



EASA
European Aviation Safety Agency

SAE Aerospace Standards Summit 2017

The role of Industry Standards in EASA regulatory framework

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Chief Engineer EASA

Your safety is our mission.

An agency of the European Union 



Facts and figures

Established
2002

15 years
in operation

800+

aviation experts
& administrators

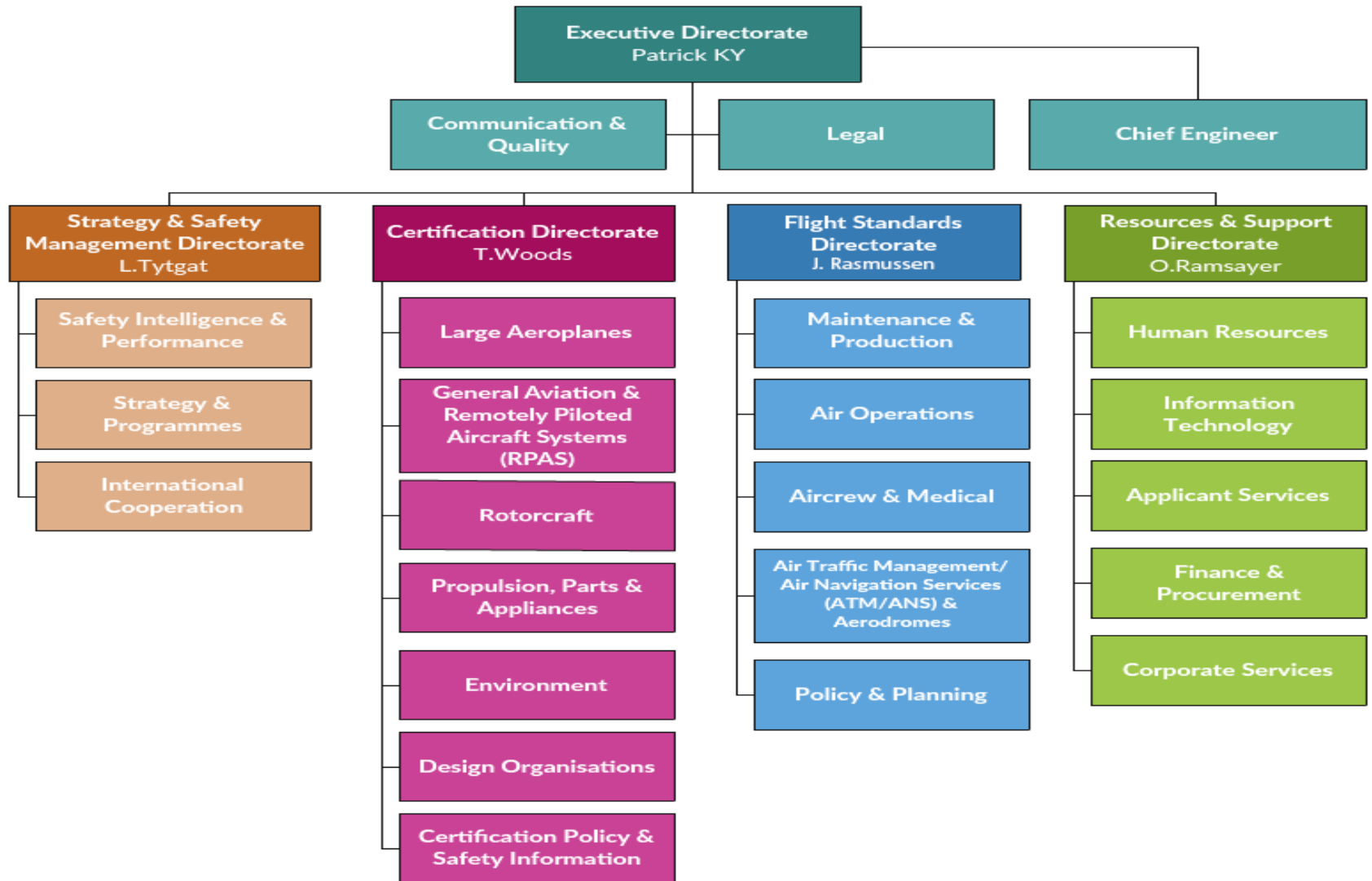
Headquarters in
Cologne
Office in
Brussels

32 EASA member states
= 28 + 4
EU + Switzerland, Norway
Iceland, Liechtenstein





The Agency Organisation





- Ensure the highest common level of safety protection for EU citizens
- Ensure the highest common level of environmental protection
- Single regulatory and certification process among Member States
- Facilitate the internal aviation single market & create a level playing field
- Work with other international aviation organisations & regulators



Scope of competences

EASA Safety Regulator

Safety significantly affects all aviation domains:

Total System Approach

Airworthiness

Operations
& FCL

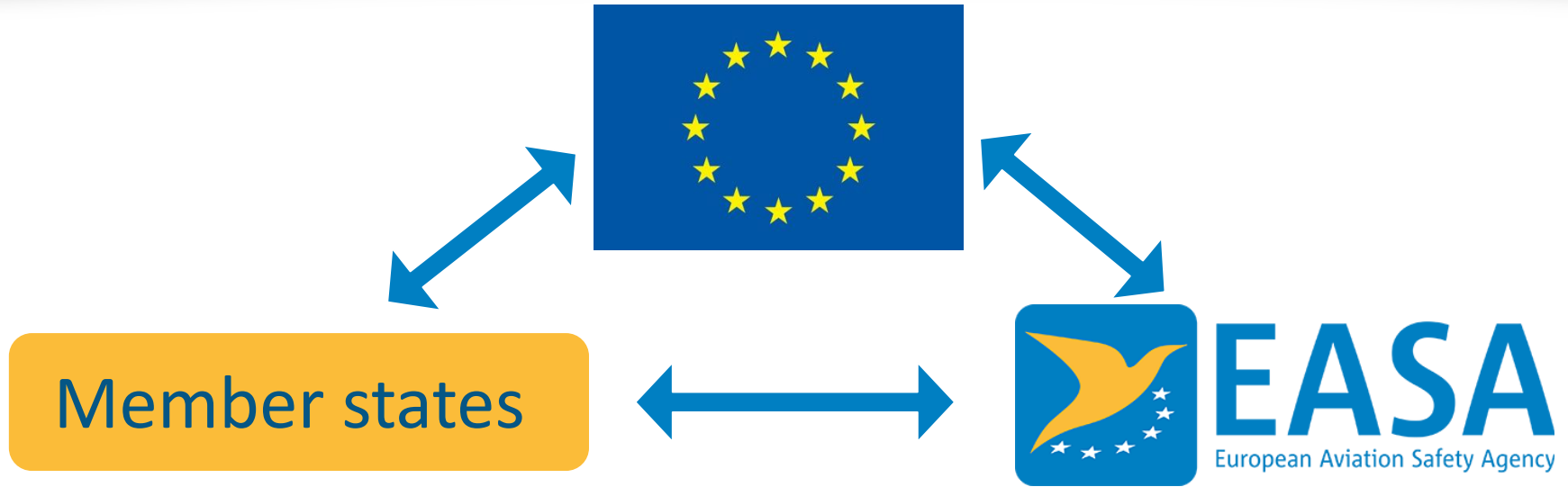
3rd Country
Operations

Aerodromes

ATM/ANS



Partnership with EU Member States

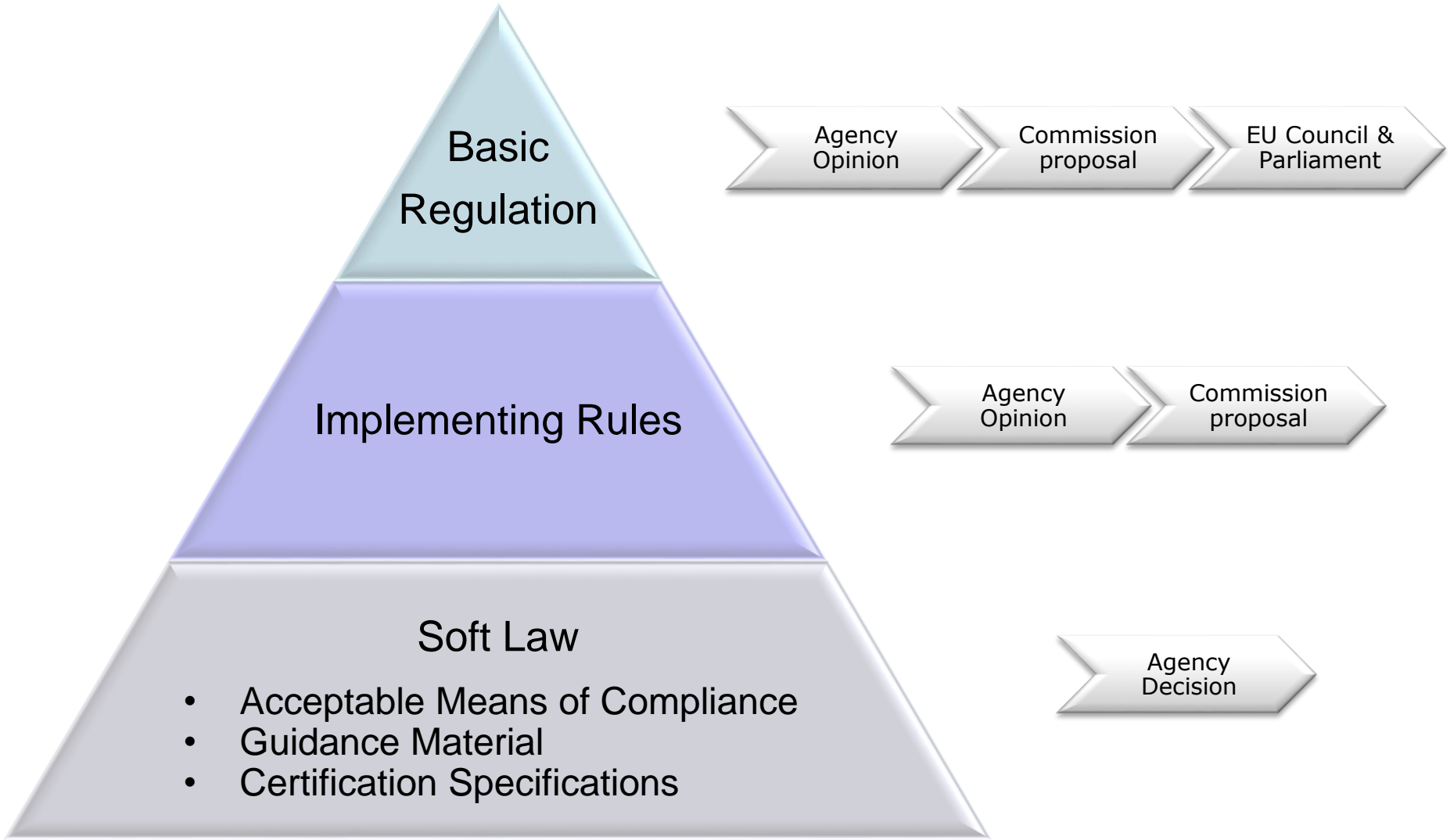


- Implementing EU Legislation
- Oversight of national organisations
 - Production
 - Maintenance
 - OPs/Licencing
 - Training
 - ATM
 - Aerodromes

- Implementing rules
- Oversight of Member States
- Aircraft and products certification
- Safety of non-EU operations
- Approval of non-EU organisations
 - *Production*
 - *Maintenance*
 - *Training*
 - *ATM*



EU Regulatory structure



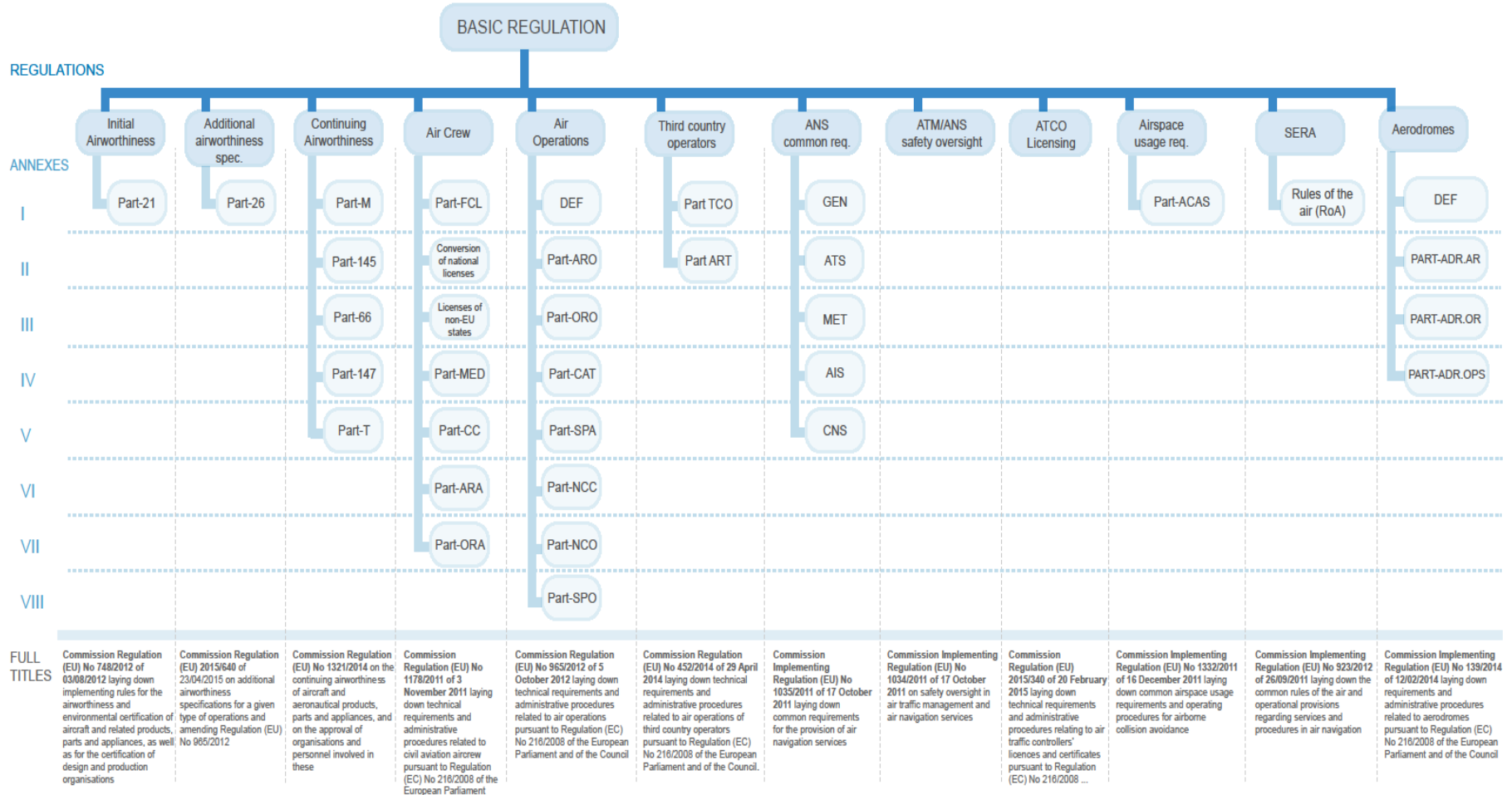


Current Regulations

Regulations Structure

Each Part to each implementing regulation has its own Acceptable Means of Compliance and Guidance Material (AMC/GM). These AMC and GM are amended along with the amendments of the regulations. These AMC/GM are so-called 'soft law' (non-binding rules), and put down in form of EASA Decisions. A comprehensive explanation on AMC in form of questions and answers can be found on the FAQ section of the EASA website.

Furthermore, Certification Specifications are also related to the implementing regulations, respectively their parts. Like AMC/GM they are put down as Decisions and are non-binding.





Outlook of Regulations

EU Legislation for ATM/ANS & Aerodromes

Part 1: SES Legislation & 'EASA rules' for Aerodromes

Click on any box to access the corresponding document

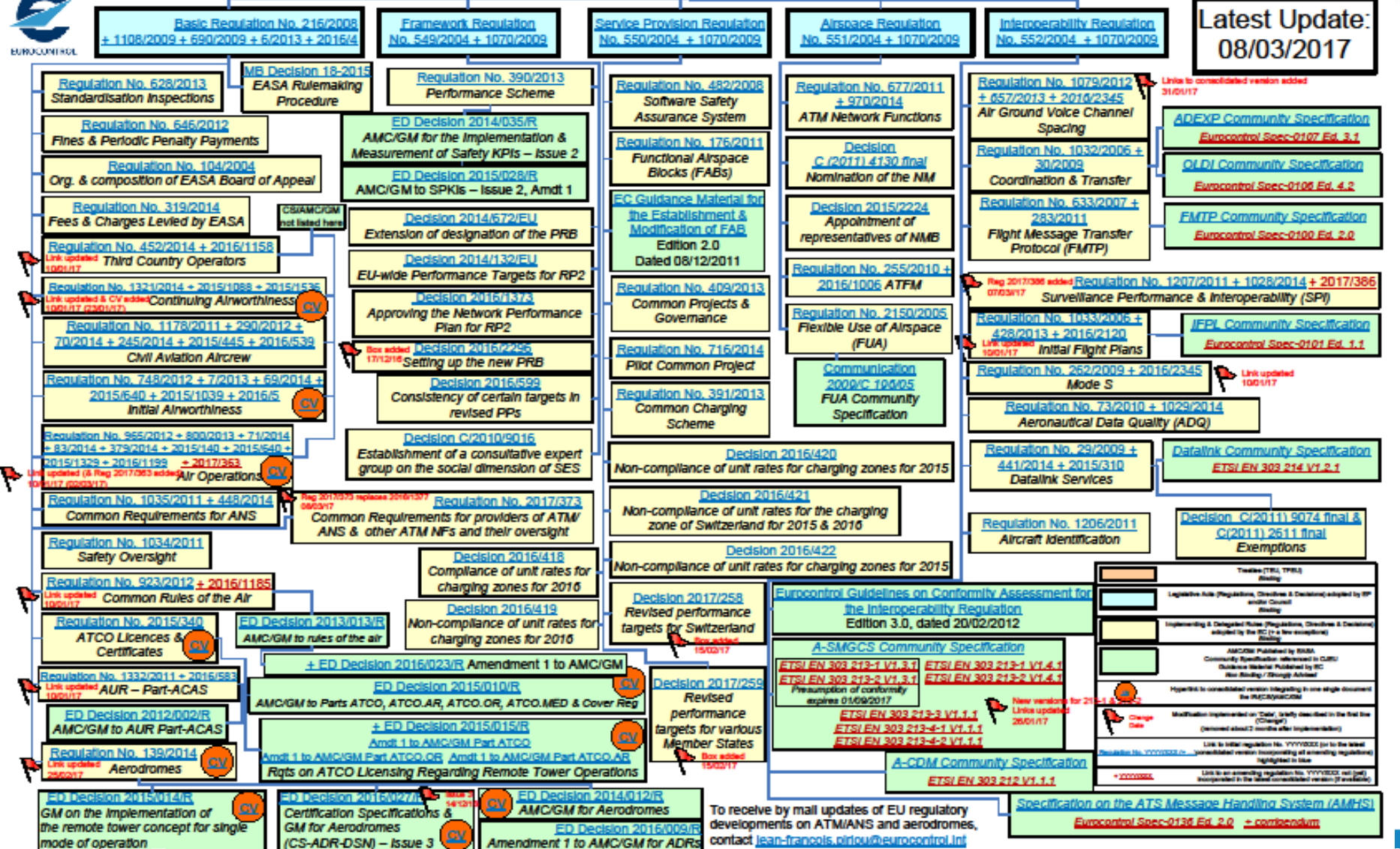


Treaty on the European Union
Treaty on the Functioning of the European Union

Regulation No. 219/2007+1351/2008 + 721/2014
Establishment of SESAR Joint Undertaking

Decision 2009/320/EC
Endorsing the European
ATM Master Plan

Latest Update:
08/03/2017





Certification Specifications (CS) and Industry Standards

- The CS are developed in order to facilitate compliance with implementing rules (e.g. CS-25 is used to provide the certification basis for a large aeroplane certificated in accordance with Part 21)
- Certification Specifications are developed by EASA in consultation with interested parties
- Industry Standards can be and are used to form the basis for demonstrating compliance with the CS or Acceptable Means of Compliance (AMC)
- Industry Standards have always played an important role in EASA's implementation of regulations, (even before, e.g. during JAA or NAA time)



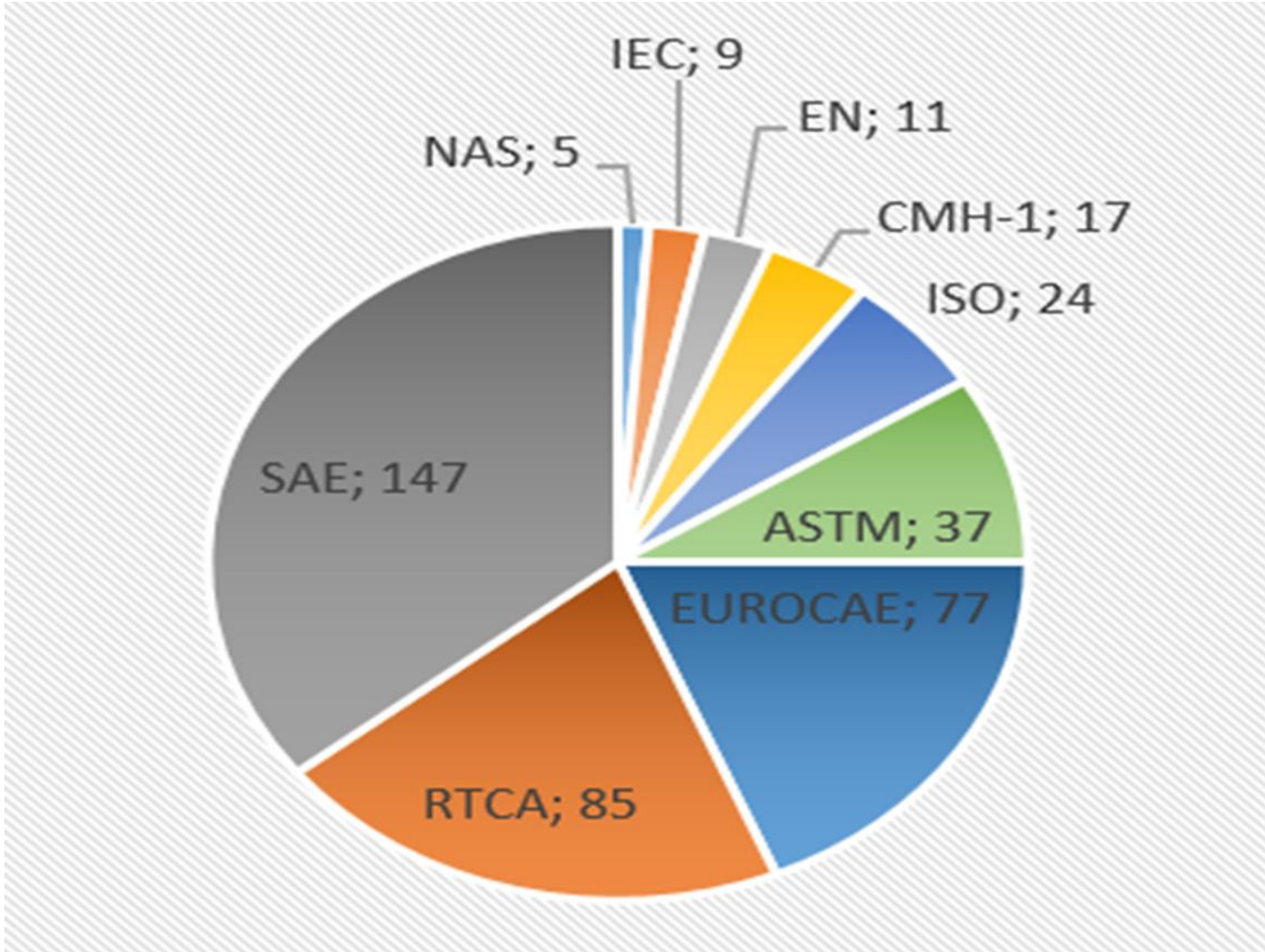
Benefits of Industry Standards

- Provide direct means of compliance
- Consistent quality and performance
- Internationally recognised
- Can be developed quicker than regulations
- Revision cycle quicker



Amount of Industry Standards Referenced in EASA CS, AMCs, and ETSOs

2016 Total: 412 2015 Total: 239





EASA SAE activities

- **Safety Assessment**
- **Aircraft Oxygen Equipment**
- **Noise Measure**
- **Aircraft Instruments**
- **Landing Gears**
- **Actuation/Flight Control Systems**
- **Aircraft Environment**
- **Anti Icing**
- **Fuel Cells**
- **Cargo Handling/GSE**
- **Helicopter Hoists**
- **Composite Repair**
- **Composite Materials**
- **ATM**
- **Exhaust Emissions**
- **Engine Health Management**
- **Structural Health Monitoring**
- **Ground Deicing**
- **IVHM**
- **Flight Deck Integration**
- **Cabin Safety**
- **Aircraft Seats**
- **Lightning**
- **Electrical Power Generation**
- **RFID**
- **Electronic Engine Controls**
- **Electromagnetic Compatibility**
- **Air Data Instruments**
- **Additive Manufacturing**
- **Propulsion Lubricants**
- **Electric Aircraft**
- **Li Battery Packaging Perf.**



Examples of Industry Standards

- High level requirements
 - CS-LSA is based on ASTM 2245

- Process level references in AMC
 - SAE **ARP 4761** Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and Equipment
 - SAE **ARP 4754 (ED 79)** Guidelines for Development of Civil Aircraft and Systems has become a must in aircraft development

- Specific material level in AMC
 - Anti-icing fluids SAE AMS 1428, Types II, III, or IV.



Trends

- ▶ EASA is moving towards an increasingly performance based regulatory approach, utilising Industry Standards as MoC
 - ▶ CS 23 Amendment 5: reorganisation of General Aviation CS, MOC will be supported by ASTM 44 work, ongoing
 - ▶ ASD-STAN: 1st Design Organisation Approval standard (prEN 9250)
 - ▶ Test organisations
 - ▶ General requirements for test process and capabilities
 - ▶ should become AMC to part 21.A.33 (a, b, c, d, e)
- Inspection and tests



Activities where standards support the EASA “regulations”

- **Certification** (the bulk of activities)
- **ATM: European Atm Standards Coordination Group** chaired by EUROCAE, with participation of EC, SJU, SDM is observer
- **UAS: EUSCG**, chaired by EUROCAE: EC,SAE will be members of, with several other Standard Making Organisations



ICAO

- ▶ ICAO is also moving in PBR direction, supporting performance based standards by technical specifications (Ind Stds), whilst maintaining several prescriptive ICAO standards
- ▶ Initiated the Std Round Table meetings for this purpose
- ▶ Participation of major SMOs, SAE, Eurocae, RTCA, Eurocontrol and some AA, e.g. EASA & FAA



EASA and SMO support to ICAO under SRTM

- ▶ Items proposed by SAE
 - ▶ G 27 for Li Battery packaging
 - ▶ proposal aimed to address data link deficiencies VDLM2 (SAE-IA)
- ▶ Items proposed by EUROCAE
 - ▶ New ELT designs, ROAS,
- ▶ Items proposed by EUROCONTROL
 - ▶ Time Based Separation
- ▶ Validation of (IS)Technical Specifications (fit for purpose) is an item to address in this expanded context
- ▶ This concern is valid not only for ICAO but also for EASA/EC and other AA



EASA involvement in Industry Standards development

- ▶ Internal International Standards Committee
 - ▶ 65 EASA staff participate to 112 Standardisation WG
 - ▶ 52 EASA staff involved with ICAO panels and WG
- ▶ EASA staff on membership of EUROCAE council, SAE Aerospace Council and ASD-STAN board
- ▶ Member of ICAO standards roundtable task force



Potential difficulties

- ▶ Duplication of effort between standards bodies and potential for differences
- ▶ Sponsoring standards development vs encouraging standards development
- ▶ Selection of the standards body and assignment of tasking is done on a case by case basis

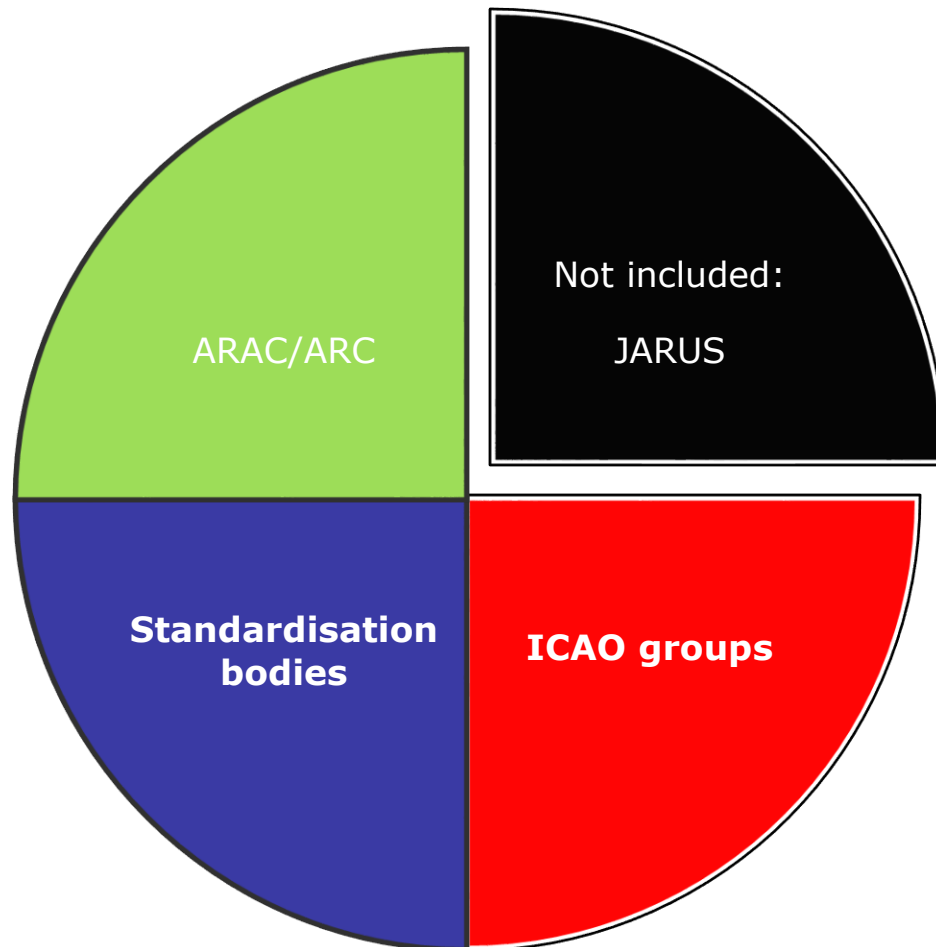


Internal International Standards Committee – (IISC)

- ▶ Shows how EASA is organised vis a vis Industry Standards developments,
- ▶ **rationalised system to coordinate its interactions with the industry standardisation bodies with all the necessary means for an efficient cooperation.**
- ▶ All Directorates are represented in the Committee,
- ▶ Tackle ARAC, ICAO and Industry Standards,
- ▶ Ensure efficient use of resources and budget,
- ▶ Meet SAE (D.Alexander) twice a year and some other SMOs

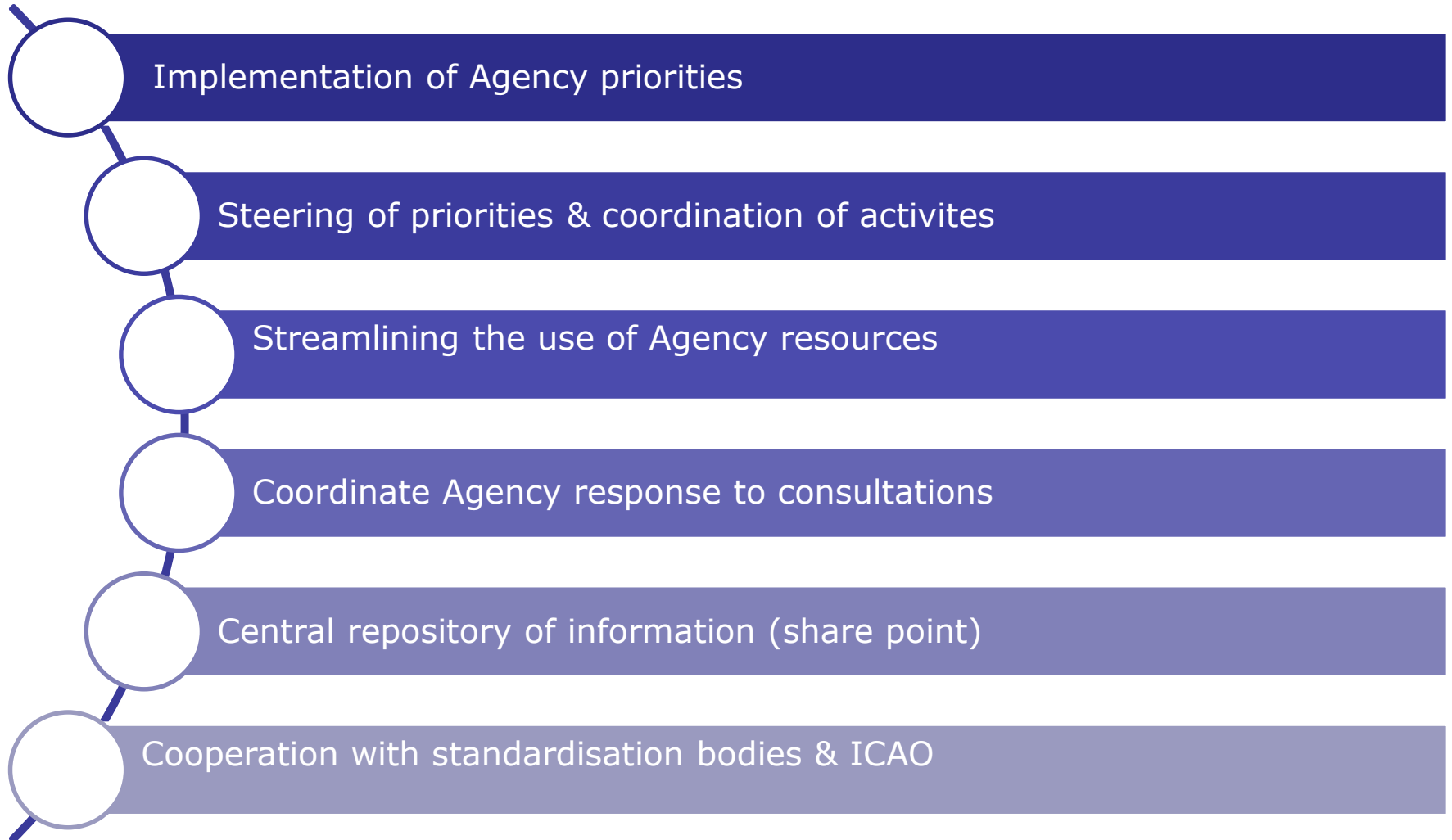


IISC 2017 scope





IISC Main functions





PKY Note to SAE summit

- ▶ **Industry Standards have always played an important role in regulatory material, even more so in EASA. We aim to put them at the heart of EASA's technical specifications, such as Certification Specifications and Acceptable Means of Compliance**
- ▶ **Indeed, EASA wishes to use even more industry standards as shown by our activities in the field of ATM**
- ▶ **The joint FAA/EASA initiative to reorganise CS 23 is another example. The modification of these certification specifications for small airplanes will simplify airworthiness certification for General Aviation, and reduce the costs incurred by focussing on key risks and putting industry standards at the centre of the certification process**
- ▶ **The partnership we enjoy with SAE is central to this strategy. Indeed, approximately half of all the industry standards referred to in our regulatory material were produced by this organisation**



Conclusions

- ▶ Industry Standards are essential to the proper functioning of an international safety driven activity such as aviation
- ▶ To support performance based rules and risk based safety management, EASA expects increased involvement and co-operation with standards bodies such as SAE in the future



EASA
European Aviation Safety Agency

Thank you for your attention!

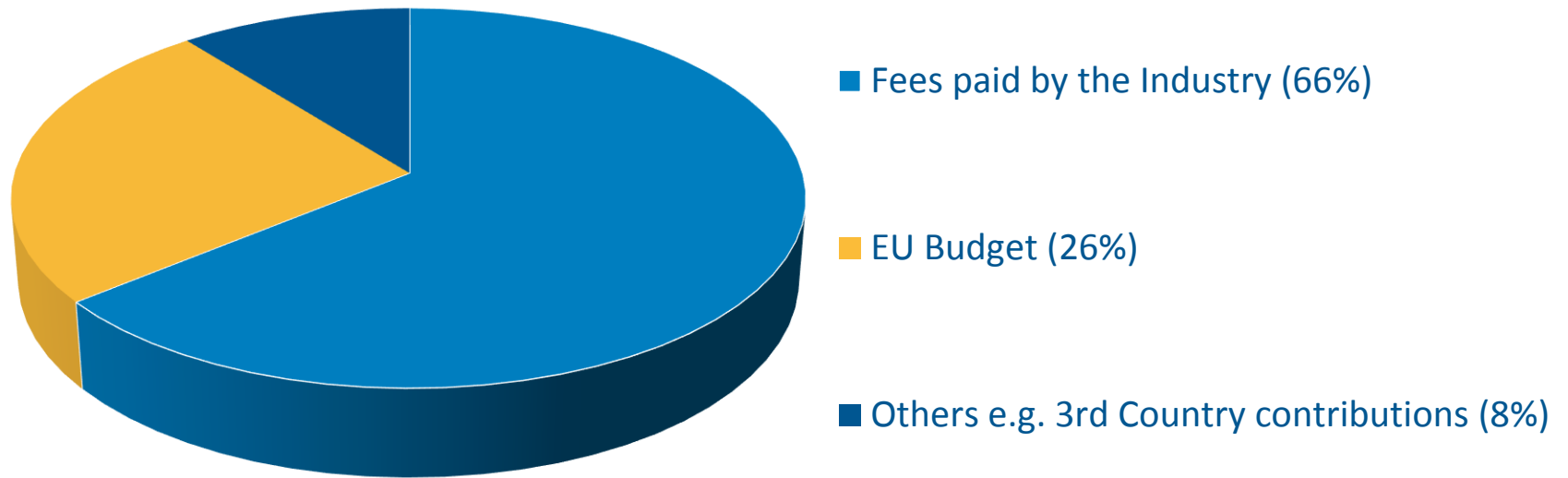
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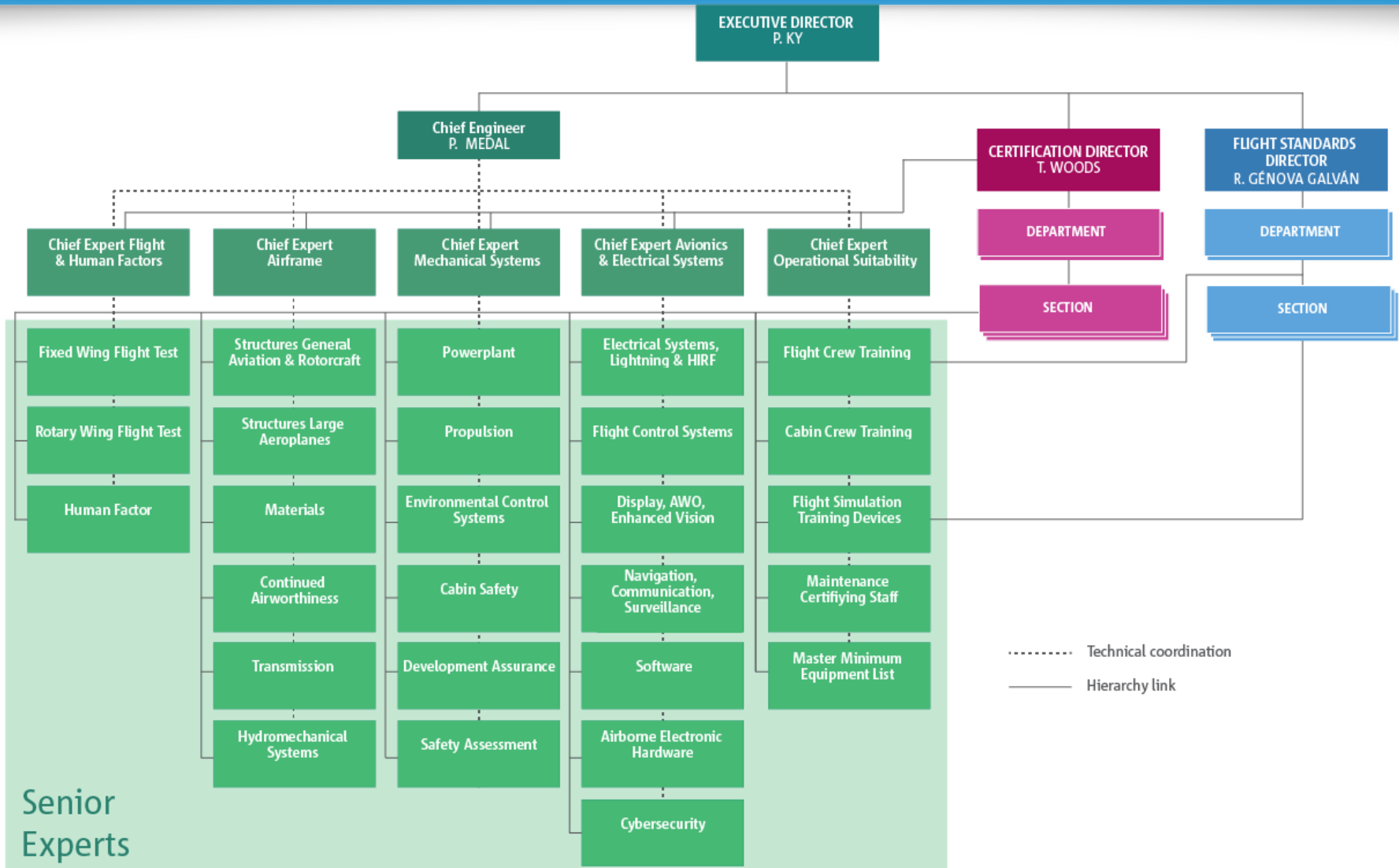
Budget in 2016

Budget in 2016: 140 M€





The Technical Structure





That's all Folks!