



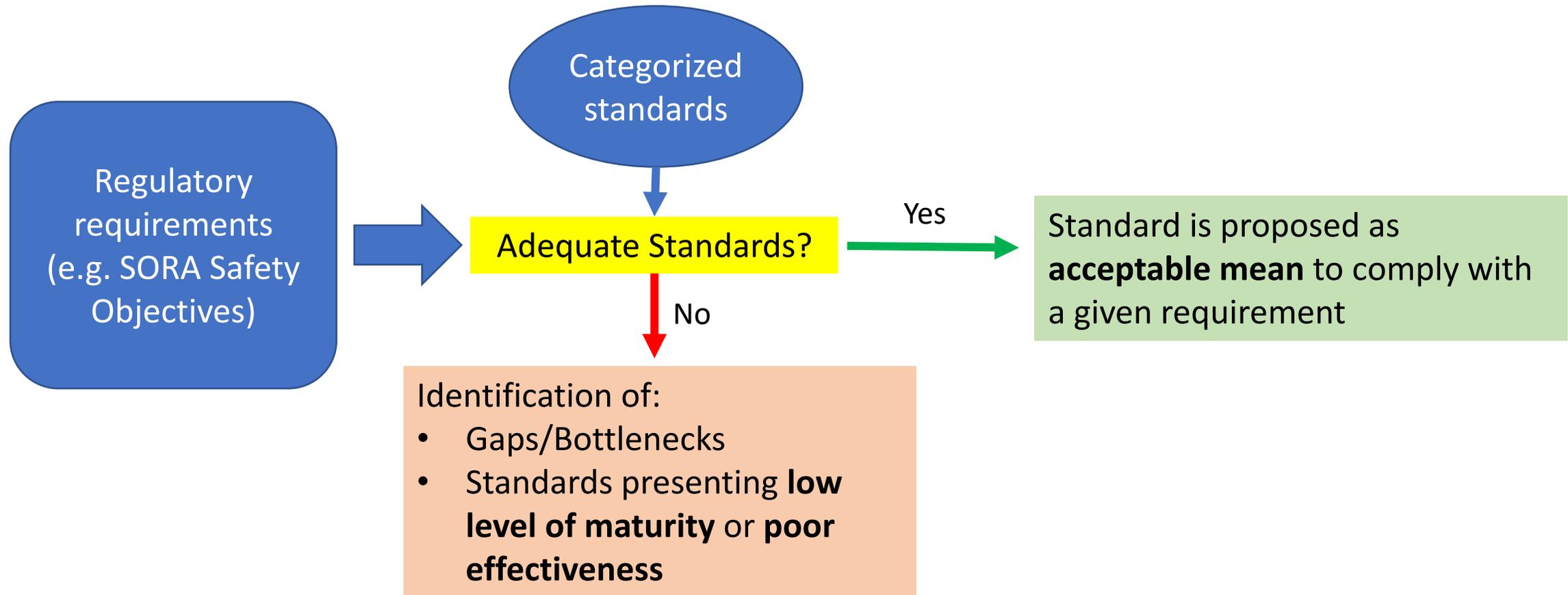
AW DRONES

# AW-Drones Data Collection and Mapping

Sebastian Cain  
DLR



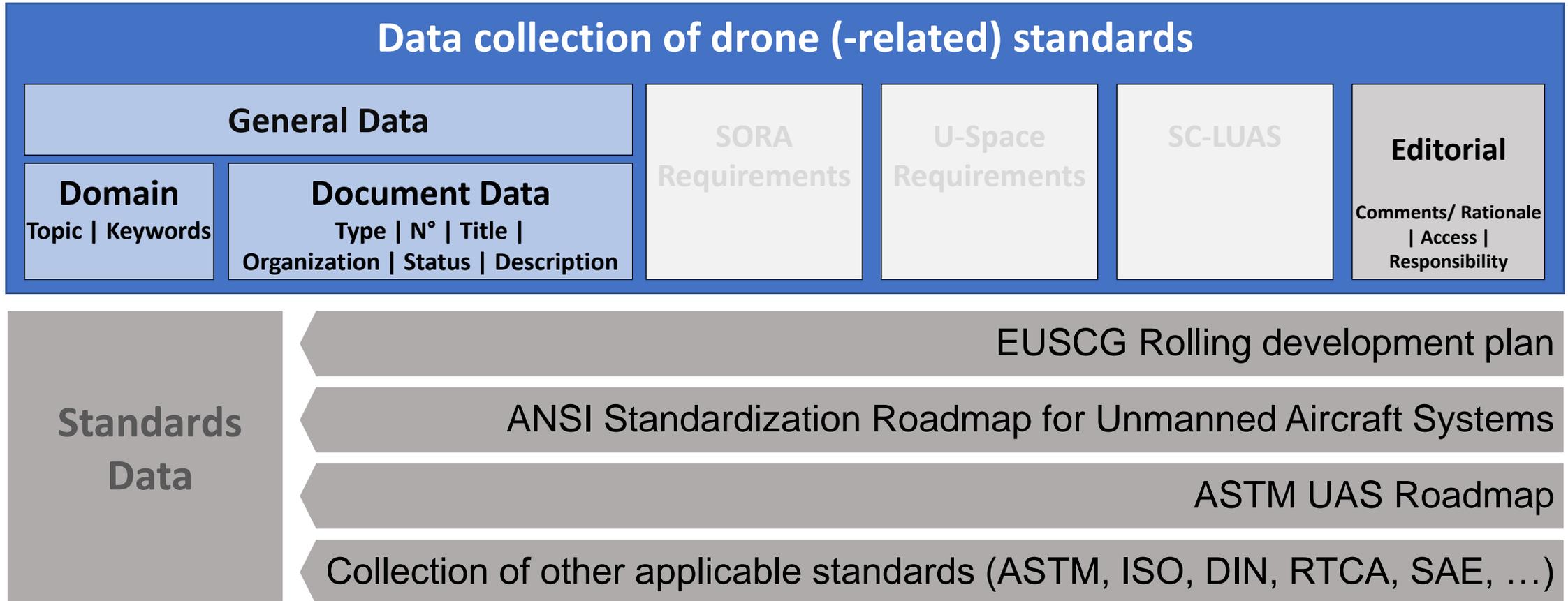
This project has received funding from European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No°824292.



1st step: setting up a database



1st step: Setting up a database



## Iteration 1

Focus on SORA Requirements

JARUS guidelines on  
Specific Operations Risk  
Assessment  
(SORA)

### Data collection of drone (-related) standards

| General Data                      |  | SORA Requirements                   |  |                                     |                        |
|-----------------------------------|--|-------------------------------------|--|-------------------------------------|------------------------|
| <b>Domain</b><br>Topic   Subtopic | <b>Document Data</b><br>Type   N°   Title  <br>Organization   Status   Description | <b>Affected OSOs</b><br>#01 ... #24 | <b>Affected GRM</b><br>M1 [1...2]   M2   ERP | <b>Affected ARM</b><br>Strat   Tact | <b>SORA</b><br>STEP #9 |

Standards Data



## Iteration 2

Focus on U-Space Requirements



European Union Aviation Safety Agency

Opinion No 01/2020

High-level regulatory framework for the U-space

RMT.0230

### Data collection of drone (-related) standards

#### General Data

##### Domain

Topic | Subtopic

##### Document Data

Type | N° | Title |  
Organization | Status | Description

SORA REQ.



#### U-Space Requirements

##### Services

Network identification service | Geo-awareness  
service | Flight authorization service | ...

##### HLR

Contingency | Occurrence  
Reporting | ...

#### Standards Data



## Iteration 3

### Focus on SC-LUAS Requirements

| SC Requirements   | OSO   | SAIL III Robustness | SAIL IV Robustness | Recommended MoC for SAIL III based on available standards (*) | Gap of recommended MoC for SAIL III (once filled, the MoC would be considered by AW Drone as adequate to achieve the objective) | Final formulation of recommended MoC with gap filled | Recommended MoC for based on available standards |
|---|-------|---------------------|--------------------|---|---|--|--|
| Light-UAS 2005 Definition of the operational scenario     | N/A   | N/A                 | N/A                |   |   |  |  |
| B - FLIGHT  |       |                     |                    |   |   |  |  |
| Light-UAS.2100 Mass and centre of gravity                 | 4     | L                   | L                  |   |   |  |  |
| Light-UAS.2102 Approved Flight envelope and environmental | 4     | L                   | L                  |   |   |  |  |
| Light-UAS.2105 Performance data                           | 4; 24 |                     |                    |   |   |  |  |
| Light-UAS.2135 Controllability, manoeuvrability and       | 4     | L                   | L                  |   |   |  |  |

## Data collection of drone (-related) standards

### General Data

**Domain**  
Topic | Subtopic

**Document Data**  
Type | N° | Title |  
Organization | Status | Description

**SORA Req.**  
+

**U-Space Req.**  
+

### Special Condition for LUAS

**Requirements**  
General | Part B -Flight | Part C -Structures | ...

## Standards Data



## Data collection of drone (-related) standards

| General Data               |   | SORA Req.<br>+ | U-Space Req.<br>+ | Special Condition for LUAS  |        |        |
|----------------------------|---|----------------|-------------------|---|--------|--------|
| Domain<br>Topic   Subtopic | Document Data<br>Type   N°   Title  <br>Organization   Status   Description |                |                   | Requirements<br>General   Part B -Flight   Part C -Structures   ... |        |        |
| Standards Data             |   |                |                   | X   | X<br>X | X<br>X |

## Mapping

Draw connection between standards and requirements

Input for a more detailed view during the **assessment**



|                       |  |  |                                     |                    |
|-----------------------|--|--|-------------------------------------|--------------------|
| <h2>General Data</h2> |  |  | <h2>Special Condition for LUAS</h2> | <h2>Editorial</h2> |
|-----------------------|--|--|-------------------------------------|--------------------|

| General Data |      |             |       |              |        |             | SOMA | U-Space | SC-LUAS | Special Condition for LUAS |                 |                     |                                  |  |                                |  |                  |          |        |                      |                |                        |                        |                        | Editorial              |                        |  |  |  |  |  |
|--------------|------|-------------|-------|--------------|--------|-------------|------|---------|---------|----------------------------|-----------------|---------------------|----------------------------------|--|--------------------------------|--|------------------|----------|--------|----------------------|----------------|------------------------|------------------------|------------------------|------------------------|------------------------|--|--|--|--|--|
| N°           | Type | Document N° | Title | Organization | Status | Description |      |         |         | General                    | Part B - Flight | Part C - Structures | Part D - Design and Construction | Part E - Lift / Thrust / Power System Installation | Part F - Systems and Equipment | Part G - remote Crew Interface and other Information | Part H - C2 Link | Comments | Access | Product Availability | Responsibility | Assigned to SOMA (CPE) | Assigned to U.S. (CPE) |  |  |  |  |  |
| 0            |      |             |       |              |        |             |      |         |         |                            |                 |                     |                                  |  |                                |  |                  |          |        |                      |                |                        |                        |                        |                        |                        |  |  |  |  |  |


Home About  

**Filters**

Requirements

Choose a domain

- General 33
- Initial Airworthiness (at UAS level) 302
- Continuing Airworthiness 13
- UAS Operations 29
- Aerodromes 3
- U-Space/ATM 33
- Environment 1
- Personnel 19
- Oversight 6

## Drone Standards Info Portal

The AW-Drones standards info portal is an online platform where users are able to easily identify relevant information from the AW-Drones database of standards and regulations.

Search standards

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**Keywords**

[Systems & Equipment \(154\)](#)
[Electrical System \(107\)](#)
[Software Development Assurance \(63\)](#)
[Design & Construction \(56\)](#)
[Command and Control \(C2\) Link \(39\)](#)
[Detect and Avoid \(29\)](#)
[Navigation \(29\)](#)
[Systems safety assessment \(25\)](#)
[Lights \(24\)](#)
[Standard Scenarios \(23\)](#)
[Electromagnetic Compatibility and Lightning Protection \(22\)](#)
[Emergency capabilities & Health monitoring \(19\)](#)
[Definitions \(18\)](#)
[Remote Pilot competence \(17\)](#)
[Instruments \(17\)](#)
[Cybersecurity \(15\)](#)
[Structures \(11\)](#)
[Flight Control System \(11\)](#)
[Organization \(10\)](#)
[UAS-ATM \(FR above VLL and below FL 600\) \(10\)](#)
[Classification of UAS operations \(10\)](#)
[Manuals \(9\)](#)
[Propulsion \(9\)](#)
[Ground Handling Service \(8\)](#)
[Level of Automation/Autonomy \(7\)](#)
[UAS Operator \(7\)](#)
[Tracking \(7\)](#)
[Identification \(5\)](#)
[Classification of drones \(5\)](#)

All keywords 

**Standards (560 results)**

Sort By: Title AZ Show: 10

Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair

Organization: FAA Federal Aviation Administration  
Document N°: AC 43.13-19  
Status: published

[READ MORE](#)

Acceptable Methods, Techniques, and Practices - Aircraft Alterations

Organization: FAA Federal Aviation Administration  
Document N°: AC 43.13-29  
Status: published

[READ MORE](#)

Access to controlled airspace

Organization: SAE G-30 UAS Operator Qualifications Committee  
Document N°: ARP###  
Status: planned

[READ MORE](#)

Active and Battery Assisted Passive Tags Intended for Aircraft Use

Organization: SAE International, AS-4/UAS Joint Architecture for Unmanned Systems Committee  
Document N°: AS6023  
Status: published

[READ MORE](#)

Advanced Encryption Code Standards

Organization: ISO International Organization for Standardization  
Document N°: ISO/IEC 18033-33  
Status: published

[READ MORE](#)

Aerial Refueling Lights - Design Criteria

Organization: SAE  
Document N°: ARP694C  
Status: published

[READ MORE](#)

AÉRONÉES CIRCULANT SANS PERSONNE À BORD - ACTIVITÉS PARTICULIÈRES Ed 1 rev 4

Aerospace - Characteristics of aircraft electrical systems

Thank you!



| Domains  |
|--|
| General  |
| Initial Airworthiness (at UAS level)                     |
| Continuing Airworthiness                                 |
| Environment  |
| UAS Operations   |
| Personnel (involved in UAS airworthiness and operations) |
| Aerodromes   |
| U-Space/ATM  |
| Oversight  |

 Keywords