ICAO Separation and Airspace Safety Panel (SASP) current outcomes related to PBCS

PBCS workshop
(Paris June 17-19, 2015)
Outline

• SASP contributors and composition
• Data link dependent separations – emphasis on performance
• PBCS for development of new separations
• Role of monitoring going forward
SASP/WG/WHL-26

- **Participation:**
  - 14 Panel members
  - 26 Advisors

- **Plenary and 5 Project Teams**
  - PT 6 Longitudinal Separation
  - PT 8 TMA Separation
  - PT 16 Lateral Separation
  - PT 17 Safety Assessment
  - Mathematicians Sub Group (MSG)
5.4.2.6.2.2 Direct controller-pilot communications shall be maintained while applying a distance-based separation minima. Direct controller-pilot communications shall be voice or CPDLC. The communication criteria necessary for CPDLC to satisfy the requirement for direct controller-pilot communications shall be established by an appropriate safety assessment.

5.4.2.6.4.3 For aircraft cruising, climbing or descending on the same track, the following separation minima may be used:

<table>
<thead>
<tr>
<th>Separation minima</th>
<th>RNP type</th>
<th>Maximum ADS-C periodic reporting interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>93 km (50 NM)</td>
<td>10</td>
<td>27 minutes</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>32 minutes</td>
</tr>
<tr>
<td>55.5 km (30 NM)</td>
<td>4</td>
<td>14 minutes</td>
</tr>
</tbody>
</table>
5.4.2.9.2 For aircraft cruising, climbing or descending on:

a) the same track, or

b) crossing tracks provided that the relative angle between the tracks is less than 90 degrees, the following separation minima may be used:

<table>
<thead>
<tr>
<th>Separation minima</th>
<th>RNP</th>
<th>RCP</th>
<th>RSP</th>
<th>Maximum ADS-C periodic reporting interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>93 km (50 NM)</td>
<td>10</td>
<td>240</td>
<td>180</td>
<td>27 minutes</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>240</td>
<td>180</td>
<td>32 minutes</td>
</tr>
<tr>
<td>55.5 km (30 NM)</td>
<td>2 or 4</td>
<td>240</td>
<td>180</td>
<td>12 minutes</td>
</tr>
<tr>
<td>5 minutes</td>
<td>2 or 4 or 10</td>
<td>240</td>
<td>180</td>
<td>14 minutes</td>
</tr>
</tbody>
</table>
Note.— Guidance material for implementation and application of the separation in this section is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869), the Global Operational Data Link (GOLD) Manual (Doc 10037), the Satellite Voice Operations Manual (SVOM) (Doc 10038) and the Guidelines for the Implementation of Performance-based Longitudinal Separation Minima (Circular xxx)
Used as guidelines for collision risk modelling

- Example:
  - Determine the minimum by which suitably approved aircraft can be longitudinally and laterally separated where ADS-B surveillance is provided but VHF voice communications are not available.

- Supporting CNS
  - 1. COMM: Direct controller/pilot communication (DCPC) CPDLC (RCP 240) or satellite voice (RCP tbd);
  - 2. NAV: RNP 4 and/or RNP 2.
  - 3. SUR: RSP 180, ADS-B with 8 sec update interval..
Increased Emphasis on System Monitoring

Monitoring requirements are being written into datalink dependent separations as a condition of implementation (EMA Manual)

- **5.4.2.8.2** The application of the ADS-C climb and descend procedure (CDP) should be supported by an ongoing monitoring process.

- **Note.** — Supporting information on ongoing monitoring is provided in Circular 342, Automatic Dependent Surveillance — Contract (ADS-C) Climb and Descend Procedure (CDP).

- **5.4.2.8.2** Application of the ADS-C CDP requires ongoing monitoring as described in the Monitoring the Application of Performance-Based Horizontal Separation Minima Manual and the ADS-C CDP Circular XXX.
Thank you