

Opinion 02/2021

AWO + ORO.FC



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**HIGH-LEVEL OVERVIEW AWO PROJECT
(RMT.0379)**

**HIGH-LEVEL OVERVIEW CREW TRAINING
(RMT.0599)**

EASA COMMITTEE UPDATE

ED DECISION AWO + ORO.FC

SUITABILITY OF RUNWAYS



Performance based Regulation

- Safety objective in IR
 - 'technology neutral'.
- Technical requirements in soft-law
 - CS, AMC and GM detailed the required technology.

Regulations affected:

- Air Operations: Reg. 965/2012
- Flight Crew Licensing: Reg.(EU) 1178/2011
- Aerodromes: Reg.(EU) 139/2014
- Airworthiness: CS-AWO

Total system approach

- Assess the combination of:
 - Aircraft +
 - ground infrastructure +
 - approach minima.
- Requires a cross-domain approach
 - Certification + OPS + FCL + Aerodromes

Stakeholders affected:

- Aeroplanes + helicopters: CAT, NCC, NCO & SPA
- ATO
- Aerodromes
- Aircraft manufacturers



Draft ED Decision – AMC&GM

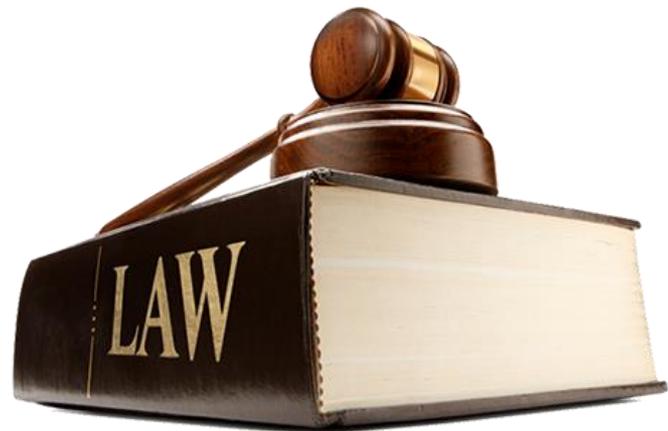
- Publication -> 2Q2022.
- Combined Decisions
 - Air OPS + Air Crew + Aerodromes
- Changes since Opinion 02/2021:
 - Small changes as a consequence of the comments received during the EASA committee.
 - One AMC related to Line checkers.
 - Comprehensive change in AMCs SPA.LVO.110 as a consequence of work to address the topic of suitability of runways.

Note: publication of CS-AWO issue 2 in 2021



Updates

- Positive vote on 27.10.2021
- Publication expected:
 - Air OPS and Air Crew -> Published December 2021.
 - Aerodromes -> 1Q2022
- Applicability
 - Air OPS and Air Crew -> 30.10.2022
 - Aerodromes -> 01.08.2022



AWO - OPS Main features

- Introduction of the ICAO concept of “operational credits”
- Reduction of the operational demonstration for CATII and CATIII
- Re-draft of the regulation to improve clarity (e.g. CDFA, app ban...).
- LVO’s Licence Proficiency Checks requirements are move to OPS

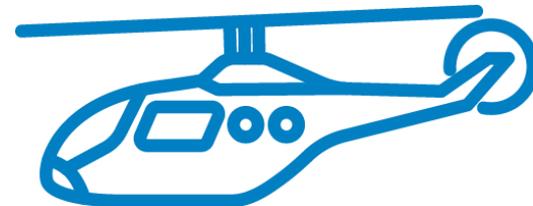
AWO – Helicopters Main features

- Enable helicopter IFR point in space (PinS) approaches and departures to destination with little aerodrome infrastructure.
- Operational credit for helicopter IFR operating under a approval



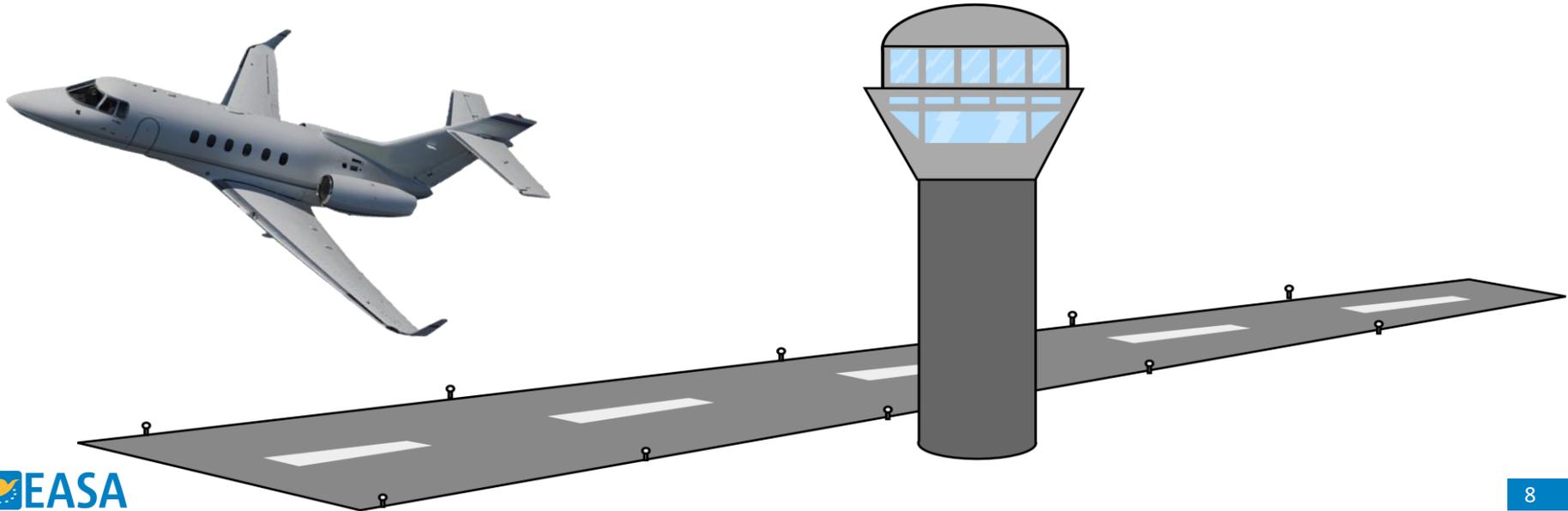
Changes to crew training covering

- Aeroplanes
- Helicopters
- SPO & CAT A-to-A



Crew training – Aeroplanes – Main features

- Re-draft of the regulation to improve clarity or editorial mistakes
- Increase flexibility in the OCC for new AOCs, new types, or other operational circumstances (e.g. line checkers).



Crew training – Helicopters Main features

- Multi pilot operations of single pilot helicopters without ATPL
- CAT Operations on more than one type or variant
- Review of the OPC (H).
 - Introduction of 3-year cycles.
 - Clarify the additional exercises required for single-engine helicopters in the OPC.
- Increase use of simulators for training and checking.
- CRM assessments.

Crew training – SPO and CAT A-to-A

- Full review of SPO requirements.
- CAT alleviations are extended to CAT A-to-A and SPO.



What is the issue?

- Removal of the operational demonstration
 - Today each aircraft type and runway-end requires an operational demonstration

Why do we need to change?

- To improve aerodrome availability
 - Better use of the infrastructure
 - Reduction of the environmental impact – increase the availability of alternate aerodromes.
 - Economic advantage
 - Charter flights and new routes - more flexibility of the airline network
 - Fuel savings related to alternate aerodromes.
- To prepare the future of new Autoland technologies.

Suitability of runways – Concept

- 90% of runways are within the certification assumptions (both for CS-AWO issue 1 and issue 2)
 - New CS-AWO issue 2 will require more transparency
 - New ADR rules will required more transparency
 - Operator's assessment of aerodrome subject to authority approval
- What do we do with the other 10%?
 - Use of previous operational data. If not possible:
 - Use other operator's operational data
 - Use of other aircraft models operational data, subject to manufacturer's statement
 - Use manufacturer's computer simulations or Full flight simulator
 - Operational demonstration.

Suitability of runways – Summary

→ Assessment of the runways:

- Desktop analysis (New)
 - compare AFM data with ADR data
- Previous operational data
- Operational demonstration



Suitability of runways – Task Force

- Authorities: Germany + Sweden + France.
- Manufacturers: Airbus + Boeing.
- Industry: IATA (IATA personnel + Iberia + Lufthansa group)

**Thank you for your
attention**

Questions?

Cologne

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END

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**In case people have
questions in the
domain of AWO**

**Some of the slides
below may be useful.**



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Low visibility take-off

- LVTO operations starts at 550 meters.
 - Aerodrome needs to establish LVP.
- @RVR 400 m SPA approval.
- @RVR 300 m a number of Runway lights are required
- @RVR 150 to 125 m a number of Runway lights are required + additional procedures and training.
- @RVR below 125 m requires an aircraft certified specifically for this purpose (AFM) and specific RVR reporting points.

AWO - Aerodromes Main features

- Alignment with ICAO on PA CAT III runway definition
- Alignment with Air operations on the definitions of:
 - Low visibility procedures
 - Low visibility take-off
 - Operation with operational credit
- Ensure the availability of visual, non-visual aids and MET equipment
- Establish the objectives of SMGCS
- Clear requirements for low-visibility procedures

AWO - Aerodromes Main features

- ADR must provide the following information:
 - Navais classification and performance data.
 - Parts of the airfield lighting which is converted to LED lights
 - Penetration of the Visual Segment Surface
 - Provision of charts
- Suitability of the aerodrome to accept EFVS operations in the terms of the certificate
- Electronic terrain and obstacle data or precision approach terrain chart should be provided as default option for precision approaches below 200 ft.

Crew training – Helicopter CAT

- Review of operator proficiency checks. Greater variety in checking. Introduction of 3 year cycles.
- Use of simulators for training and checking.
- CRM assessments.

EFVS 200ft - General concept

- In Europe:
 - pre-approval is needed for LVO (200 ft./RVR550 m)
 - Specific approval requires special training of inspectors and special procedures to the authority.
 - “approach ban” concept
 - Equipment is certified iaw CS.AWO.A.EFVS
 - ADR “declared ”suitability for EFVS operations.
- Explanatory note statement to explore EFVS 100 feet. – One of the conditions may be dual HUD.
- Note: GBAS, SBAS, GLS, etc. excluded in the NPA. But they will be proposed during the review group.



Enhanced Flight Vision Systems EFVS (EVS + HUD/HMD)

The EFVS enhances a pilot's ability to safely fly an aircraft by providing increased flight visibility for improved situation awareness and for ops credit.

Allows a pilot to identify runway lights and ground features under low visibility conditions and at night by adjusting to current conditions in real time to maintain optimal detection capability





- An operation that requires the use of an EFVS to provide enhanced flight visibility to perform the visual segment of an instrument approach procedure.

- The EFVS operation concept is to mitigate currently required ground infrastructure for Low visibility (CAT II/III ILS, etc.) by use of airborne systems.



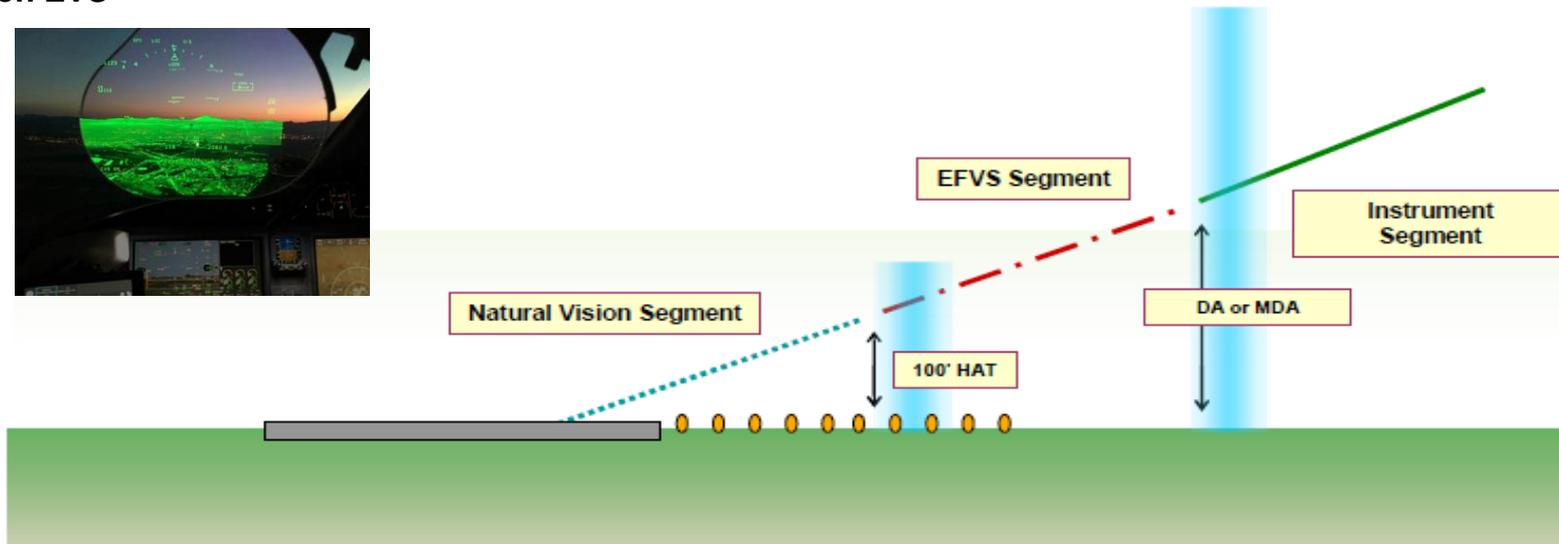
- EFVS Operational Credit is the ability to **dispatch** or **begin an approach** when weather is reported to be BELOW the authorized IAP visibility minimums.
- The concept of operational credits is based on a total system approach:
 - enhance equipment in the aircraft, in conjunction with equal ground infrastructure allows lower minima, or
 - Enhance equipment in the aircraft, in conjunction with a standard minima allows lower ground infrastructure in the airport



EFVS APPROACH concept (100 ft as DH)

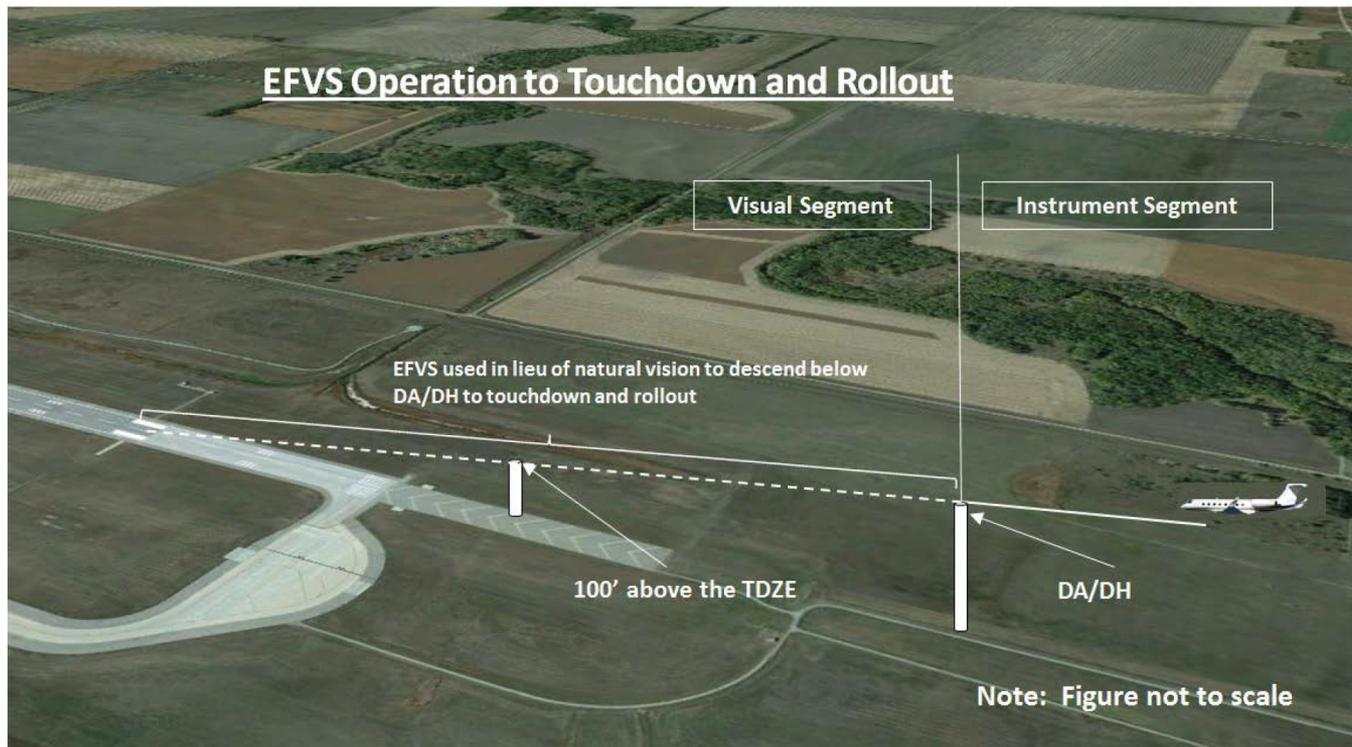
Operational Concept for EFVS

At 100' HAT visual references (see AMC1 CAT.OP.MPA.305(e)) must be distinctly visible and identifiable (lighting, marking) without reliance on EVS





EFVS – Landing (no DH with 300 m as RVR limitation)



EFVS 200 feet. Detailed explanation.

→ Applicability:

- Part - CAT (Commercial air transport)
- Part - NCC (Non – commercial complex motor power)
- Under discussion - SPO (Specialised operations)
 - NCO is EXCLUDED.

→ Background

- Federal aviation administration - Part 91
- ICAO latest proposed amendment to Attachment H of Annex 6.
 - Operational credits.
- Use – CAT I approaches with higher minima (e.g. Alicante, Biarritz...)
 - Non-precision approach

EFVS 200 feet. Detailed explanation.



Pre-approval NOT required.
Straight in approach only (+- 3degrees).
Normal change to OPS manual + Training of the pilots.

App ban:
Check RVR
above 550m or
1/3 whichever
is higher



MDH/DA (Minima): Visual with
Runway through EFVS

G/A



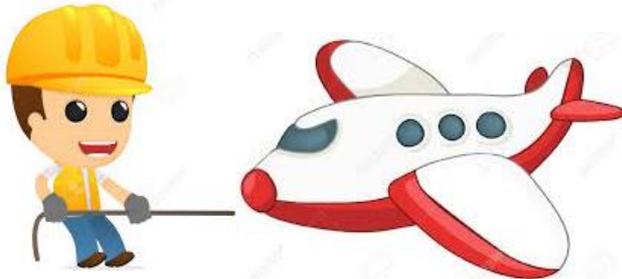
At 200ft Natural vision

No natural
vision with the
Runway: G/A



Air crew – Flight Crew Training (ORO.FC)

1. Moving all Licence proficiency checks (1 every year) requirements back to OPS – ORO.FC
 - Aligned with EU- OPS (preceding regulations)
 - Less administrations – NO licences endorsement
 - Appendix 9 (section 6) requirement deleted
 - LVO training and checking is back to the operator
 - (except for initial licencing (1st issue) which remains at ATO level)



EFVS – OPS + FCL – Regulatory update

- FCL – NO FCL requirements + NO Licence endorsement.
- Operations – Reg. (EU) 965/2012
 - Annex V – Specific Approval – SPA.LVO.
 - Performance based – IR valid for EFVS-A + EFVS-L.
 - Full use of the Visual advantage at certification – Removal of the fix quantify of 1/3
 - EFVS – Approach operations – AMCs proposed in the NPA.
 - EFVS – Landing operations – NO AMC proposed in the NPA.
 - Possible AMC Currently under discussion.
 - EFVS 200' concept – NO approval
 - Part NCC and Part CAT.

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RMT.379 ALL WEATHER OPERATIONS**



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RMT.0599 EVIDENCE-BASED TRAINING**



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RMT.0573 FUEL PROCEDURES & PLANNING**



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01 - REGULATORY UPDATE RMT.379 ALL WEATHER OPERATIONS

EASA OPINION – 3Q2020
ADOPTION – 3Q2021

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**01 -RMT.379 ALL WEATHER OPERATIONS
REGULATORY CHALLENGES.**

PRE-THRESHOLD TERRAIN



Pre-threshold terrain - Background

- Current Operational demonstration for LVO requires
 - Extensive number of landings.
 - A long time.
- For all* aircraft types and all runways.
 - Credits are available when aircraft have the same basic flight control and display system using the same procedures.



Is this effective and efficient?



Certification of the auto-land VS certification of runways.

➤ Certification requirements of auto land (CS-AWO) do not match

➤ With the LVO runway certification (CS-ADR).



- ❑ There are a small numbers of LVO runways outside the assumptions of certification.
- ❑ However, the safety data available today do NOT indicate a safety concern.

- **Aerodromes: improve the accessibility of the runway information.**
 - Today there is limited information about the variations of slopes along the runway and electronic pre-threshold terrain charts are not always available.
- **Certification: AFM will provide more details of the certification basis of the auto-land.**
- **Operators:**
 - Perform a desktop exercise to ensure the ADR data and AFM data match.
 - When ADR and AFM data match: No operational demonstration.
 - When ADR and AFM data do NOT match: Still in discussion what to do. The rulemaking group did not reach an agreement yet.

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**02 –REGULATORY UPDATE
RMT.0599 EVIDENCE-BASED TRAINING**

**EASA OPINION – PUBLISHED 4Q2019
ADOPTION – 4Q2020**

Overview of the Rulemaking activities

Programing phase

Rule development phase

Proposal

From various sources

Ranking

Decided by stakeholders

EPAS

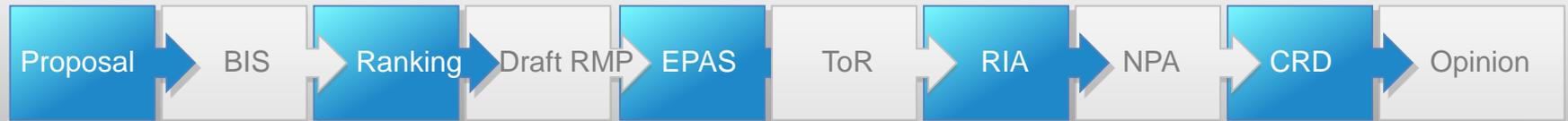
European plan for aviation safety

RIA

Regulatory Impact Assessment

CRD

OPS + FCL - +900 comments
Helicopters – 225 comments
ADR – less than 200 comments



BIS

Best intervention strategy

Draft EPAS

ToR
Terms of Reference
- 09.12.2015-

NPA

- 13.07.2018-
Helicopter Sept 2019

Opinion

/ Decision...
- 3Q2020-

CS-ADR regulatory update – RMT.0379

- ADR must publish the ILS classification and performance data.
 - Airport information publication.
- ADR should “declare”(AIP) if they are “EFVS ready.”
 - *“parts of the aerodrome lighting system which are converted to LED”* and
 - approach light switch over time – one second
- Electronic terrain and obstacle data should be provided as default option for Precision approaches below 200 ft.
 - Alternatively precision approach terrain chart iaw ICAO Annex 15.



EFVS – OPS + FCL – Regulatory update

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