

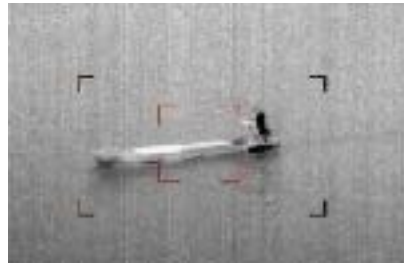
UAS surveillance at sea :

Musings on challenges encountered and the way ahead



Where we left off in january :

- Quadcopters are great but range and stay are limited;
- Fixed wing SUAS are a great upgrade from consumer drones;
- Professional version of “consumer” drones are a good “upgrade”;
- VTOL with HD EO/IR, automatic flight patterns/target following modes and longrange → interesting compromise!



UAS surveillance at sea



UAS in support of maritime surveillance (what, why, where, how)

What can you do ?

- 24/7/365 surveillance (RADAR, VHF, optical...) ; ✓
- Maritime Domain Awareness ;
- General maritime monitoring missions ; ✓
- SAR ; ✓
- vessel traffic monitoring ; ✓
- fisheries surveillance, cultural artefact protection (wrecks...),
protected marine areas surveillance ✓



From an experimental setup... to a robust operation (ongoing!)



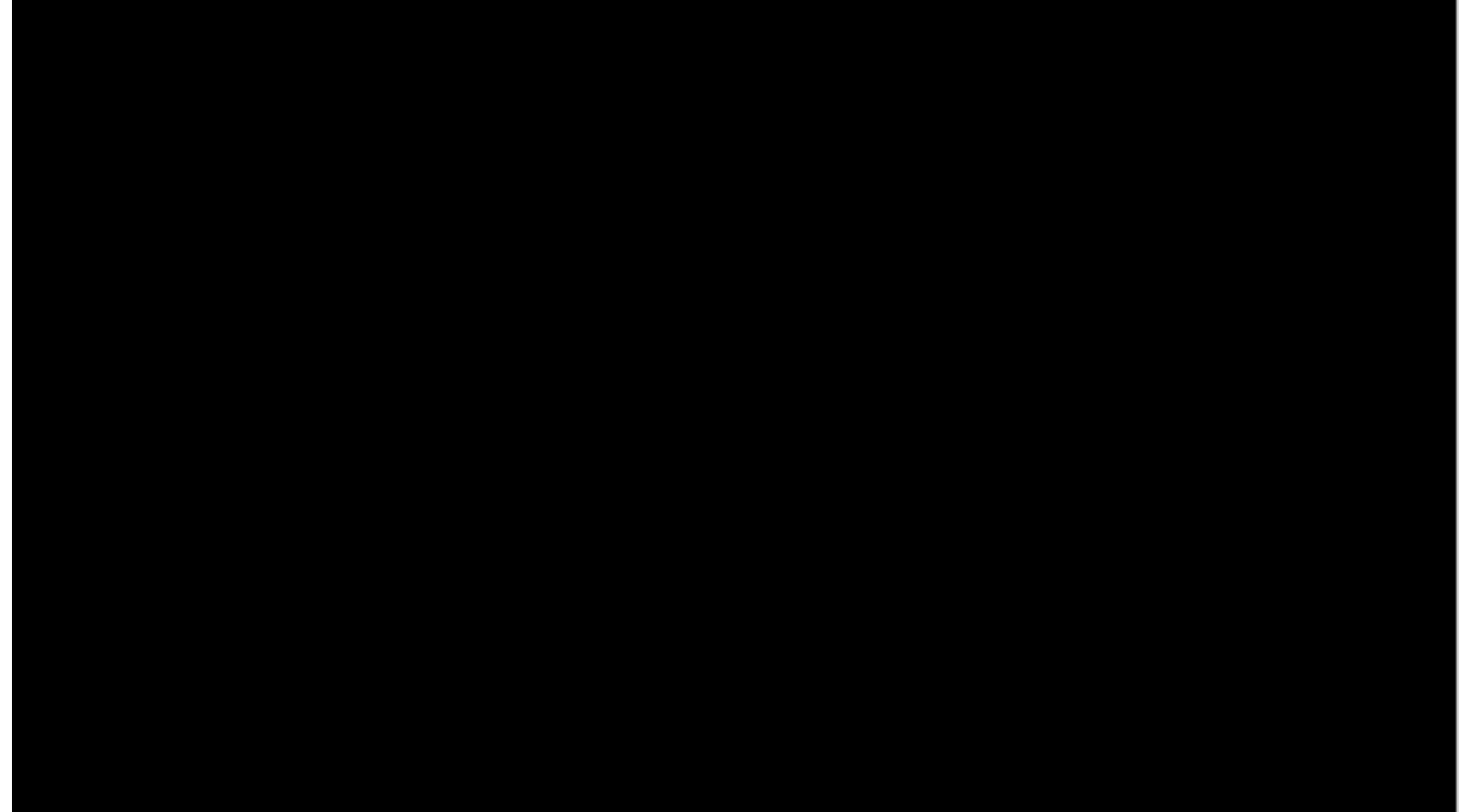
Be prepared for setbacks – many things can go wrong:

- Training;
- air safety management;
- HR;
- Weather;
- crashes! (none so far!)...
 -
 - No dedicated HR (coastal station operators)
 - Meteorological constraints
 - Starting with existing AIP supplement and building on it





From an experimental setup... to a robust operation (ongoing!)



Increased ability to:

- Detect, recon, identify
- Shadow
- Alert ;
- Prioritise.

→ **Ability to generate live feed to ops center + voice link** (proof of concept OK).

**Way ahead: rules, rules, rules! + HR.
Dedicated support structure.**



UAS surveillance



UAV	Lat	50° 41' 43,45"	Lon	1° 33' 52,36"	156 ft	Altanc	GPS Time	Zoom / Dir
Target	Lat	50° 41' 48,37"	Lon	1° 33' 54,04"	75 ft	0,1 NM	10/10/2023 12:41	

Coordinates system : Lat Long / WGS 84 EO sensor - protection





A trinity to consider in order to succeed : law, logistics and force generation

Main challenges:

- Regulatory framework (AIP SUP 223/2023 now allows 24/7 ops)
- New AIP SUP 2024/112 for coastal ops in Seine bay
- Sustaining permissive reg. framework;
- Maintaining air safety while developing ops envelope;
- Dedicated support structure (sort of)
- Trained personnel;
- Sustainable deployment rate.

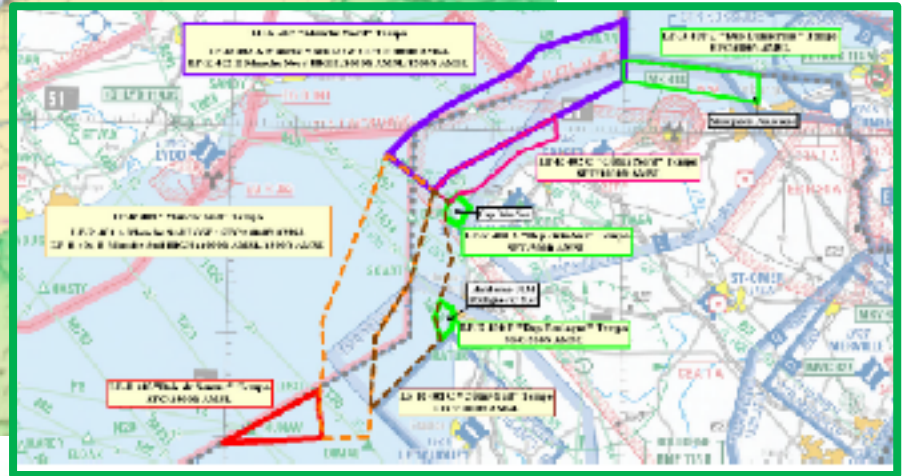
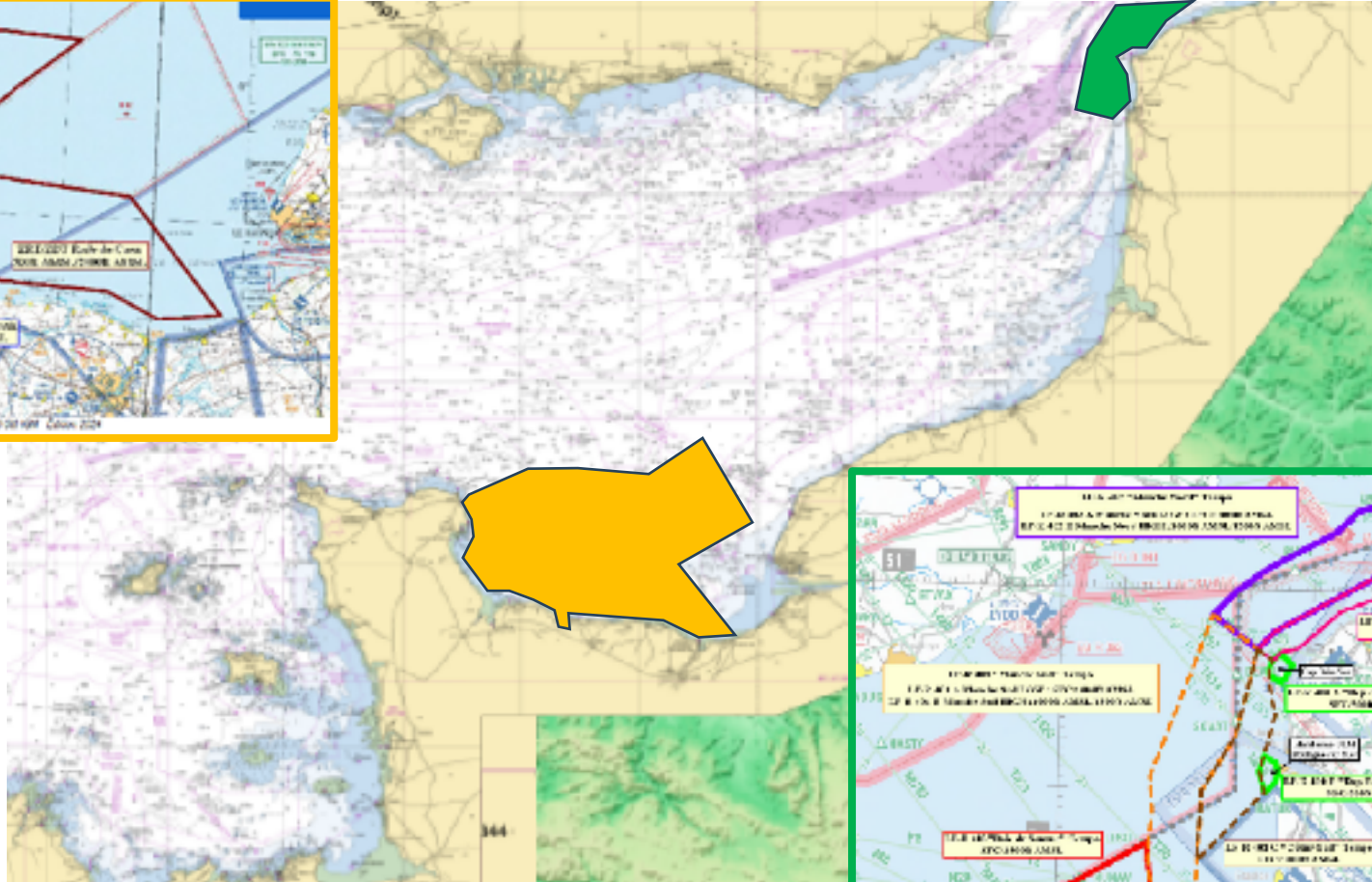




MINISTÈRE
DES ARMÉES

Liberté
Égalité
Fraternité

A trinity to consider in order to succeed : law, logistics and force generation



Maritime surveillance in the Channel – *done focus*



SUAS program: a real game changer

- SMDM (Navy mini drone system) = Survey copter ALIACA;
 - Channel and North Sea initial deployment = achieved;
 - **Additional deployment sites under development;**
 - HR costs VS operational capability gain;
- *worthy investment !*

Way forward:

- *Needs further interconnectedness (CIS)*
- *Other payloads (radar?)*
- *Regulatory environment*

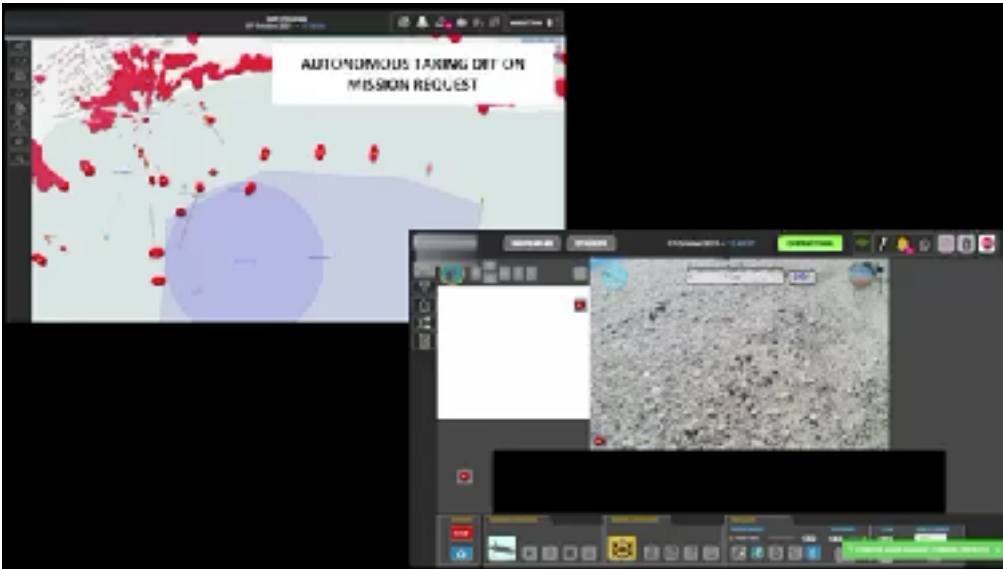


Maritime surveillance in the Channel



Way forward:

- *Further interconnectedness (CIS) – example of « off the shelf » solutions*
- *Further VTOL tests & acquisition ?*



Maritime surveillance in the Channel – the way forward

Future plans:



- Further develop commercial SUAS capability:
 - Target : +/- 20 machines consumer grade quadcopters (on par);
 - Train additional 50 operators;
 - ❖ **Attain 24/7/365 deployment capability**
- Initial MILSPEC SUAS capability:
 - 2 SURVEYCOPTER ALIACA (SMDM) systems delivered ;
 - Train additional 3 operators;
 - ❖ **50% deployment milestone**
- Still under consideration : COTS VTOL
 - compatible with FR regulatory framework;
 - Able to operate from populated areas & small take off/landing zones.



UAS surveillance at sea :

Musings on challenges encountered and the way ahead

