions to bring forward to the Workshops</i></p>



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**WEDNESDAY, 17 OCTOBER 2012  
 CONTINUED**

13:00 - 14:30

**Lunch Break**  
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WEDNESDAY, 17 OCTOBER 2012

**WORKSHOPS**

(14:30 - 17:15)

<p align="center"><b>Workshop A - Practical Experiences and Air Traffic Management</b></p> <p align="center">(All you need to know to create the PBN environment)</p>	<p align="center"><b>Workshop B - PBN and the Cockpit</b></p> <p align="center">(All you need to know to commence PBN Flight Operations)</p>
<p>Expert Panel presentations / discussion</p> <ul style="list-style-type: none"> <li>Moderator - David Maynard, CANSO</li> </ul> <p><i>(This is a learning/education workshop that will explore in more detail the ATM issues, requirements and solutions resulting from actual PBN implementation examples)</i></p>	<p>Expert Panel presentations / discussion</p> <ul style="list-style-type: none"> <li>Moderator - Jeff MacDonald, ICAO</li> </ul> <p><i>(This is a learning/education workshop that will explore in more detail the Flight Operations issues, requirements and solutions resulting from actual PBN implementation examples)</i></p>
<p><b>ATM REQUIREMENTS FORUM</b></p>	<p><b>FLIGHT OPERATIONS REQUIREMENTS FORUM</b></p>
<p>FORUM INTRO/OVERVIEW</p> <ul style="list-style-type: none"> <li>CHAMPION - Franca Pavlicevic, EUROCONTROL</li> </ul>	<p>FORUM INTRO/OVERVIEW</p> <ul style="list-style-type: none"> <li>CHAMPION - Pedro Rivas, IFALPA</li> </ul>
<p>AIRSPACE DESIGN</p>	<p>INSTRUMENT PROCEDURE DESIGN</p>
<p>INSTRUMENT PROCEDURE DESIGN</p>	<p>FLIGHT CREW PROCEDURE DEVELOPMENT</p>
<p>AERONAUTICAL INFORMATION MANAGEMENT AND CHARTING</p>	<p>DATA QUALITY AND NAVIGATION DATABASE</p>
<p align="center">COFFEE BREAK</p> <p align="center">Sponsored by</p>	
 	
<p>PRACTICAL PBN EXAMPLE</p>	<p>CONTROL OF DATA QUALITY &amp; NAVIGATION DATABASE</p>
<p>AIR TRAFFIC CONTROL OPERATING PROCEDURES</p>	<p>FLIGHT CREW PROCEDURE DEVELOPMENT</p>
<p>Questions for the Panel</p>	
<p>REQUIREMENTS/ISSUES CAPTURE</p>	<p>REQUIREMENTS/ISSUE CAPTURE</p>
<p>CLOSING REMARKS</p>	





THURSDAY, 18 OCTOBER 2012

WORKSHOPS

(09:30 - 13:00)

<p><b>Workshop A - Practical Experiences and Air Traffic Management</b></p> <p>(All you need to know to create the PBN environment)</p>	<p><b>Workshop B - PBN and the Cockpit</b></p> <p>(All you need to know to commence PBN Flight Operations)</p>
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<p><b>TECHNICAL REQUIREMENTS FORUM</b></p>	<p><b>REGULATORY AND CERTIFICATION FORUM</b></p>
<p><b>FORUM INTRO/OVERVIEW</b></p> <ul style="list-style-type: none"> <li><b>CHAMPION - Jim Arrighi</b>, FAA</li> </ul>	<p><b>FORUM INTRO/OVERVIEW</b></p> <ul style="list-style-type: none"> <li><b>CHAMPION - Mark Steinbicker</b>, FAA</li> </ul>
<p><b>RNAV, RNP AR AND RNP</b></p>	<p><b>LATIN AMERICA GUIDANCE MATERIAL</b> (Present/Planned and Certification/Approval Strategies)</p>
<p><b>AIR TRAFFIC SYSTEM SUPPORT REQUIREMENTS</b></p>	<p><b>FAA GUIDANCE MATERIAL</b> (Present/Planned and Certification/Approval Strategies)</p>
<p><b>FLIGHT PLANNING</b></p>	<p><b>EASA GUIDANCE MATERIAL</b> (Present/Planned and Certification/Approval Strategies)</p>
<p><b>TRAJECTORY PREDICTION</b></p>	<p><b>ICAO PBN OPERATIONAL APPROVAL MANUAL</b> (Present/Planned and Certification/Approval Strategies)</p>
<p><b>TERRAIN / OBSTACLE DATA</b></p>	<p><b>RNP OPERATIONAL APPROVALS, CHALLENGES AND WAY FORWARD</b></p>
<p><b>QUESTIONS FOR THE PANEL</b></p>	
<p><b>REQUIREMENTS/ISSUE CAPTURE</b></p>	



THURSDAY, 18 OCTOBER 2012

CONTINUED

COFFEE BREAK

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**Honeywell**



TRAINING FORUM

FORUM INTRO/OVERVIEW

- CHAMPION - Dennis Kelly, IFATCA

AIR TRAFFIC CONTROL

REGULATORY / PROCEDURE DESIGN

AIRSPACE DESIGN

MILITARY TRAINING

REGIONAL TRAINING INITIATIVE

QUESTIONS FOR THE PANEL

REQUIREMENTS/ISSUES CAPTURE

DETERMINING AIRCRAFT ELIGIBILITY

SUPPORTING DOCUMENTATION - Safety Cases

QUESTIONS FOR THE PANEL

REQUIREMENTS/ ISSUE CAPTURE

LUNCH

13:00 - 14:00


Sponsored by





THURSDAY, 18 OCTOBER 2012

CONTINUED

14:15 - 17:00	
REGULATORY AND CERTIFICATION FORUM	TECHNICAL REQUIREMENTS FORUM
<b>FORUM INTRO/OVERVIEW</b> <ul style="list-style-type: none"> <li>CHAMPION - Honghai Yang, CAAC</li> </ul>	<b>FORUM INTRO/OVERVIEW</b> <ul style="list-style-type: none"> <li>CHAMPION - Geoff Burtenshaw, UK Civil Aviation Authority</li> </ul>
AIRSPACE AND ATFM REGULATION	AN AIRCRAFT MANUFACTURER'S PERSPECTIVE
CERTIFICATION FOR INSTRUMENT APPROACH PROCEDURE DESIGN	AN AIRSPACE PERSPECTIVE
AIR TRAFFIC SYSTEM SUPPORT	AN INSTRUMENT PROCEDURE DESIGNERS PERSPECTIVE
	A THIRD PARTY PROVIDERS PERSPECTIVE
	A THIRD PARTY PROVIDERS PERSPECTIVE
	QUESTIONS FOR THE PANEL
	REQUIREMENTS/ISSUES CAPTURE
COFFEE BREAK Sponsored by 	
	<b>TRAINING FORUM</b>
EASA REGULATORY SOLUTIONS	FORUM INTRO/OVERVIEW CHAMPION - John Sullivan, CAE
ATFM MANUAL	USE OF FLIGHT SIMULATORS
ENVIRONMENTAL REGULATION ISSUES	REGULATORY REQUIREMENTS



THURSDAY, 18 OCTOBER 2012

CONTINUED

SAFETY CASE - PROCEDURE READY FOR PUBLICATION?	FLIGHT DISPATCH/FLIGHT PLANNING TRAINING
QUESTIONS FOR THE PANEL	QUESTIONS FOR THE PANEL
REQUIREMENTS/ISSUE CAPTURE	REQUIREMENTS/ISSUE CAPTURE

CLOSING REMARKS AND WORKSHOP SUMMARY

(17:00 - 17:10)

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**FRIDAY, 19 OCTOBER 2012**  
**WORKSHOPS**

**“ON-FINAL” - SYMPOSIUM WRAP-UP**  
MC - Vince Galotti, ICAO  
Moderator - Christian Schleifer, ANC President

09:00 - 09:10	<ul style="list-style-type: none"> <li>➤ <b>Recall of Objectives</b> <ul style="list-style-type: none"> <li>• Vince Galotti, ICAO</li> </ul> </li> </ul>
9:10 - 09:15	<ul style="list-style-type: none"> <li>➤ <b>Purpose of session</b> <ul style="list-style-type: none"> <li>• Moderator - Christian Schleifer, ICAO</li> </ul> </li> </ul>
09:15 - 09:45	<ul style="list-style-type: none"> <li>➤ <b>ATM Workshop - The issues and next steps</b> <ul style="list-style-type: none"> <li>• Moderator ATM Stream - David Maynard, CANSO</li> </ul> </li> </ul>
09:45 - 10:15	<ul style="list-style-type: none"> <li>➤ <b>Flight Operations Workshop - The issues and next steps</b> <ul style="list-style-type: none"> <li>• Moderator Flight Operations stream - Jeff MacDonald, ICAO</li> </ul> </li> </ul>
10:15 - 11:00	<ul style="list-style-type: none"> <li>➤ <b>The Challenge</b></li> <li>➤ <b>Panel discussion &amp; Questions</b></li> </ul>
11:00 - 11:30	<p><b>COFFEE BREAK</b> Sponsored by</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>
11:30 - 12:00	<ul style="list-style-type: none"> <li>➤ <b>The issues and next steps consolidated</b> <ul style="list-style-type: none"> <li>• Vince Galotti, ICAO</li> </ul> </li> </ul>
12:00 - 12:15	<ul style="list-style-type: none"> <li>➤ <b>Closing speech - Nancy Graham, ICAO</b></li> </ul>