EASA
European Aviation Safety Agency

Performance Based Navigation Implementation - Regulatory framework and approach

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Your safety is our mission.

EASA is an agency of the European Union

Content

European PBN implementation mandate

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Pilot Common Project

COMMISSION IMPLEMENTING REGULATION (EU) No 716/2014 of 27 June 2014 on the establishment of the Pilot Common Project supporting the implementation of the European Air Traffic Management Master Plan.

AF 1 - Extended Arrival Management and **Performance Based Navigation in the High Density Terminal Manoeuvring Areas.**

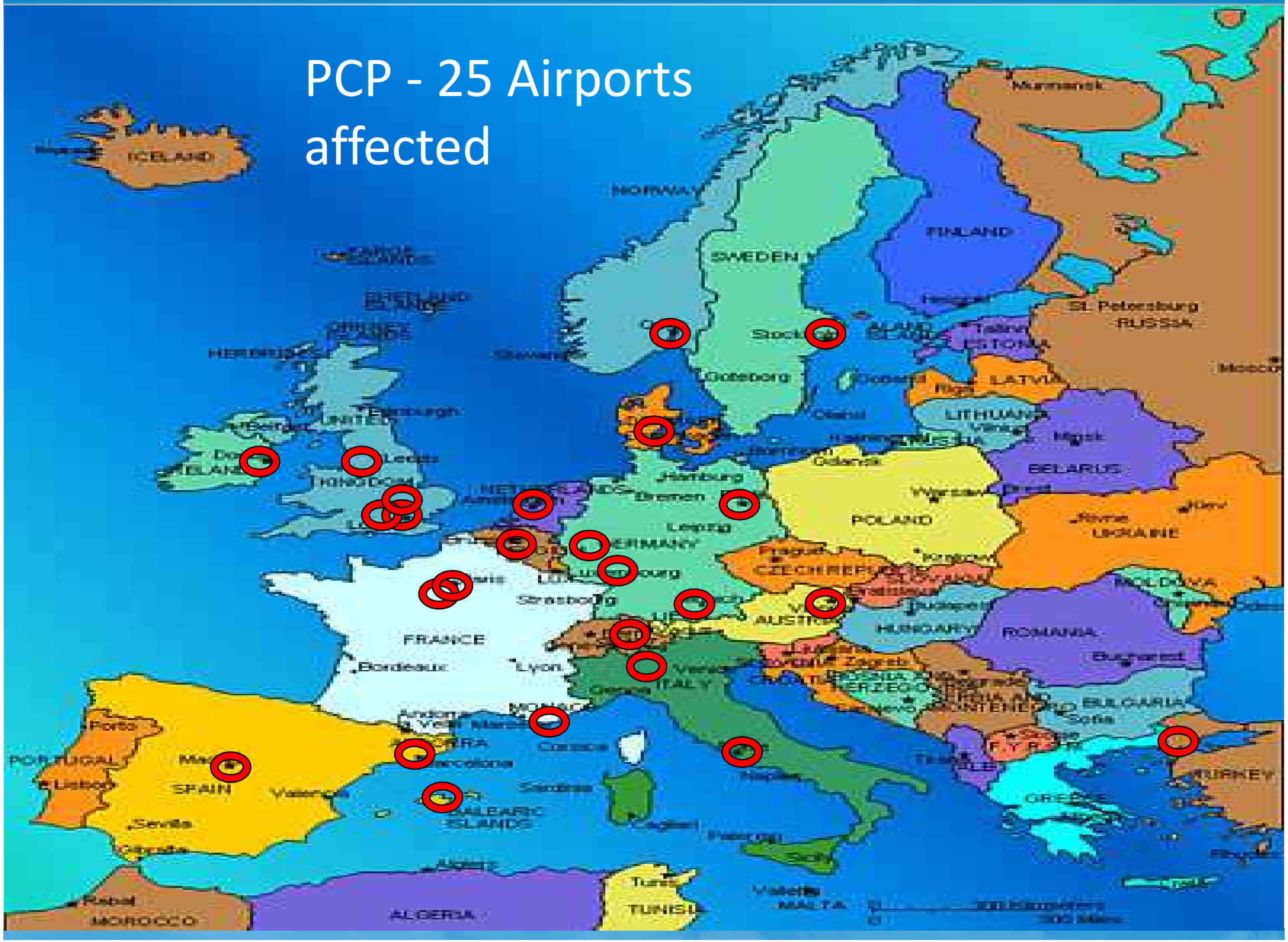
PCP - PBN in the High Density TMA

RNP 1 SIDs, STARs Plus Radius to Fix (RF)

2024

RNP APCH to LNAV/VNAV or LPV minima

PCP - 25 Airports affected



Proposed European PBN implementation

NPA 2015-01

PBN Implementation in EATMN

Noting that the PCP mandates PBN applications at a limited number of locations.

Recognising that to ensure an efficient, harmonised and safe implementation of PBN in Europe, **that supports the improved performance** of the European Air Traffic Management Network (EATMN), the uniform use of PBN specifications and functionalities is critical.

Economic regulation

Performance regulation

Safety regulation

Interoperability regulation

ATM/ANS

Aerodromes

Operations & FCL

Airworthiness

3rd Country Operations

TOTAL SYSTEM APPROACH

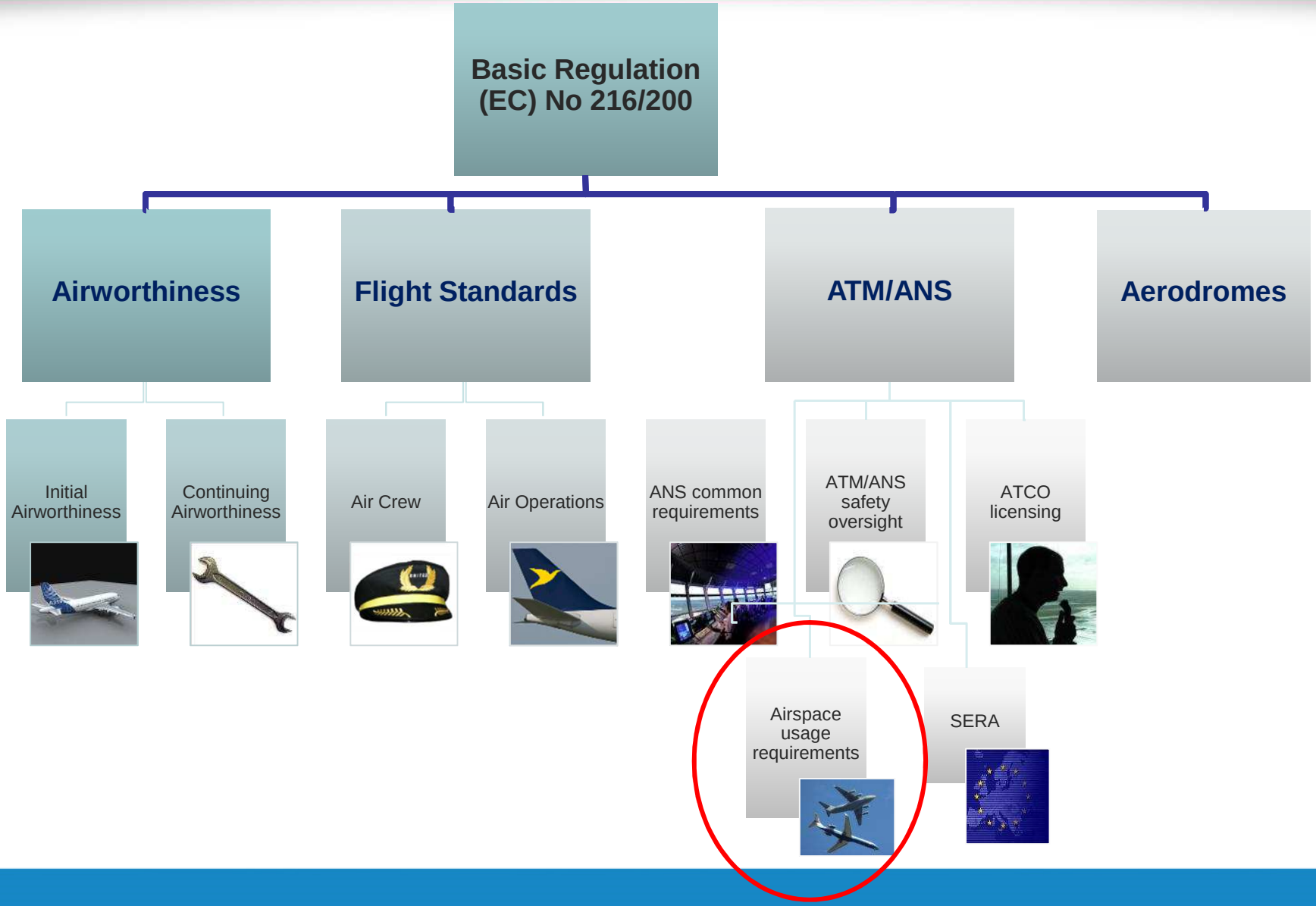
A single regulation containing the mandated requirements applicable to **all** airspace users and to the use of the airspace would be appropriate.

Lay down common airspace usage and operating procedures to be applied above the territory to which the Treaty applies;

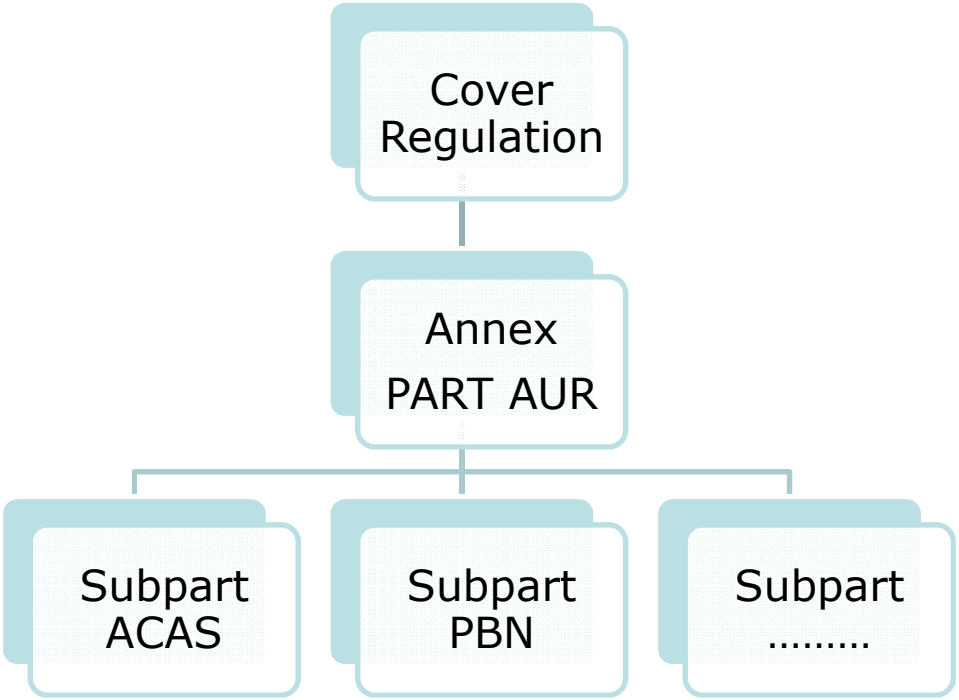
Be applicable to:

Operations of aircraft registered in a Member State and Aircraft registered in a third country and operated by a Member State operator	Operations of aircraft by a third country operator	Aerodrome operations	ATM/ANS provision

Current Regulations - EASA Framework



PART AUR format



- **Cover Regulation**: Full Scope, definitions, applicability dates, etc.
- **Subpart ACAS**: Specific scope and ACAS II carriage obligations
- **Subpart PBN:** Specific scope and PBN use obligations
- **Subpart .....**:

	PHASE OF FLIGHT						
	En Route			Terminal		Final Approach	
	Aircraft		Service Provision	Aircraft	Service Provision	Aircraft	Service Provision
	Above FL195	Below FL195					
By end 2018							RNP APCH (APV, where appropriate, subject to operational needs but LNAV as a minimum)
By end 2020				RNP1 + RF leg + RNAV Holding + Ability to meet altitude constraints, i.e. "AT", "AT OR ABOVE", "AT OR BELOW", "WINDOWS",	Provide RNP SIDs and STARs Use of altitude constraints Optimise TMA flows to provide: • Capacity • Efficiency • Access • CDO/CCO based on positive CBA	APV (either Baro or SBAS)	
By end 2023	Advanced RNP + FRT	RNP1 + RNAV Holding	Airspace designed to optimise flight efficiency. • Free routes airspace enabling user-preferred trajectories. • High density airspace redesigned for closer space routes and route conformance monitoring tools implemented to manage traffic • Use of altitude constraints				

The overall objectives of the EASA system are defined in Article 2

1. is to establish and maintain a **high uniform level of civil aviation safety in Europe**.

2. Additional objectives are, in the fields covered by this Regulation, as follows:
   a) to ensure a **high uniform level of environmental protection**;
   b) to facilitate the free movement of goods, persons and services;
   c) to promote **cost-efficiency in the regulatory** and certification processes and **to avoid duplication** at national and European level;
   d) ……..

contribute to the implementation of the essential requirements of Regulation EC (No) 552/2004 — Annex II, Part-A.

Be consistent with the ATM Functionality AF 1 — Extended AMAN and PBN in high density TMAs of the Pilot Common Project Regulation

Enable a performance-based application of PBN within the EATMN

What is need to for PBN Operations in the EATMN?

Air Traffic Service Providers and aerodrome operators

Enable a performance-based application of PBN within the EATMN for:

- SID/STAR in order to meet local performance objectives shall conform to RNP 1 performance;
- ATS routes in order to meet network performance objectives shall conform to RNP 1 performance requirements;

Enable a safety based application of PBN within the EATMN for:

- PBN APV conforming to the RNP APCH requirements at all instrument runway ends where currently, there is only a non-precision approach procedure.

Aircraft Operators

Commission Regulation (EU) No 965/2012

ORO.GEN.110 Operator responsibilities

- *The operator shall ensure that its aircraft are equipped and its crews are qualified as required for the area and type of operation.'*

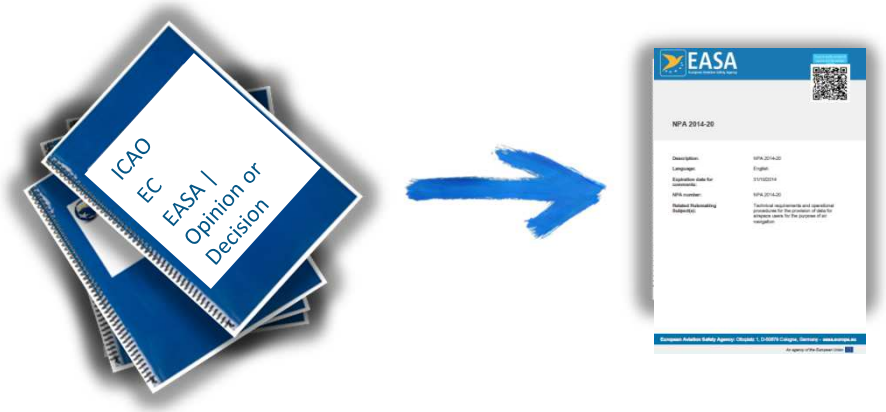
Commission Regulation (EU) No 923/2012

SERA.5015 Instrument flight rules (IFR) — Rules applicable to all IFR flights:

- *Aircraft equipment*
- *Aircraft shall be equipped with suitable instruments and with navigation equipment appropriate to the route to be flown and in accordance with the applicable air operations legislation.'*

EASA framework

Building on a solid regulatory framework to make life simpler and consistent for aviation



Binding rules

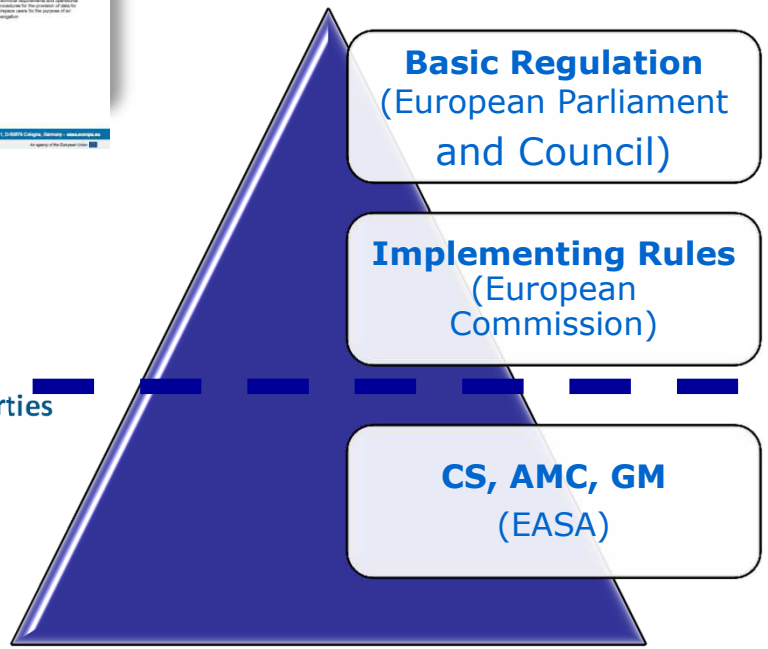
« ***shall*** »

Flexibility given to affected parties

Compliance provisions

('non-binding' rules')

« ***should*** »



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Any questions?
Thank you for your attention

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