



Ministry of
Infrastructure
& Construction



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High Level Drone Conference Warsaw, Poland – 23 & 24 November 2016

Remotely Piloted Aircraft Systems (RPAS)

Where We Are

&

Where We Are Going

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What is UVS International

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International non-profit association registered in The Netherlands & operating out of offices in Paris, France - **Founded in 1998** - Board of Directors = Representatives from **24 Countries**

FEDERATES ♦ **27 national RPAS associations in 25 countries**

REPRESENTS

- ◆ **> 3600 companies & organisations, 44 countries, all continents**
- ◆ **Operators** ◆ **Manufacturers** ◆ **Service Suppliers**

INVOLVEMENT **Long-standing (since 2000) advocacy for the creation of RPAS-related rules & regulations + standards at:**

- ◆ **European level** (participant in **ALL EC RPAS initiatives**)
(participant in **ALL EUROCAE RPAS activities**)
- ◆ **International level** (participant in **ALL ICAO RPAS initiatives**)

| MEMBER | |
|--------|--|
| ◆ | ICAO RPAS Panel |
| ◆ | ICAO Space Learning Group |
| ◆ | EC RPAS Roadmap Implementation Coordination Group |
| ◆ | JARUS Stakeholder Consultation Body (<i>invited</i>) |
| ◆ | SESAR Joint Undertaking Outlook Study Reference Group |
| ◆ | EASA General Aviation Sectorial Committee |
| ◆ | EASA RPAS Expert Group |



International RPAS Coordination Council

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27 National Associations – 25 Countries – 3612 Companies

| | | |
|-----------|------------------|-----|
| Argentina | ARPASA | 17 |
| Australia | ACUO | 71 |
| Austria | AAI-UAS-WG | 34 |
| Belgium | BeUAS | 175 |
| Canada | Unmanned Systems | 186 |
| Colombia | ARTC | 38 |
| Finland | RPAS Finland | 17 |
| France | FPDC | 275 |
| Germany | UAV-DACH | 103 |
| Hong Kong | ARPAS-HK | 31 |
| Ireland | UAAI | 20 |
| Italy | ASSORPAS | 58 |
| Italy | FIAPR | 10 |
| Latvia | LARPAS | 30 |

| | | |
|----------------|-------------|-----|
| Japan | JUIDA | 370 |
| Netherlands | DARPAS | 64 |
| Norway | UAS Norway | 613 |
| Peru | APEVANT | 12 |
| Portugal | APANT | 30 |
| Romania | UVS Romania | 10 |
| South Africa | CUAASA | 110 |
| South Korea | KDA | 30 |
| Spain | AERPAS | 120 |
| Sweden | UAS Sweden | 64 |
| Switzerland | SFCD | 190 |
| United Kingdom | ARPAS | 500 |
| United Kingdom | UAVS | 120 |



Aerial Operations

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RPAS - Current (Experimental) Usage

| | | | | | | | |
|------------------|---|------------------|--|---|------------------|------------------------|--|
| Governmental | M U T U A L I Z A T I O N | Military | | | ◆ | NON MILITARY OPS | <div>←</div> <div>←</div> <div>←</div> |
| | | Non-Military | State Flights <i>Security related</i> | Customs Police Border Guards Coast Guard | ◆ ◆ ◆ ◆ | | |
| | | | Not State Flights <i>Incl. Safety related</i> | Civil Protection Fire Fighters National Mapping Agencies | ◆ ◆ ◆ | | |
| | | Non-Governmental | <div>→</div> | Commercial Air Transport <i>(Transport of Persons & Freight)</i> | | | |
| General Aviation | | | | Corporate Operations Flight Training / Instruction Pleasure <i>(private non-commercial)</i> | | | |
| Aerial Work | Commercial Non-Commercial <i>(incl. Corporate Operations)</i> | | | ◆ ◆ | | | |
| | Training / Instruction Other Miscellaneous | | | ◆ ◆ | | | |
| | | Leisure | Model Aircraft | | ◆ | | |
| | | | Recreational Drones | | ◆ | | |
| | | | Flying Toys | | ◆ | | |



Aerial Work - **Market** Sectors

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Agriculture, Fishery, Forestry

Audio-Visual, Media, Advertising

Cinema & TV Industry

Construction & Real Estate

Environmental (*Protection / Conservation*)

Heritage & Historical Monument Mgt

Humanitarian Relief (*incl. NGOs*)

Industrial (*Commercial & Corporate*)

Insurance (*Claim Investigations*)

Maintenance

Meteorology

Mining & Exploration

News Gathering & Broadcasting

Policy Compliance & Legal Proof

Private Citizen Requirements

Public Safety

Animal Deterrent, Civil Protection, Disaster Management, Fire Fighting, Public Gatherings, Critical Installations

Public Security & Law Enforcement

Police, Border Guard, Coast Guard, Customs, Game-Keeping, Judiciary

Research & Scientific

Utility Companies (*Public & Private*)

Flight Training / Instruction

See www.rpas-regulations.com for
explanation of & applications in these sectors



Aerial Work - **Applications**

Flight Mission Purposes

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Application defines:

- Payload
- Flight parameters
- Flight location
- Operation manual
- Possible export restrictions

Payload conditions:

- Possible privacy infringement risks
- Possible data protection risks
- Possible export restrictions

Advertising

Cinema & TV

Deterring

Dispensing

Exploration

Identification

Inspection

Localisation

Manipulation

Mapping

Measuring

Monitoring

News Gathering

Observation

Patrolling

Policy Compliance

Relief Flight

Research

Search & Rescue

Sensing

Special Purpose

Spotting

Spraying

Surveying

Testing

Tracking

Video

Water Bombing

Flight parameters & location define:

- Operational category
- and may create:**
- Privacy concerns

Operational category conditions:

- Applicable Rules & Regulation
- Authorisation required
- Applicable standards
- Required pilot & personnel skills
- Operational risk
- Risk Assessment
- Risk Mitigation

Operational category influences:

- Insurance

See www.rpas-regulations.com for the explanation of these applications



Flight Regulatory Status – Europe

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European Union + Norway & Switzerland = 30 Countries

| EU (28) + Norway & Switzerland | | |
|--|---------|----------------------------------|
| ICAO Members | 30 / 30 | + EASA & Eurocontrol |
| JARUS Members | 21 / 30 | + EASA & Eurocontrol |
| National RPAS Associations | 18 / 30 | UVS International Federated |
| RPAS Regulation In Place | 18 / 30 | |
| Regulation Upcoming (Dec/Jan) | 02 / 30 | Luxembourg & Portugal |
| Regulation Updates Coming | 06 / 30 | |
| RPAS Rules in Place | 03 / 30 | |
| Quantity Certificated Operators | 10 000 | Most Operations Are Only VLOS |
| | | |

Rules: Permits-to-Fly are granted by National Aviation Authority (NAA), based on *specific national rules*, and possibly on a case-to-case exemption basis (also in countries where no national regulation exists).

Certificated: Any form of recognition that a product, part or appliance, organisation or person complies with the applicable requirements, including the provisions of a regulation and its implementing rules, as well as the issuance of the relevant certificate *attesting* such *compliance* (EASA Basic Reg. Art. 3).

(The term “Certificated” is used because there is no internationally agreed understanding of the meaning of the terms “Authorized” & “Approved”)



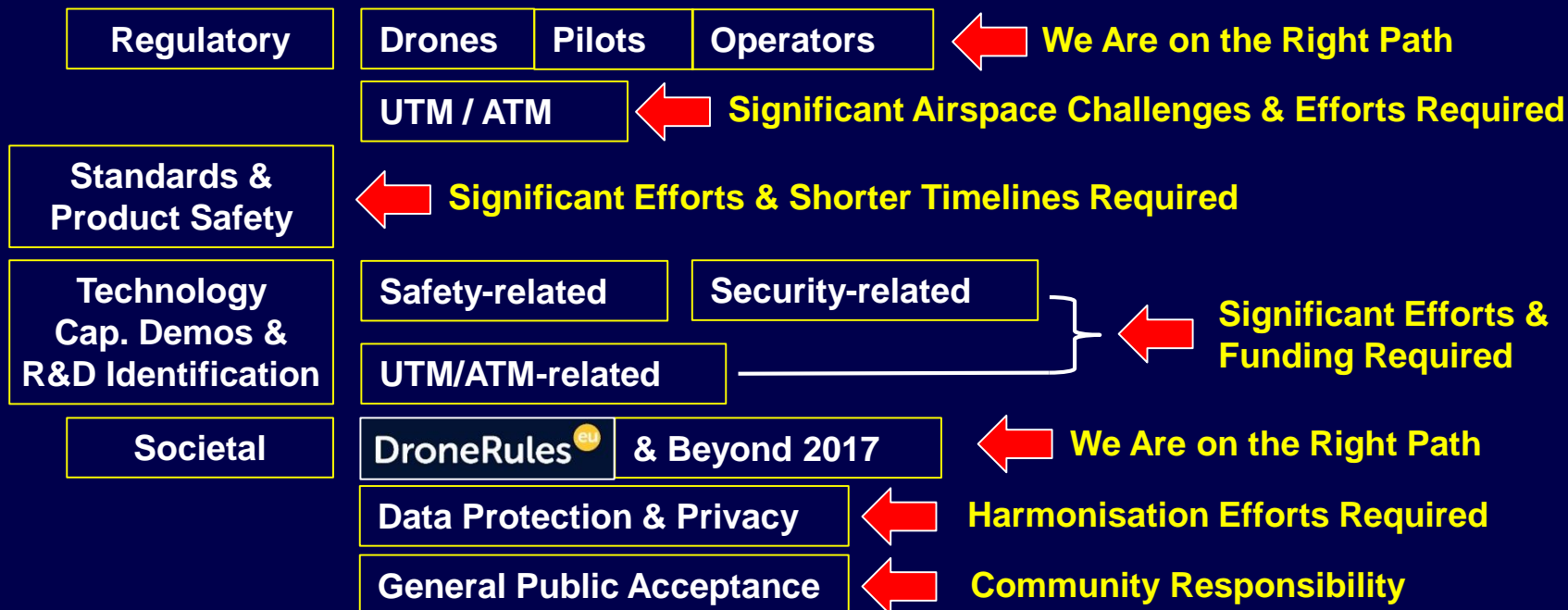
The Next Frontier

VLL Operations (= <500 ft AGL)

| | | | |
|-----------------|------------------|-------------------|-------------------|
| Today | VLOS Operations | VLL | Non-Urban |
| Tomorrow | BVLOS Operations | VLL | Non-Urban & Urban |
| Thereafter | BLOS Operations | All Flight Levels | Non-Urban & Urban |

Concentrate Efforts Here

Efforts Required

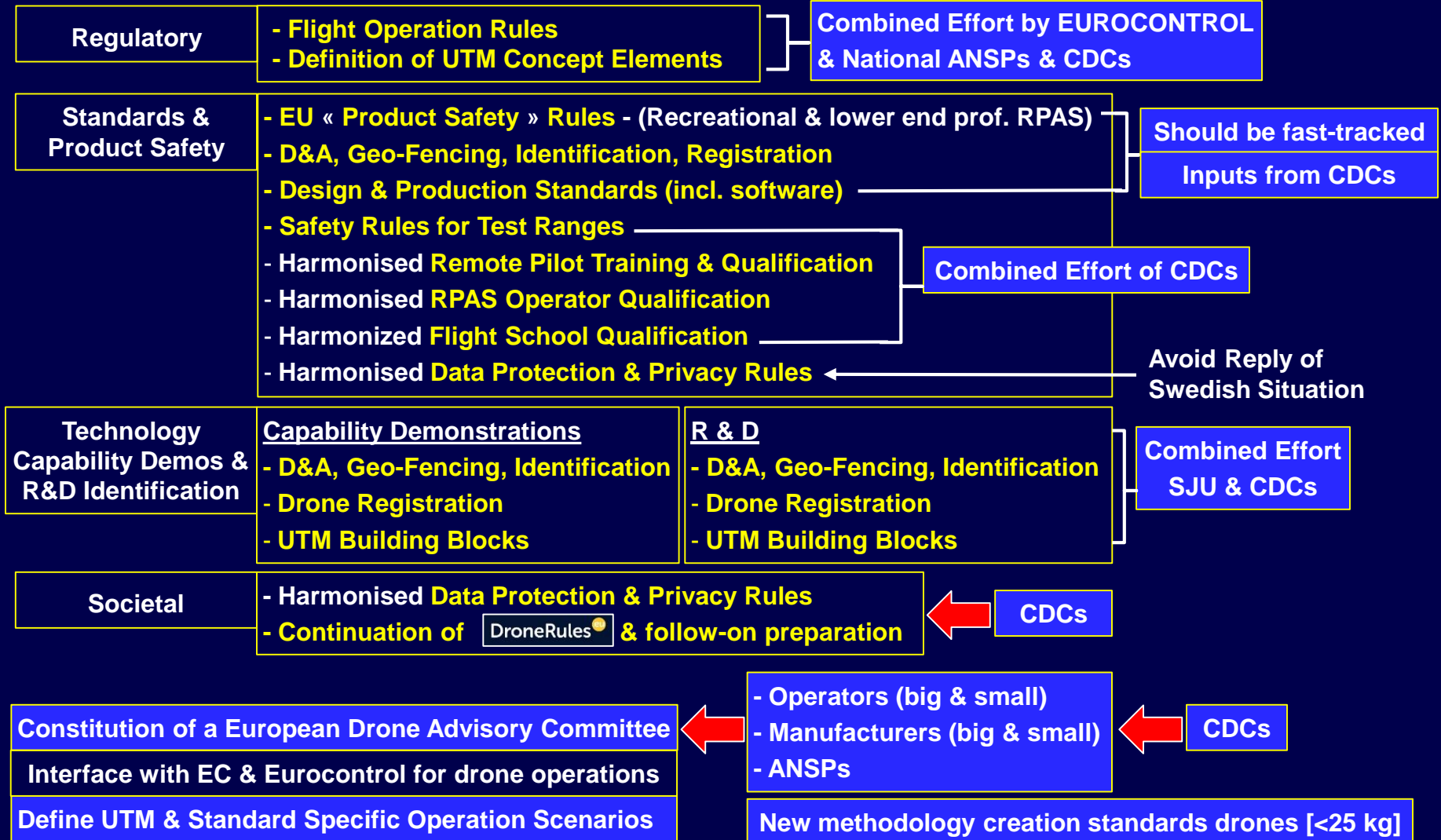




Bottlenecks & Possible Solutions

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Fast-Tracking VLL Operations (= <500 ft AGL)
By Means of National & Regional Civil Drone Councils (CDC)





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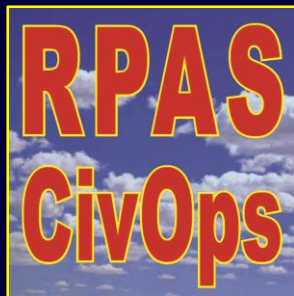
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