Approach Classification Issues
Summary

- ICAO Documents Impacted
- Various Definitions
  - Procedures
  - Operation Types
  - Runways
  - Systems
- Some consequences
- Terminology Issues
Changes to Several ICAO Documents

- **Annex 14**
  - Instrument Approach Runways

- **PANS-OPS vol. II**
  - Instrument Approach Procedures

- **Annex 2**
  - Instrument Approach Definitions

- **Annex 10**
  - Instrument Approach System Performance

- **Annex 6**
  - Instrument Approach Operations
Annex 6 - Flight Operations

- **Precision approach (PA) procedure.**
  - An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS CAT I) designed for 3D instrument approach operations Type A or B.

- **Non-precision approach (NPA) procedure.**
  - An instrument approach procedure designed for 2D instrument approach operations Type A.

  - Type A: MDH or DH at or above 75 m (250 ft);
  - Type B: DH below 75 m (250 ft).

  - Type B further categorized as Cat-I, II or III
    - With associated DH, Vis and RVR minima.
Annex 14 – Runway Types

- **Non-Instrument Runway**
  - A runway intended for the operation of aircraft using visual approach procedures or an *instrument approach procedure* to a point beyond which the approach may continue in visual meteorological conditions.

- **Instrument Runway**
  - A runway intended for the operation of aircraft using instrument approach procedures:
    - Non-Precision Approach Runway
    - Precision Approach  Cat I,
    - Precision Approach  Cat II,
    - Precision Approach  Cat III,
## Annex 10 Mapping

### Performance requirements in support of instrument approach operations

<table>
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<tr>
<th>Annex 10 system performance</th>
<th>Annex 6 method — Approach operation category</th>
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<tr>
<td>Non-precision approach (NPA)</td>
<td>2D-Type A&lt;sup&gt;(1)&lt;/sup&gt;</td>
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<tr>
<td>Approach with vertical guidance (APV)</td>
<td>3D-Type A&lt;sup&gt;(2)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Category I, DH equal to or greater than 75 m (250 ft)</td>
<td>3D-Type A&lt;sup&gt;(3)&lt;/sup&gt;</td>
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<tr>
<td>Precision approach (PA)</td>
<td>3D-Type B — CAT I&lt;sup&gt;(3)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Category I, DH equal to or greater than 60 m (200 ft) and less than 75 m (250 ft)</td>
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<tr>
<td>Category II</td>
<td>3D-Type B — CAT II</td>
</tr>
<tr>
<td>Category III</td>
<td>3D-Type B — CAT III</td>
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<sup>(1)</sup> Without vertical guidance.
<br>/<sup>(2)</sup> With barometric or SBAS vertical guidance.
<br>/<sup>(3)</sup> With ILS, MLS, GBAS or SBAS vertical guidance.
Consequences and Questions

- Instrument Approach Procedures to Non-Instrument Runways
  - Could we have an ILS to a non-instrument runway?

- Type A or B depends on DH.
  - What is the Type if the DH is not published but only the OCH –as recommended by ICAO?

- SBAS and ILS Support both 3D Type A and B.
  - An ILS with a DH > 250’ = Type A precision approach
    - Is it a CAT-I?
Potential Terminology Confusion

- Is an SBAS procedure an APV or a Precision approach?
  It can be both according to Annex 10
  There are two sets of procedures design criteria in PANS OPS
  SBAS APV-I and SBAS Cat-I

- One Interpretation could be:
  - APV-I design criteria = APV
  - Cat-I design criteria = Precision approach

- All SBAS approaches are PBN operations.
  - Charted as RNAV (GNSS) RWY XX
  - minima line labelled LPV

- An SBAS Cat-I procedure = PBN precision approach!
SBAS Cat-I and APV-I

- Whether it is a Type A or Type B - Not seen on the chart.
  - Unless a DH is published

- How do pilots know the minimum minima if only OCH is published?

- An OCH lower than 250’ possible with APV-I criteria

- Caution: SBAS Systems are qualified to meet the Cat-I performances only when a 35m vertical alert limit (VAL) is used.
Conclusions

- The new approach classification introduces new terms that might be interpreted in different ways.
- The community needs to be consistent as to how these terms are used.
- Publishing OCH or DH has consequences.
- The term APV should be avoided when talking about operations.
- Training and guidance is needed.
Thankyou
Supplementary slides
Annex 2

**Instrument approach operations.** An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

- a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and
- b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

**Note.**—Lateral and vertical navigation guidance refers to the guidance provided either by:

- a) a ground-based radio navigation aid; or
- b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

**Instrument approach procedure.** A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:

- **Non-precision approach (NPA) procedure.** An instrument approach procedure designed for 2D instrument approach operations Type A.

- **Approach procedure with vertical guidance (APV).** A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A.

- **Precision approach (PA) procedure.** An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS Cat I) designed for 3D instrument approach operations Type A or B.