



EASA
European Aviation Safety Agency



AERODROMES WORKSHOP

Podgorica, Montenegro

6 – 7 November 2014

Certification Basis (CB), from application to ADR certification

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Your safety is our mission.

An agency of the European Union 

TE.GEN.00409-001

Tivat Airport





Certification basis (CB)

Basic Regulation, Article 8a *Aerodromes*

- Par.1 **Aerodromes, aerodrome equipment and operation of aerodromes shall comply with the essential requirements set out in Annex Va and, if applicable, Annex Vb**
- Par.2 **The compliance with 1. shall be established in accordance:**
- (a) the certificate shall be issued when the applicant has shown that the aerodrome complies with the aerodrome **certification basis** and the aerodrome is safe for operation;
 - (b) the **certification basis** shall consist of:
 - i) the applicable **CS** related to the type of aerodrome;
 - ii) the provisions for which an Equivalent Level of Safety (**ELOS**) has been accepted; and
 - iii) the Special Detailed Technical Specifications (**SC**) when the designed features of a particular aerodrome or the experience in operation render any of the specifications in i) inadequate or inappropriate to ensure conformity with ER.
 - (c), (d) and (e) ...



Certification basis (CB)

The content of the Certification Basis is set out in Article 8a (BR), no definition needed

- Competent Authority to establish the CB (ADR.AR.C.020)**
- Based on the request received from the applicant (ADR.OR.B.015)**

CB & Certification → negotiation process between the Competent Authority and the Applicant



Certification basis (CB)

Art 8a: ... aerodromes shall comply with the Essential Requirements ...

ANNEX Va

ESSENTIAL REQUIREMENTS FOR AERODROMES

A — Physical characteristics, infrastructure and equipment

1. *Movement area*
2. *Obstacle clearances*
3. *Visual and non-visual aids and aerodrome equipment*
4. *Aerodrome data*

B — Operations and management

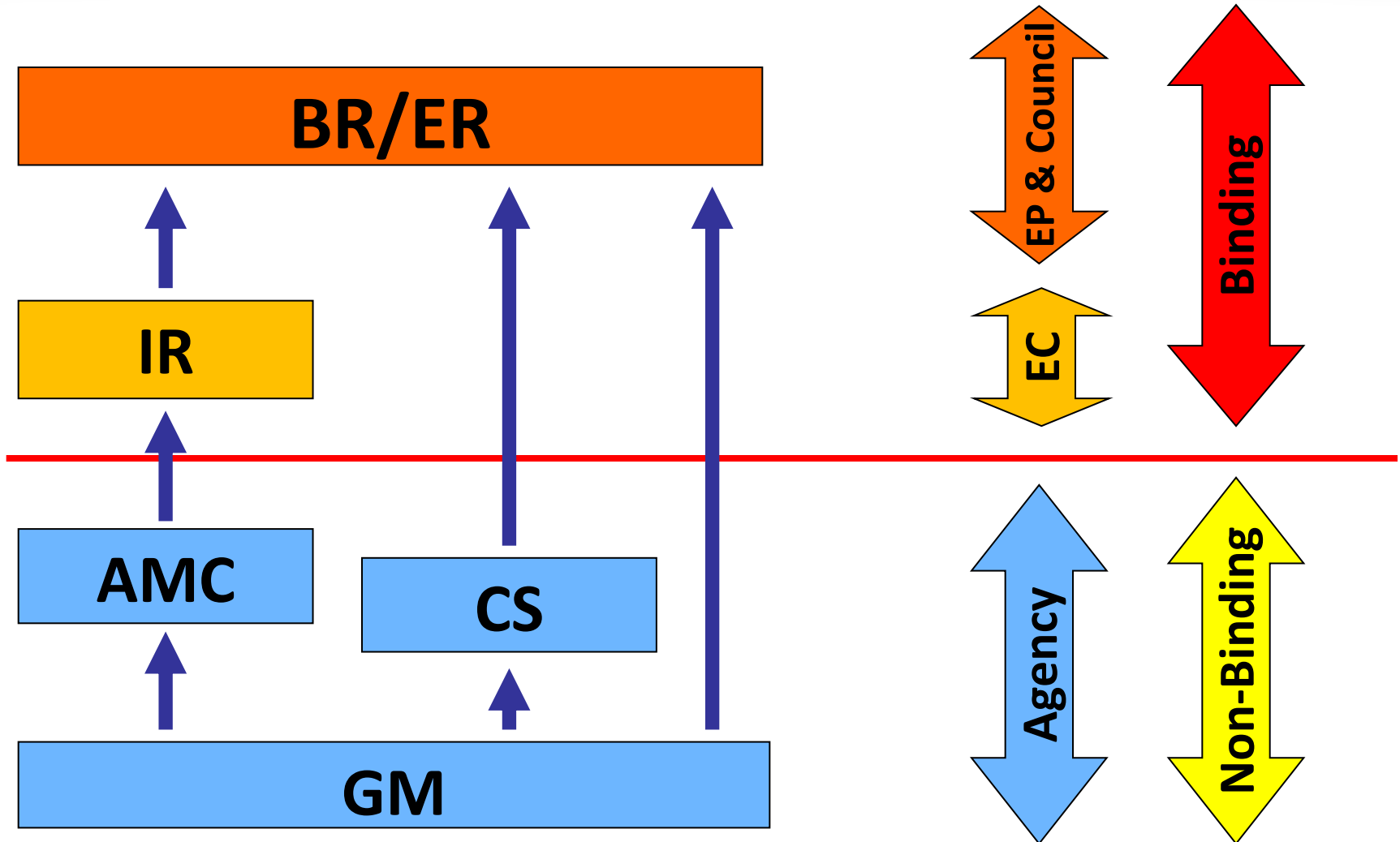
1. *The aerodrome operator is responsible for operation of the aerodrome.*
2. *Management systems*

C — Aerodrome surroundings

D — Others



Regulatory framework





Regulatory framework

Implementing Rules (IR) are binding in their entirety and are used to specify a high and uniform level of safety and uniform conformity and compliance, without variation.

Acceptable Means of Compliance (AMC) are non-binding standards adopted by the Agency which illustrate the means to establish compliance with Regulation (EC) No 216/2008 and its Implementing Rules.



Regulatory framework

Certification Specifications (CS) are technical standards adopted by the Agency which indicate the means to show compliance with Regulation (EC) No 216/2008 and its Implementing Rules and which can be used by organisations for the purpose of certification.

CS are used to establish the certification basis (CB). However, CSs, become binding on an individual basis to the aerodrome operator as part of an agreed CB.



Regulatory framework

Guidance Material (GM) is non-binding material developed by the Agency which helps to illustrate the meaning of a requirement or specification and is used to support the interpretation of Regulation (EC) No 216/2008, its Implementing Rules, Certification Specifications and Acceptable Means of Compliance.



Regulatory framework–variation elements

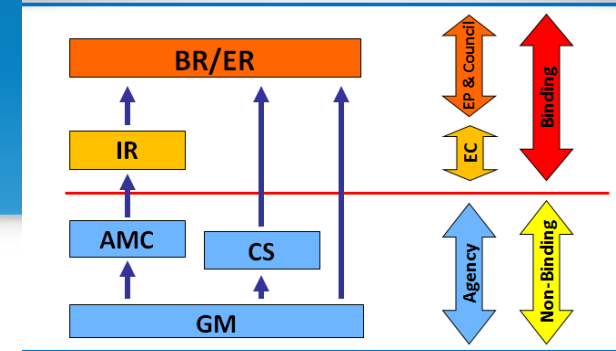
Where an aerodrome cannot comply with the CS the aerodrome operator has two options:

- to propose an **Equivalent Level of Safety (ELOS)** for a given CS that demonstrates how it meets the intent of that CS and thereby complies with the ER.
- to propose an **alternative** when they feel the **CS is inadequate or inappropriate** for use at their aerodrome. This may result in the competent authority introducing a **Special Condition (SC)**. SC are special detailed technical specifications determined by the CAA for an aerodrome if the CS established by EASA are not adequate or are inappropriate to ensure conformity of the aerodrome with the ERs of Annex Va to EC Regulation No. 216/2008 (Basic Regulation). Such inadequacy or inappropriateness may be due to:
 - the **design features** of the aerodrome; or
 - where **experience in the operation** of that or other aerodromes, having similar design features, has shown that safety may be compromised.

SCs, like CSs, become binding on an individual basis to the aerodrome operator as part of an agreed CB.



Reg. framework – example



Reg 216/2008 (BR): Art 8a

2. The compliance of aerodromes, aerodrome equipment and operation of aerodromes with the essential requirements shall be established in accordance with the following:

BR, ER, Annex Va

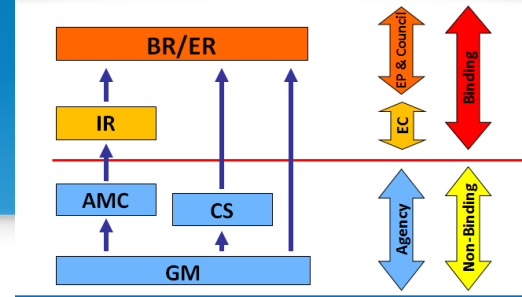
(a) Aerodromes shall have a designated area for the landing and take-off of aircraft, which satisfies the following conditions: ...

Reg 139/2014, Art 6, 2

2. Before the end of the period specified in paragraph 1, the Competent Authority shall issue certificates for the aerodromes and aerodrome operators concerned, if the following conditions are met:



Reg. framework – example



Reg 139/2014, Annex I, Definitions

(38) ‘runway’ means a defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft;

Reg 139/2014, Annex II, Part Authority Requirements

ADR.AR.C.020 Certification basis

The certification basis is to be established and notified to an applicant by the Competent Authority and shall consist of: ...

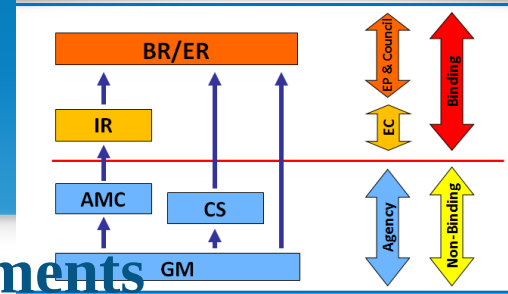
Reg 139/2014, Annex III, Part Organisation Requirements

ADR.OR.B.005 Certification obligations of aerodromes and aerodrome operators

Prior to commencing the operation of an aerodrome or when an exemption in accordance with Article 5 has been revoked, the aerodrome operator shall obtain the applicable certificate(s) issued by the Competent Authority.



Reg. framework – example



Reg 139/2014, Annex IV, Part Operations Requirements

ADR.OPS.B.045 Low visibility operations

(a) The aerodrome operator shall ensure that means and procedures are established and implemented for providing safe conditions for aerodrome operations in low visibility conditions.

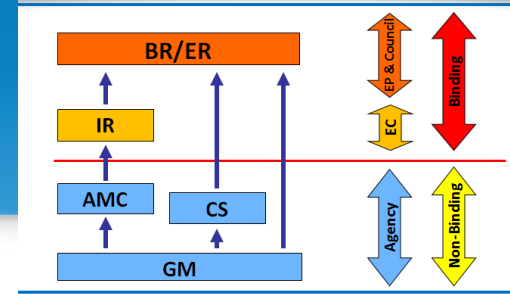
AMC1 ADR.AR.C.020(b);(c) Certification Basis

CASES OF EQUIVALENT LEVEL OF SAFETY AND SPECIAL CONDITIONS

When deciding on cases of equivalent safety or special conditions and their respective underpinning justification material, the Competent Authority may consider whether any of the applicable certification specifications compares to a Standard or a Recommended Practice and their different implications foreseen by the ICAO Convention and its Annexes.



Reg. framework – example



GM1 ADR.AR.C.020(b) Certification basis

CERTIFICATION BASIS — PROPOSALS FOR EQUIVALENT LEVEL OF SAFETY

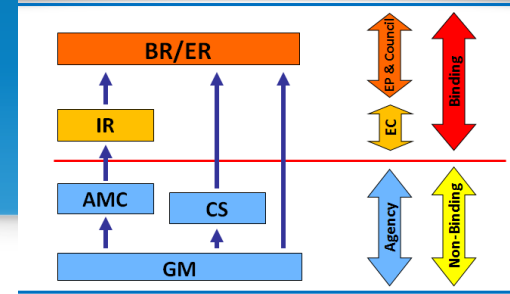
When the Competent Authority assesses a proposal of an applicant who has requested to demonstrate an equivalent level of safety, the Competent Authority should pay, amongst others, particular attention to:

(a) the identification of the intent of the Agency's certification specifications in question, and assess if the proposal satisfies that intent;

...



Reg. framework – example

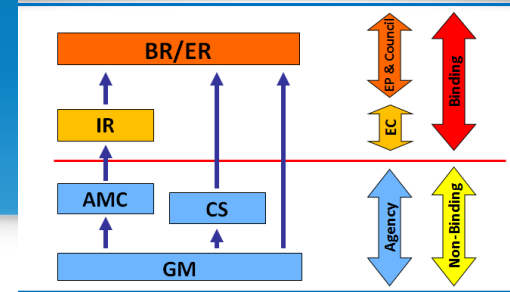


CS ADR-DSN.B.035 Actual length of runway and declared distances

- (a) The length of a runway should provide declared distances adequate to meet the operational requirements for the aircraft which the runway is intended to serve.
- (b) The following distances should be calculated to the nearest metre for each runway:
- (1) Take-off run available;
 - (2) Take-off distance available;
 - (3) Accelerate-stop distance available; and
 - (4) Landing distance available.



Reg. framework – example



GM1 ADR-DSN.B.035 Actual length of the runway and declared distances

(a) Length of the runway:

- (1) This specification does not necessarily mean providing for operations by the critical aeroplane at its maximum mass.
- (2) Both take-off and landing requirements need to be considered when determining the length of runway to be provided and the need for operations to be conducted in both directions of the runway.
- (3) Local conditions that may need to be considered include elevation, temperature, runway slope, humidity, and the runway surface characteristics.



Certification basis – variation elements

Special condition (SC)

- **Part of the CB**
- **Can only be prescribed by Competent Authority**
- **When the CS is inappropriate or inadequate because:**
 - **CS cannot be met due to physical, topographical or similar limitations related to the location of the aerodrome;**
 - **the aerodrome has novel or unusual design features; or**
 - **experience from the operation of that aerodrome or other aerodromes having similar design features has shown that safety may be endangered.**
- **Technical specifications, limitations, procedures to ensure compliance with the Essential Requirements**



Certification basis – variation elements

Equivalent level of safety (ELOS)

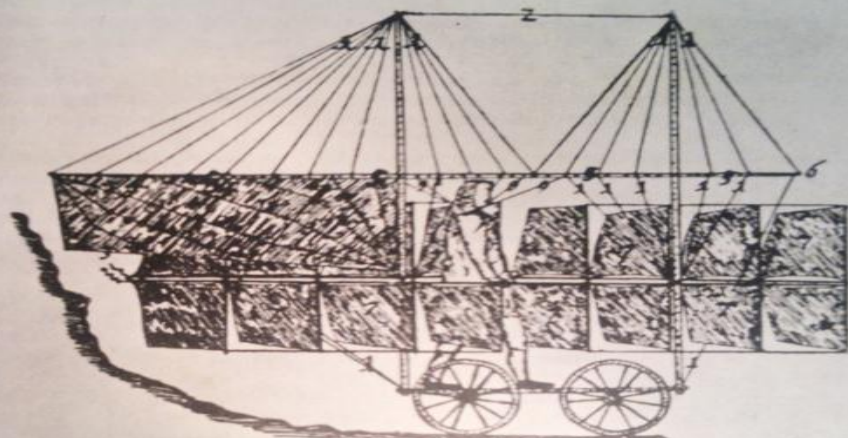
- **Part of the CB**
- **Can apply to any variation, must be identified and documented**
- **Applicant has to demonstrate compliance with the CS**
- **Safety assessment**
- **Has to be accepted by the Competent Authority**

Deviation Acceptance and Action Document (DAAD)

- **Part of the Certificate and NOT part of the CB**
- **Competent Authority compiles the evidence**
- **Competent Authority specifies the period of acceptance**
- **Safety assessment**

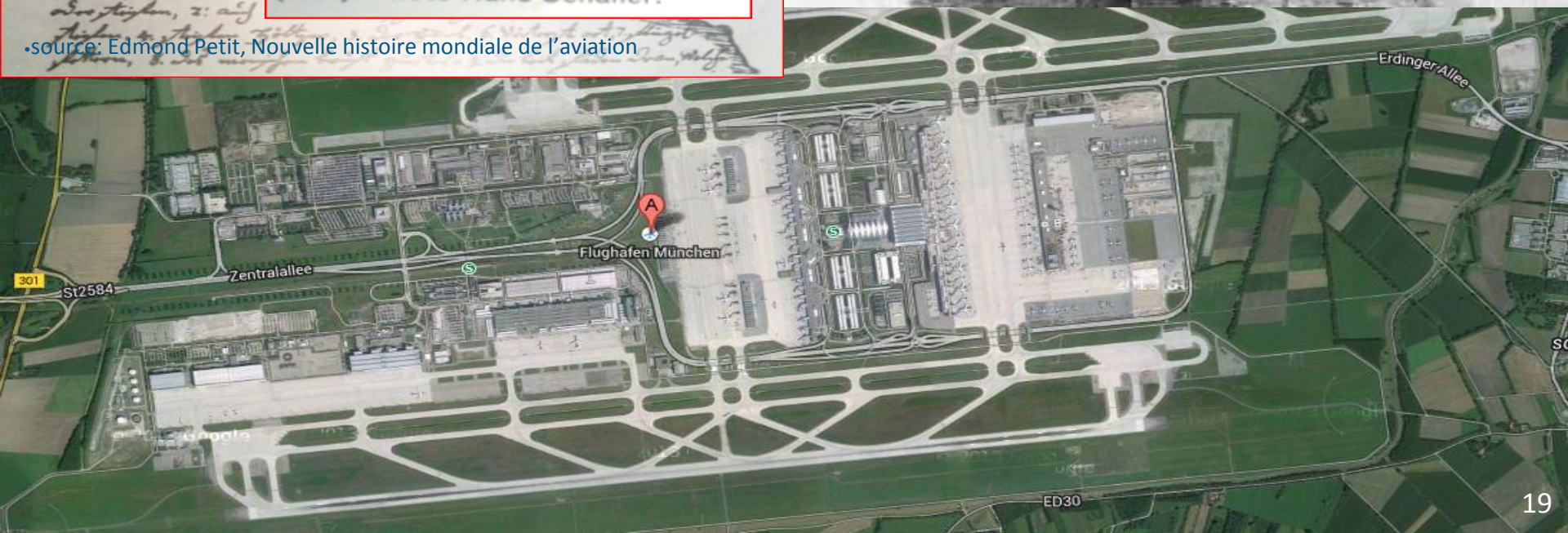
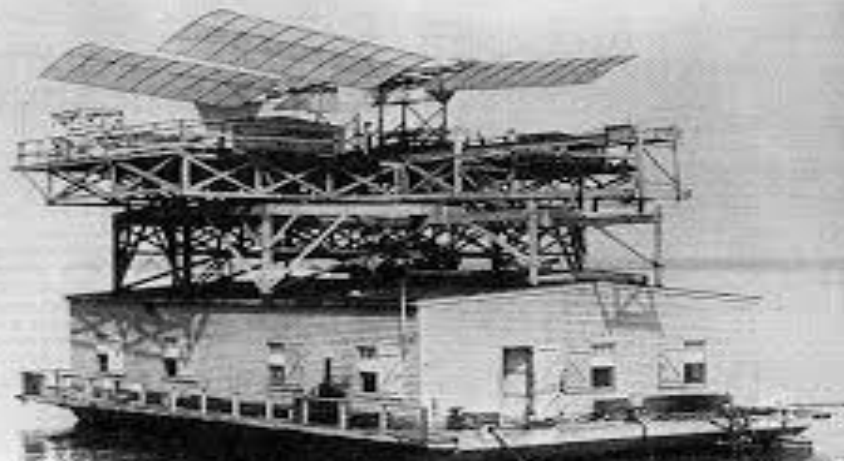


Questions?



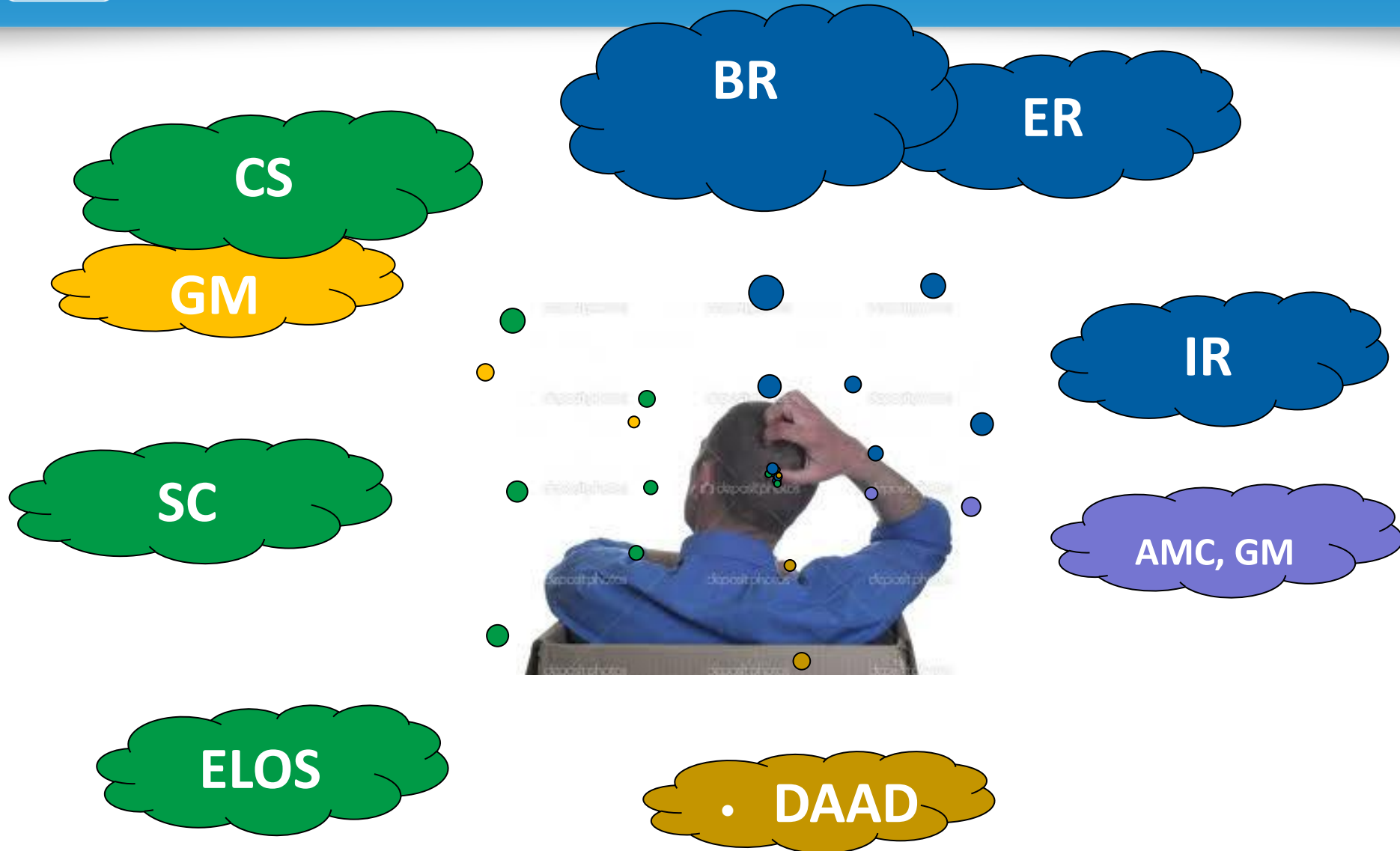
Voiture céleste de Melchior Bauer (1764). Photo Hans Schaller.

•source: Edmond Petit, Nouvelle histoire mondiale de l'aviation





Certification basis (CB)





Flexibility: Certification Basis

ADR Certificate

ADR OR & OPS

Ref. BR Art. 8a.5

IRs

AMC

GM

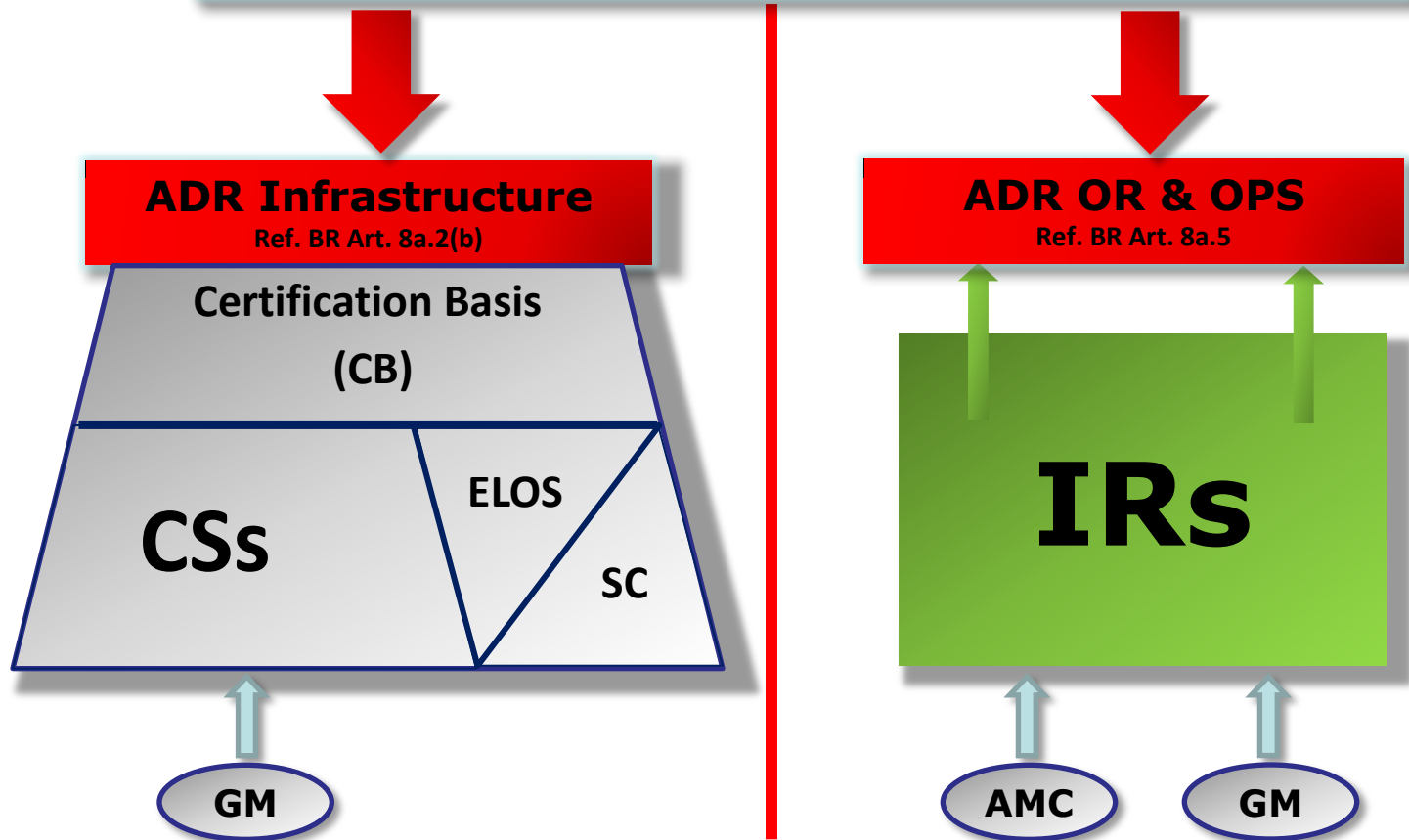
IRs = Implementing Rules
CSs = Certification Specifications
ELOS= Equivalent Level of Safety
SC= Special Condition
GM= Guidance Material
AMC= Acceptable Means of Compliance





Flexibility: Certification Basis

ADR Certificate



IRs = Implementing Rules
CSs = Certification Specifications
ELOS = Equivalent Level of Safety
SC = Special Condition
GM = Guidance Material
AMC = Acceptable Means of Compliance



Flexibility: Certification Basis

ADR Certificate

ADR Infrastructure

Ref. BR Art. 8a.2(b)

Certification Basis
(CB)

CSs

ELOS

SC

EASA

GM

ADR OPS

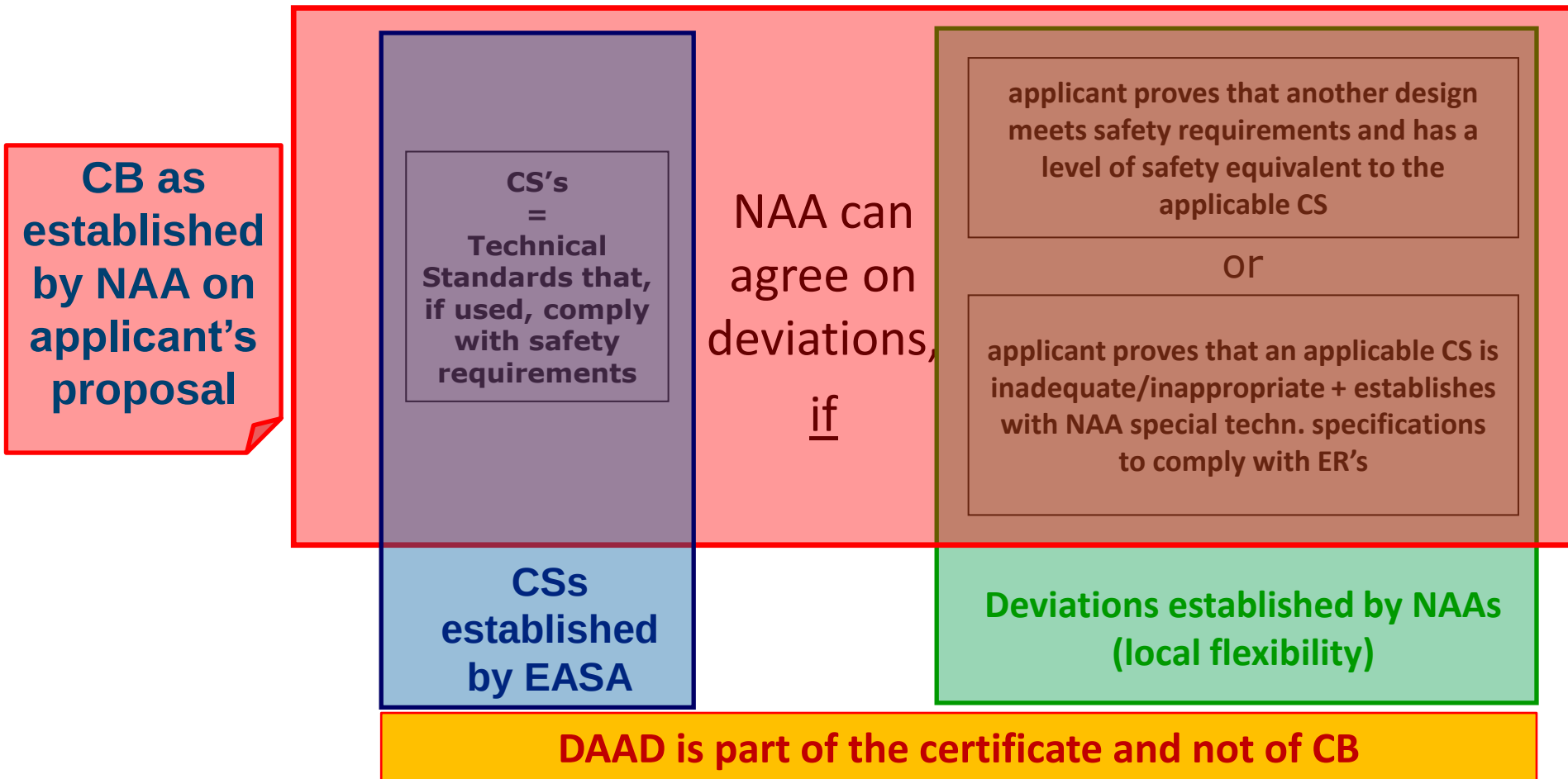
Ref. BR Art. 8a.5

- - No “hard law” for ADR infrastructure
- - Individual process
- - Involving high level of NAA’s discretion
- - ELOS and SC are options in order to deal with individual challenges (innovation, terrain, obstacles, etc)



Certification basis (CB)

CB is the NAA's confirmation of how an applicant can show compliance with the safety requirements (**ER's and IR's**)





Certification basis (CB)

Chapter D – Taxiways

Please complete the table below (dimensions in metres)

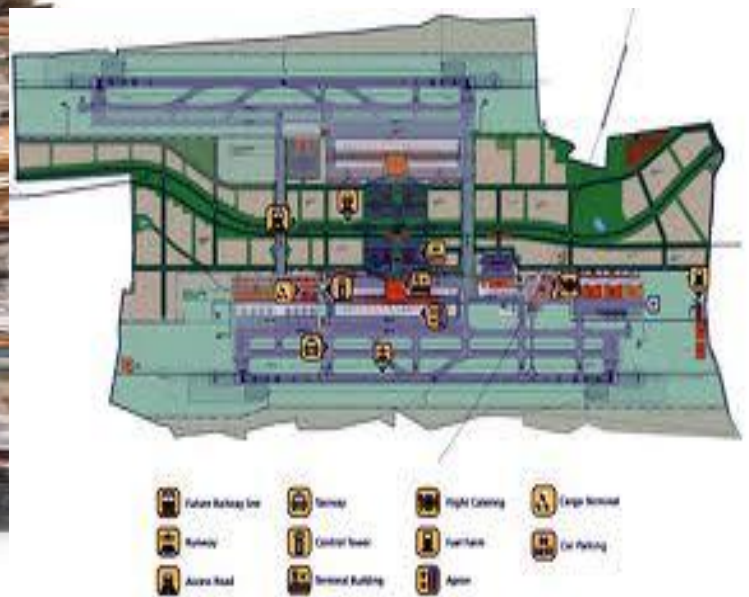
Taxiway Designator	Code	Width	Strip Width

C S ADR-DSN.	Certification Specification (CS)	C S Met Yes / No / N/A
D.240	Taxiways general	Choose an item.
D.245	Width of taxiways	Choose an item.
D.250	Taxiway curves	Choose an item.
D.255	Junction and intersection of taxiways	Choose an item.
D.260	Taxiway minimum separation distance	Choose an item.
D.265	Longitudinal slopes on taxiways	Choose an item.
D.270	Longitudinal slope changes on taxiways	Choose an item.
D.275	Sight distance of taxiways	Choose an item.
D.280	Transverse slopes on taxiways	Choose an item.





Certification basis (CB)





From application to certification

Part – ADR.OR

(Aerodrome Operator)

•ADR.OR.B.005 Certification obligations of aerodromes and aerodrome operators

- Prior to operation of an aerodrome, the aerodrome operator shall obtain the applicable certificate(s) issued by the Competent Authority



Part – ADR.OR

(Aerodrome Operator)

•ADR.OR.B.015 Application for a certificate

•The applicant shall provide the CA:

- Name, address, ...
- Location of the aerodrome
- Type of operations at the aerodrome
- Design and facilities of the aerodrome (applicable CS) and any proposed deviation from CS
- Documentation demonstrating compliance with BR and IR
- Accountable manager (could be later)
- Aerodrome manual (could be later)



From application to certification

Part – ADR.AR (Competent Authority)

•ADR.AR.C.015 Initiation of certification process

- Competent Authority assesses the application
- For existing aerodrome Competent Authority prescribes conditions for operation
- The Competent Authority shall establish and notify the applicant of the certification basis



From application to certification

Part – ADR.AR (Competent Authority)

•ADR.AR.C.020 Certification basis

- Competent Authority establishes the CB with:
 - Applicable CSs to the design and the type of operation of the aerodrome (+ compliance with later effective amendments)
 - Any provision for ELOS accepted by the Competent Authority and demonstrated by the applicant
 - Any SC necessary to be included in the CB



Part – ADR.AR (Competent Authority)

•ADR.AR.C.025 Special conditions

- The Competent Authority shall prescribe special conditions if the related CS are inadequate or inappropriate, to ensure compliance with the ER, because:
 - The CS cannot be met due to physical, topographical or similar limitations related to the location of the aerodrome;
 - The aerodrome has novel or unusual design features; or
 - Experience from the operation of that aerodrome or other aerodromes having similar design features has shown that safety may be endangered.



Part – ADR.OR

(Aerodrome Operator)

•ADR.OR.B.025 Demonstration of compliance

- The aerodrome operator shall demonstrate compliance with:
 - CB, CS applicable to a change, any safety directive, and the applicable requirements of BR & IR
 - That the aerodrome, OLS and other areas are safe for operation
 - Flight procedures are approved
 - Relevant design information, drawings, inspection, test and other relevant reports



Part – ADR.AR

(Competent Authority)

•ADR.AR.C.035 Issuance of certificates

- The CA may require any inspection, test, safety assessment, ...
- Single or two separate certificates
- Demonstration of compliance by aerodrome operator
- Certificate: CB, aerodrome manual, operating conditions or limitations and any DAAD



From application to certification

Summary of three certification elements:

1. Certification Basis

- Applicable Certification Specifications (CS);
- any Equivalent Level of Safety (ELOS);
- any Special Conditions (SC)
- ELOS, SC, DAAD to be supported by Safety Assessment

2. Aerodrome Manual (content)

- General;
- Aerodrome management system, qualification and training requirements;
- Particulars of the aerodrome site;
- Particulars of the aerodrome required to be reported to the AIS; and
- Particulars of the operating procedures of the aerodrome, its equipment and safety measures.

3. Demonstration of Compliance (AD Operator)



Certification basis (CB)

CERTIFICATE

(Part AR, APPENDIX I and II)

- Common ADR rules; 1st ever
- Harmonised cert. process
- Harmonised certificates
- Improved SAFETY

 28 EU states

 4 EFTA states

NP 2011-20 (B.I) ANNEX I – Part-AR APPENDIX I APPENDIX I [MEMBER STATE] A Member of the European Union ⁴		09/12/2011
CERTIFICATE Certificate reference: [STATE CODE]: xxxxx		
Pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council and the Commission Regulation (EC) No .../... for the time being in force and subject to the conditions specified below, [THE COMPETENT AUTHORITY OF THE MEMBER STATE ⁵] hereby certifies that:		
[COMPANY NAME AND ADDRESS]		
is authorised to operate aerodrome [NAME OF AERODROME], in accordance with the provisions of Regulation (EC) No 216/2008 and its Implementing Rules, the aerodrome certification basis, the terms of approval attached to this certificate and the approved aerodrome manual.		
This certificate shall remain valid for an unlimited duration, unless it is surrendered, suspended or revoked.		
Date of original issue:		
Revision No:		
Signed:		
For the competent authority [COMPETENT AUTHORITY IDENTIFICATION]		
⁴ Delete for non-EU Member States. ⁵ Delete for non-EU Member States. TS-1900.00024-002 © European Aviation Safety Agency. All rights reserved. Proprietary document. Copies are not controlled. Confirm revision status through the EASA Internet/Intranet. Page 32 of 70		
APPROVAL XXXX [MEMBER STATE] ⁶ xxxxx Day Night VFR only IFR only VFR/IFR ASDA: LDA: TODA: TODA: CES Non-Instrument Instrument Non-precision approach Precision approach + Standard Category I + Lower than Standard Category I + Precision Approach Category II + Other than Standard Category II + Precision Approach Category III-A + Precision Approach Category III-B + Precision Approach Category III-C DA/DH – MDA/MCY Visibility/RVR Code number/Code letter ome Specify name of service provider Yes/No Accountable manager: Safety management: Compliance monitoring: Aerodrome operational services and maintenance: Other: EASA FORM UUUUU Issue 1		
⁶ Delete for non-EU Member States. TS-1900.00024-002 © European Aviation Safety Agency. All rights reserved. Proprietary document. Copies are not controlled. Confirm revision status through the EASA Internet/Intranet. Page 33 of 70		

Tivat Airport





EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT



Thank you!

predrag.sekulic@easa.europa.eu

Your safety is our mission.
easa.europa.eu