EASA
European Aviation Safety Agency

Panel 4: A flexible framework for small aircraft- Certification & Production

EASA Safety Conference on GA , 16 October 2014

Moderated by: Mr Hugues Le Cardinal, DAHER-SOCATA & Aeronautical Consultant (CEO of VELICA)

Speakers:

Mr Stefan Ronig, EASA, RPAS VLA LSA Balloons Airship Section Manager
Mr Gregory Bowles, GAMA, European Regulatory Affairs & Engineering, Director
Mr Jan Fridrich, LAMA Europe, Chairman of the Board & President
Mr Matthias Betsch, Flight Design, Managing Director
Mr Luciano Belviso, Blackshape, CEO
Mr Oliver Masefield, Pilatus Aircraft, Chief Engineer
Mr Christoph Robin , DAHER-SOCATA, Vice-President Engineering

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An agency of the European Union

Panel 4 :
A flexible framework for small aircraft Certification & Production

Hugues LE CARDINAL
- ex-Head of Certification at DGAC-France
- Aeronautical consultant (CEO-founder of VELICA)
- Currently Head of Airworthiness at DAHER-SOCATA

Velica
experts et consultants en aéronautique et nautisme

DAHER-SOCATA

A flexible framework for small aircraft - certification

Short-/Mid-Term Solutions

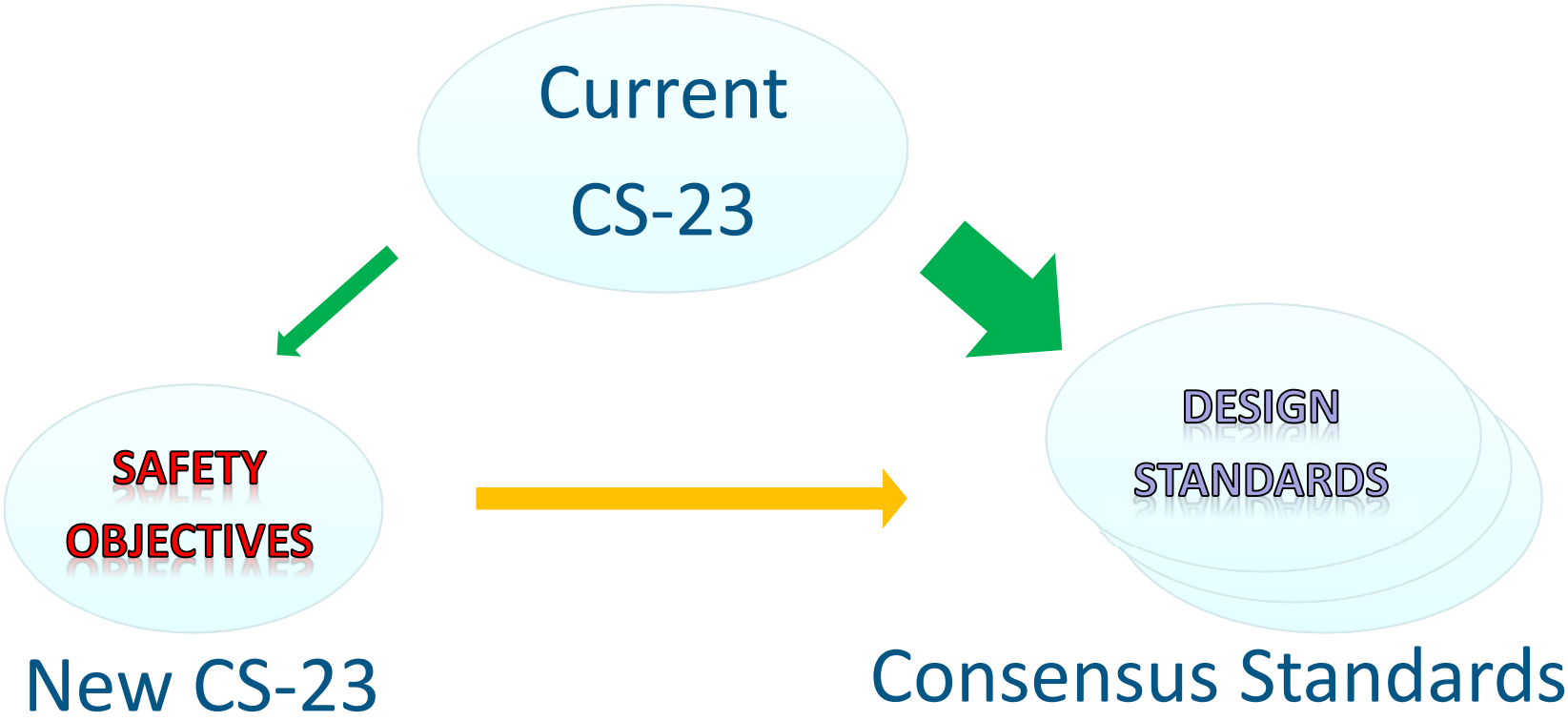
- Improvement of internal procedures
  - EASA re-organisation
  - Development of templates & guidance
  - Proportionate implementation of OSD
  - Applications Portal
- CS - Standard Changes and Repairs
- Simplified STC Validation Process

Long-Term Solutions

- „New CS-23“
- „New Approach“

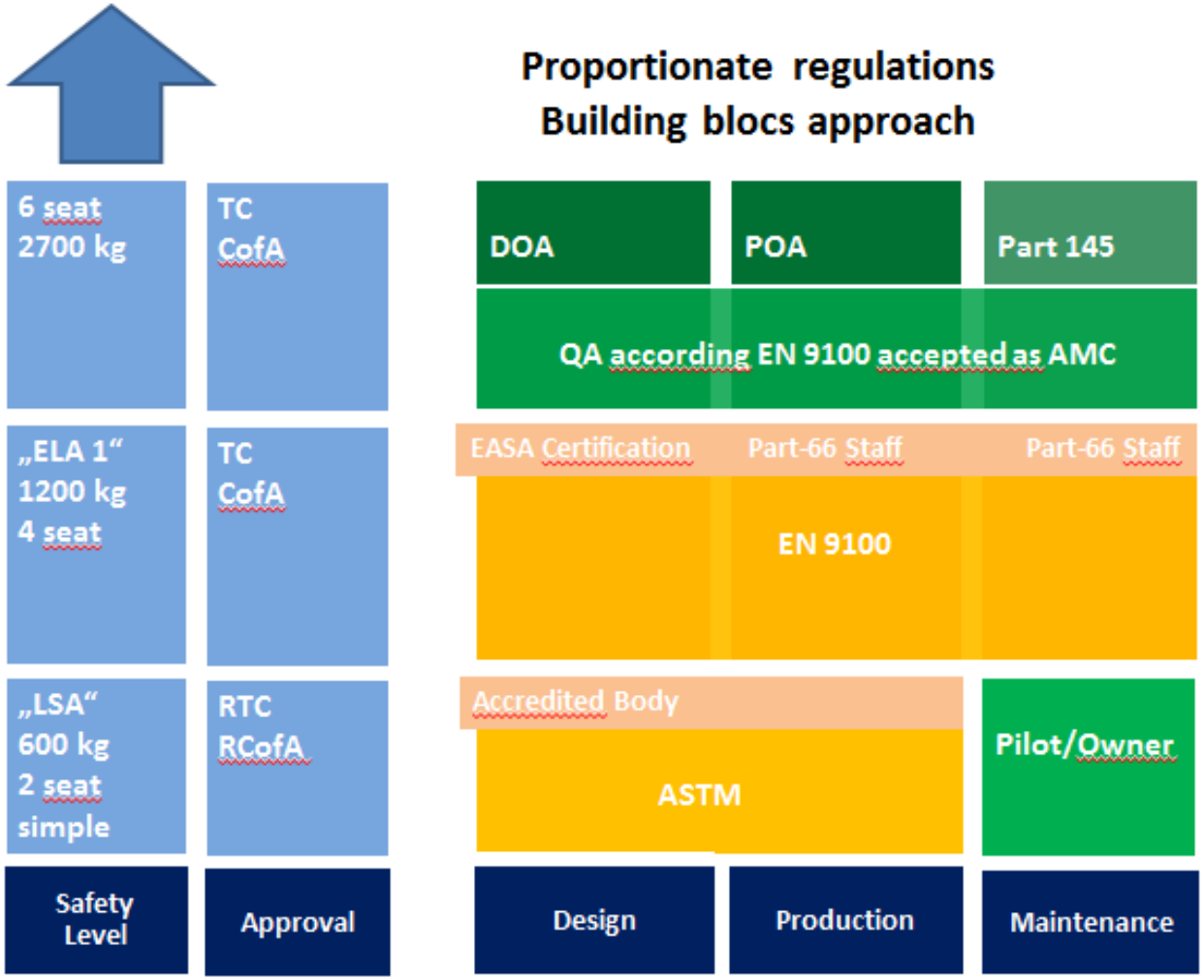
Long-term: "New CS-23"

- Faster introduction of innovations
- More flexible and proportionate
- Building block approach

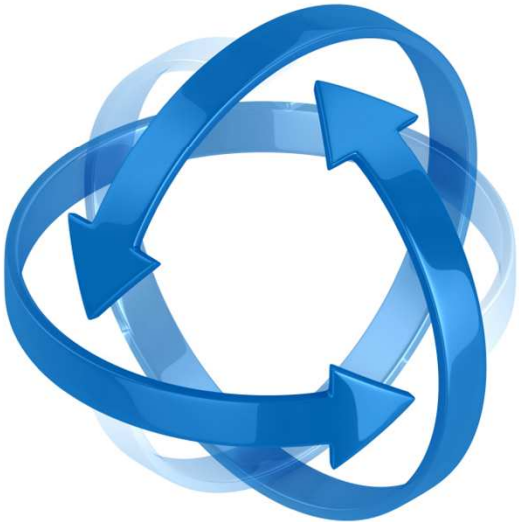


Longterm: "New Approach" Proportionate Airworthiness Procedures

Simplified entry levels for Design and Production in Discussion



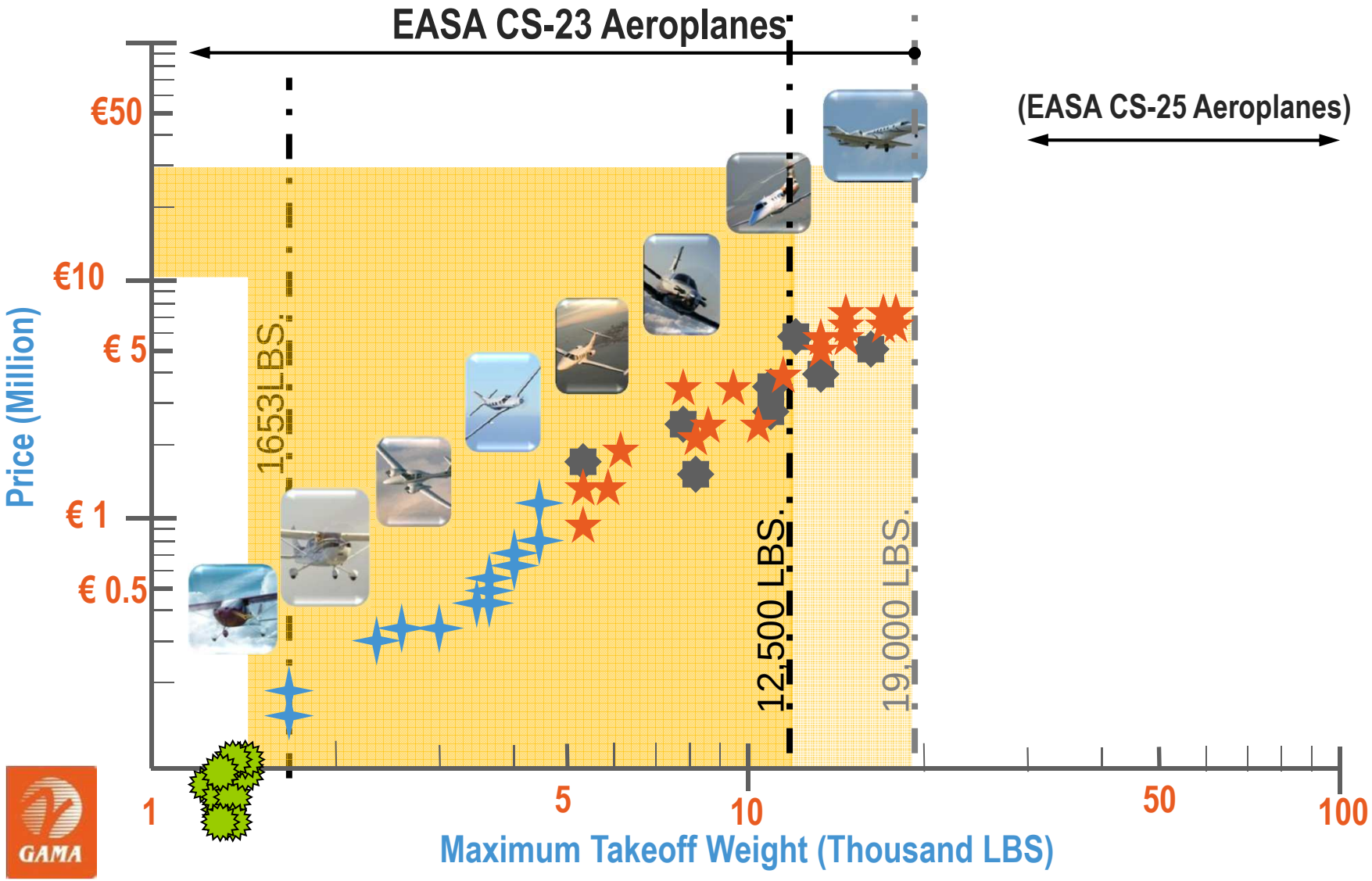
Cooperative approach



Join forces on common analysis, ideas and expertise for successful delivery

Spectrum of Products

S-LSA - Piston - Turboprop - Turbine –



Separating Safety Requirements from Methods of Compliance

EASA

International Aviation Community

Current CS 23

New CS 23

EASA Acceptance

High-level requirements.
(safety driven)
NO technical solutions prescribed
No tiers or categories

Systems & Equipment

Powerplant: Engine

Structures: Design

Structures General

Flight Characteristics, Performance, & Operating Limits

- Technical Solutions that meet standards
- Test specifications
- Specific compliance methods

Detailed Design Standards
- Tiered where it makes sense
- Contains detailed compliance requirements
- Current CS/Part 23 used as a starting basis

CASE STUDY EASA RTC LSA

Cost of certification:

ULL = 80 000 EURO

US LSA = 100 000 EURO (acceptation)

EASA RTC LSA= > 250 000 EURO + cost of getting DOA, POA = 93 166 up to 261 166 EURO

the Delta between LSA and RTC is 243 166 up to 411 166 EURO!!!

53 types representing 55% of SLSA in the USA is from Europe

So far only 4 EASA RTC LSA airplanes

Estimated sales April 2012-2014: approx.100 airplanes

ONLY ONE RTC ISSUED BY EASA SINCE APRIL 2012!!!

Note: Certification cost does not include development costs.

I strongly believe that the Initial Airworthiness for light aircraft should be as follows:

1. Basic principle is that the manufacturer is responsible for Initial airworthiness
2. Initial airworthiness is based on self-declarative principle using industry standards, but following steps will be independently checked (audited, veryfied):
   a. That the load for static test is corresponding (it means it is realistic and proper load cases vere selected)
   b. That the static tests were performed in proper manner and no important load cases was ommitted
   c. Flight tests were performed in proper manner and final results checked by independent properly qualified test pilot (with experience with light aircraft)
3. On top of that
   a. Flight manual and maintenance manual exists and conform to the standards
   b. Maintenance is based on approved maintenance manual.
   c. Type Certificate for LSA will be issued and it will be accepted in at least EU

CONCLUSION

- The problems are not in Initial Airworthiness.
- Need for complete LSA system – ASAP!!
- Keep it simple!
- Ensure Harmonization with FAA as much as possible = we need global system!
- Burden for Certification and Production of LSA should not be excessive higher than for Microlight in CZ, GER, (UK).
- Safety level should be not less than in these countries.
- Project should not at all affect current Annex II Microlight aircraft

The main principle must be, the rules (and EASA) are here for pilots not the other way around!

More safety through a flexible frame work!

The huge majority of fatal accidents are:

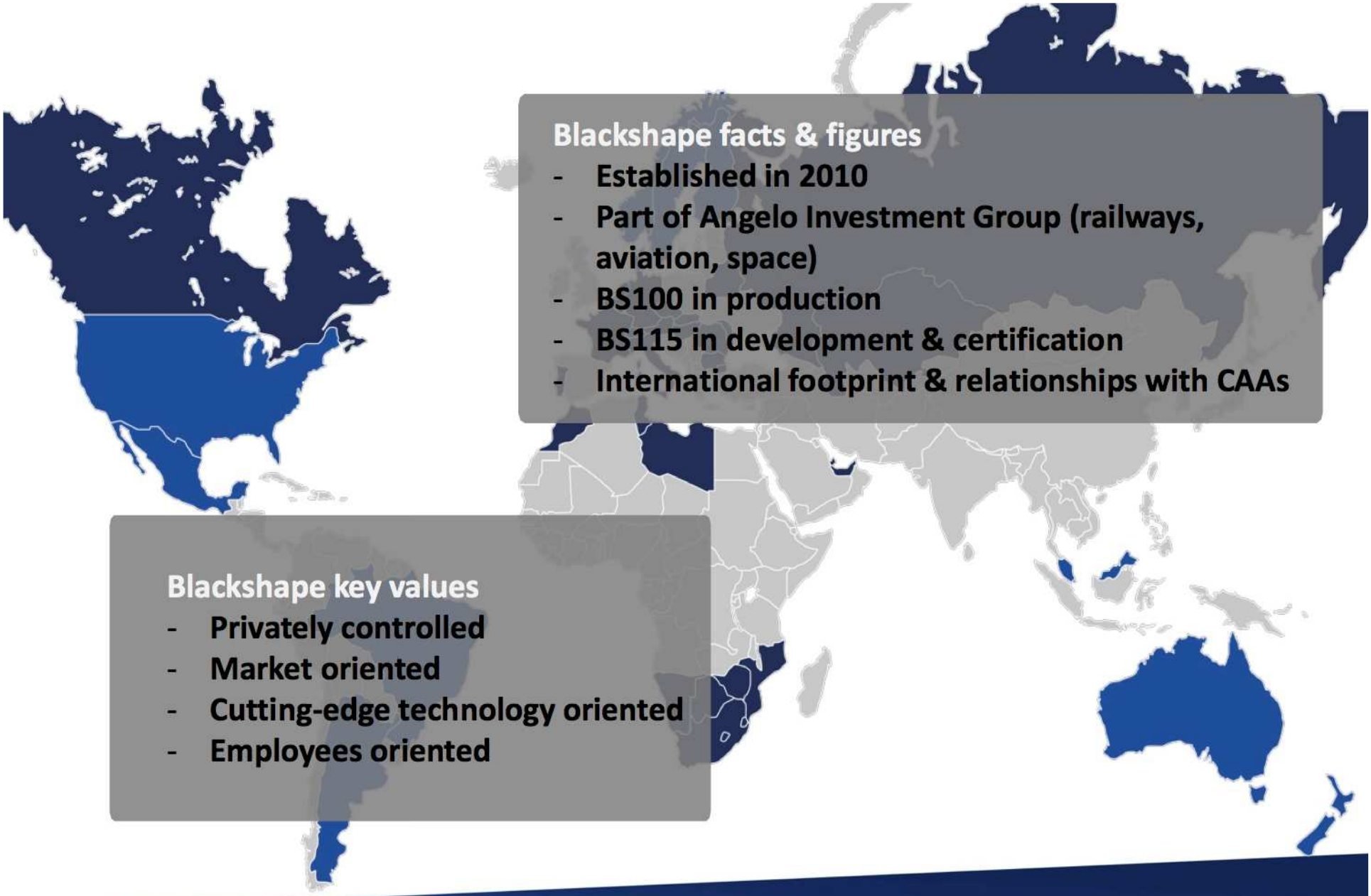
- Loss of control
- Controlled flight into terrain
- Loss of power

This accidents could already since long be very significantly reduced by new technologies if rules would be more flexible!

Technology in design and production is changing fast - Safety objective very slowly

Clear dividing of responsibilities will be beneficial for all interests!

- **Time to market** and **transparency** are the keys for implementation of safety features and cost reduction in design and production!
- **Governments** rule the safety objectives and the approval of industry standards!
- **Industry** rules via standards (governmental approved) the legal and practical base for the daily work in design, certification and production!
- **Third party audits** of accredited organizations ensure the compliance of the industry with the rules



Blackshape facts & figures

- Established in 2010
- Part of Angelo Investment Group (railways, aviation, space)
- BS100 in production
- BS115 in development & certification
- International footprint & relationships with CAAs

Blackshape key values

- Privately controlled
- Market oriented
- Cutting-edge technology oriented
- Employees oriented

«less but better»

- An adequate level of complexity

- The key to achieve better: harmonization, clear rules and AMC, clear and measurable targets for both Organizations and Agencies

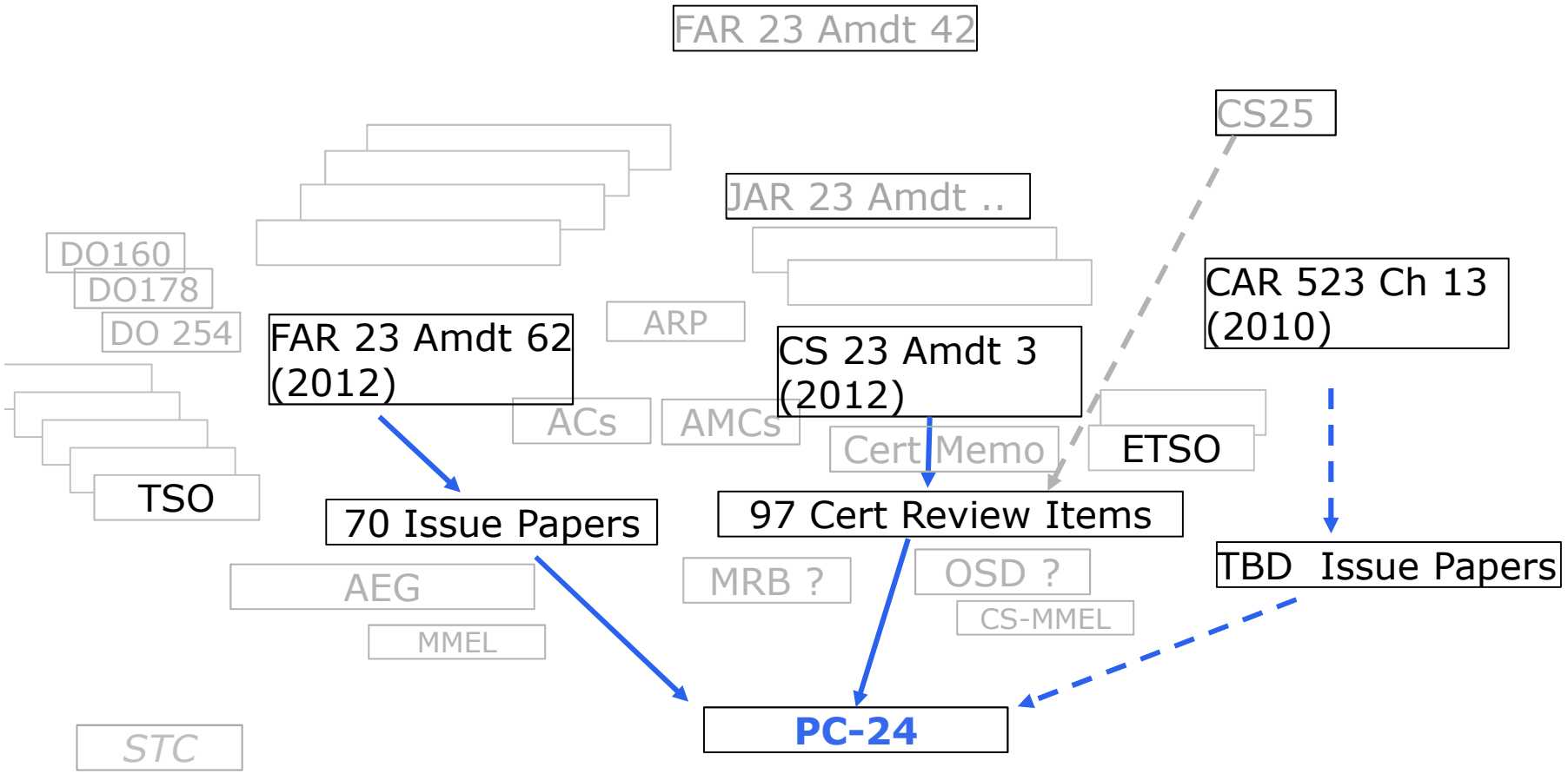
- Production Organizations: communication between CAAs

Market-driven approach

- Market and time-to-market are key decision parameters. Investment and return on investment can be ameliorated

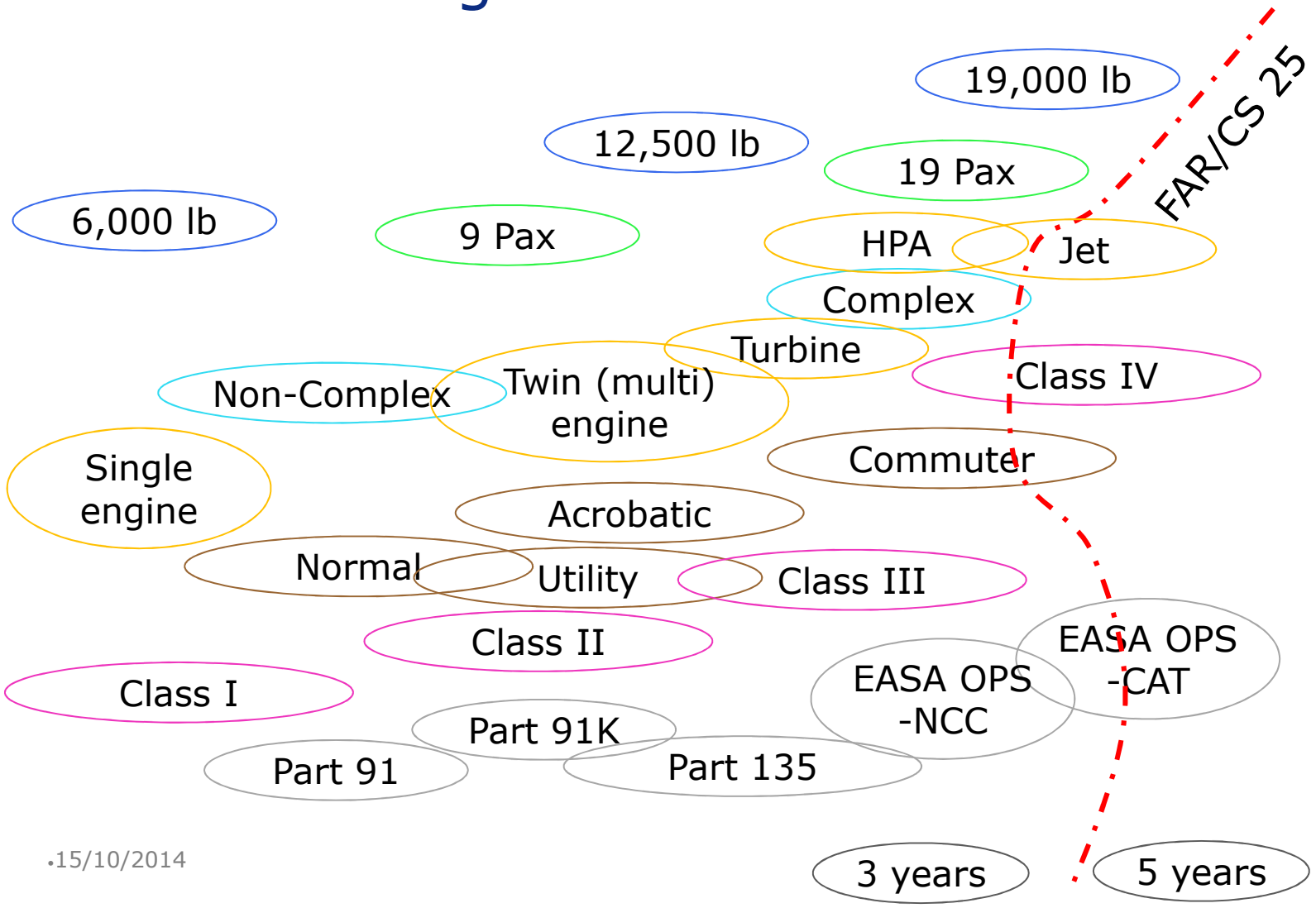
- Technology-driven: new technologies implementation

Example: PC-24 Certification Basis



- Multiple conflicting requirements

Certification Categories – Break Points



Safety improvement?

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What does the industry needs from its authorities?

What does the industry needs to do for itself?

1. **Pragmatic approach based on a risk analysis**
   ⇒ TBM900 is not a A380 / “Perfect is the enemy of the good”
2. **Shorter and easier certification for safety devices**
   ⇒ Airbags, Parachute, Electronic parachutes, AoA, etc…
3. **Access to the world market with the same certification**
   ⇒ Same certification basis, simplified validation process
4. **Authorities needs to spend their (our) money on the weak link**
   ⇒ Airmanship (Attitude 75%, Skills 25%)
5. **Industry has to spend its money on improving product and not administrative task**
   ⇒ What about the fees?

How?

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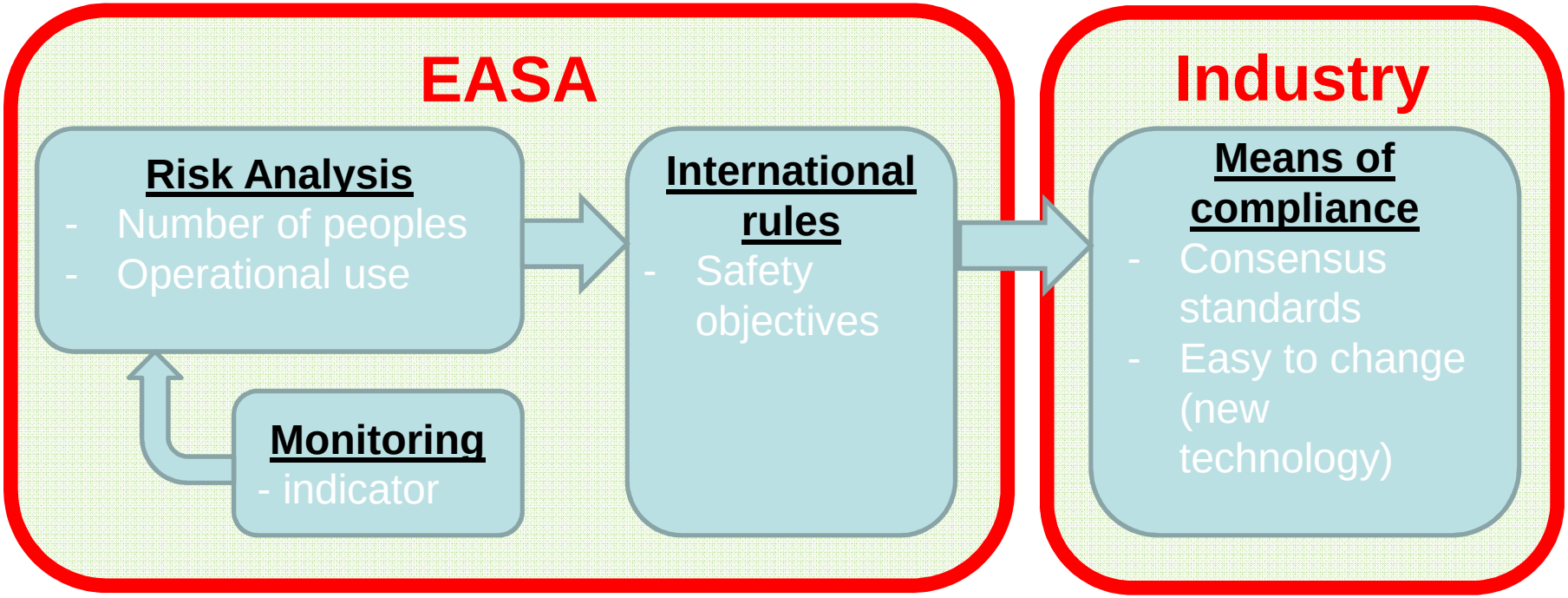
Safety is our common goals

⇒ **Let's give each task to the most efficient actor!**



ARC23 is going the right way in a collaborative manner:

EASA ⇔ Industry ⇔ FAA

Let's do the same work for helicopters, production, design and maintenance!