Flight Path Management
the ATM perspective

Lew Jenkins Senior Safety Specialist
Changing times.....

In the old days pilots had some idea of where they were but no idea where other aircraft were, so they invented ATC.

Today pilots know exactly where they are and other aircraft around them, yet we still have ATC ......
We have started the journey ..... 

Enablement

Fly the Numbers FT#’s predictability & consistency

PBN [LNAV & VNAV] & FLOW [time] mgt

Oceanic Control System; OCS

Short Term Conflict Alerting, STCA

Other Safety Management Tools
Loss of Separation Occurrences
last 3 years

<table>
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<tr>
<th>Region</th>
<th>Occurrences</th>
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<tbody>
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<td>Oceanic</td>
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<td>Dom Enroute</td>
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<td>Int TMA</td>
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Modus Operandi

Past:
• ATC ‘can do’ culture
  Tactical and reactive
  Work satisfaction
  Very ‘I am in control’ focus

Now:
• Leave as planned, do not offer

• Avoid short notice changes SID’s & STAR’s

• Pilots not consistent, becoming more so
Air Safety Incidents
from Dec 2015

- Arrivals Manager
- STAR
- Speed
- RNAV
Challenges:

- Mixed mode operations
- VNAV assurance, LNAV ??
- Pilot SA in regard to Controlled Air when doing VA
- RTA capability
- STAR but not Approach capable
- Controller HMI & SA: geo to data referencing
- Reducing controller ‘competency’?
Benefits

• Inter system checking: DAPS [downlink aircraft parameters] IAS and altitude

• Tech & Automation is the only solution to safely and effectively manage demand & customer expectation OCS evidence

• Reduction in tactical intervention – ↘ human error
• The real challenge ??

  ATC accurate FLOW capability, and

  Aircraft RTA performance  [+/- 5 seconds]

  Airline, pilot compliance to ‘the rules’
Thank You