



# SESAR AAL EFVS with OPS credit operations EASA AWO Workshop

HIGHER TOGETHER™

|           |                                |
|-----------|--------------------------------|
| Référence | DGTXXX                         |
| Indice    | A0                             |
| Date      | November 10 <sup>th</sup> 2016 |



# Synthetic Vision System

*Conformal 3D image  
of terrain, water areas  
and obstacles  
(databases)*

## Enhanced Flight Vision System

*(multi-sensor camera)*

*Infrared image displayed on HUD*



# EFVS with OPS credits

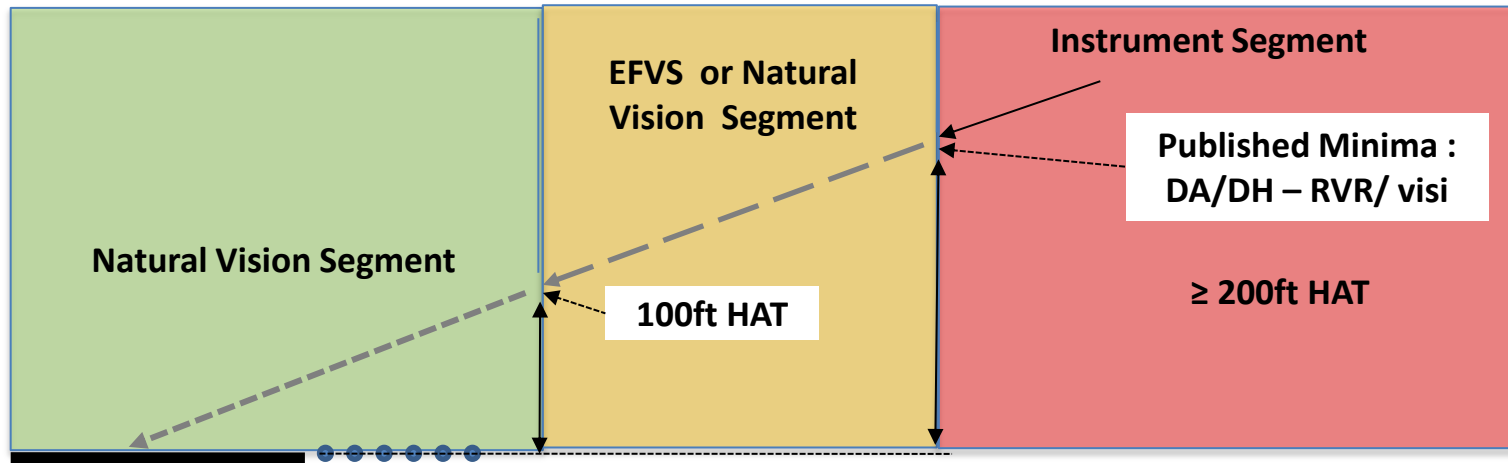
## *Status on regulations*



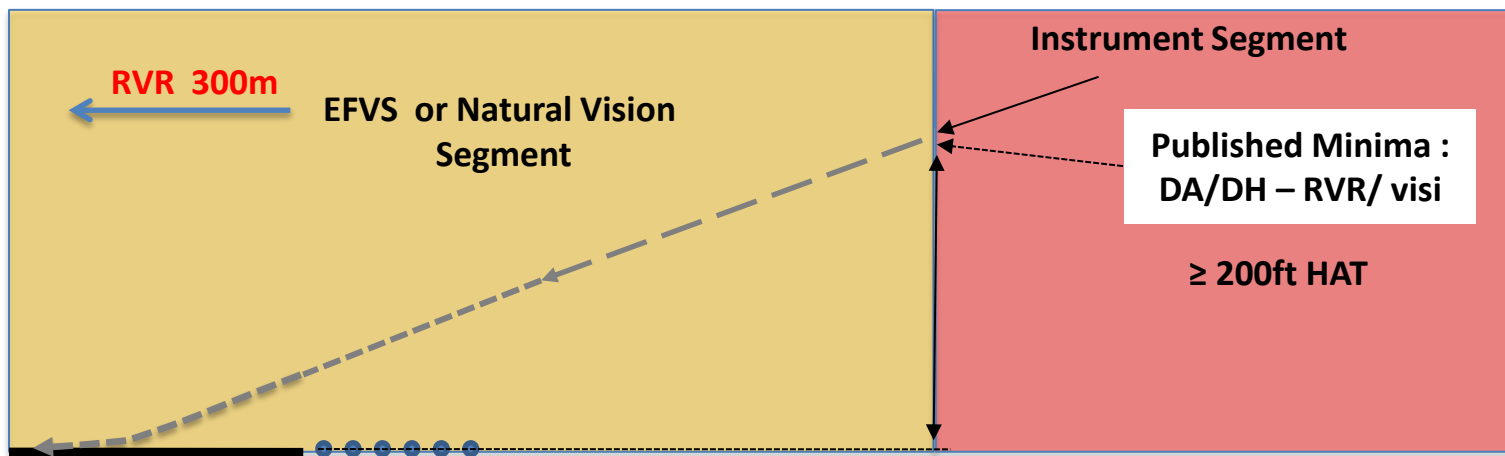
- **EFVS with OPS credits includes:**
  - ✓ **EFVS down to 100ft (EFVS I for US)**
    - covered by current EU/US regulation for Air operations (Flight Crew)
    - covered by current EU/US regulation for Airworthiness
    - *but no specific regulation for ATM aerodrome*
  - ✓ **EFVS to Land (EFVS II for US) - with RVR Min = 300 m**
    - Rulemaking in progress for the 3 above domains in EU (RMT.0379)
    - Draft regulation published for US (NPRM)

# EFVS concept

## EFVS 100 ft / EFVS to Land



EFVS 100 ft



EFVS to land

# SESAR AAL - EFVS with OPS credits

## Objectives



- **Objectives of SESAR AAL** (Augmented Approach to Land)  
" *EFVS To Land* " Workpackage:

⇒ To determine the rules impacted by the EVS with OPS credit operation and to propose adaptations of LVP to enable these operations at secondary and small aerodromes with RVR300m

Such Work has been performed with French DGAC/DSNA and local french aerodromes (LFBE, LFBX, LFBD) and was based on the review of the proven and comprehensive French aerodrome regulation (CHEA) used for all French aerodromes (from non precision to CATIII operations)



# SESAR AAL - EFVS with OPS credits

## Domains and Partners

### ① Aerodrome/ ATM impacts

⇒ Study  
⇒ Flights



### ② Aerodrome Accessibility

- ➔ Weather analysis (Europe)
- ➔ Number of accessible aerodrome

⇒ Study



### ③ Air Procedures

⇒ Study  
⇒ Simulator  
⇒ Flights



### ④ Performance prediction

⇒ Simulation  
⇒ Fog chamber  
⇒ Flights



⑤ Regulation

RMTo379



# SESAR AAL - EFVS with OPS credits

## Main results (1/3)

- **Aerodrome/ ATM recommendations proposed in 6 domains**

### 1/ Infrastructure

- RVR measurement
- Fences
- Lighting
- Secondary Power supply

### 2/ Procedure design criteria:

- Obstacle in approach (VSS)
- Obstacle in G/A (climb gradient)

### 3/ Publication of EFVS related information on charts and AIP

- Approach XX authorized EFVS to land (chart)
- PPR conditions (chart)
- Missed approach Climb gradient (chart)
- LED lighting system source indication, if exist
- NOTAM for first publication



# SESAR AAL - EFVS with OPS credits

## Main results (2/3)



- **Aerodrome/ ATM recommendations proposed in 6 domains**

### 4/ Low Visibility Procedures:

- Limitation of traffic movement/ restriction of circulation of vehicle (low/medium or high traffic density)
- Limitation of ground speed
- Activation/ cancelation of EVP including PPR
- Lighting
- Recue and Fire Fighting Services (RFFS)
- Small work and maintenance activities
- Fences and barriers are closed
- ILS, if exist is locked



### 5/ Phraseology:

- “Request for LPV with EVS” phraseology proposed...

### 6/ Flight Plan:

- “EVS300m” in field 18 of the flight plan...



# SESAR AAL - EFVS with OPS credits

## Main results (3/3)



- **Perimeter:**

- ✓ on ILS CAT I, RNAV with LPV, or RNAV with LNAV/VNAV minima
- ✓ at controlled aerodrome (with and without Low Vis Procedure) and at AFIS.

- **Adaptations proposed:**

- ✓ CATII/III aerodromes ➔ LVP applied and are sufficient
- ✓ Other than CATII/III ➔ adapted LVP are proposed taking into account Aerodrome Traffic Density and continuity of service to be considered

It as been demonstrated that these recommendations would require neither installation modification nor significant procedures changes

⇒ Approach must be approved for EFVS to land operation,  
and capability of EFVS to land must be published in the AIP

# SESAR AAL - EFVS with OPS credits

## CONCLUSION

Refer to SESAR AAL document :

**"EFVS WITH OPS CREDIT - Impact on ATM-Aerodromes"**

Recommendations were:

- ✓ presented to SESAR
- ✓ shared with French and European aerodromes
- ✓ shared with EASA in the frame of RMT0379
- ✓ disseminated to FAA.



# Thank You Any Questions ?

