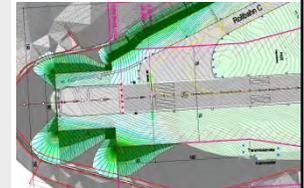


# Future aerodrome safety rules

## “An external perspective”

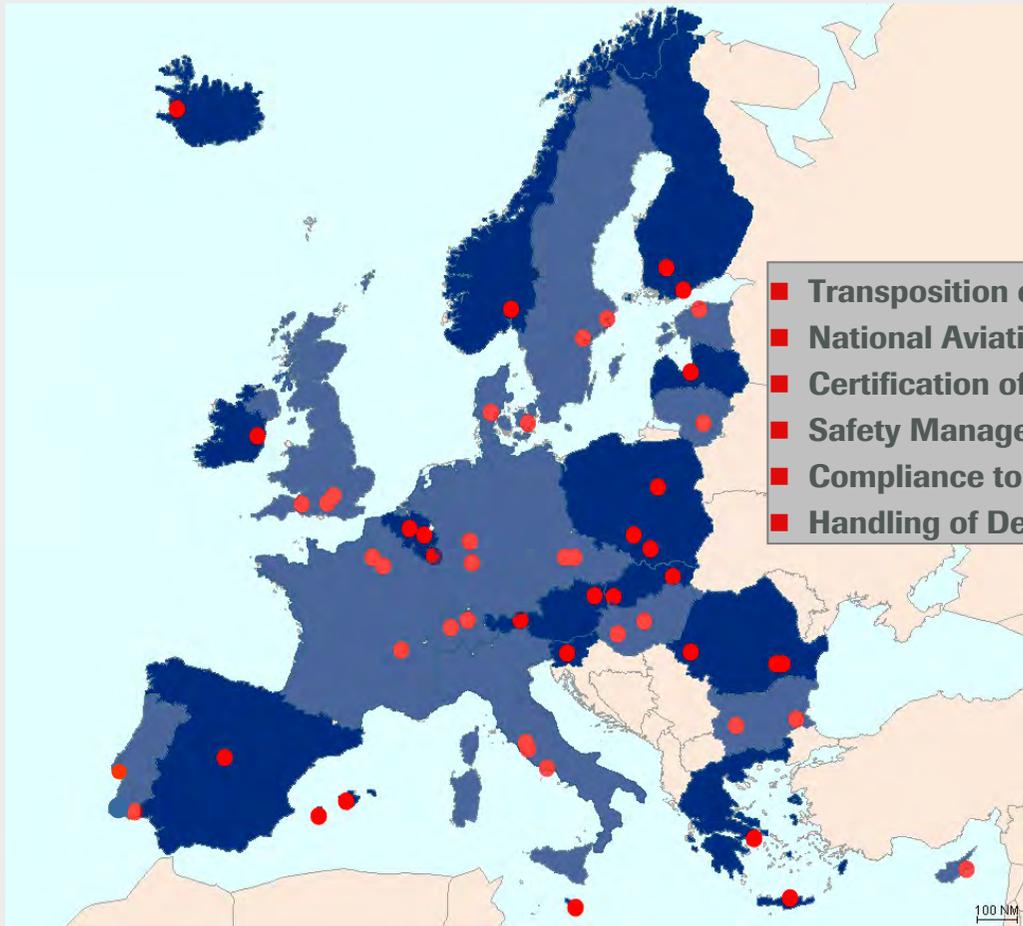
EASA conference on aerodrome safety rules / Cologne / 21–22 May 2012

Dr.-Ing. Holger Schulz – Managing Director



## /The ICAO Annex 14 study

- In 2008: EASA → airSight / TÜV Nord
- "analyse Annex 14 implementation"
- 30 EASA Member States
- 56 Aerodromes

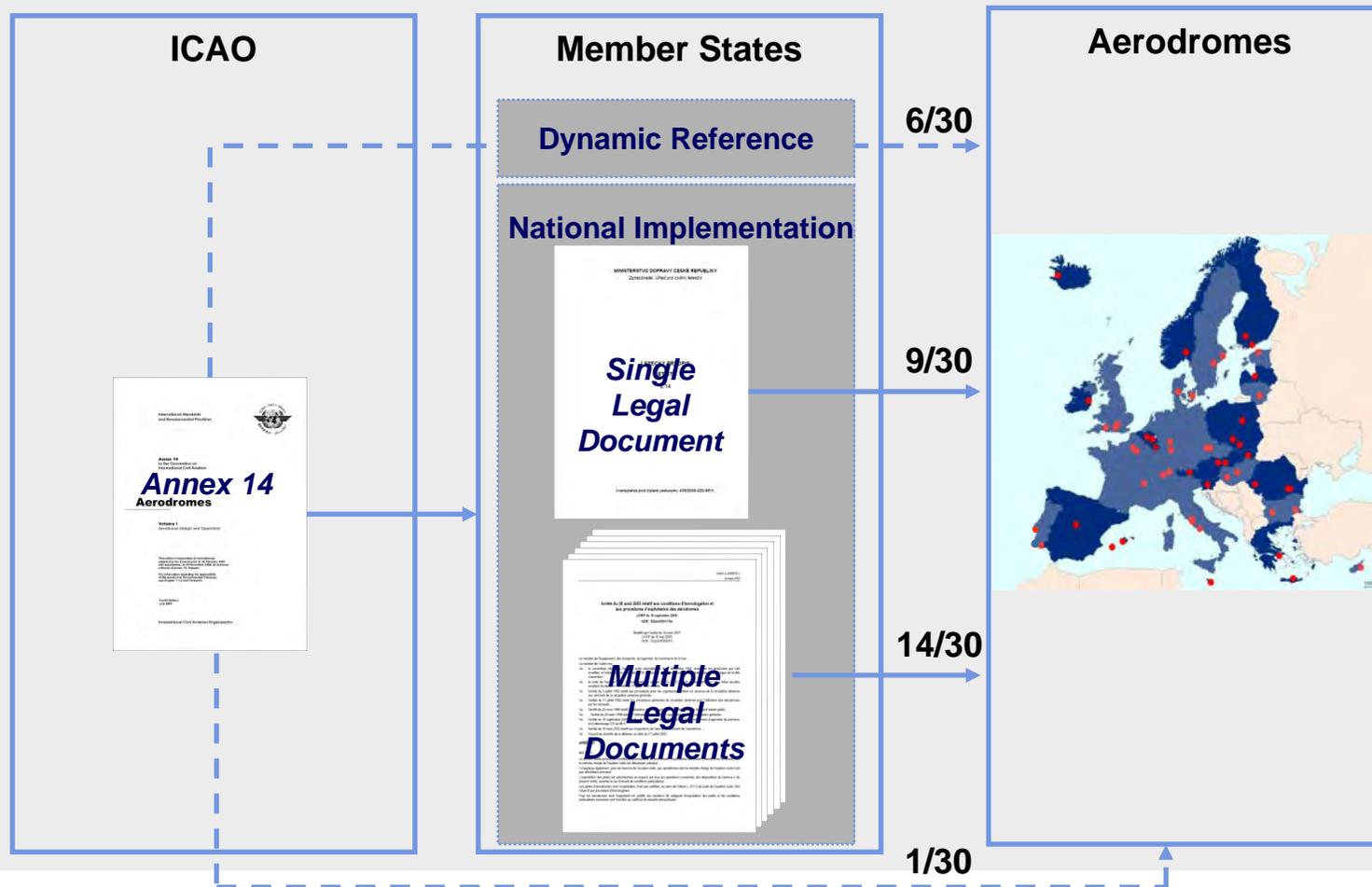


- Transposition of Annex 14
- National Aviation Authorities
- Certification of Aerodromes
- Safety Management Systems
- Compliance to SARPs
- Handling of Deviations



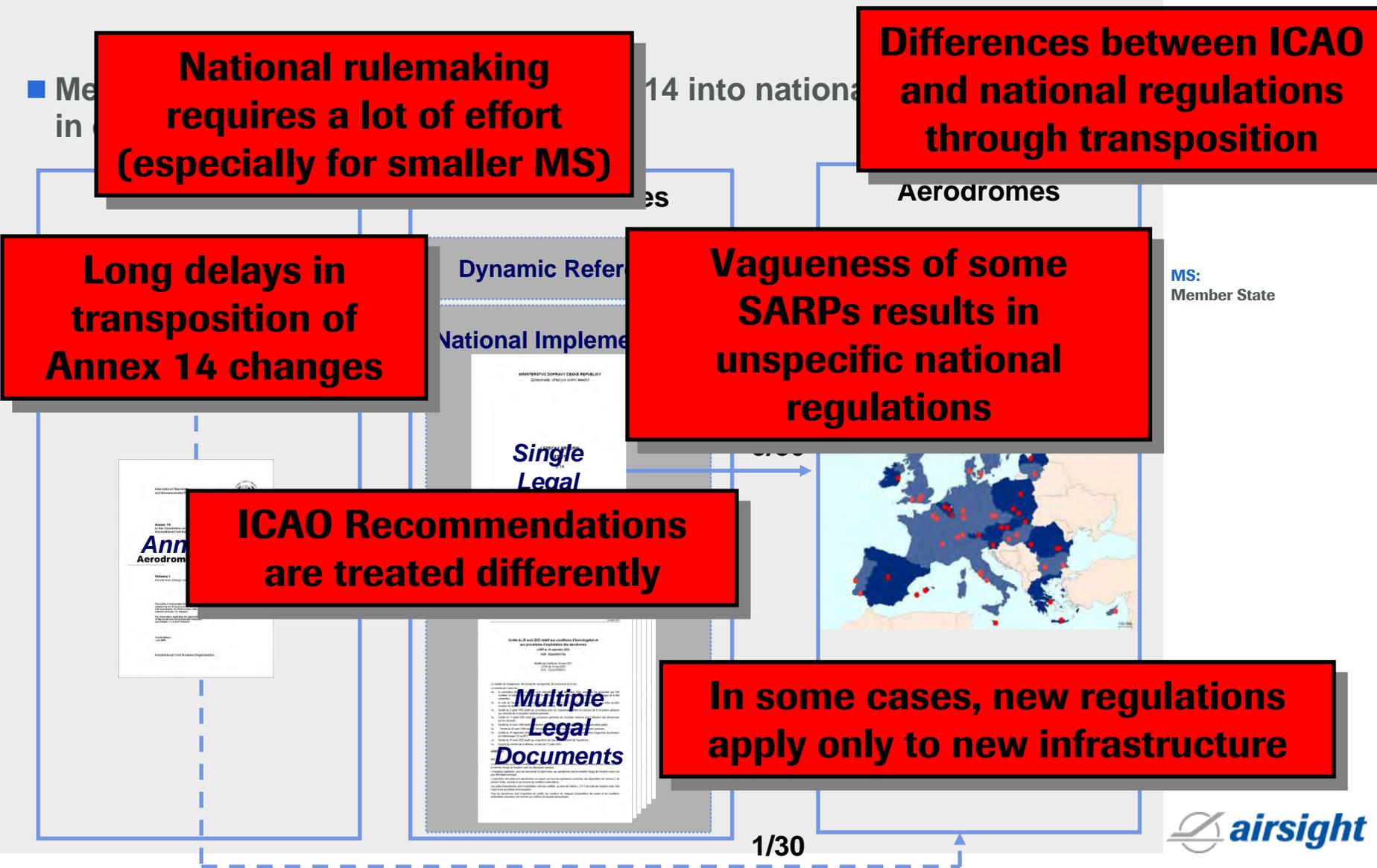
## /Study Results – Transposition of Annex 14

- Member States transpose ICAO Annex 14 into national regulations in different ways



MS:  
Member State

## /Study Results – Transposition of Annex 14



## /Study Results – Future Requirements

### National Aviation Authorities often

- understaffed
- focussed on large aerodromes
- need training
- not aware of aerodromes' deviations
- problems in handling of changes or identified deviations

### Safety Management & Certification

- Applicability, scope, validity and implementation status differ widely
- implementation of certification procedures can lead to better structured oversight activities

### Compliance and Deviations

- Almost all ADR deviate from ICAO SARPs
- Deviation from REC more frequent
- Small ADR deviate more from ICAO STD
- 90% of deviations are related to ADR DSN
- Awareness and handling of deviations very different

More specific rules for Authorities could support their needs

SMS/Certification should be crucial part of an EASA's risk based safety approach

Need for

- Flexibility
- Proportionality
- Deviations

**SMS:**  
Safety Management System

**ADR:**  
Aerodromes

**SARPs:**  
Standards and Recommended Practices

**STD:**  
Standard

**REC:**  
Reccomendations

**DSN:**  
Design

## /What has been achieved within the NPA



European Aviation Safety Agency

**NOTICE OF PROPOSED AMENDMENT  
NPA 2011-20 (A)**

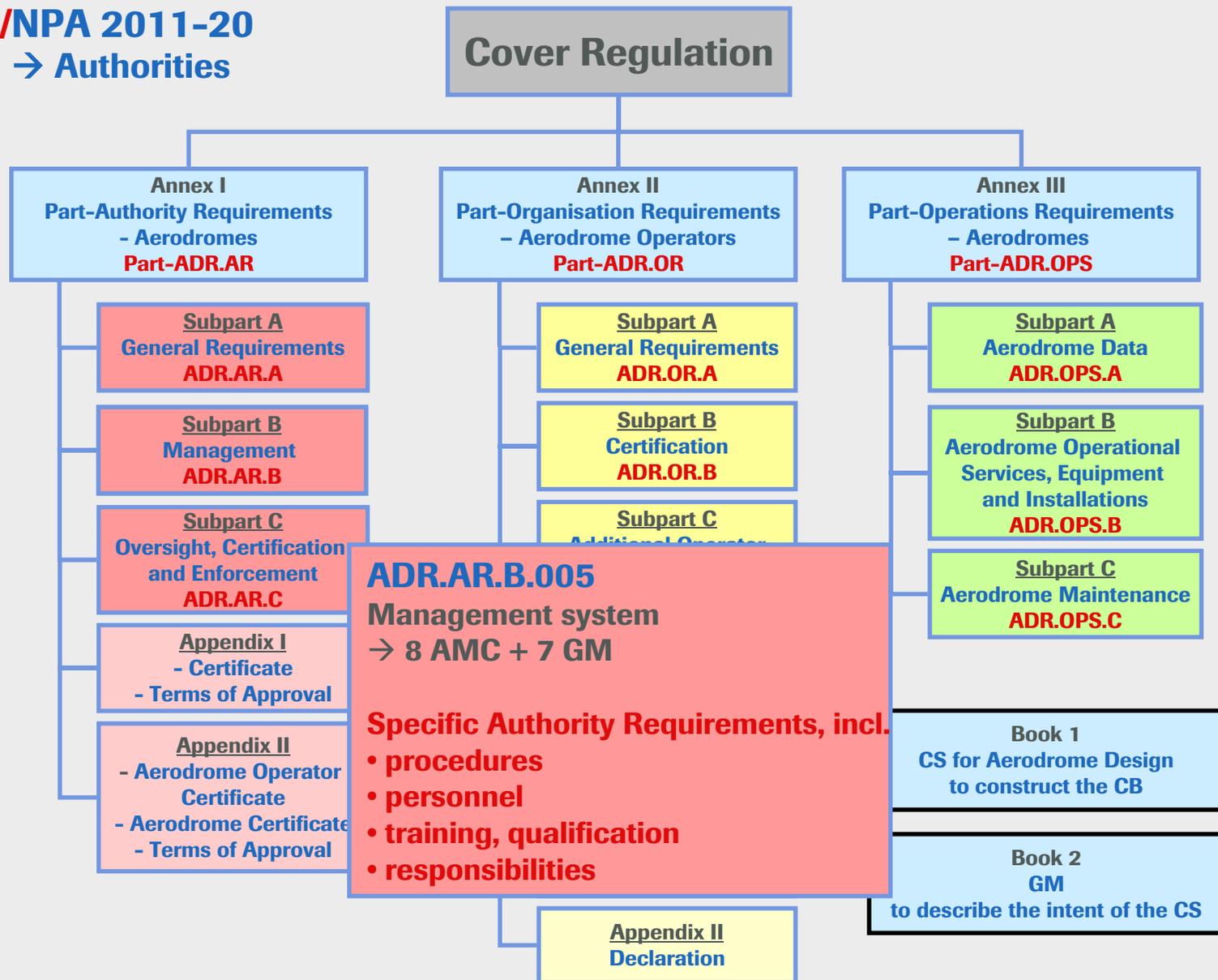
RMT.0136 (ADR.001 (a)) & RMT.0137 (ADR.001 (b))  
RMT.0140 (ADR.002 (a)) & RMT.0141 (ADR.002 (b))  
RMT.0144 (ADR.003 (a)) & RMT.0145 (ADR.003 (b))

**Authority, Organisation and Operations  
Requirements for Aerodromes**

**NPA 2011-20 (A) — Explanatory Note**



**/NPA 2011-20**  
→ Authorities



**ADR:**  
Aerodromes

**CB:**  
Certification Basis

**CS:**  
Certification  
Specifications

**AMC:**  
Acceptable Means of  
Compliance

**GM:**  
Guidance Material

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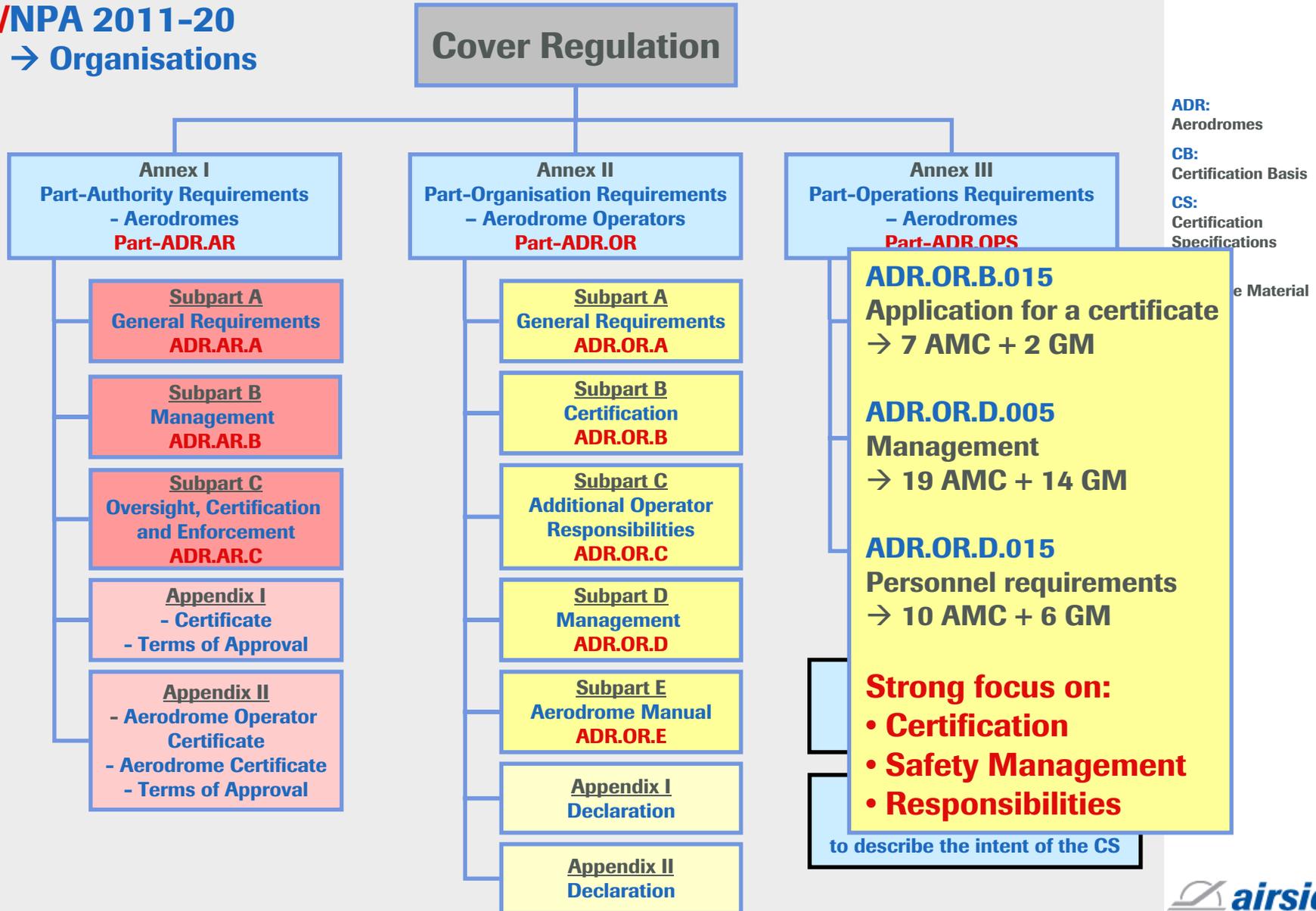
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- Proportionality
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# /NPA 2011-20 → Organisations



## /Study Results – Future Requirements

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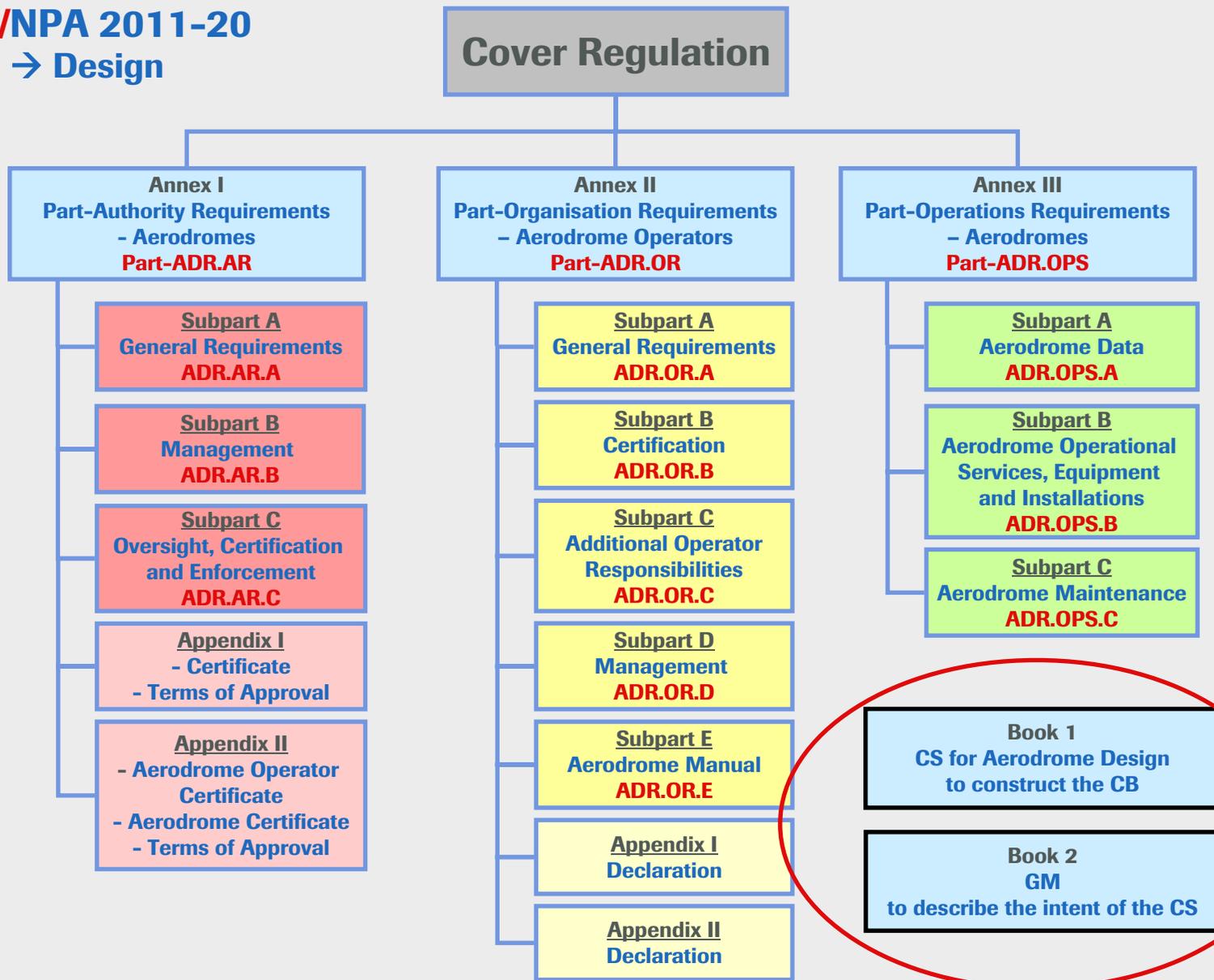
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**/NPA 2011-20**  
→ Design



**ADR:**  
Aerodromes  
**CB:**  
Certification Basis  
**CS:**  
Certification  
Specifications  
**GM:**  
Guidance Material

## /NPA 2011-20 Books

- **CS ADR DSN**
  - **Certification Specifications for Aerodrome Design**
  - **"transposed ICAO Annex 14"**

|  |            |
|--|------------|
| <b>BOOK 1</b> .....  | <b>4</b>   |
| CHAPTER A – GENERAL .....  | 4          |
| CHAPTER B – RUNWAYS .....  | 11         |
| CHAPTER C – RUNWAY END SAFETY AREA .....   | 22         |
| CHAPTER D – TAXIWAYS .....   | 24         |
| CHAPTER E – APRONS .....   | 32         |
| CHAPTER F – ISOLATED AIRCRAFT PARKING POSITION .....                                 | 34         |
| CHAPTER G – DE-ICING/ANTI-ICING FACILITIES .....                                     | 35         |
| CHAPTER H – OBSTACLE LIMITATION SURFACES .....                                       | 37         |
| CHAPTER J – OBSTACLE LIMITATION REQUIREMENTS .....                                   | 45         |
| CHAPTER K – VISUAL AIDS FOR NAVIGATION (INDICATORS AND SIGNALLING DEVICES) ...       | 50         |
| CHAPTER L – VISUAL AIDS FOR NAVIGATION (MARKINGS) .....                              | 52         |
| CHAPTER M – VISUAL AIDS FOR NAVIGATION (LIGHTS) .....                                | 78         |
| CHAPTER N – VISUAL AIDS FOR NAVIGATION (SIGNS) .....                                 | 126        |
| CHAPTER P – VISUAL AIDS FOR NAVIGATION (MARKERS) .....                               | 144        |
| CHAPTER Q – VISUAL AIDS FOR DENOTING OBSTACLES .....                                 | 146        |
| CHAPTER R – VISUAL AIDS FOR DENOTING RESTRICTED USE AREAS .....                      | 157        |
| CHAPTER S – ELECTRICAL SYSTEMS .....   | 160        |
| CHAPTER T – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND INSTALLATION .....         | 167        |
| CHAPTER U – COLOURS FOR AERONAUTICAL GROUND LIGHTS, MARKINGS, SIGNS AND PANELS ..... | 170        |
| <b>BOOK 2</b> .....  | <b>205</b> |
| CHAPTER A – GENERAL .....  | 205        |
| CHAPTER B – RUNWAYS .....  | 206        |
| CHAPTER C – RUNWAY END SAFETY AREA .....   | 224        |
| CHAPTER D – TAXIWAYS .....   | 229        |
| CHAPTER E – APRONS .....   | 235        |
| CHAPTER F – ISOLATED AIRCRAFT PARKING POSITION .....                                 | 237        |
| CHAPTER G – DE-ICING/ANTI-ICING FACILITIES .....                                     | 238        |
| CHAPTER H – OBSTACLE LIMITATION SURFACES .....                                       | 240        |
| CHAPTER J – OBSTACLE LIMITATION REQUIREMENTS .....                                   | 244        |
| CHAPTER K – VISUAL AIDS FOR NAVIGATION (INDICATORS AND SIGNALLING DEVICES) .         | 246        |
| CHAPTER L – VISUAL AIDS FOR NAVIGATION (MARKINGS) (009 – 16032011) .....             | 249        |
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| CHAPTER N – VISUAL AIDS FOR NAVIGATION (SIGNS) .....                                 | 273        |
| CHAPTER P – VISUAL AIDS FOR NAVIGATION (MARKERS) .....                               | 281        |
| CHAPTER Q – VISUAL AIDS FOR DENOTING OBSTACLES .....                                 | 293        |
| CHAPTER R – VISUAL AIDS FOR DENOTING RESTRICTED USE AREAS .....                      | 296        |
| CHAPTER S – ELECTRICAL SYSTEMS .....   | 298        |
| CHAPTER T – AERODROME OPERATIONAL SERVICES, EQUIPMENT AND INSTALLATION .....         | 298        |
| CHAPTER U – COLOURS FOR AERONAUTICAL GROUND LIGHTS, MARKINGS, SIGNS AND PANELS ..... | 301        |

**ADR:**  
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Design

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Certification Specifications

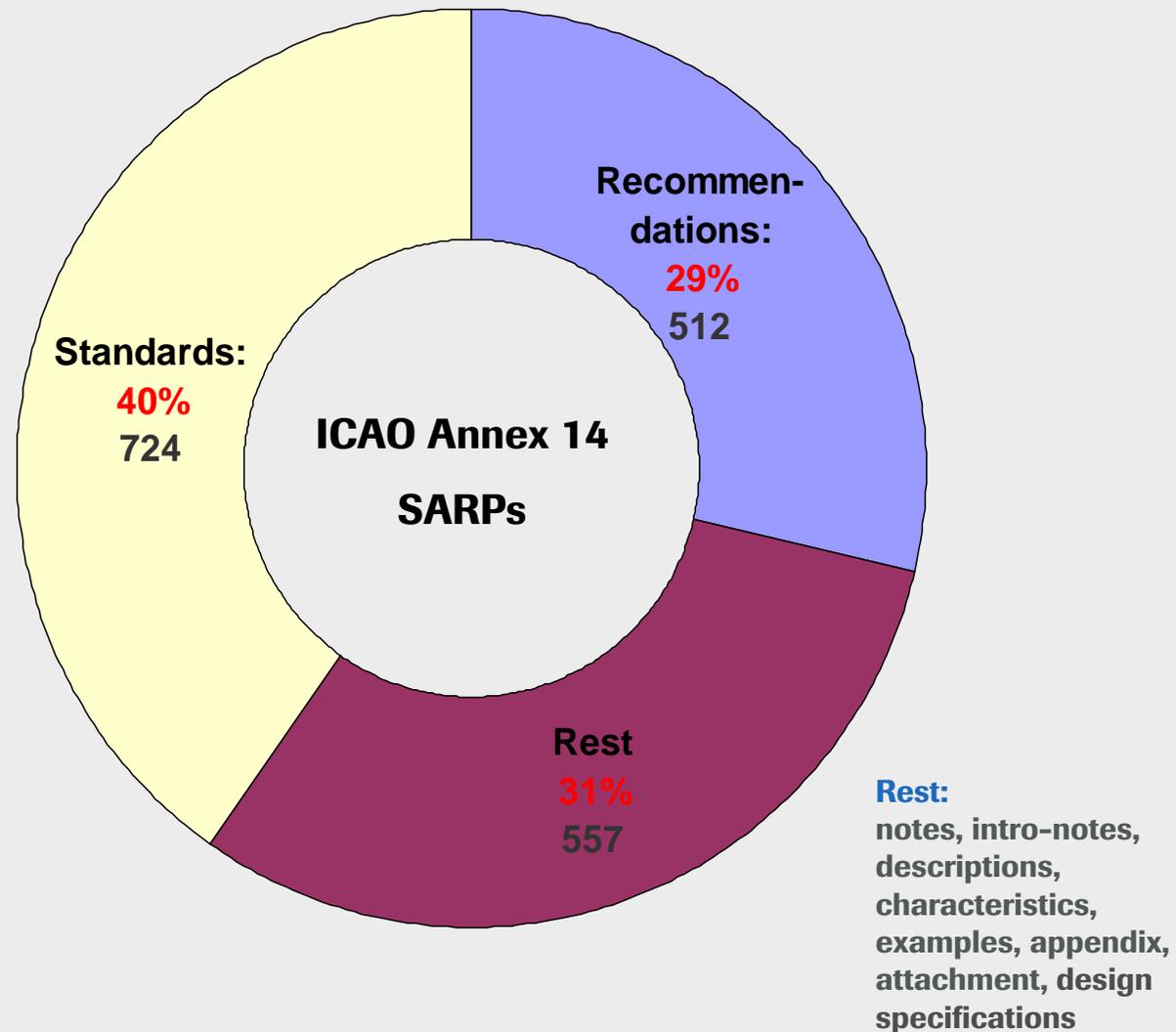
**GM:**  
Guidance Material

**Book 1:**  
Design Specifications

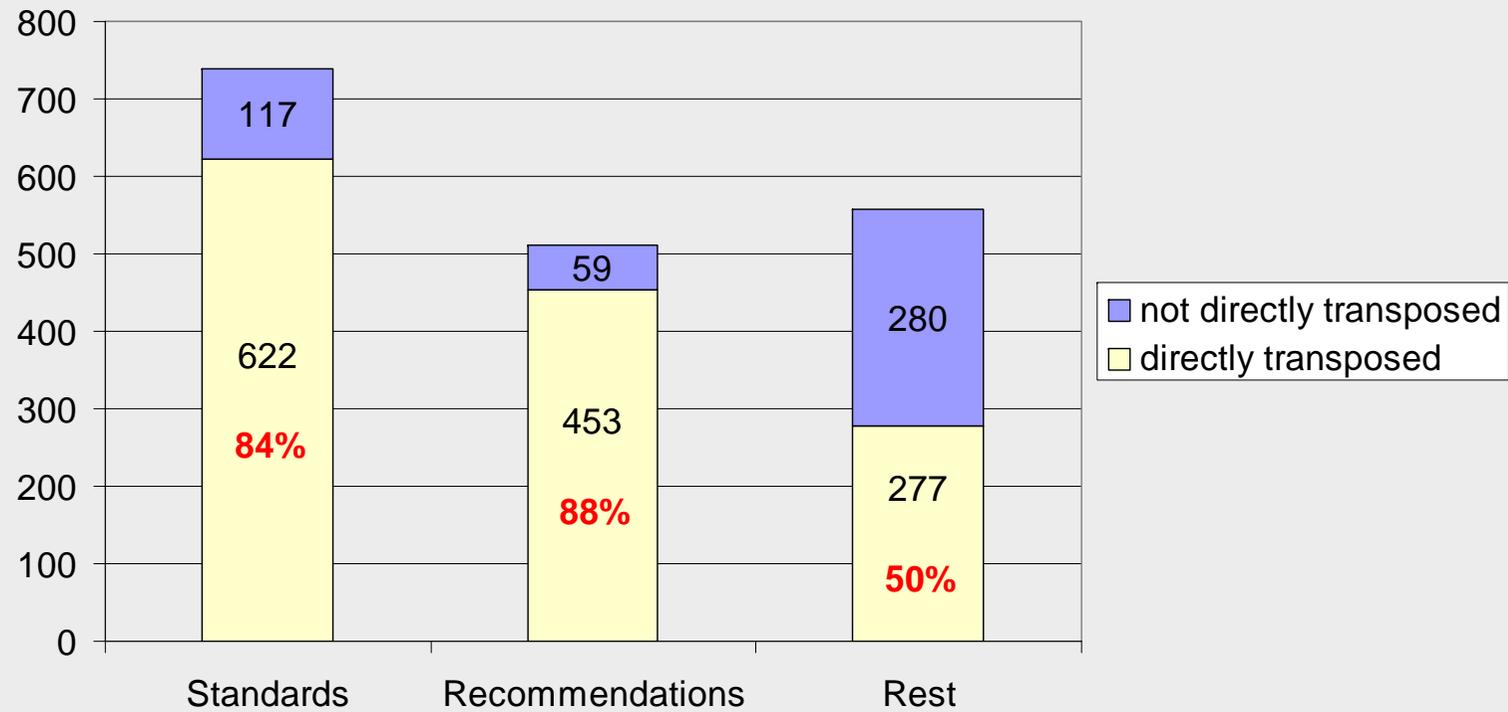
**Book 2:**  
Guidance Material



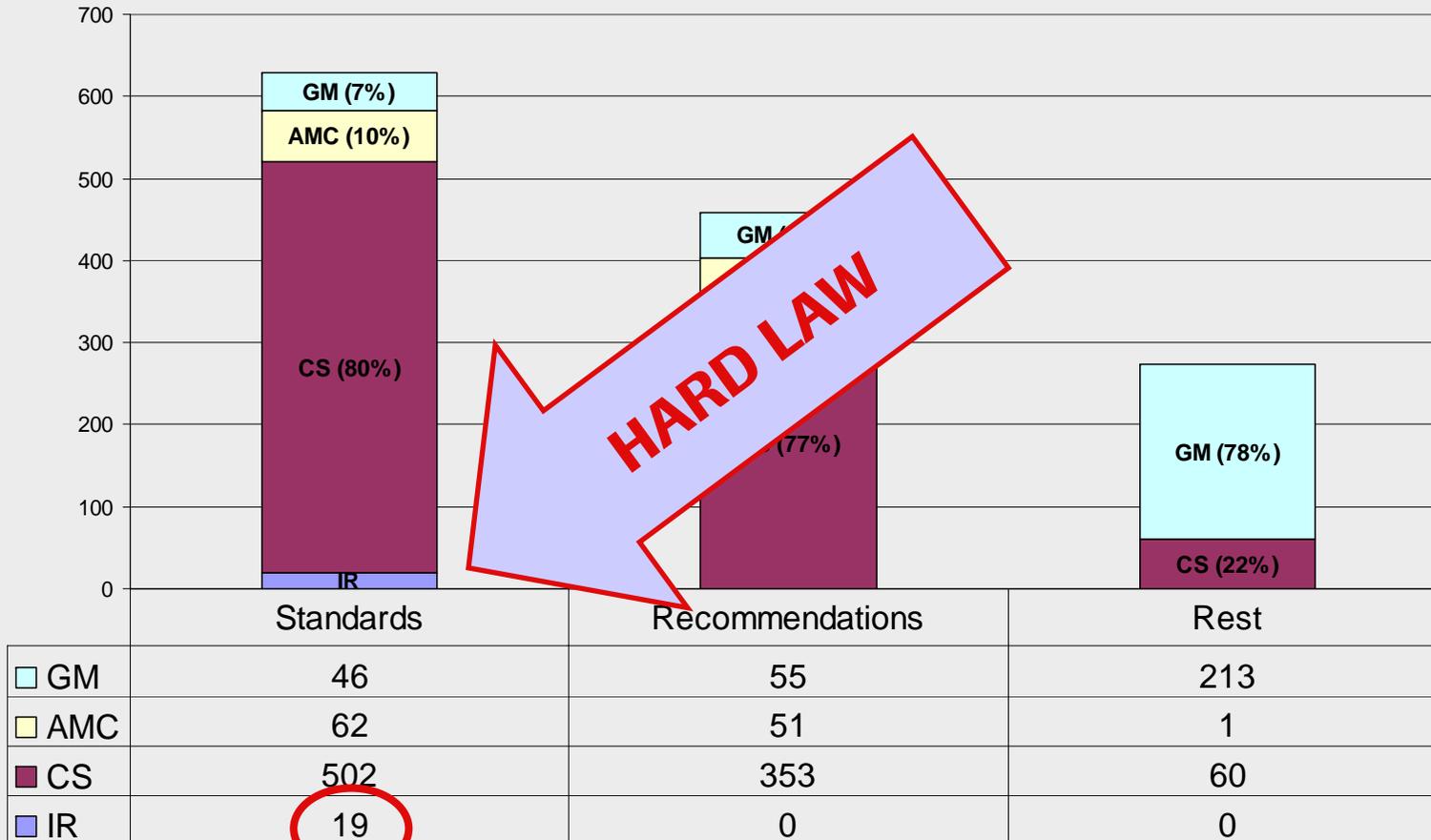
## /Transposition of Annex 14 into EASA NPA Aerodrome Design Statistical analysis



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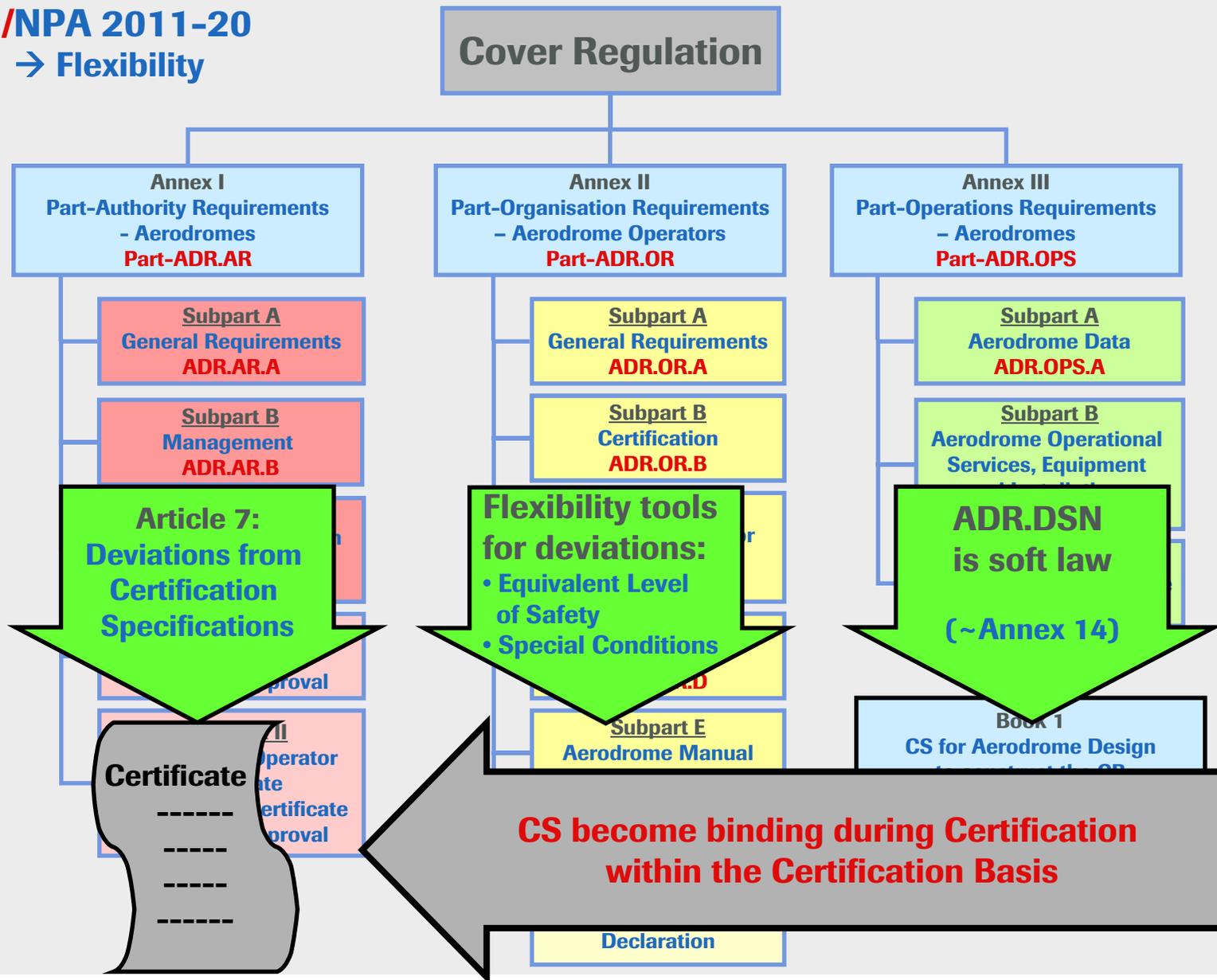


- ICAO STD → IR:  
6 x definitions
- 2.13. → OPS.A.015  
Coordination between  
ADR, AIS, ANSP
- 6.1.6. → OPS.B.080  
Marking/lighting  
of mobile objects
- 9.1. → OPS.B.005  
ADR emergency planning
- 9.4.3. → OPS.B.020  
Wildlife strike hazard  
reduction
- 9.5.4 → OPS.B.045 (d)  
Low Visibility Operations
- 9.8.1 → OPS.B.030  
SMGCS
- 10.2.1 → OPS.C.010  
Pavements

Note: some SARPs transposed to CS (DSN) and AMC (AR) at the same time (lighting of objects)

**99% of transposed ICAO  
Annex 14 becomes soft law**

**/NPA 2011-20**  
→ Flexibility



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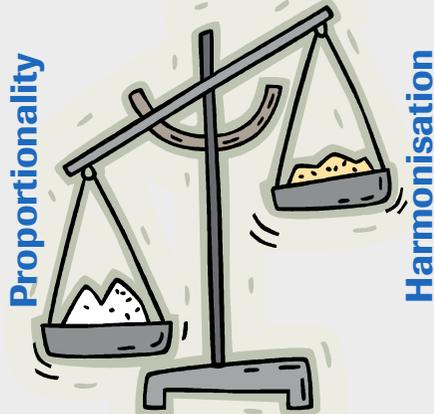


# /Summary

## Requirements for ADR



## Common rules



## Requirements for CA European      National

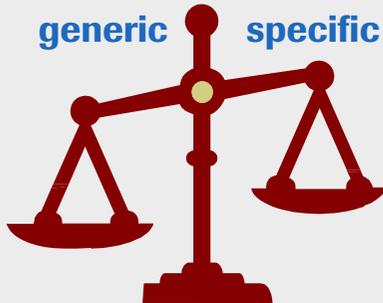


## Possibility of deviations Annex 14



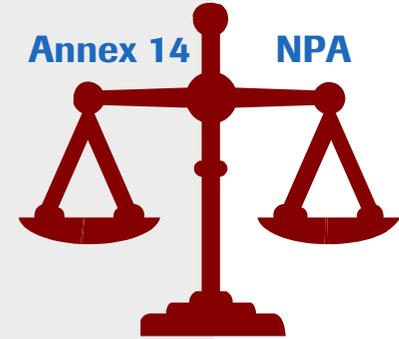
## Hard law

generic      specific



## Requirements for Design and Operations

Annex 14      NPA



## Rules of NPA

Standardisation

Flexibility



## **/Conclusions**

- **Overall, the proposed future aerodrome rules**
  - are quite good and meet the future requirements
  - still need some editorial changes and minor adjustments
  
- **Challenges**
  - **For Aerodromes**
    - Resources for CB & new certificate, and lots of paper work
  - **For Authorities**
    - Management systems
    - Personnel requirements
    - Training
  
- **Expected difficulties**
  - Different application (especially of CS, ELoS, SA)
  - Information & training necessary

**CB:**  
Certification Basis  
**ELoS:**  
Equivalent Level of Safety  
**SA:**  
Safety Assessments