Airbus Amber

Operational assessment with SPA-LVO 110

GM8 SPA.LVO.110

Thierry BOURRET, AutoFlight System Expert

24 October 2022

AIRBUS

Agenda Operational assessment with SPA-LVO 110

GM8 SPA.LVO.110

- When to use OPERATIONAL ASSESSMENT?
- General principle of OPERATIONAL ASSESSMENT
- “Scale the effort” principle of OPERATIONAL ASSESSMENT
- Runway complexity determination based on GM8 SPA.LVO.110
- Example of application Runway complexity assessment
- Criteria for successful operational assessment

When to use OPERATIONAL ASSESSMENT?

When not other options available

Reminder of other options availables

(A) **Previous Operational Data (GM4 SPA.LVO.110 / GM5 SPA.LVO.110**

- *No recorded operations on Airport/Runway (example. diversion airport)*
- *Aircraft type does not operate on Airport and Aircraft Type extension not allowed.*
- *Different Aircraft System used for LVO*

(B) **Desktop assessment (GM6 SPA.LVO.110 / GM7 SPA.LVO.110)**

- *Data available, but not within declared assessed performance*
- *Lack of data from Aircraft manufacturer*

(C) **Equivalence Approved AMC 1.LVO.110 (o)**

- *simulations made by the aircraft manufacturer or approved design organisation*
- *a verification using an FSTD, if the FSTD is suitable for the operational assessment*

General principle of OPERATIONAL ASSESSMENT

As per AMC1 SPL.VO. 110 (l)

(1) Identify risks

- *Effort scaled based on identified risks*
- *GM8 SPA.LVO.110 Provide guidance based on know risks / known systems*
  - *Other risks may exist for other systems.*

(2) Agree methodology with the competent authority

- *Way to identify Risks*
- *Way to perform the assessment.*

GM8 SPA.LVO.110 Provides some Guidelines to define a Methodology

“Scale the effort” principle of OPERATIONAL ASSESSMENT

GM8 SPA.LVO.110 Suggest 4 level of complexity:

Complexity	Suggested number of Flights	Condition to perform Assessment
SIMPLE	None	N/A
MODERATE	At least one	Commercial flight allowed
COMPLEX	Minimum 3, including at least one close to max Landing Weight	Designated pilot and defined procedures
VERY COMPLEX	Initial 4 to 6 If successful progressive extension of weight / wind / landing configuration domain up to 15 successful.	Designated pilot and defined procedures No passengers for the initials flight

Runway complexity determination based on GM8 SPA.LVO.110

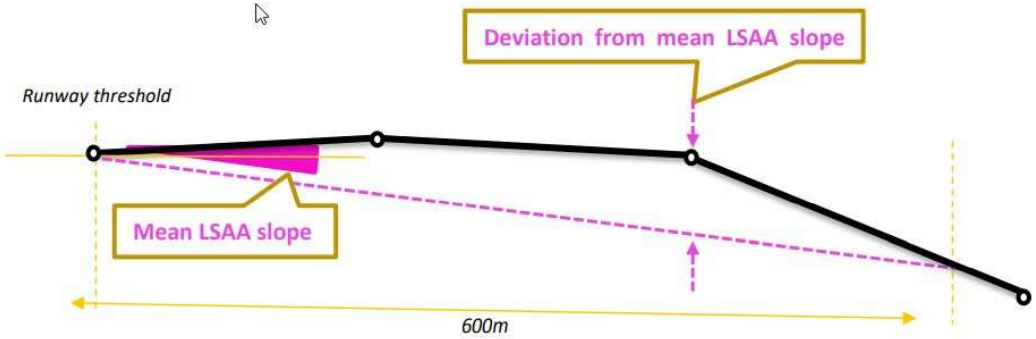
Criteria to determine complexity based on known systems (Automatic landing systems)

- *Other criteria may be relevant for other/new systems.*

<u>Identified criteria to assess Runway complexity</u> (Simple / Moderate / Complex / Very Complex)

1) Pre-threshold terrain profile

2) Landing System Assessment Area (LSAA) slope
   - *Mean LSAA slope*
   - *Deviation from mean LSAA slope.*



Some criteria could be relaxed if it can be justified

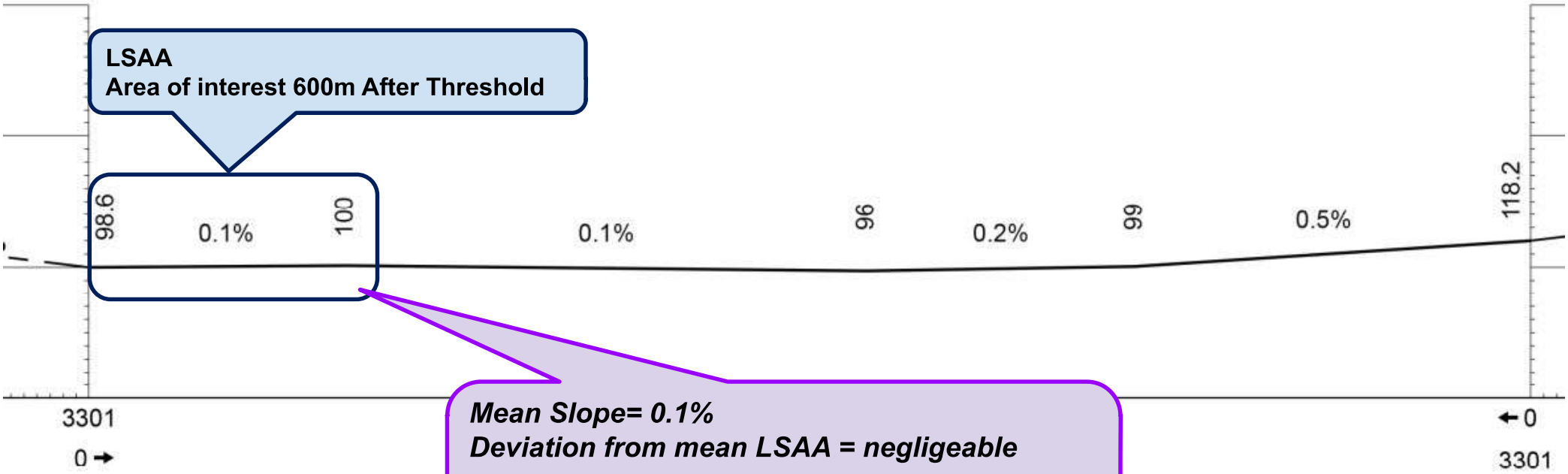
- *Example: Small aircrafts with flare height of less than 20ft may not be concerned by Pre-threshold terrain profile*

AIRBUS

Example of application Runway complexity assessment

Stockholm Arlanda Airport

Example of ESSA 01L (Aerodrome Obstacle Chart) https://aro.lfv.se/Editorial/View/11699/ES_AD_2_ESSA_3-1_en

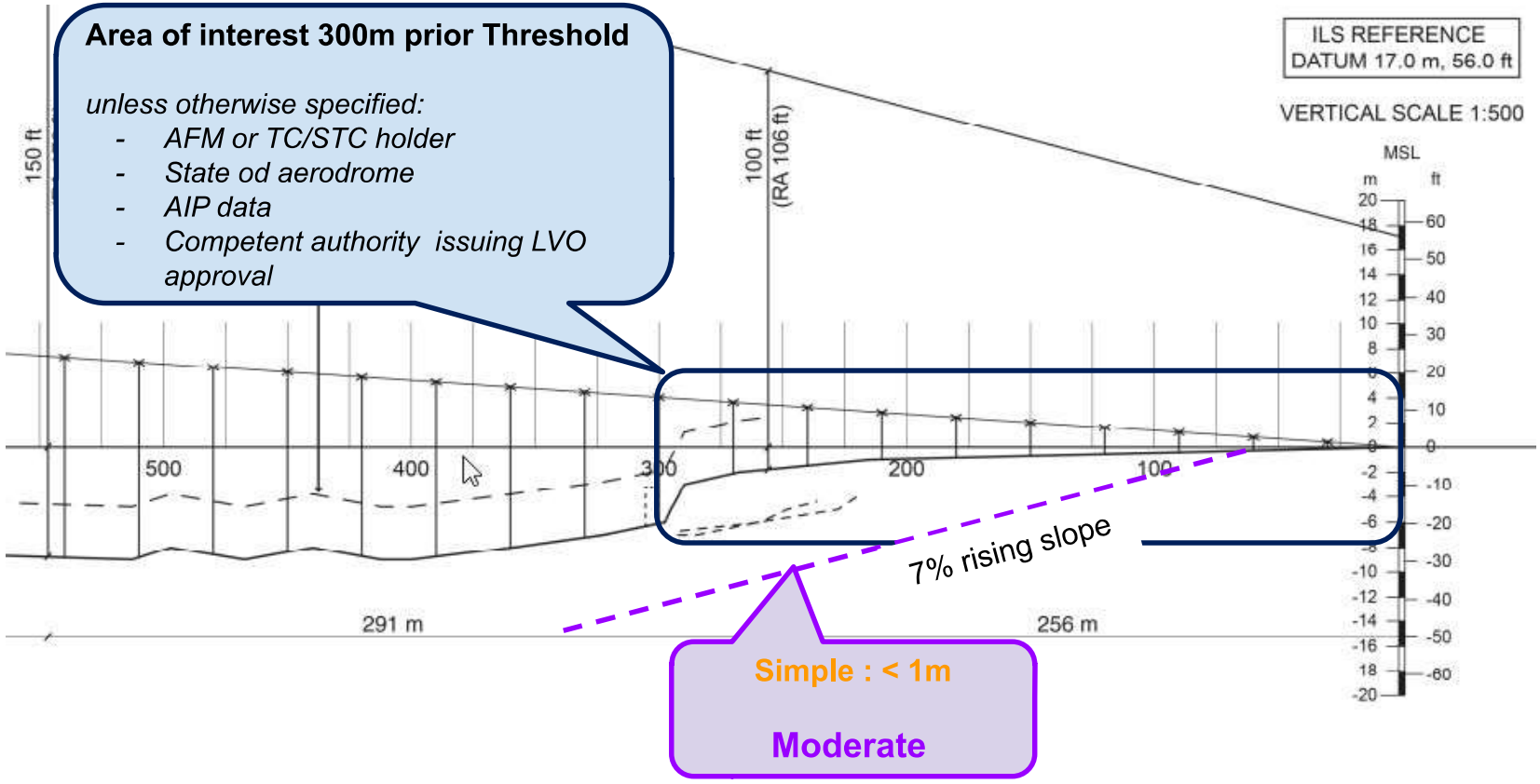


AIRBUS

Example of application Runway complexity assessment - Case 1

Stockholm Arlanda Airport

Example of ESSA 01L (Precision Approach Chart) https://aro.lfv.se/Editorial/View/7565/ES_AD_2_ESSA_3-7_en



AIRBUS

Example of application Runway complexity assessment - Case 1

Pre-threshold terrain profile : **Moderate**

Landing System Assessment Area (LSAA) slope : **Simple**

Other Factor identified : **None**

4. Low visibility procedures (LVP)

4.1 Criteria for activation of LVP

LVP will be in operation when RVR falls below 550 m or when ceiling or vertical visibility falls below 200 ft. The application of LVP will be announced in ATIS.

4.2 CAT II/III RWY

RWY 01L and 01R/19L are approved for CATII/III.

4.2.1 Approach spacing

In order to maintain protection on ILS, no vehicle or aircraft shall penetrate sensitive areas. In order to fullfil requirement more than 5 NM spacing between arrivals will be used.

Worst Factor

Moderate

Suggested Plan:

- ***One flight***
- ***Commercial operation***

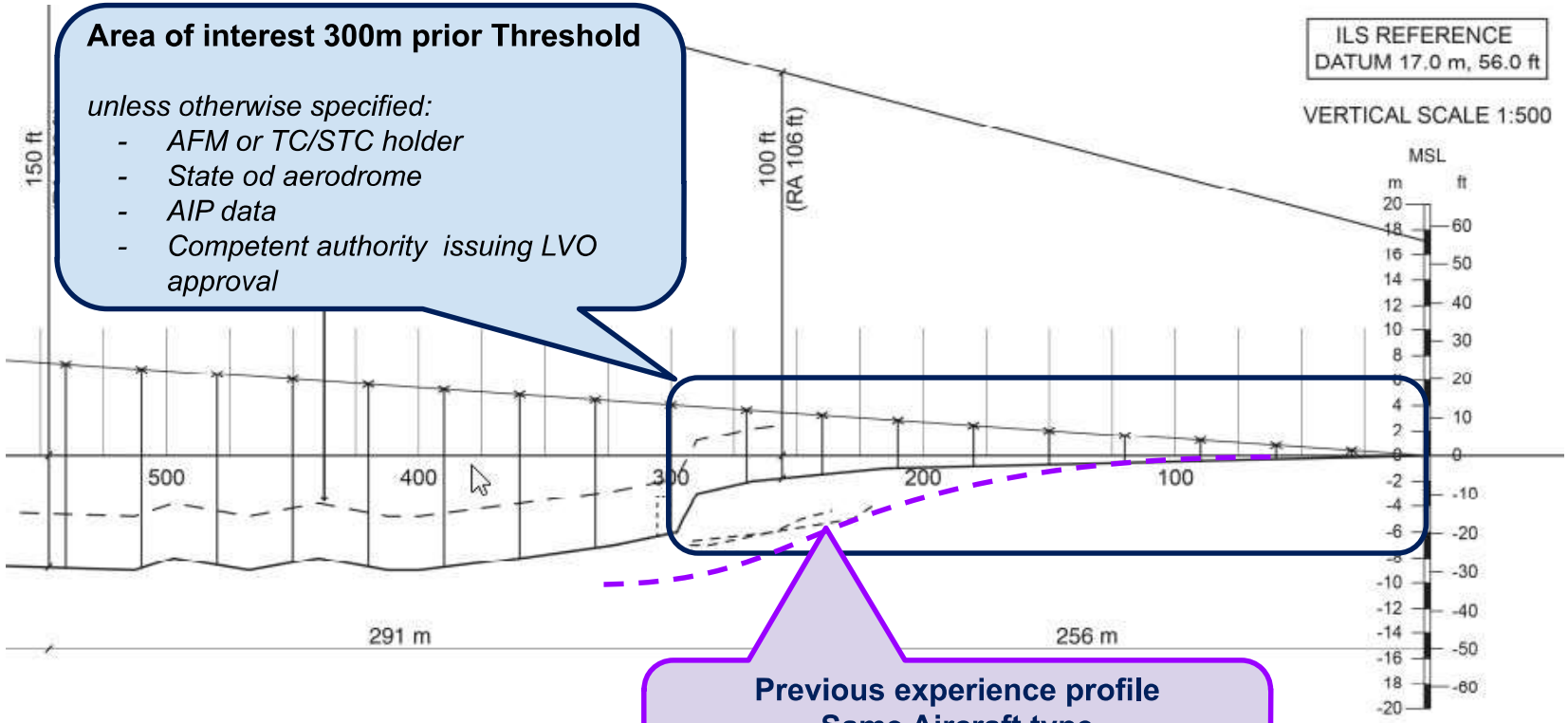
Assumption : Methodology agreed with authorities

AIRBUS

Example of application Runway complexity assessment - Case 2

Stockholm Arlanda Airport

Example of ESSA 01L (Precision Approach Chart) https://aro.lfv.se/Editorial/View/7565/ES_AD_2_ESSA_3-7_en



AIRBUS

Example of application Runway complexity assessment - Case 2

Pre-threshold terrain profile : **Simple**

Landing System Assessment Area (LSAA) slope : **Simple**

Other Factor identified : **None**

4. Low visibility procedures (LVP)

4.1 Criteria for activation of LVP

LVP will be in operation when RVR falls below 550 m or when ceiling or vertical visibility falls below 200 ft. The application of LVP will be announced in ATIS.

4.2 CAT II/III RWY

RWY 01L and 01R/19L are approved for CATII/III.

4.2.1 Approach spacing

In order to maintain protection on ILS, no vehicle or aircraft shall penetrate sensitive areas. In order to fullfil requirement more than 5 NM spacing between arrivals will be used.

Worst Factor

Simple

Suggested Plan:
- ***No flight***

Assumption : Methodology agreed with authorities

AIRBUS

Criteria for successful operational assessment

Data to be recorded

- Wind conditions & touch down point

  Can be observation

- Pertinent landing system parameters

  Typically: flight data recorder, quick-access recorder or equivalent

  Or

  Photo or video recording of pertinent instrument or instrument and outside view

Data to be reviewed with Authorities

- The final approach, flare and touch down profile to ensure suitability

  Guidance are provided in GM8 SPA.LVO.110

Agree methodology with authorities

Thank you

AIRBUS