AW DRONES

Harmonising drone standards to support the ongoing EU regulatory process

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

Who we are

AW-Drones is a **3-years** Coordination and support action (CSA) funded under the EU H2020 program.

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deepblue

EUROUSC ITALIA

DLR

nlr

FLIGHT SAFETY FOUNDATION MEDITERRANEAN "Never take safety for granted"

HELLENIC INSTITUTE OF TRANSPORT CERTH / HIT

TU Delft

ortelio

dji

DELAIR AERIAL INTELLIGENCE

UNIFLY

IAI

Background: Regulatory Framework in Europe

- EU is leading the rulemaking process for drones at a global level
- Big progress towards a common European regulation for drones in the last years:
  - EASA basic regulation 2018/1139 extended the mandate of EASA to drones of **whatever mass**
  - **EU Regulations 2019/947** and **2019/945** set the framework for the safe operation of drones in European skies (EU and EASA Member States)
  - Related **Guidance Material** and **Adequate Means of Compliance**
  - **U-space** regulation sets the ground for further development of the drone sector

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Background: Rules and standards

- Today EASA and FAA often refer to **“voluntary” industry standards** in their regulatory material
  - E.g. in “Book 2” of Certification Specifications
  - In a huge number of FAA Technical Standard Order (TSO) or EASA European TSO (ETSO) for equipment
  - **…and in drone regulations!**
- All these standards are not binding, but, if used, constitute a **presumption of compliance with the rules = Acceptable Means of Compliance (AMC)**
- Several are published by **ASTM, EUROCAE, ISO, RTCA or SAE** = Standard Development Organisations (SDOs)

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Where does AW-Drones fit into regulation?

Safety rules for civil UAS operations in EU (2019/947) comprise 3 categories of operations:

a) "open" in Visual Line-of-Sight (VLOS) for which no safety assessment is prescribed, but for which the regulations establish strict limitations

b) "specific", which includes Beyond VLOS and for which a risk assessment is always required

AW-Drones

c) "certified" which covers high risk operations by long range or large drones or passenger carrying and for which a safety assessment is also required

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The problem (policy-makers side)

- **Lack of harmonised** standards is **holding back** the development of drone-related business, both at a global level and in Europe
- Several studies and surveys identify **a reliable regulatory and standardisation framework** as one of the main potential **boosters** for the drone business
- To foster the growth of safe drone usage, there is a need to implement **coherent and interoperable** global standards for drones in the EU

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The problem (manufacturer/operator side)

- Industry standard-making bodies are developing **several hundreds of standards for drones**

How to find "my" standard in the jungle?

- Not immediate and easy to establish relationship between these standards and
  - Applicable EU/EASA rules
  - Categories of UAS operation (open; specific; certified)
  - **Inside specific category, e.g. with SORA integrity levels**
- Information difficult to trace, "digest" and consult

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AW-Drones approach

- **Collect information** on on-going and planned work with regards to technical and operational **standards** developed for drones worldwide
- Carry out a **critical assessment/benchmarking** of all collected data to identify best practices, gaps, bottlenecks and applicability
  … in other words a "metastandard"
- **Propose** and **validate** a well-reasoned set of standards for each category of drone operations
- **Engage** with key stakeholders and end-users, i.e. representatives of the whole drone value chain

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Project Scope

- Year 1 (2019): Standards required to support effectively the Specific Operations Risk Assessment (**SORA**) methodology
  600+ standards collected and assessed, 47 gaps identified!

- Year 2 (2020): Standards supporting the development of **U-Space** in Europe (+ 2nd iteration of SORA)
  Around 30 additional standards collected and assessed

- Year 3 (2021): Standards needed to support the design verification process in compliance to **SC-Light UAS**

Iterative approach throughout the project duration

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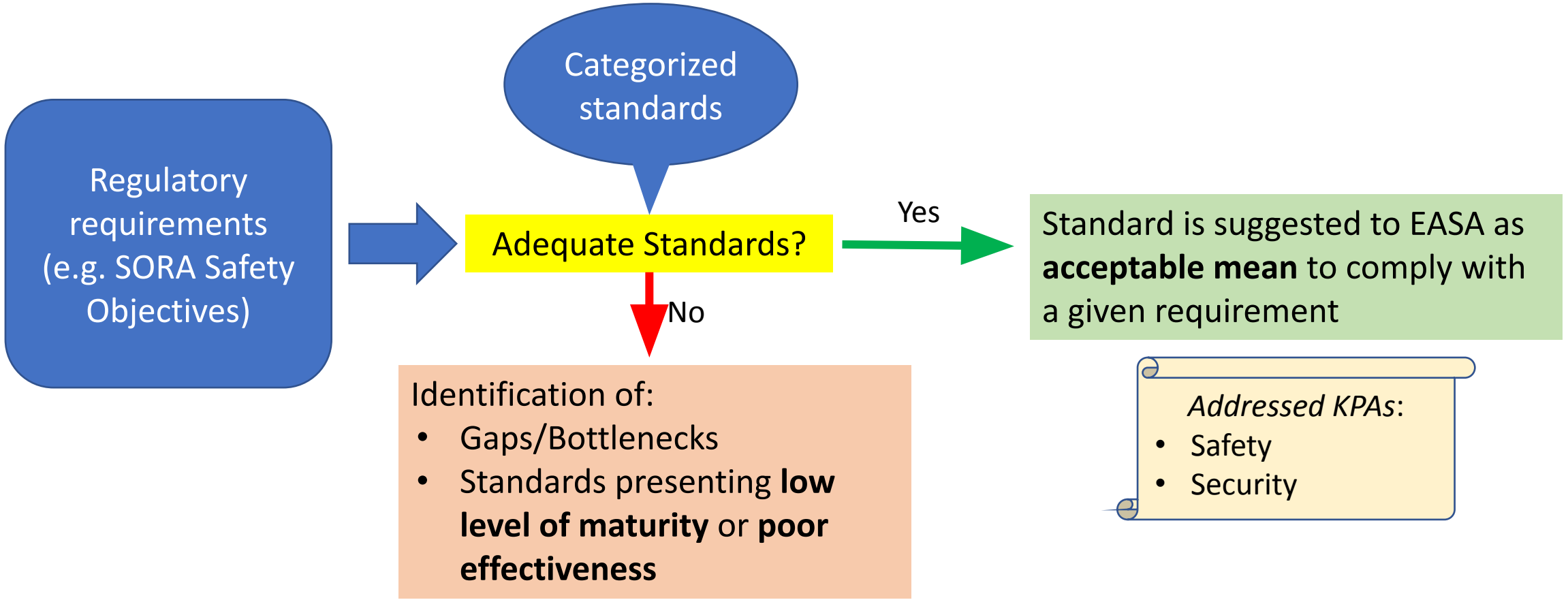
Our flow



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Outputs

- A **yearly report** about “State-of-the-Art” of standards for UAS
- A yearly report containing a **“well-reasoned” set of standards:**
  - Applicability
  - Maturity
  - Effectiveness
- A **drone standards information portal** containing structured information about technical rules, procedures and standards for drones worldwide, including applicability to different UAS OPS categories and different SAILs (Specific Assurance and Integrity Levels)

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The Drone Standard Information Portal

- Open access repository that provides single point of access to relevant information about:
  - rules, procedures and technical standards developed for mass-market drones worldwide;
  - best practices, gaps and bottlenecks;
  - technical standard for each category of drone operations

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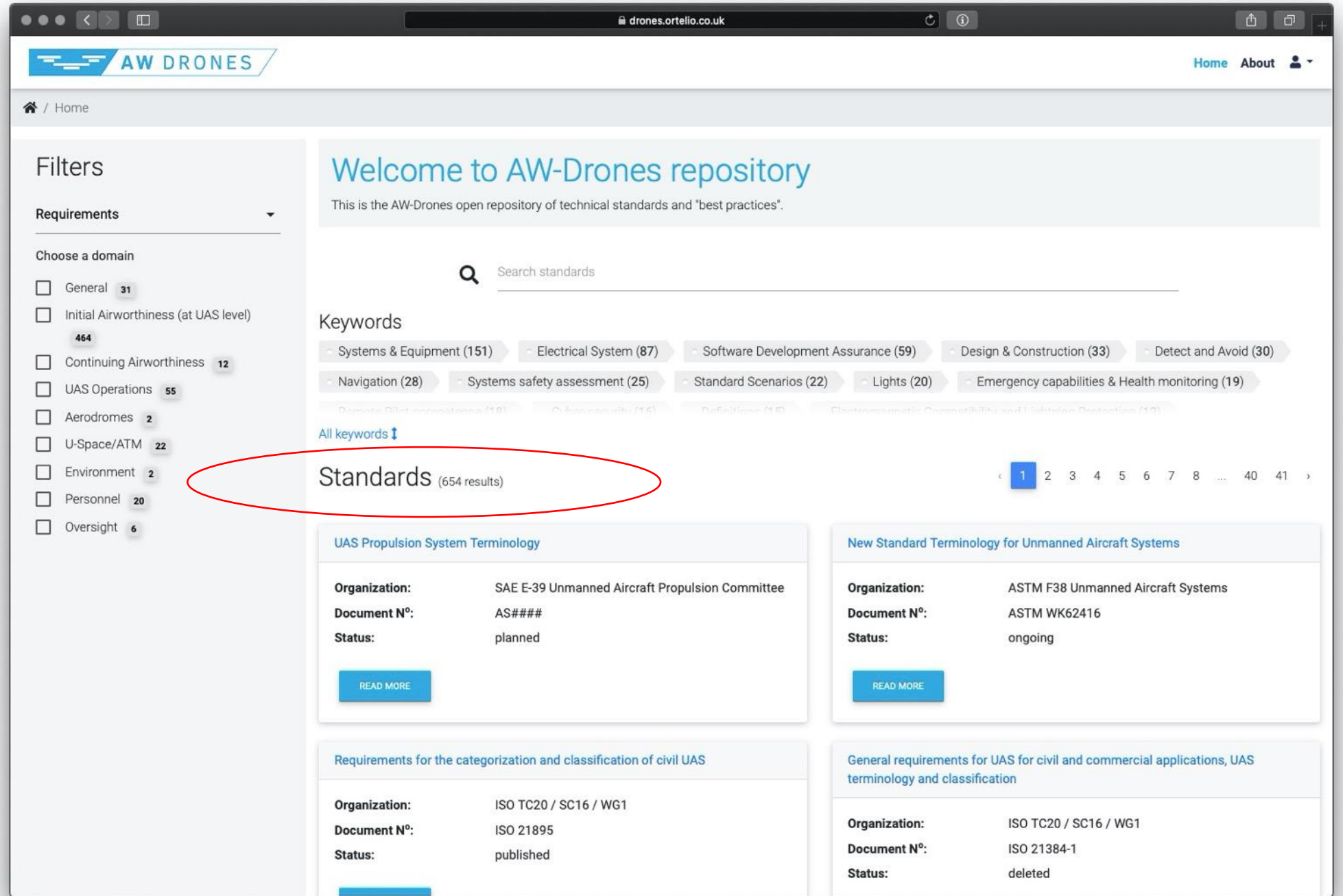
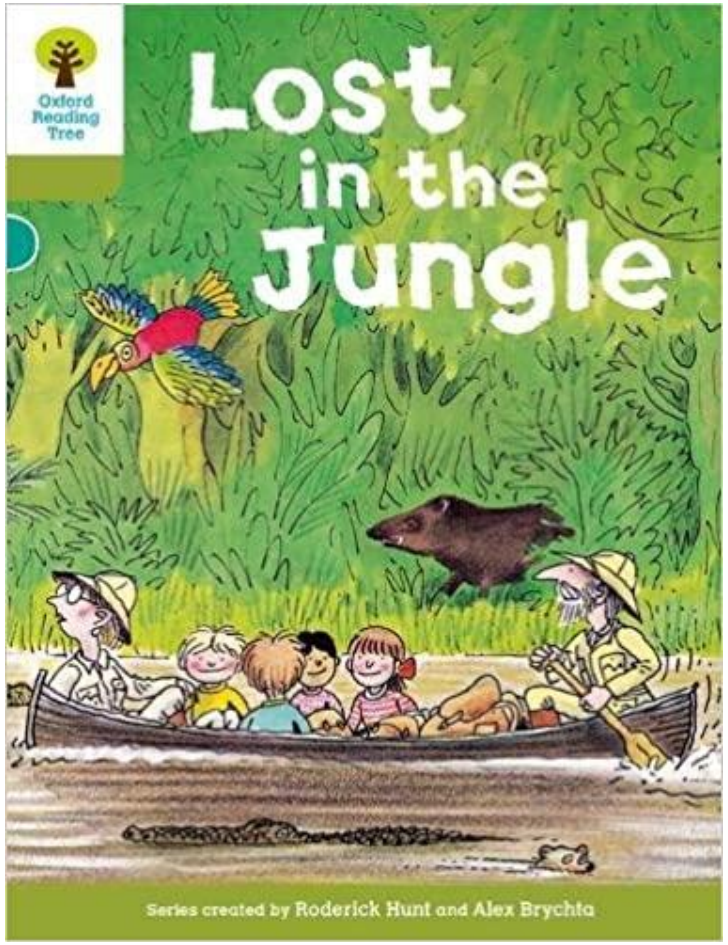
URL: https://standards.aw-drones.eu

Homepage



Conclusions: how to find my way in the jungle?



Project AW-DRONES – a single metastandard linked to EU rules

Project AW-DRONES – facilitates identification of applicable industry standards

Compliance with recognised standards increases safety

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Follow us!

http://www.aw-drones.eu/
(sign in to the newsletter)

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Thank you for your attention!

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Questions?

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