

# UTM Service Suppliers (USSs)

## *Organizational construct and approval processes*

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**ENAIRe** 

*with the support of*



**DGAC**  
MINISTERIO DE FOMENTO

**ICAO's DRONE ENABLE/3**

*"Facilitating Future Innovation"*

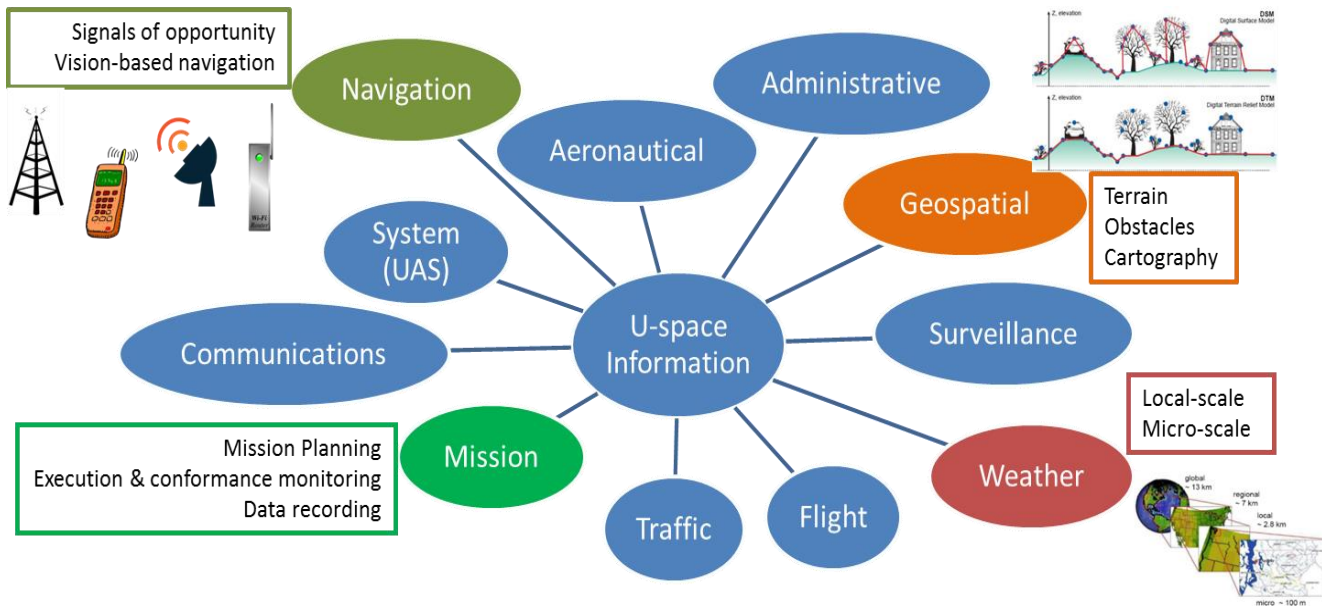
*Montreal, 13<sup>th</sup> November 2019*

# What is an USS?

## UTM Service Supplier introduction



- Responsible for the **provision of services**.
- Give **extra value** to its costumers.
- Competing in a **fair open market**.
- **Certified** for a certain type of operation and/or specific air space.



Source: IMPETUS, SESAR JU

# USS Figure

UTM Service Supplier introduction

## Role

- Provide services to drone operators.
- Mission specific oriented.
- Scalable operation.
- Detailed, diverse and dynamic.

## ANSP differences

- Services provided in a broader manner.
- Large scale.
- Rigid.
- Slow for new technical implementations.

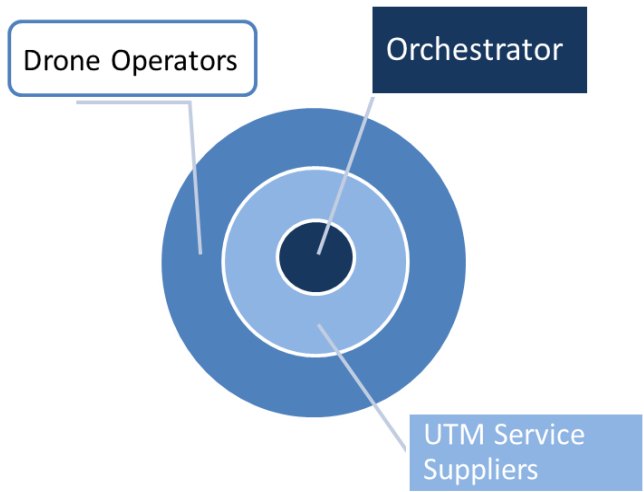
# USS Figure

## UTM Service Supplier introduction



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### ANSP differences

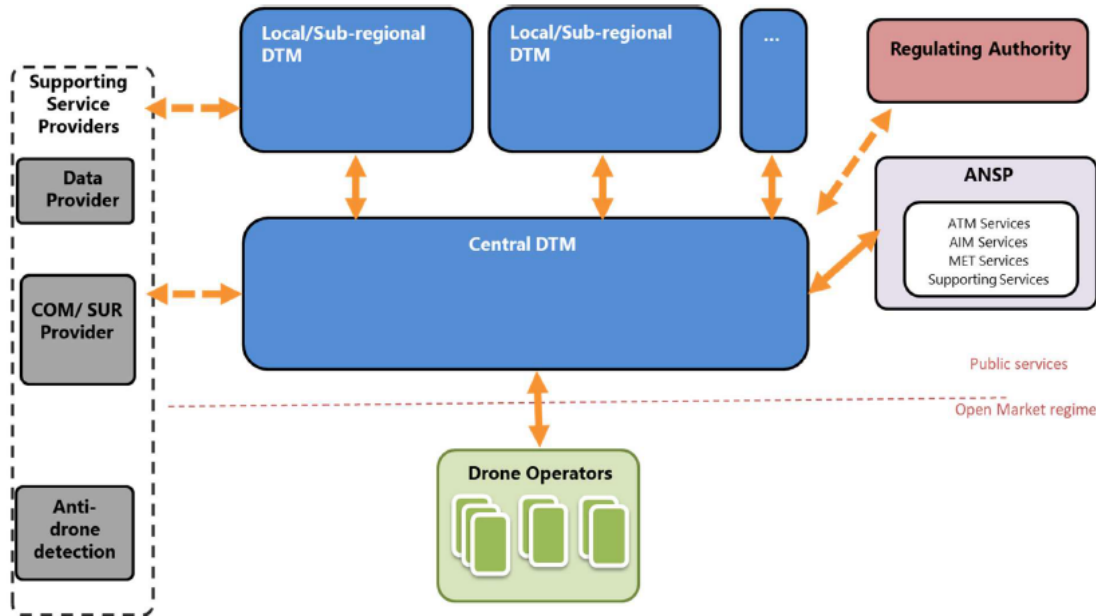
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# Architecture types

## Centralised



- **Characteristics:**
- 1 **central** platform.
- **All services** performed by the central entity.
- **ANSP** and **Authorities** connects to central platform
- **Limited open** market.

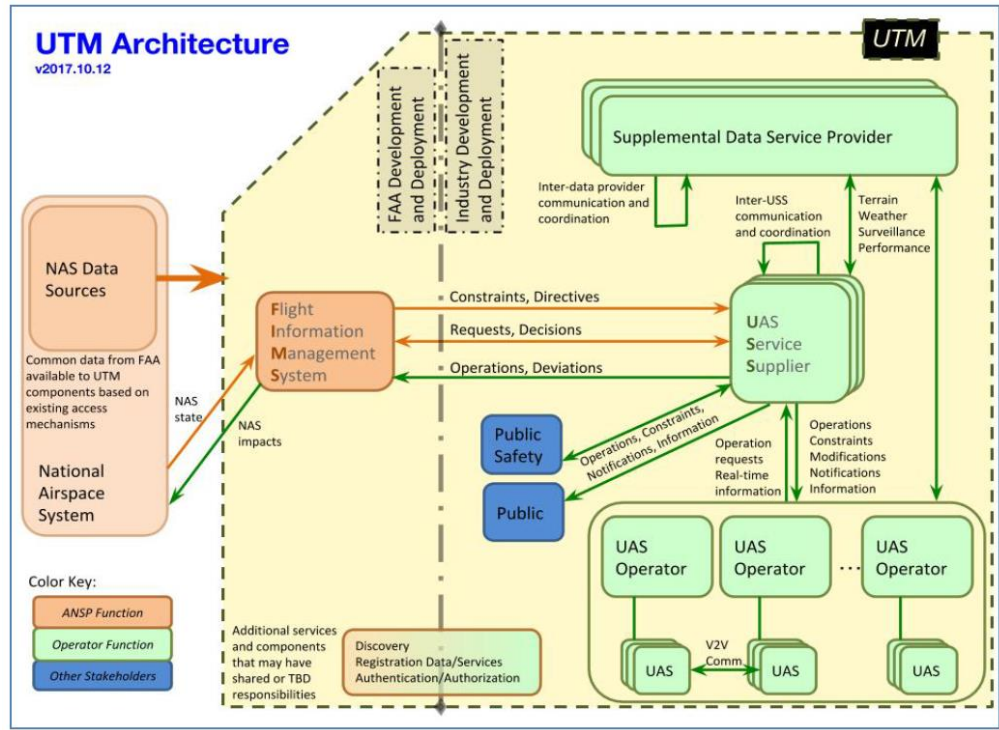


# Architecture types

## Confederated (liberal federated)



- **Characteristics:**
- FIMS role
- **Critical services** performed by **USSs.**
- **Coordination inter-USSs platforms.**
- Limited interaction with common information provider (CIF or FIMS).



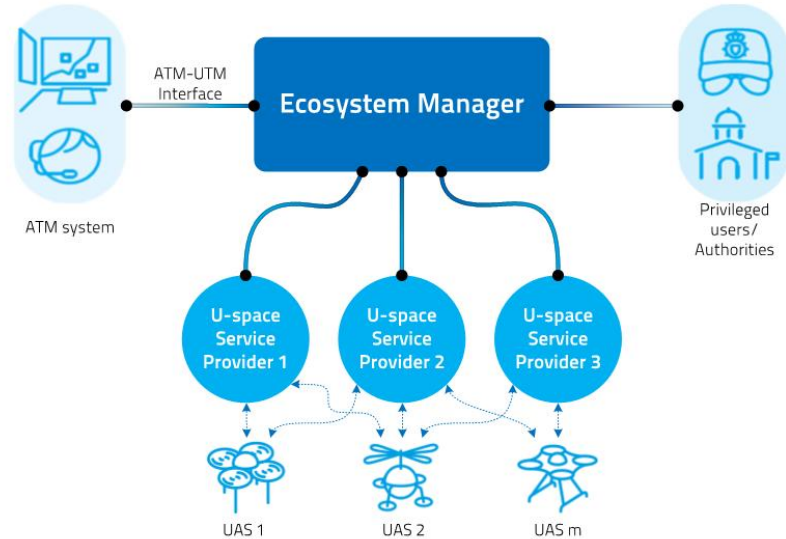
# Architecture types

## Federated



- **Characteristics:**

- 1 **neutral** central platform with critical services and **single point of truth**.
- **Non-critical services** performed by USSs.
- **Open** market.
- **Fair access** to the market for newcomers.

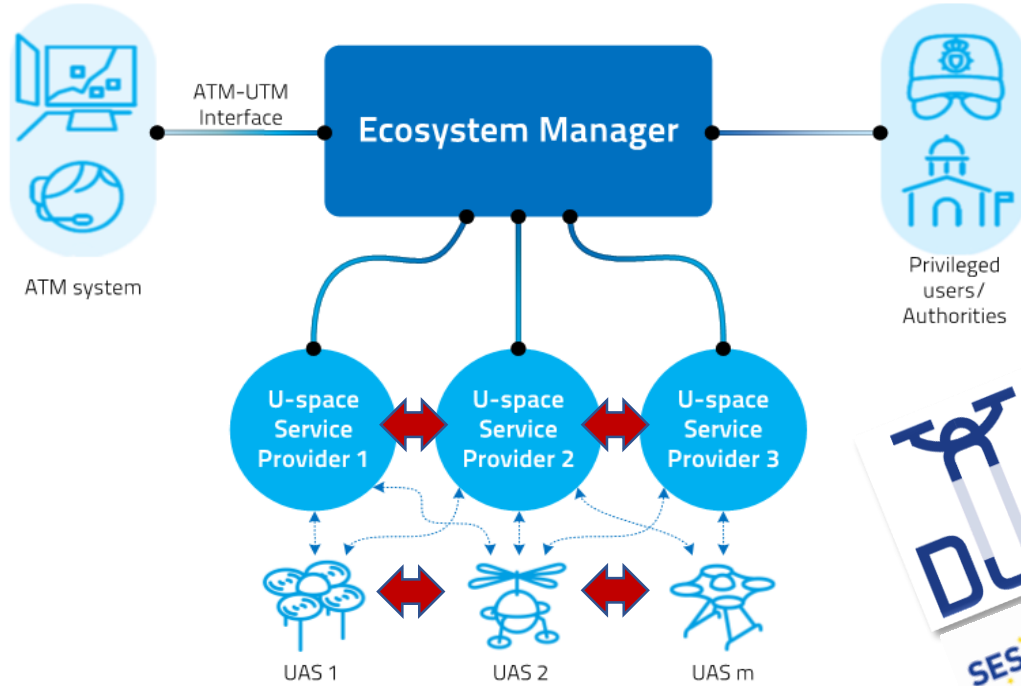


# Federated Architecture

## Detailed



There will be eventually more interaction between USP's & drones (V2V)

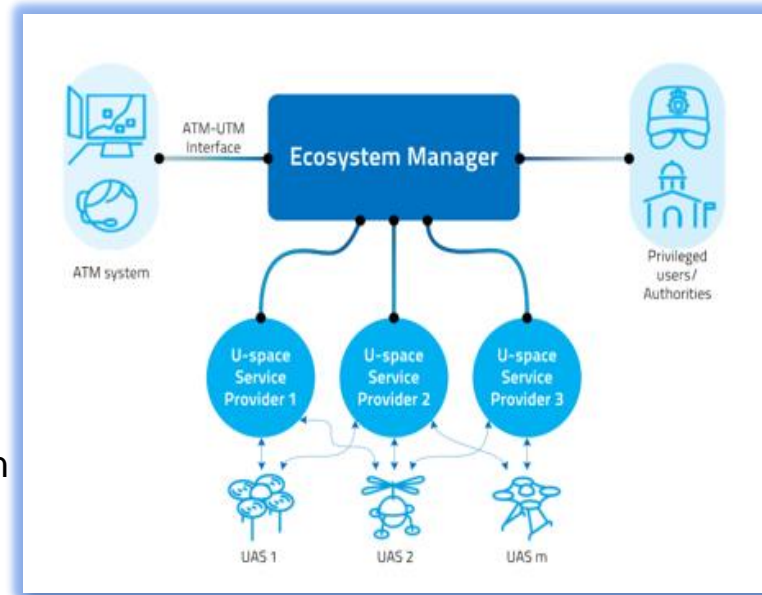




# Federated Architecture

## Benefits

1. The Ecosystem Manager host the common **core critical functionalities** for the U-space, interfacing with **manned ATM** system as single point of access and providing for data integrity to all users as **single point of truth**.
2. Provides for a **central legal entity bearing responsibilities and liabilities**.
3. Guarantees neutrality and hosting of critical U-space services by ESM, and **USPs are guaranteed equal and fair access**;
4. Requires **less effort for USP certification**;
5. **Easier deployment** for advanced U-space services.
6. **Military or Law Enforcement missions** will remain unknown to other users.



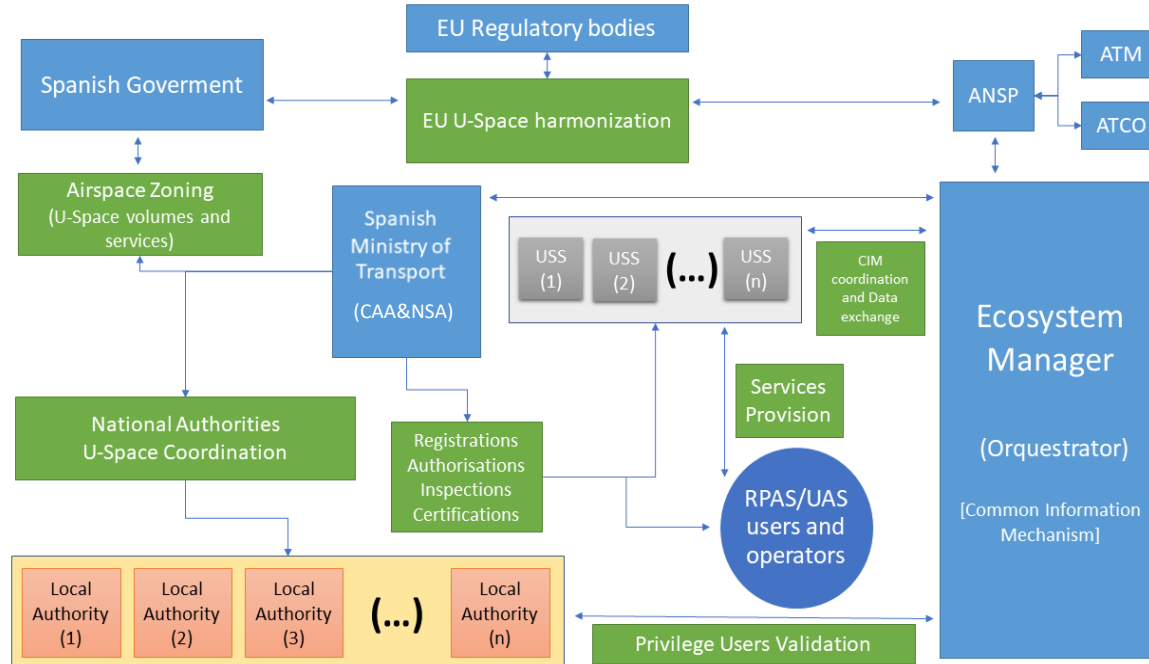
# European USS certification Requirements



- Stricter certification for the Orchestrator or the Ecosystem Manager.
- Less restrictive certification for USSs.
- Requirements focused on:
  - Compliance with CNS.
  - Interface standards.
  - Defined performance criteria.
- Service Level Agreements (SLAs) are highly relevant.
- Difficulties found in EU framework:
  - All USS certificates issued shall be mutually recognized by all EU member states.
  - Harmonized implantation plan.
  - Common framework and criteria goals.

# Certification

## Certification actors



# Certification

## Key points



- Competent authority designated at national level.
- Demonstrate that the USS have systems and equipment that guarantee UTM performance level.
- Financial stability and solvency.
- Comply with interoperability.
- Liability insurance.
- Any requirements depending on the final UTM framework.

# Standards

## Current situation

- EUROCAE, ASTM, ISO, EUROCONTROL, SAE, etc.
- **Coordination problems.** E-ident Standard example: ASTM F38 vs. EUROCAE wg-105 S32
- Important to rely on industry and administrations through **coordination groups** (EUSCG, ASD-STAN).

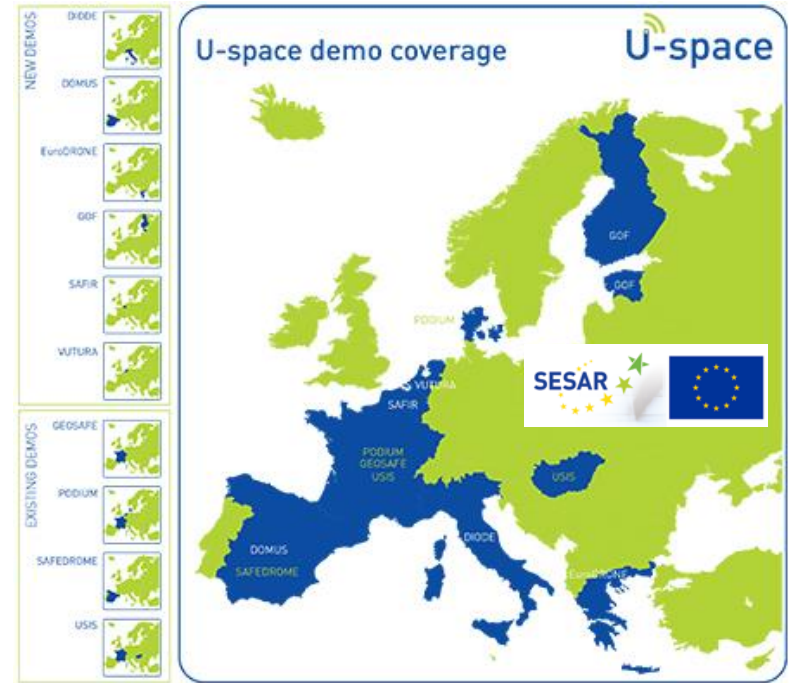


# Standards

Future situation



- Important source for U-space: **feedback** from research and demonstrators (European Commission, SESAR JU)
- ENAIRe's participation: DOMUS & SAFEDRONE



# Recomendations & Standards

## DOMUS & General SESAR JU Results

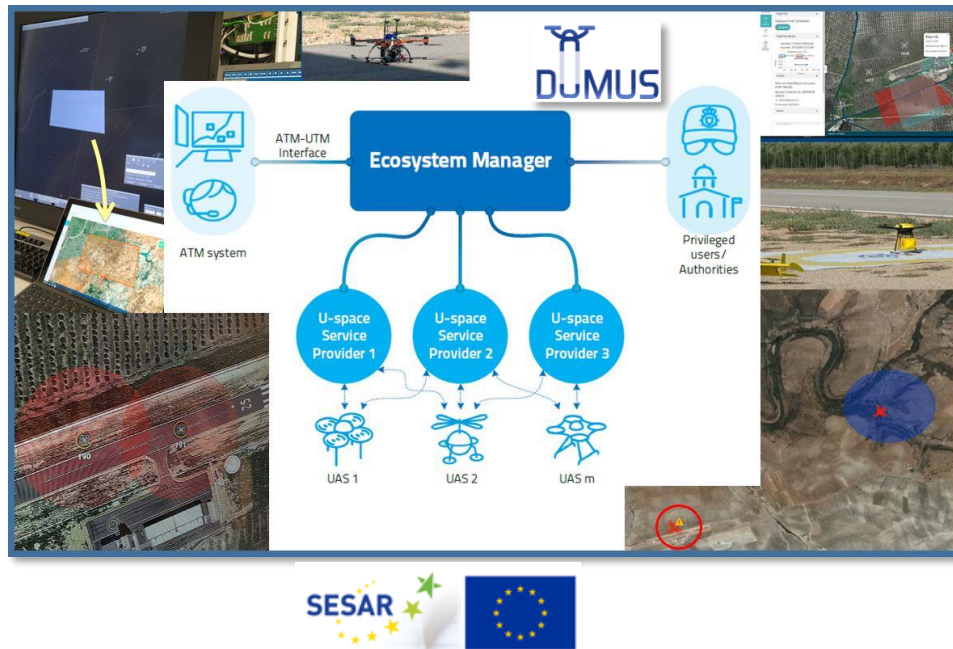
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UTM Service Suppliers (USS)

Organizational Construct and Approval Processes

- Initial Study Report Oct 2019
- Final Study Report Dec 2019
- SESAR JU's Consolidated Results
  - WAC @ Madrid (March 2020)









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1919 | 2019



AGENDA  
2030

Thank you!

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