

DEME

# Opportunities & challenges for drones in offshore wind

Seminar Robotising in Offshore Wind  
Sharing Knowledge in Innovation Projects

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DEME Offshore  
16/09/2020



# WHAT DO YOU SEE?





# AGENDA

- 01 UAV OPPORTUNITIES

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- 02 UAV CHALLENGES

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- 03 PROJECT WITH SABCA

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1

# UAV OPPORTUNITIES

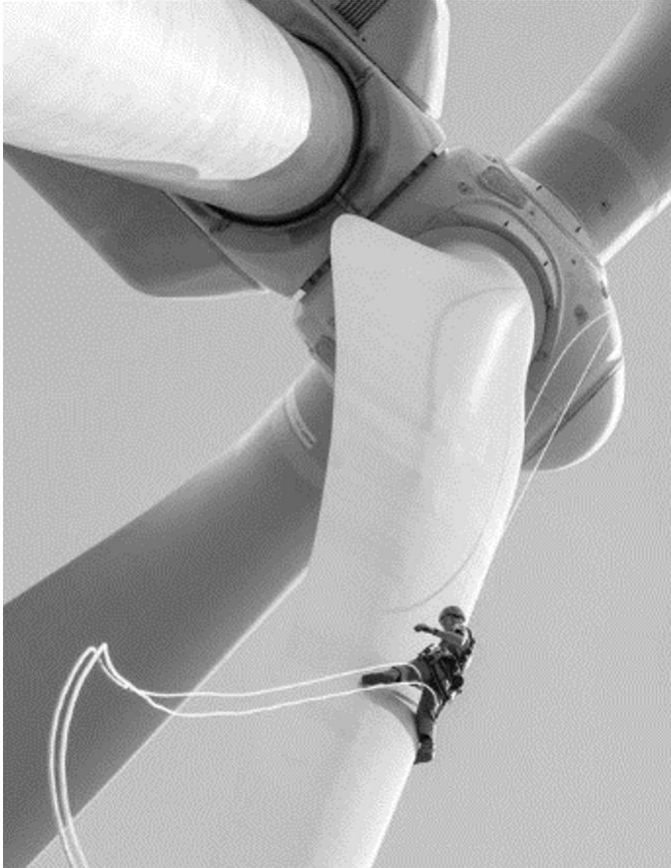


# ENVIRONMENTAL – MONITOR & PROTECT





## HEALTH & SAFETY – AVOID DANGEROUS, DIRTY & DULL JOBS





# HEALTH & SAFETY – AVOID DANGEROUS, DIRTY & DULL JOBS



## SECURITY – AVOID UNWANTED VISITORS

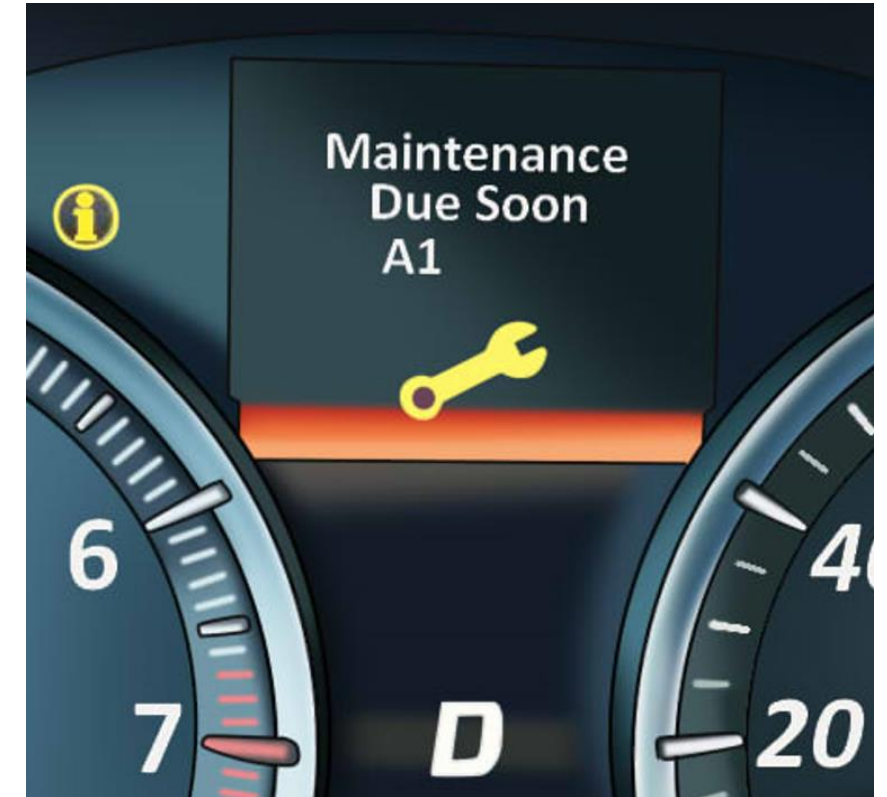
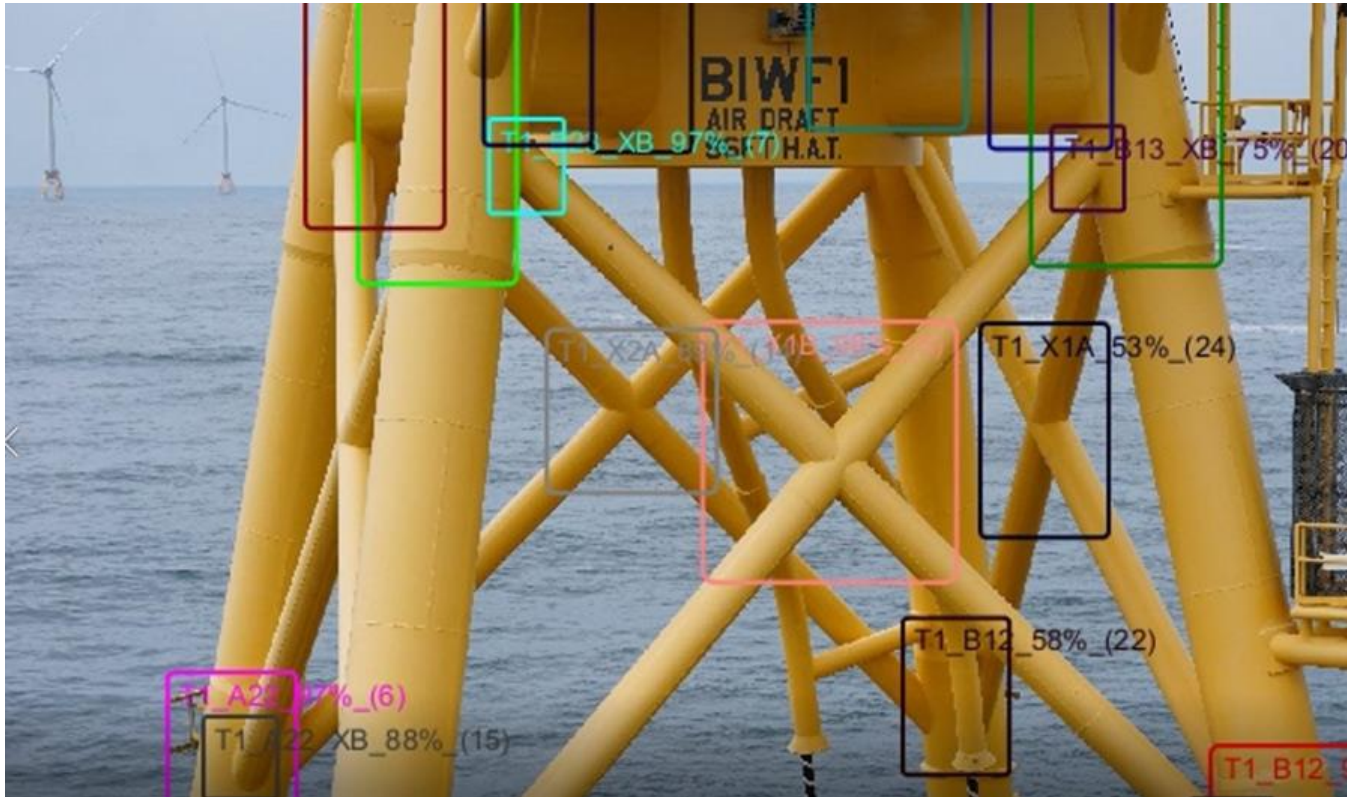




## EFFICIENCY – BE FASTER, BETTER, CHEAPER



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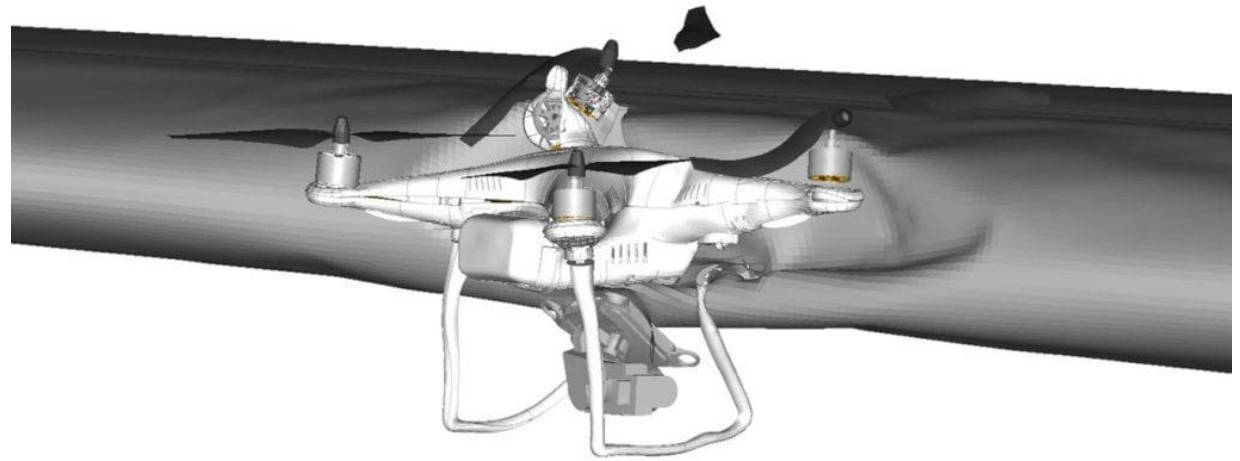




## UAV CHALLENGES



# HEALTH & SAFETY - NO ROOM FOR FAILURE





# SECURITY – RELIABILITY IS KEY

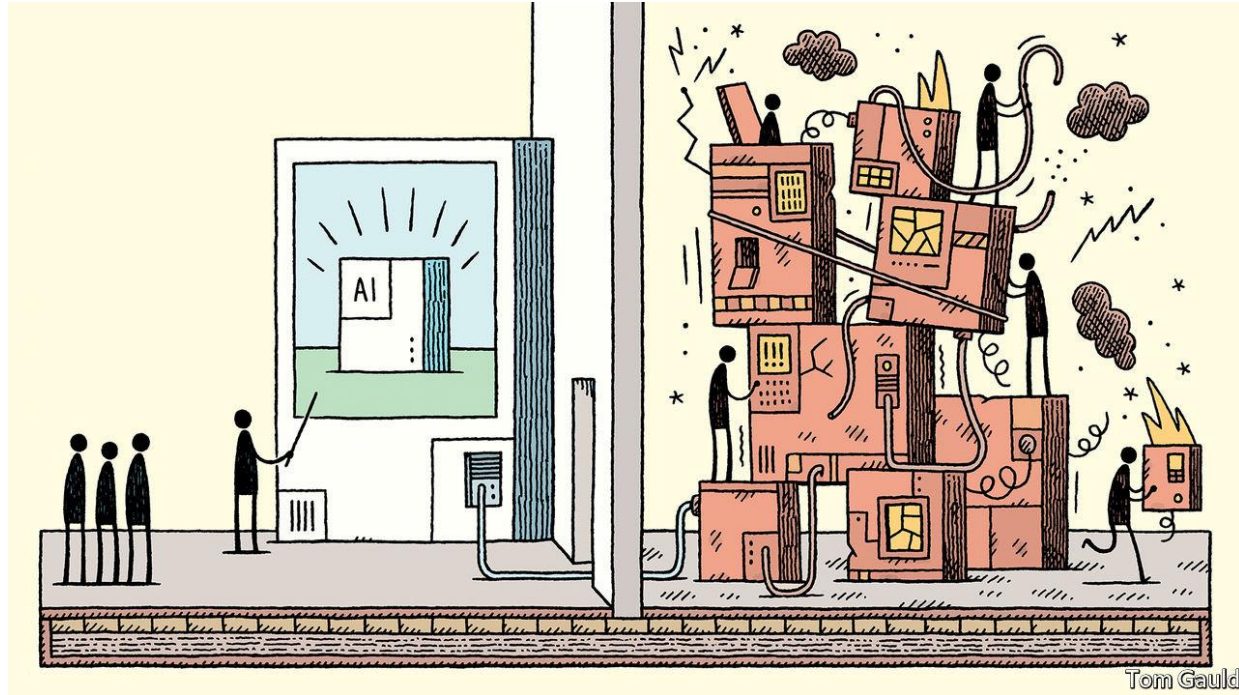


# EFFICIENCY – HARDWARE CHALLENGES





# EFFICIENCY – SOFTWARE CHALLENGES



Technology Quarterly

Jun 11th 2020 edition >

The  
Economist

Artificial intelligence and its limits

**An understanding of AI's  
limitations is starting to sink  
in**



# CONCLUSION ON UAVs IN OFFSHORE WIND

- Disruptive? NOT (YET) – Added value? YES
- Focus on QHSE & legislative framework
- Focus on technology improvement to (fully) replace humans in cost-effective way
- No "one drone fits all"

 HIGH EXPERTISE REQUIRED

 TRY, (FAIL), LEARN, IMPROVE, SUCCEED

**Innovation is  
the ability to convert  
ideas into invoices.**

[L. Duncan]







3

PROJECT  
WITH SABCA



# SABCA: EXPERIENCED PARTNER FOR ALL-IN-ONE UAV SOLUTIONS



- Belgian company founded in 1920
- Established actor in **aerospace industry**
- Provided of **all-in-one** UAS solutions
- Focus on **safety-critical** missions
- Experience in **fully autonomous** UAV flights

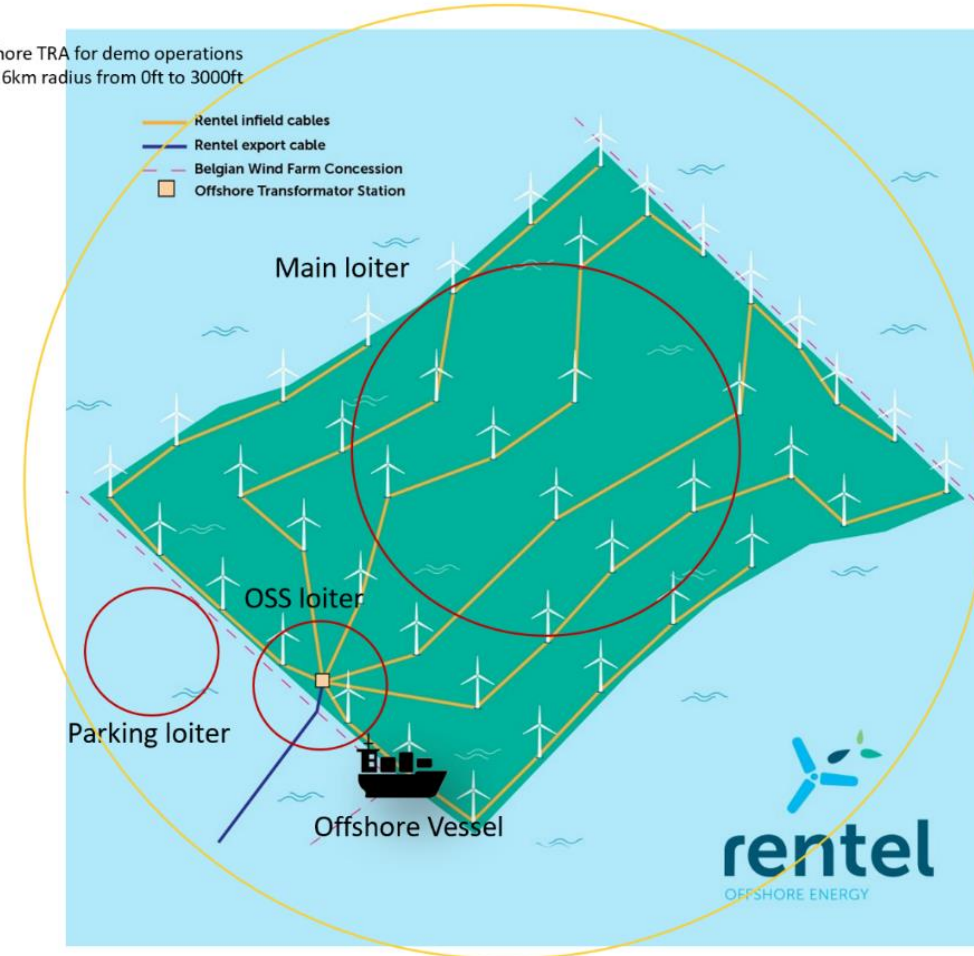




# OCTOBER 2020: FURTHER TESTS ON RENTEL OWF IN BELGIUM



Offshore TRA for demo operations  
6km radius from Otf to 3000ft



# EQUIPMENT



**1 x fixed wing drone**

3.3m wingspan – 22.5kg –  
100km range – 16h  
endurance - camera with  
object tracking



**1 x multicopter**

0.9 x 0.9m –  
12.5kg – 30min  
endurance  
(rechargeable)



**1 x CTV with multicopter  
landing system**





# DEMONSTRATION TESTS



SAFETY



SECURITY



ENVIRONMENTAL



INSPECTION



DRAFT VIDEO, TO BE UPDATED ON  
15/09 WITH NEW VIDEO FROM PRE-  
TESTS DONE 10/09



**S A B C A**

THANK YOU FOR YOUR ATTENTION

Questions?

Feel free to contract  
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