

Case study 1 Certification programme + Certification Basis

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Aerodrome Certification

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Case study 1: Planning of a certification process

- In this part of the course, the instructors will propose a practical study case, related to the theoretical subject provided.
- The intention for this case is that attendants, by groups, analyze the case, and achieve possible conclusions.
- On the groups have exposed their conclusions, the instructors will open a discussion on the content, to gather all the points of view.



- Certification Process
- Planning
- Inspection

Case study 1: Planning of a certification process

- The CAA of LALALAND wants to certificate MIKEY International Airport, in order to comply the international standards.
- Imagine that this is the first certification process in the country, and the team of aerodrome inspectors has decided to have a meeting to establish the process.
- The team is composed by 3 inspectors, led by the most experienced member.

Case study 1: Planning of a certification process

Questions (1)

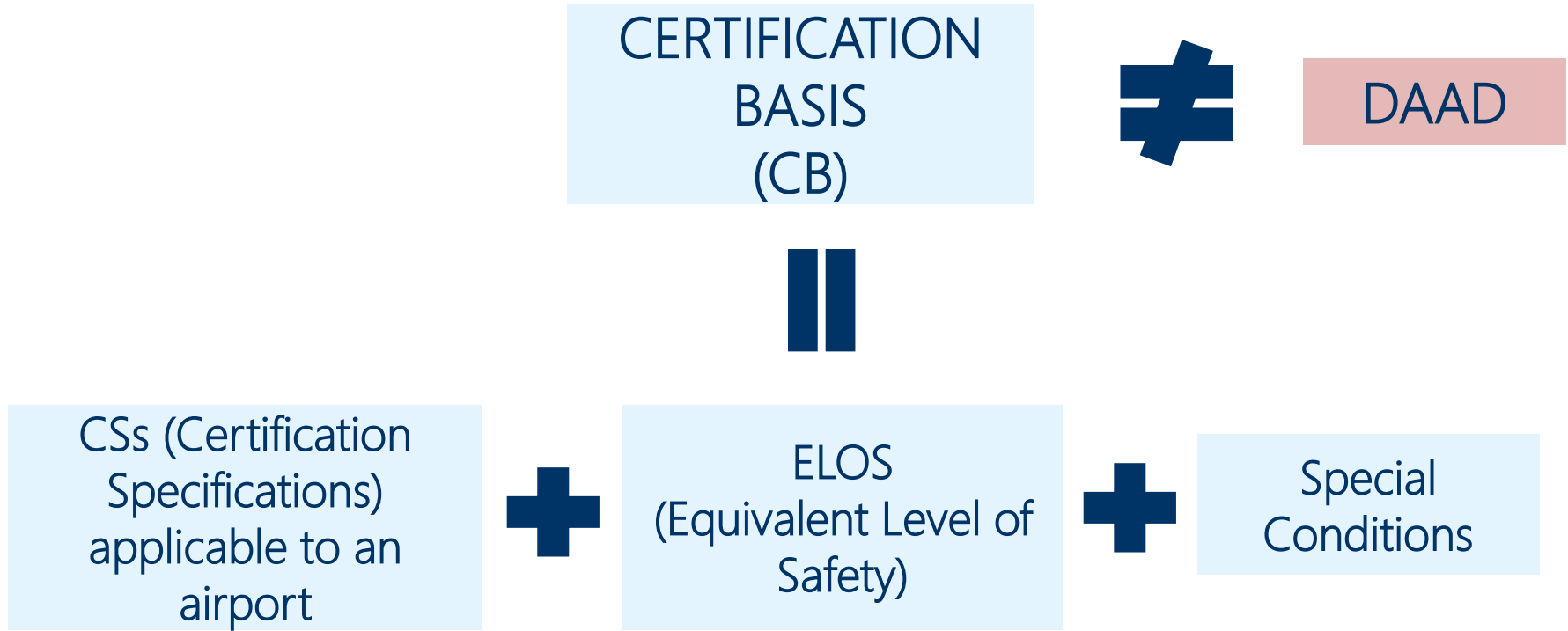
Please, in groups of three people, answer the following questions made by the team leader:

- Which are the **main steps** in the certification process?
- In what **order** are they going to be carried out?
- **How much time** requires carrying out each of them?
- Which are the **key tasks** and **milestones** of the process?
- How many **on-site inspections** will be carried out?

Certification Basis

Definition of Certification Basis Requirements in Reg 139/2014

Certification Basis



Certification Basis

ADR.AR.C.020 Certification basis

Regulation (EU) No 139/2014

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

- (a) the certification specifications issued by the Agency which the Competent Authority finds applicable to the design and the type of operation of the aerodrome and which are effective on the date of application for that certificate, unless:
 - (1) the applicant elects compliance with later effective amendments; or
 - (2) the Competent Authority finds that compliance with such later effective amendments is necessary;

Regulation (EU) No 139/2014

- (b) any provision for which an equivalent level of safety has been accepted by the Competent Authority to be demonstrated by the applicant; and

Regulation (EU) No 139/2014

- (c) any special condition prescribed in accordance with [ADR.AR.C.025](#), that the Competent Authority finds necessary to be included in the certification basis.

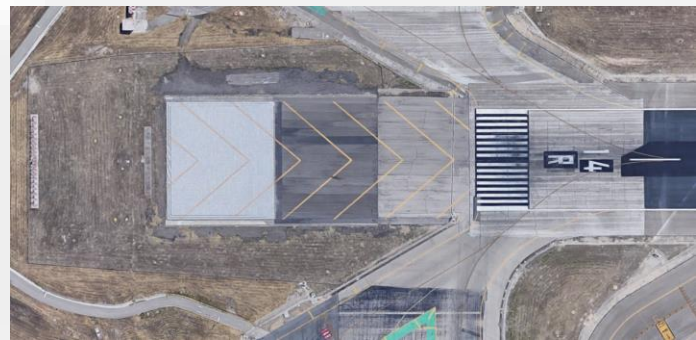
Certification Basis

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

ED Decision 2014/012/R

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.



Aircraft Arresting Systems: EMAS

Certification Basis

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

ED Decision 2014/012/R

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;
- (b) any possible interconnections/relationships between the Agency's certification specifications which the proposal is related to, with any other certification specifications or requirements, in order to:
 - (1) identify any implications of the proposal to other design, operational, human, or other elements of the system; and
 - (2) establish if such interconnections/relationships and implications have been properly and adequately addressed by the applicant.

The applicant's proposal may involve design, technical, procedural, or other suitable means.

The demonstration of an equivalent level of safety may involve various methodologies, quantitative or qualitative, whose magnitude and complexity may vary, depending on each case.

In any case, the applicant should demonstrate to the satisfaction of the Competent Authority that the proposed solution offers a level of safety, which is effectively not lower than that associated with the relevant Agency certification specifications.

Certification Basis

ADR.AR.C.025 Special conditions

Regulation (EU) No 139/2014

- (a) The Competent Authority shall prescribe special detailed technical specifications, named special conditions, for an aerodrome, if the related certification specifications issued by the Agency referred to in point [ADR.AR.C.020\(a\)](#) are inadequate or inappropriate, to ensure compliance with the essential requirements of Annex Va to Regulation (EC) No 216/2008, because:
- (1) the certification specifications cannot be met due to physical, topographical or similar limitations related to the location of the aerodrome;
 - (2) the aerodrome has novel or unusual design features; or
 - (3) experience from the operation of that aerodrome or other aerodromes having similar design features has shown that safety may be endangered.
- (b) The special conditions shall contain such technical specifications, including limitations or procedures to be complied with, as the Competent Authority finds necessary to ensure compliance with the essential requirements set out in Annex Va to Regulation (EC) No 216/2008.

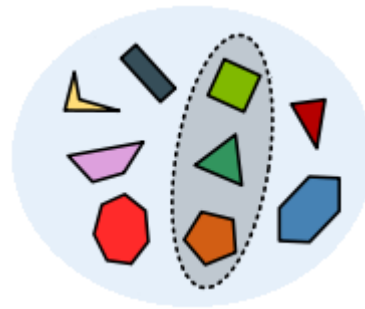


Certification Basis

List of Applicable CSs (Support Tool)

Certification Basis

- The Aerodrome Operator must **preselect the CSs they think are applicable to the airport due to its characteristics (infrastructure and type of operation)** at the beginning of the Certification Process. The Operator has to justify compliance with those CS by means of supporting documentation.
- The Aerodrome Operator **send this selection of CS to the AESA along with the Certification Request.** This selection has to be evaluated by AESA, in order to determine if that selection is proper (or not) for that infrastructure and the operation developed on it.



Certification Basis

- After a first evaluation, **AESA's selection of applicable CS** has to be notified to the Aerodrome Operator.
- Those are the **Certification Basis (CB)**, that is, the CS that apply to the airport (*that selection could change during the certification process if any additional non-compliance is found, or when a non-compliance is solved during the process*).



Certification Basis

- The CS Tool is intended to facilitate the **identification of the Certification Basis**, and also to give a document on which refer all the supporting documentation.



Certification Basis

- In order to perform this task, the Tool is divided into two stages:
 - 1 – Parameters: Depending on the type of operations
 - 2 – Infrastructures: Additional elements

Certification Basis

PARAMETERS

Número de clave

1 2 3 4

Letra clave

A B C D E F

Número de pistas

	Tipo de aproximación pista	Designación (máx. 7)
<input type="radio"/> 1	<input type="checkbox"/> VFR <input type="checkbox"/> INP <input type="checkbox"/> CAT I <input type="checkbox"/> CAT II/III	RWY: <input type="text"/>
<input type="radio"/> 2	<input type="checkbox"/> VFR <input type="checkbox"/> INP <input type="checkbox"/> CAT I <input type="checkbox"/> CAT II/III	RWY: <input type="text"/>
<input type="radio"/> 3	<input type="checkbox"/> VFR <input type="checkbox"/> INP <input type="checkbox"/> CAT I <input type="checkbox"/> CAT II/III	RWY: <input type="text"/>
<input type="radio"/> 4	<input type="checkbox"/> VFR <input type="checkbox"/> INP <input type="checkbox"/> CAT I <input type="checkbox"/> CAT II/III	RWY: <input type="text"/>

VFR = Aproximación visual
INP = Aproximación instrumental de No Precisión
CAT I = Aproximación de precisión de categoría I
CAT II/III = Aproximación de precisión categoría II/III

Pistas paralelas con operación simultánea

Sí No

Número de plataformas

	Designación (máx. 7)
<input type="radio"/> 1	APR: <input type="text"/>
<input type="radio"/> 2	APR: <input type="text"/>
<input type="radio"/> 3	APR: <input type="text"/>
<input type="radio"/> 4	APR: <input type="text"/>

LVP

Sí No

- Operación con RVR < 350 m
- Despegues con RVR < 800 m

LVP = Procedimiento de baja visibilidad
RVR = Alcance visual en la pista

Uso nocturno

Sí No



Certification Basis

INFRASTRUCTURES

Infraestructuras Área de Movimiento

- Anchura pista ≥ 60 m (Letra clave D o E)
- RESA (Área de Seguridad de extremo de pista)
- CWY (Zona libre de obstáculos)
- SWY (Zona de parada)
- Plataforma de viraje en pista
- Calle de salida rápida
- Calle de rodaje en puente
- Área anterior al umbral pavimentada, no resistente y longitud > 60 m
- Pista ruta normalizada rodaje con luces de pista y de calle
- Pista no pavimentada
- Calle no pavimentada

Instalaciones aeroportuarias

- Instalaciones de deshielo
- Luces instalaciones de deshielo
- Fuente secundaria con sus propias líneas de transporte de energía
- Punto de comprobación del VOR

Filtrar (seleccionar Número de clave)

Luces de campo de vuelos

- Luces de eje de pista
- Luces de borde de pista
- Luces de extremo de pista
- Barra de parada
- Luces de punto de espera intermedio
- Luces de punto de espera en vial
- Faro aeródromo
- Luces de umbral
- Luces de eje de calle
- Luces de borde de calle
- RETILs (Luces indicadoras de calle de rodaje de salida rápida)
- Luces de plataforma de viraje en pista
- Luces de guía de maniobra de puesto de estacionamiento
- Luces de identificación de umbral
- TZL (Luces de zona de toma de contacto)

Luces de aproximación y balizamiento de obstáculos

- SALS (Sistema sencillo de Luces de aproximación)
- ALS (sistema de luces de aproximación) CAT I
- ALS (sistema de luces de aproximación) CAT II/III
- Luces de mediana/alta intensidad para iluminación de objetos

Señalización Área de Movimiento

- Señal de punto de visada
- Señal TDZ (Zona de toma de contacto)
- Punto de espera intermedio
- Indicador de dirección de aterrizaje
- Sistema de guía visual de atraque
- Sistema de guía visual de atraque avanzado
- Paneles de señales
- Señales de instrucciones obligatorias
- Señales de información
- Pista o calle cerrada total o parcialmente. Areas fuera de servicio
- Intersección pista-pista o pista-calle

Balizas

- Balizas de eje de calle de rodaje
- Balizas de borde de calle de rodaje
- Balizas de borde de calle no pavimentada

Certification Basis

- Once all characteristics are selected, the **CS Tool** generates a document with **all the CS**, differentiating between those which apply and those which do not.



Certification Basis

	CS ADR DSN — BOOK 1			
Designador RWY / APRON	Especificación de certificación	DESCRIPCIÓN CS	DESCRIPCIÓN GM	C/ELOS/ SC/DAAD/ NA
RWY: 06L-24R	CS ADR-DSN.B.120 Resistencia de los márgenes de las plataformas de viraje en la pista	La resistencia de los márgenes de la plataforma de viraje en la pista deberá poder soportar el tránsito ocasional de la aeronave más exigente para la que está prevista sin inducir daños estructurales al avión o a los vehículos de apoyo en tierra que puedan operar en el margen de pista.		NA
RWY: 06R-24L	CS ADR-DSN.B.120 Resistencia de los márgenes de las plataformas de viraje en la pista	La resistencia de los márgenes de la plataforma de viraje en la pista deberá poder soportar el tránsito ocasional de la aeronave más exigente para la que está prevista sin inducir daños estructurales al avión o a los vehículos de apoyo en tierra que puedan operar en el margen de pista.		NA
RWY: 06L-24R	CS ADR-DSN.B.125 Márgenes de pista	(a) El objetivo de seguridad operacional del margen de pista es que deberá construirse de manera que reduzca cualquier peligro a una aeronave que se salga de la pista o zona de parada, o para evitar la ingestión de piedras sueltas u otros objetos por las turbinas de los motores. (b) Deberán proveerse márgenes de pista para cualquier pista con letra de clave D o E, siendo la anchura de la pista inferior a 60 m. (c) Deberán proveerse márgenes de pista para cualquier pista cuya letra de clave sea F.		C
RWY: 06R-24L	CS ADR-DSN.B.125 Márgenes de pista	(a) El objetivo de seguridad operacional del margen de pista es que deberá construirse de manera que reduzca cualquier peligro a una aeronave que se salga de la pista o zona de parada, o para evitar la ingestión de piedras sueltas u otros objetos por las turbinas de los motores. (b) Deberán proveerse márgenes de pista para cualquier pista con letra de clave D o E, siendo la anchura de la pista inferior a 60 m. (c) Deberán proveerse márgenes de pista para cualquier pista cuya letra de clave sea F.		C

Certification Basis

- The rest of rows must be manually selected as C, NC or NA
- During this process, the corresponding Supporting Documentation column must be added as well in order to justify the previous choosing.

	CS ADR DSN — BOOK 1				
Designador RWY / APRON	Especificación de certificación	DESCRIPCIÓN CS	DESCRIPCIÓN GM	C/ELOS/SC/DAAD/NA	Documentación Justificativa
RwY: 06L-24R	CS ADR-DSN.B.125 Márgenes de pista	<p>(a) El objetivo de seguridad operacional del margen de pista es que deberá construirse de manera que reduzca cualquier peligro a una aeronave que se salga de la pista o zona de parada, o para evitar la ingestión de piedras sueltas u otros objetos por las turbinas de los motores.</p> <p>(b) Deberán proveerse márgenes de pista para cualquier pista con letra de clave D o E, siendo la anchura de la pista inferior a 60 m.</p> <p>(c) Deberán proveerse márgenes de pista para cualquier pista cuya letra de clave sea F.</p>		C	<p>(NT 3.2.1) a) Manual de Aeropuerto de Palma de Mallorca, Anexo 1, Planos. MA-02.01 Configuración Geométrica.</p> <p>(NT 3.2.2) a) Manual de Aeropuerto de Palma de Mallorca, Anexo 1, Planos. MA-02.01 Configuración Geométrica.</p> <p>b) Manual de Aeropuerto de Palma de Mallorca, Parte 1, Información general.</p>



Certification Basis



Case study 1 Certification programme + Certification Basis

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