
Military Airworthiness and UAS

A European perspective

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- Involvement of EDA
- What are the problems for military aviation
- UAV traffic insertion
- Military Aviation Safety
- Role of EASA
- Conclusions



Involvement of EDA in airworthiness and aviation safety

- 2005 - EDA fully operational, UAVs high priority for pMS

- 2006 – UAV Airworthiness agenda leads to:
 - Charting of regulatory activities
 - Launching of technology oriented studies (LOS/BLOS data links, Sense and Avoid and UAV Simulation test bed)

- 2007 - EDA approaches industry to cooperate more and develop jointly
 - Major aviation industrial players propose to develop a technology roadmap for UAV traffic insertion
 - EDA upgrades proposal to include all other relevant issues (e.g. regulatory framework)

- 2008 – UAV traffic insertion study is launched (Air4All consortium)



Situation for military UAS

- UAS are expected to be used extensively in the future
..... **BUT**.....

- Key success factors for a wider use of UAS are:

- reliability (airworthiness)

- threat to other airspace users and public

- E.g. lack of mature sense & avoid technology will limit possibilities for use of LE UAS until at least 2012+

- Civil regulations will rule the use of UAS except for special cases

-> both technological and regulatory issues have to be tackled in parallel

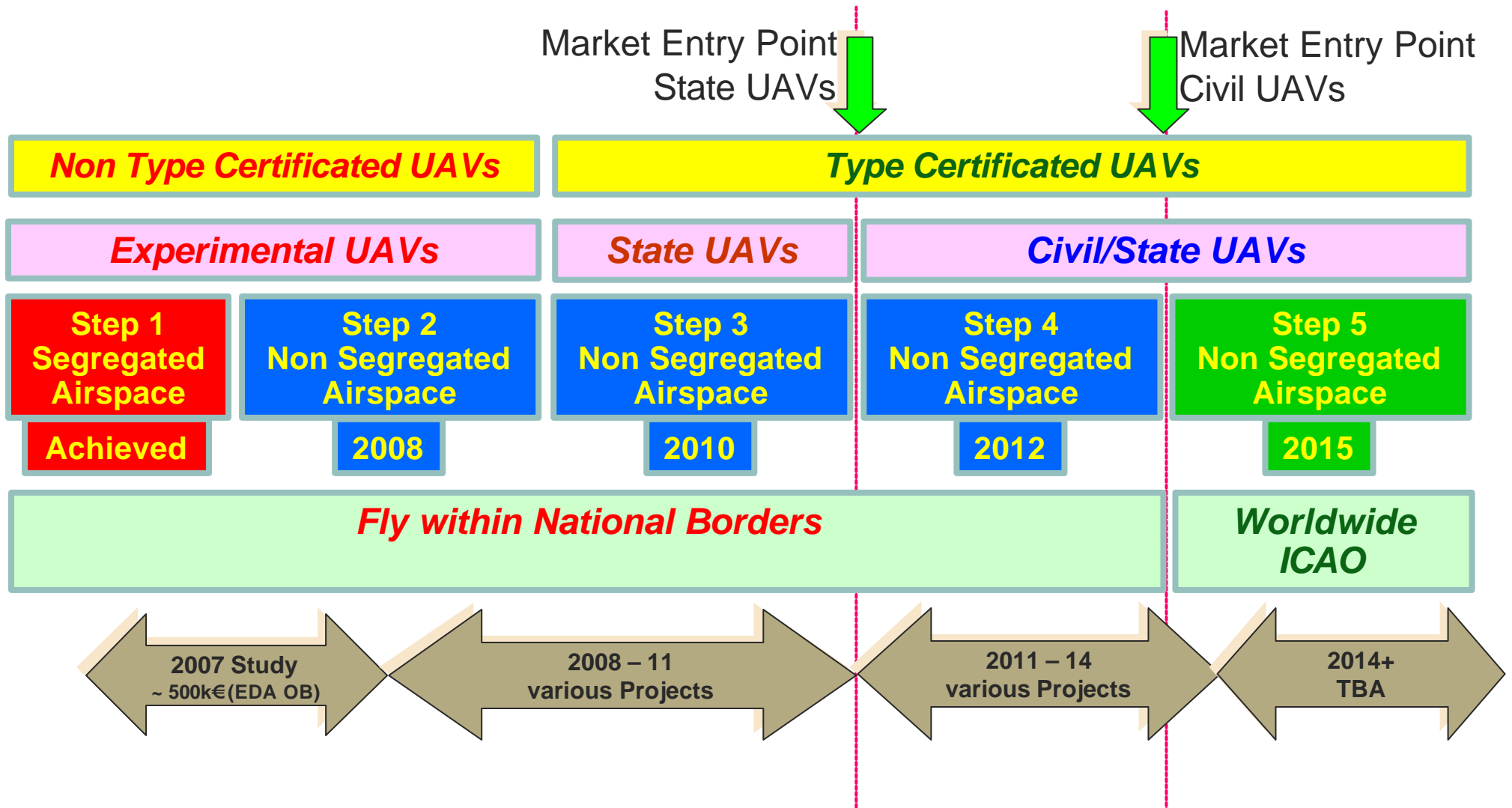
What are the problems?

- Fragmentation of activities:
 - Lots of initiatives but little coordination/ cooperation
 - Several industries build experimental UAS
 - Several working groups address the regulatory issues
 - Several nations are developing sense&avoid technology
 - Island solutions or coherent EU/NATO approach?
 - No (common) regulatory framework for military UAS
 - little involvement of responsible military authorities?

How EDA intends to tackle these challenges

- Encourage more information exchange between all stakeholders (industry, regulatory bodies and nations)
- Encourage common EU/NATO solutions
- Harmonize ongoing and planned projects and activities (e.g. UAV traffic insertion roadmap)
- Most promising regulatory venues for military UAS:
 - step1: consolidation and harmonisation of current views and policy of military aviation authorities
 - step 2: development of a new common EU wide military aviation safety framework

Harmonization: UAV Traffic Insertion - Road Map



*Note: Figures are first rough max. attempt prior to any discussion/negotiation of WP details and without insertion of already available technologies

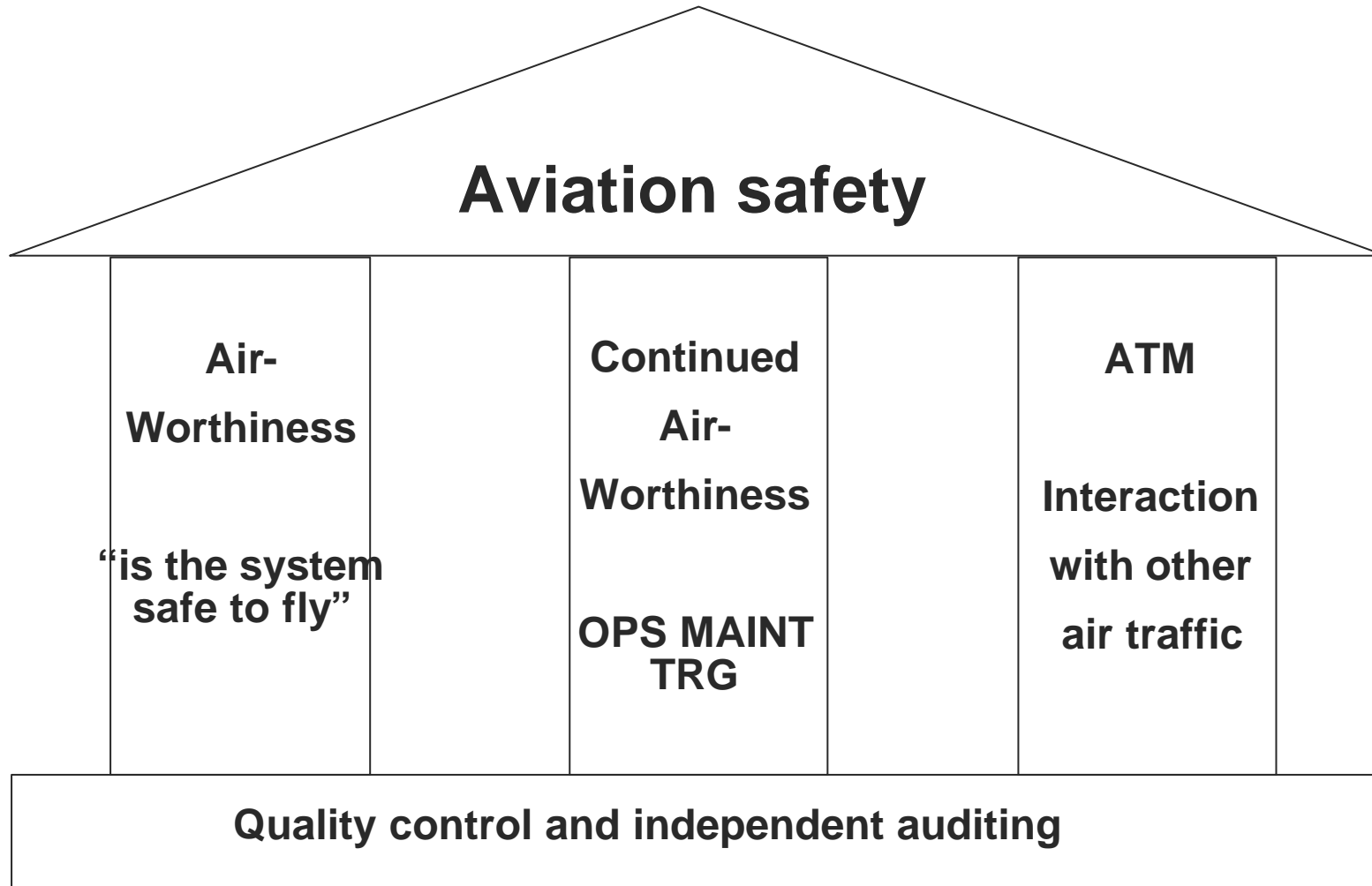


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The “larger picture”



Tiers in military aviation functions

Military Aviation Authority organisations and regulators

e.g., MAAs, FLYGI, DGA (authority role), ADRP, EMAAG...

Military material and procurement organisations

e.g. DMO, DPA, DGA, FMV, OCCAR...

Military operators, maintainers, trainers

e.g. Air Forces, Navies, Armies etc....



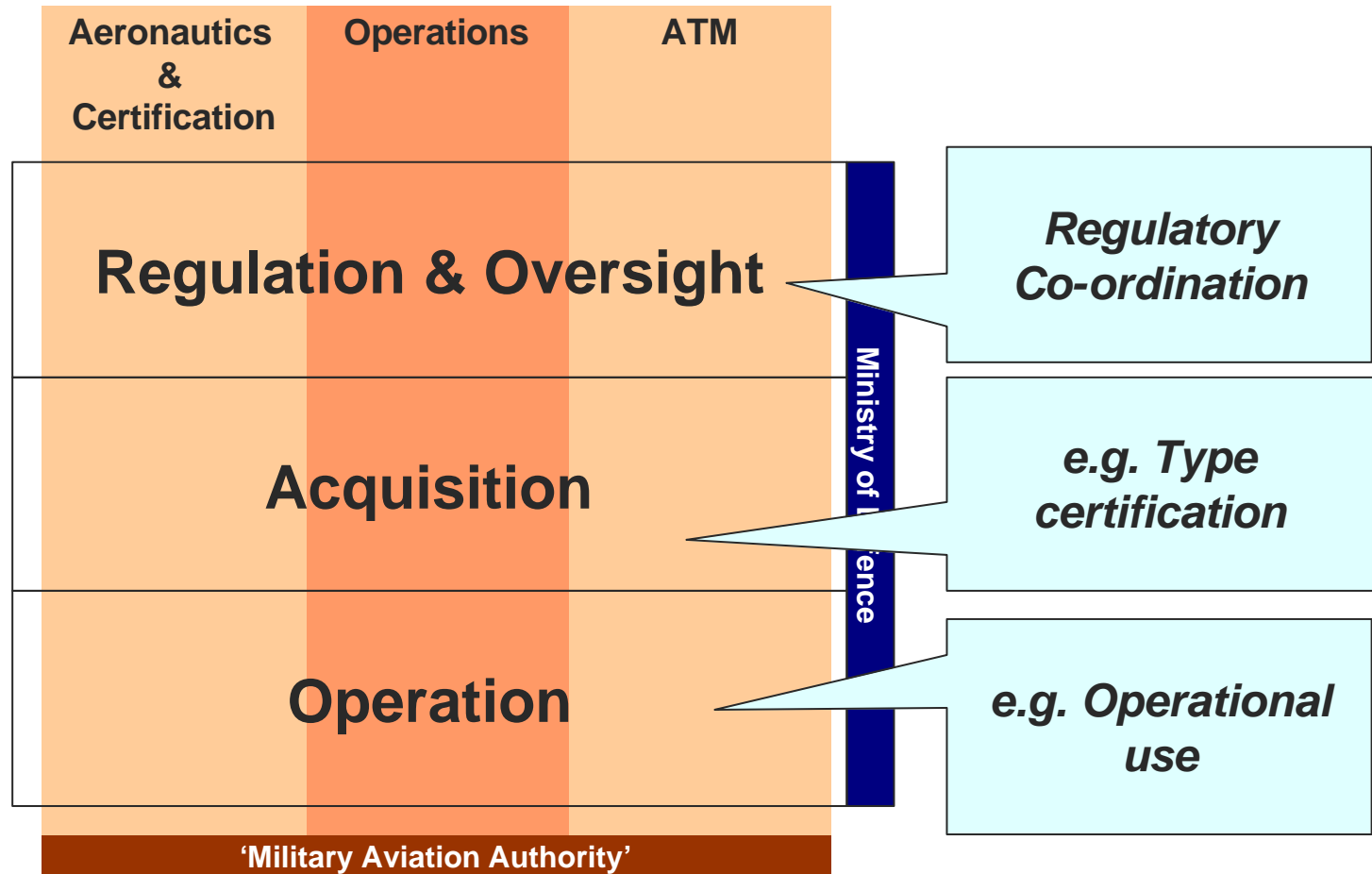
Tiers in military aviation functions

Military Aviation Authorities will have to tune with their civil counterparts (e.g. EU, EASA, Eurocontrol) to meet legal objectives and law.

Regulatory Co-ordination

Material Organisations have to tune with their operators and aviation authorities

Military aviation regulations shall meet or shall have due regard for (the objectives of) (international) (aviation) law

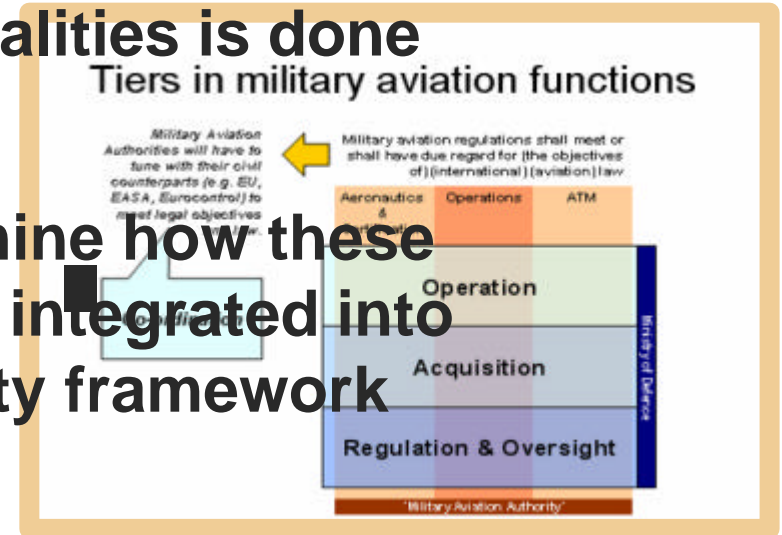




Military Aviation Safety requires....

Difficult to track how coordination between functionalities is done
From an military point of view aviation safety requires a coordinated approach on (typically):
Difficult to determine how these functionalities are integrated into an aviation safety framework

- Certification
- Operation
- Airspace usage



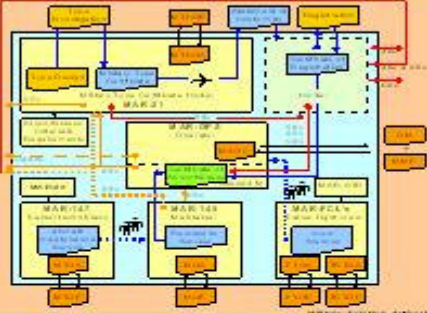
‘military aviation authorities’ use a coherent national safety framework for the military aviation but there is no common EU/NATO wide approach

'responsibilities of Military Aviation Authority'

Aeronautics & Certification

Operations

ATM

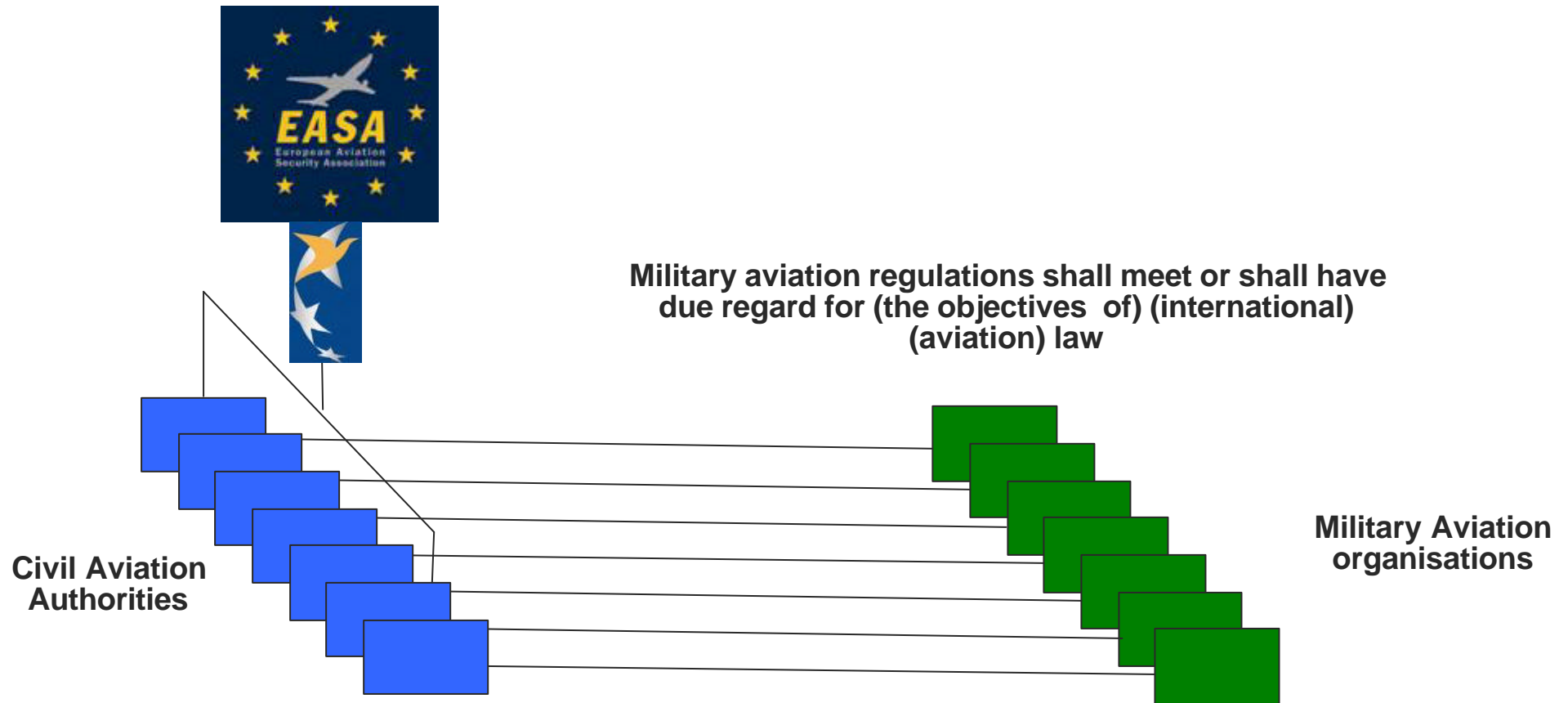
<p>NMAAs?</p>			<p>NMAAs?</p>	<p>Eurocontrol, mil ATM directors or NMAAs?</p>
<p>JMAG</p>	<p>UAV Certification Requirements</p> <p>MARs 21</p> <p>MARs 66, 145, 147, OPS, FCL</p> <p>NATO look-alikes?</p>		<p>JAPCC wg?</p>	
<p>STANAGs/USAR</p> <p>EUROCAE wg73</p> <p>ETAP mil flight permission</p>				

Regulations and oversight, requirements or Essential Requirements (Ersa)

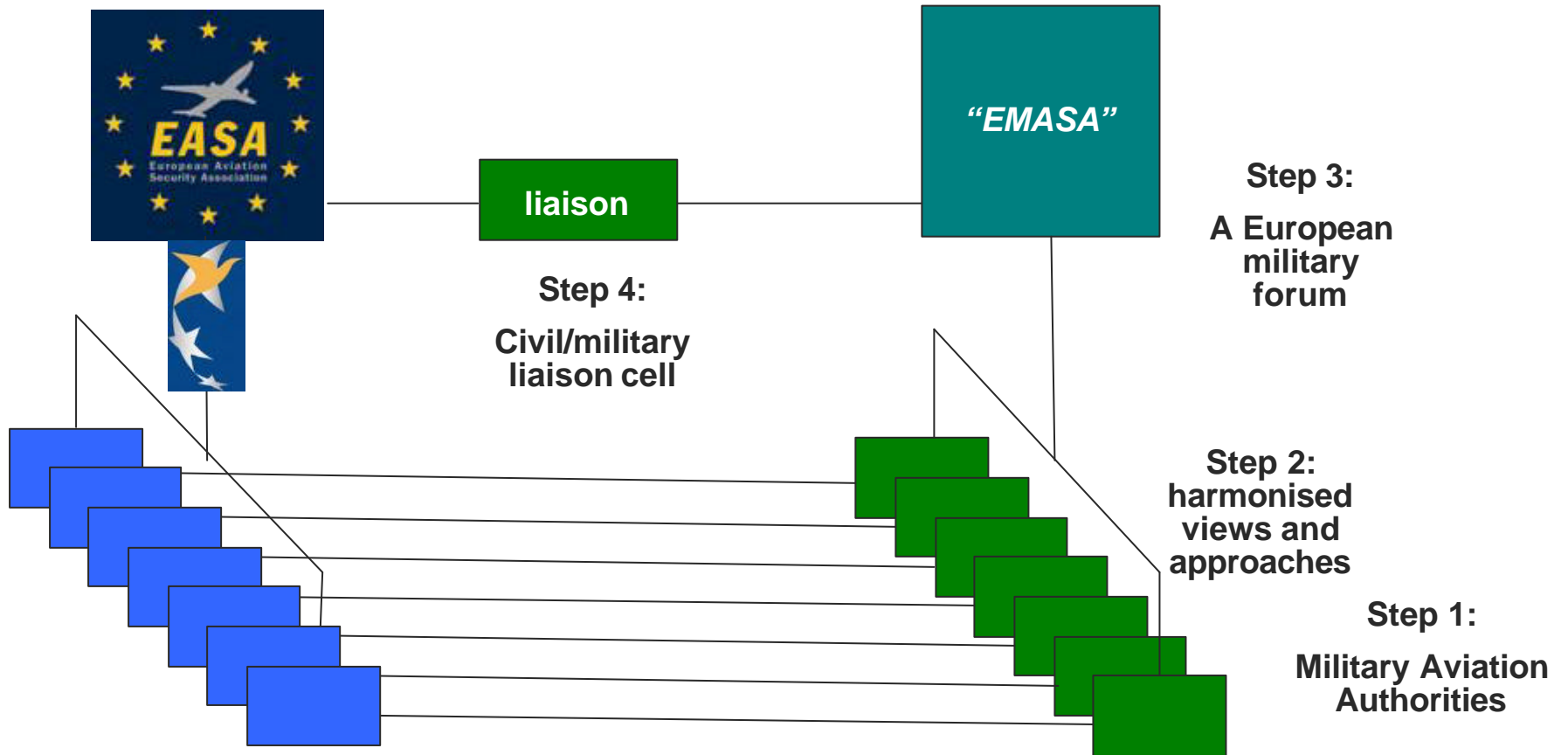
Functional Implementing Rules (IRs)

Eqpmnt/ Info or Community Specifications (CS)

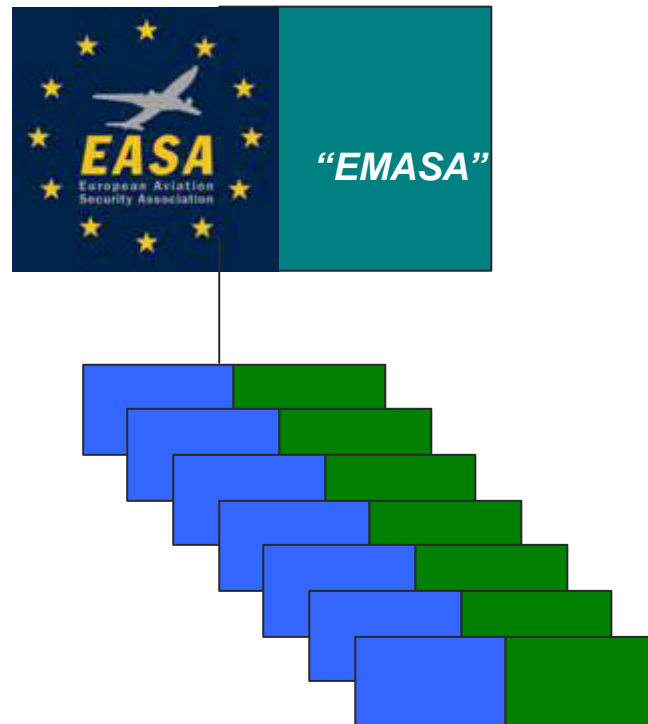
Current situation: EASA versus “the Military”



Where could it go?



Ultimate goal?



**Joint Civil- and “Security Forces”
Aviation Authorities (JAA?)**

Conclusions

- EDA is focusing on:
 - Addressing the challenges to achieve UAV traffic insertion
 - Encouraging more and intensified cooperation between industries and governments to create a viable aeronautical industrial base
 - Encouraging military aviation organisations to harmonize views and approaches and collaborate more and better
- EDA suggests that:
 - EASA should take the lead in tackling the regulatory issues around UAVs and traffic insertion
 - EASA should try to involve military authorities in the regulatory process to enable “state” use of UAVs
 - EUROCONTROL should remain involved in EUROCAE, FINAS and the EDA traffic insertion study
- EDA encourages:
 - Military aviation organisations to evolve in recognisable, transparent military aviation authorities
 - Military Aviation Authorities to intensify the sharing of experiences and views
 - Military Aviation Authorities to work on harmonisation of regulations and procedures on a European scale in line with European ambitions



QUESTIONS ??

