Chengdu, China

中国成都

DRONE ENABLE/2

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UTM Framework Update

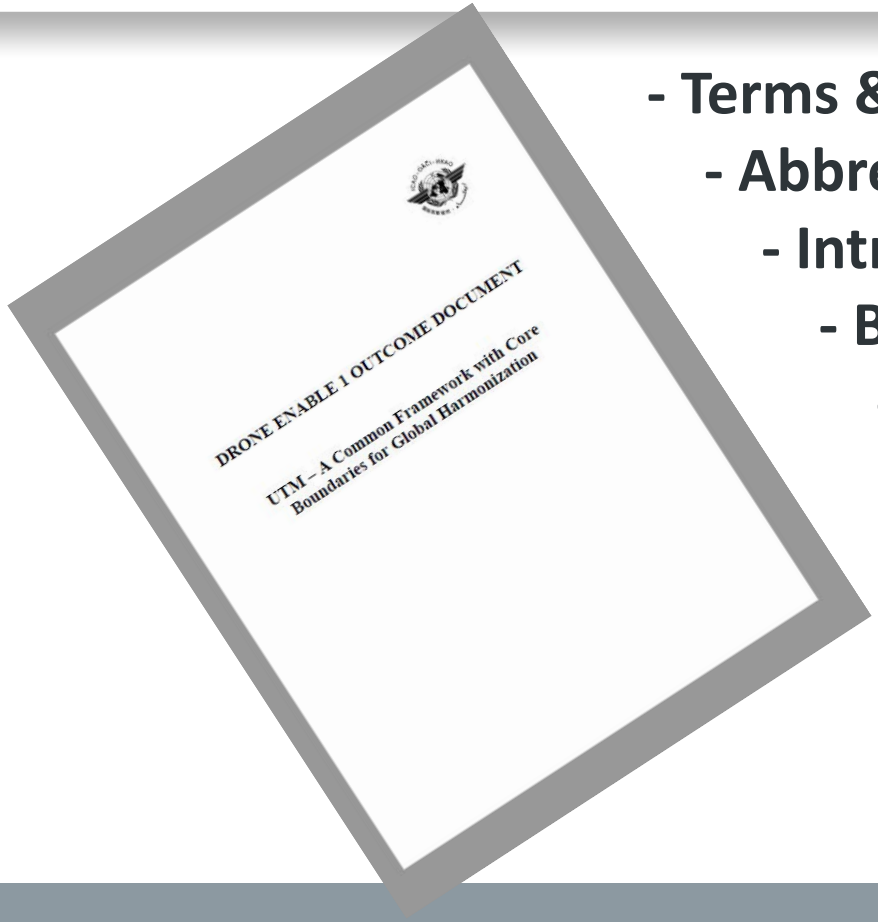
Introduction

ICAO received a new a mandate to address UAS issues

DRONE ENABLE 1 – Started our UTM efforts

Framework approach adopted instead of developing SARPS

UAS Advisory Group retasked with developing a UTM framework



- Terms & Definitions
  - Abbreviations and Acronyms
    - Introduction
      - Background
        - Objective (Purpose Statement)
          - Scope
            - Principles & Building Blocks
              - List of Services
                - Gaps/Issues/Challenges
                  - Conclusions

Framework Overview

Provide States a framework and core capabilities of a “typical”

UTM system,

High level UTM requirements/considerations

Not a technical solutions document

First edition addresses the very low-level environment

Framework Objectives

Foster common framework for core UTM principles

Maintain safety

Facilitate more complex low-level UA operations

Support technological developments in UTM and UAS

Provide safety-focused recommendations for UTM system development

Address security and environmental risks.

Intent

Facilitate harmonization between UTM systems globally

Enable industry, manufacturers, USS and end users to grow safely and efficiently

Minimize disruption the existing manned aviation system.

UTM architecture should meet the UAS community demands, while:

- maintaining emphasis on criticality of safety
- enabling the timely introduction of appropriate traffic management capabilities

Assessment

- Overall effectiveness,
- Safety and efficiency of the UTM system;
- Registration and identification systems;
- Communications compatibility between other stakeholders;
- Geo-fencing like systems (benefits, constraints, restraints, etc.);
- Interoperability (with other systems and other nations);
- Radio spectrum (availability, suitability, security, etc.);
- Security (cyber)

Core Principles (1/2)

Co-operate with manned aviation and within finite airspace resources

Safety is paramount

Privacy, security, reliability and environment

Compliance and accountability

Harmonization of risk profiles, performance based regulations and oversight

Emerging technologies to provide solutions

Core Principles (2/2)

Oversight remains with the regulator

Airspace access and aircraft prioritization policies remain applicable

UAS operator should be appropriately qualified

Access to UA data

Approval Principles

Types of UA

Existing airspace structure,

Nature of operation,

Existing and anticipated traffic,

All UA in the UTM to be cooperative,

Management of Aeronautical and Geographic Information Systems data

Contingency/emergency procedures

Enablers/Complimentary Actions

Performance based, risk based regulations

Development of appropriate standards

Optimize airspace and spectrum

Assurance standards (e.g. cybersecurity, software assurance level, etc.)

Education and guidance

Trusted AIS/GIS data

List of Services

Aeronautical Information

Activity Reporting

Registration

Restriction Management

"Flight Planning"

Mapping

Separation

Airspace Authorization

Tracking and Location

Gaps/Issues/Challenges

Current airspace classification scheme

Application of ICAO Annex 2

Development of UTM system procedures

Common and reliable altitude, navigation and temporal references

Data standards

Spectrum availability/supportability

UAS separation standards within the UTM system

Policies to address means of compliance/system approval

Summary

Framework provides high level guidance

Does not endorse or propose any specific UTM design or technical solutions

Living document

UTM concepts, capabilities, standards still under development

Industry engagement remains critical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THANK YOU!