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Remote maritime monitoring

Challenges, lessons identified and possible ways ahead



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14 *semaphores*

Primary missions:

- 24/7/365 surveillance (RADAR, VHF, optical...);
- Maritime Domain Awareness
- general maritime monitoring missions

Secondary missions:

SAR, vessel traffic monitoring, fisheries surveillance, cultural artefact protection (wrecks...), protected marine areas surveillance...



Maritime surveillance in the Channel – the *status quo*



An HR and infrastructure intensive approach

- Coastal monitoring by semaphores / signal stations ;
 - 14 signal stations / semaphores = HR intensive +/- 140 personnel ;
 - RADAR + optical + networked surveillance system + comms...
 - All sensors exploited locally **and remotely**.
- **Paradigm change = leveraging networked capabilities ?**

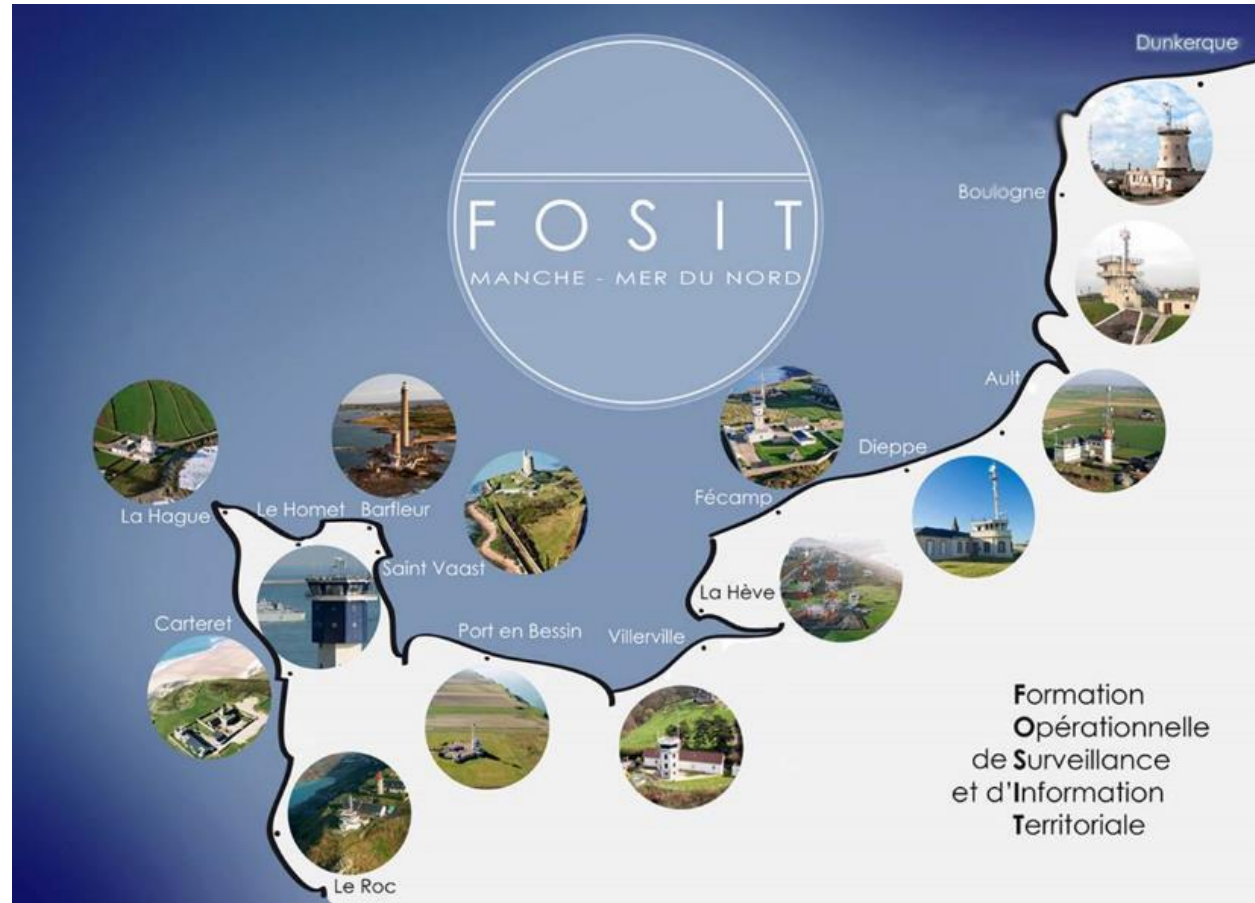




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Maritime surveillance in the Channel



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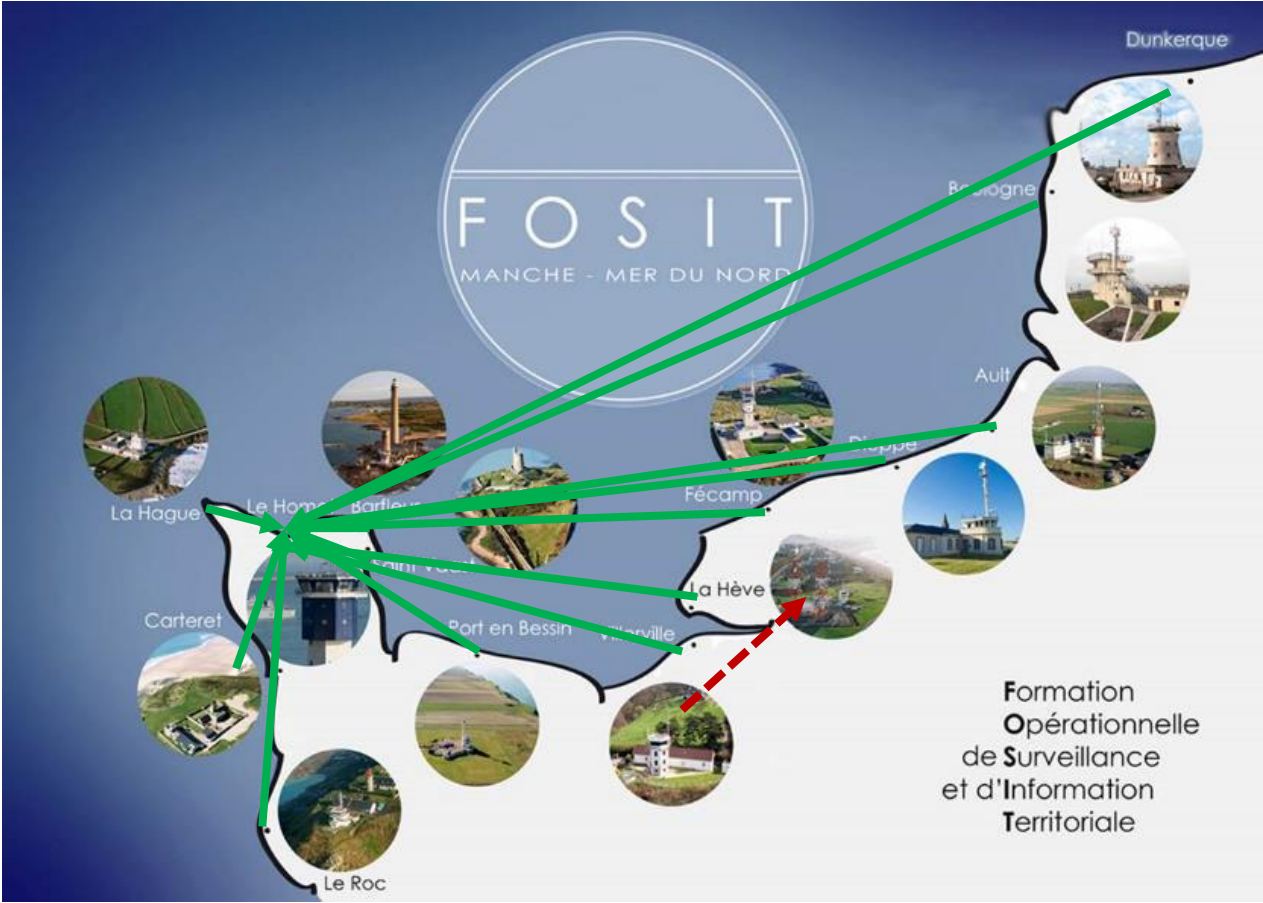
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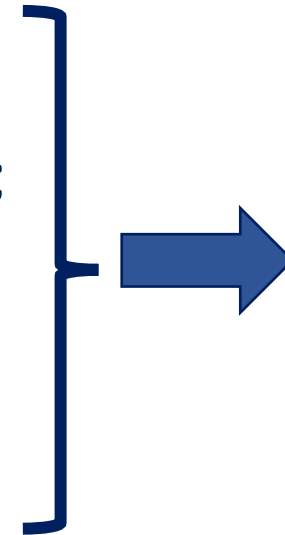
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Operational and infrastructural challenges / opportunities

Not all functions can be automated but...

- Surveillance sensors;
- Drones (consumer grade) + MILSPEC SUAS ;
- EO/IR systems ;
- Next gen. digital RADAR;
- AI/classification algorithms...



**Integrated
C2
=
Augmented
bandwidth
& decision
making**





Maritime surveillance in the Channel



From a manned to a remote surveillance station

Augmented bandwidth & decision making

- *Need to rethink the infrastructure and keep reversibility;*
- *Data handling / pipes;*
- *Screen real estate;*
- *Infrastructure (inhabited vs uninhabited), safety, security...*
- *Who watches the “watcher” (equipment)?*

Some jobs can't be automated or performed (too) remotely

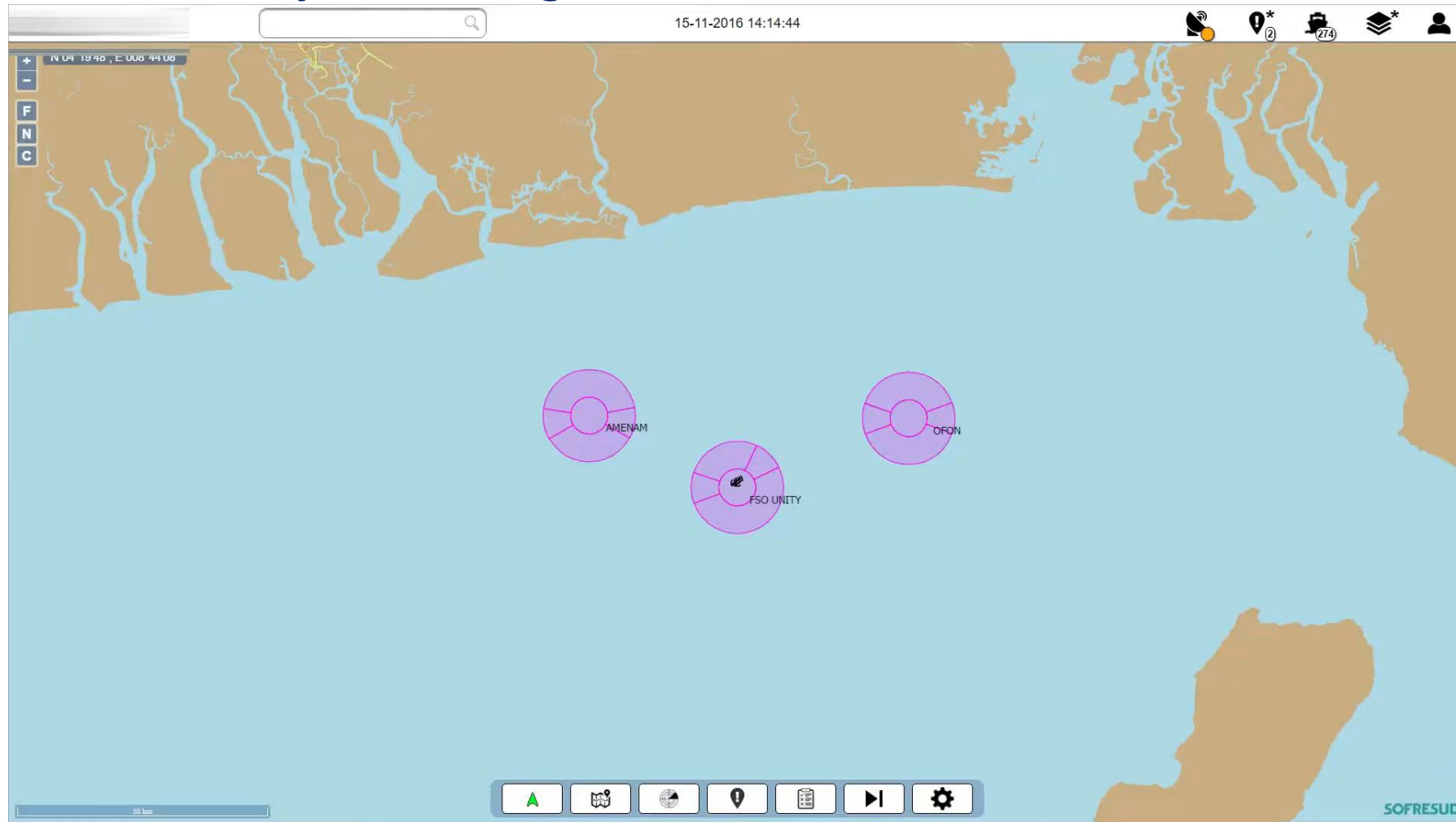




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Systems integration : the crux of the matter



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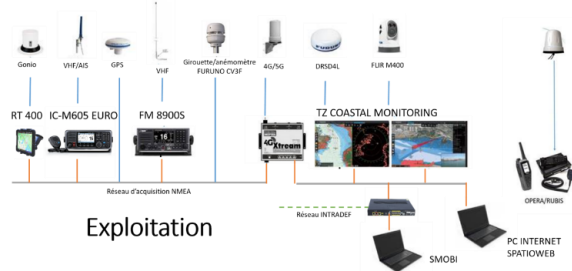
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Maritime surveillance in the Channel – current *key development areas*



Mobile semaphore



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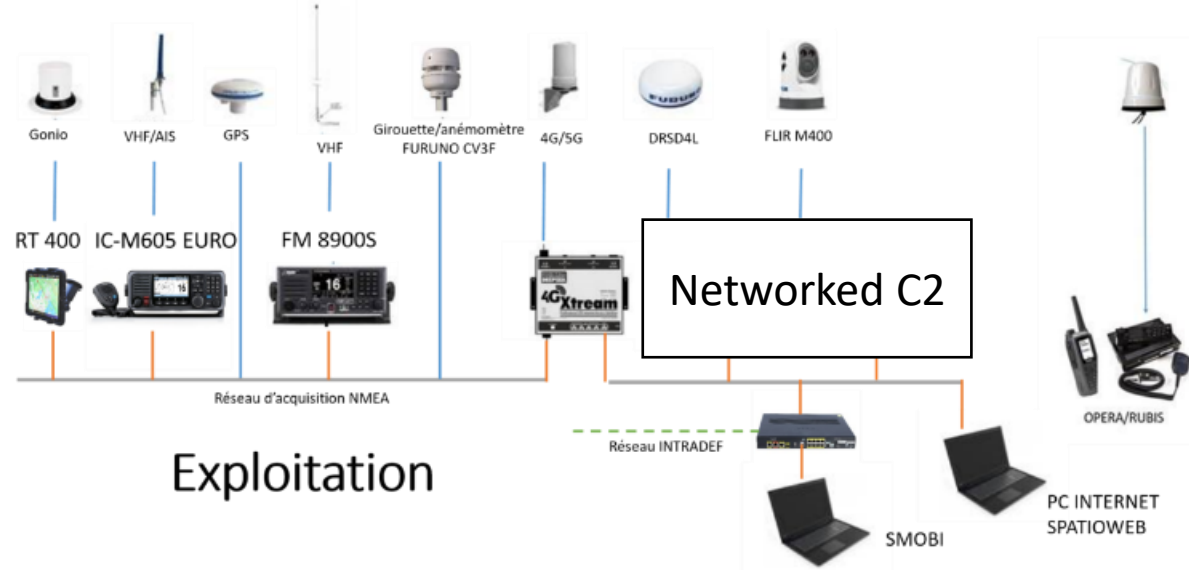
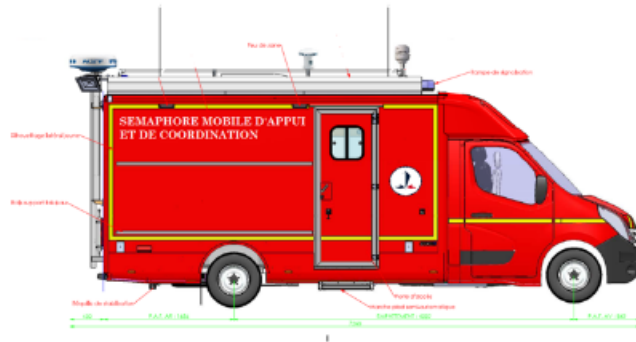
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Maritime surveillance in the Channel – current *key development areas*



Mobile semaphore



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Maritime surveillance in the Channel – *key development areas*



Centralised / program driven :

- Large scale projects / long term investments ;
- Standardised systems ;
- Top down.

Decentralised / innovation / partnership driven :

- Win-win industry-navy partnerships ;
- « One shot » deployment ;
- Very short capacity building timing.





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Thank you for your attention.



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