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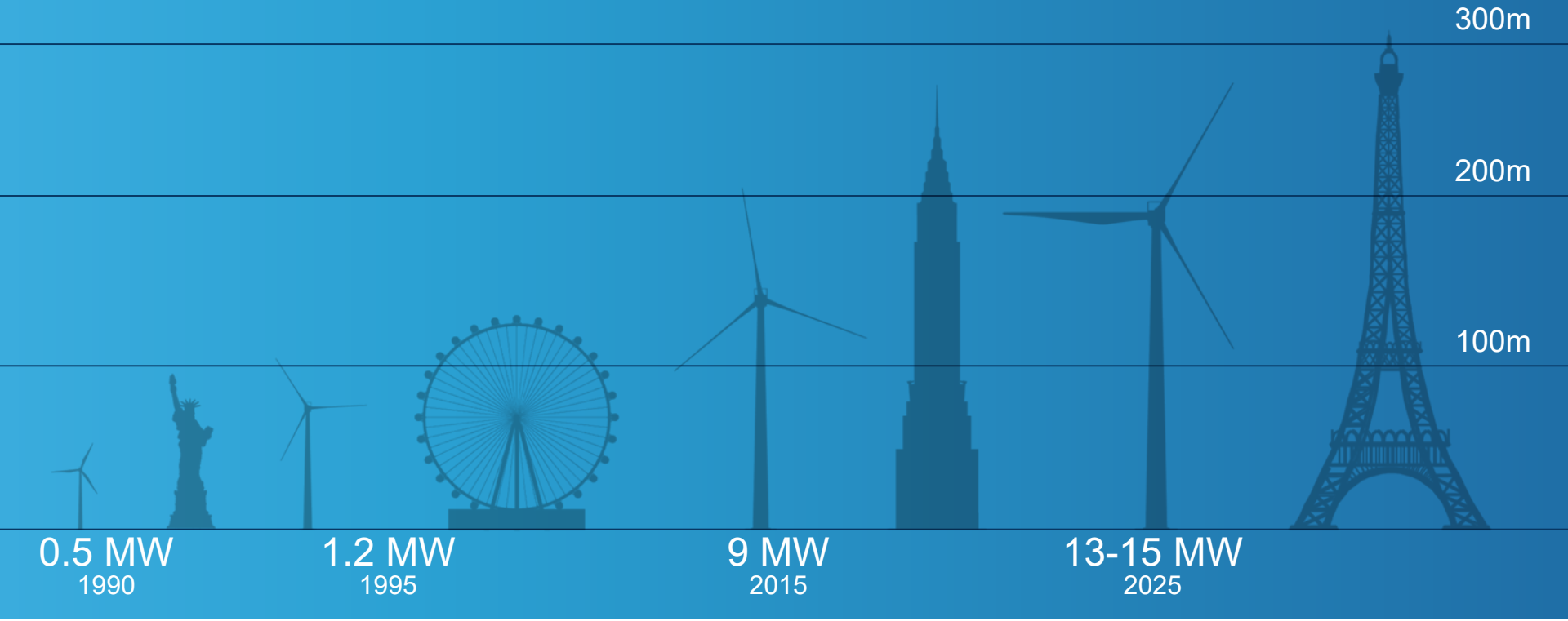
ROBOTIC BLADE CARE SYSTEMS

With the contribution of the European Maritime and Fisheries Fund of the European Union

Evolution of wind turbine heights and output



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Wind turbine blades require maintenance

Leading edge erosion

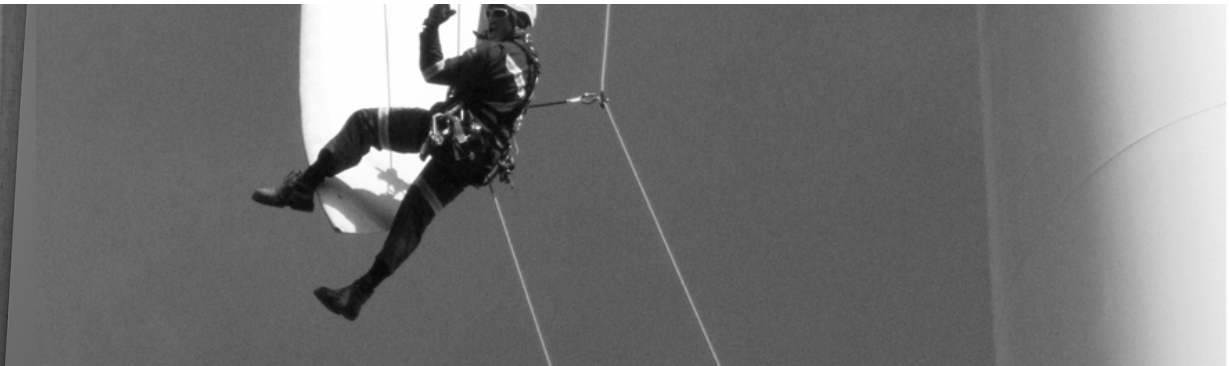
Lightning damage

Harsh environments

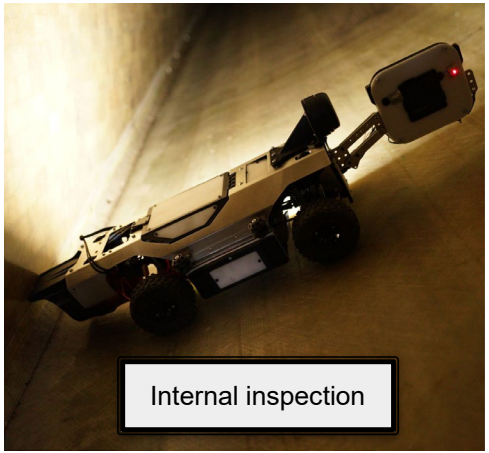
Bugs, dust, algae, resin

Currently blade maintenance is
MANUAL AND DANGEROUS

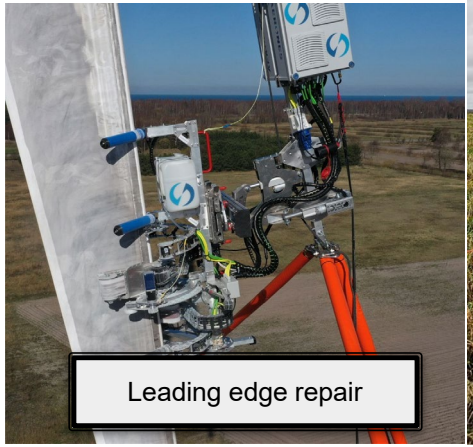
Higher downtimes and reduced
maintenance window leads to
HIGHER DAY RATES = LOST REVENUE




HOW DOES
IT WORK?


Internal inspection


LPS & troubleshooting


Leading edge repair


Positioning winch


Visual inspection


Drainage cleaning


Blade cleaning


Lifting winch

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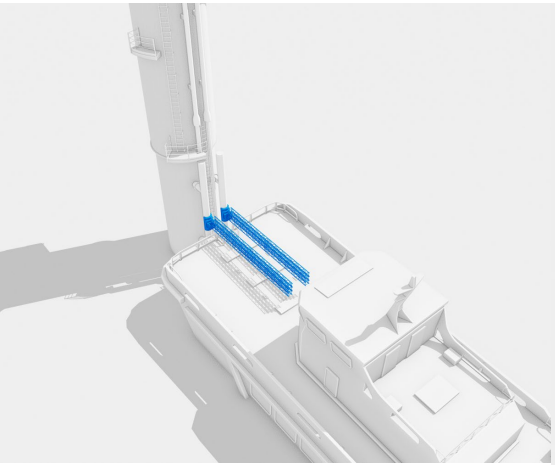
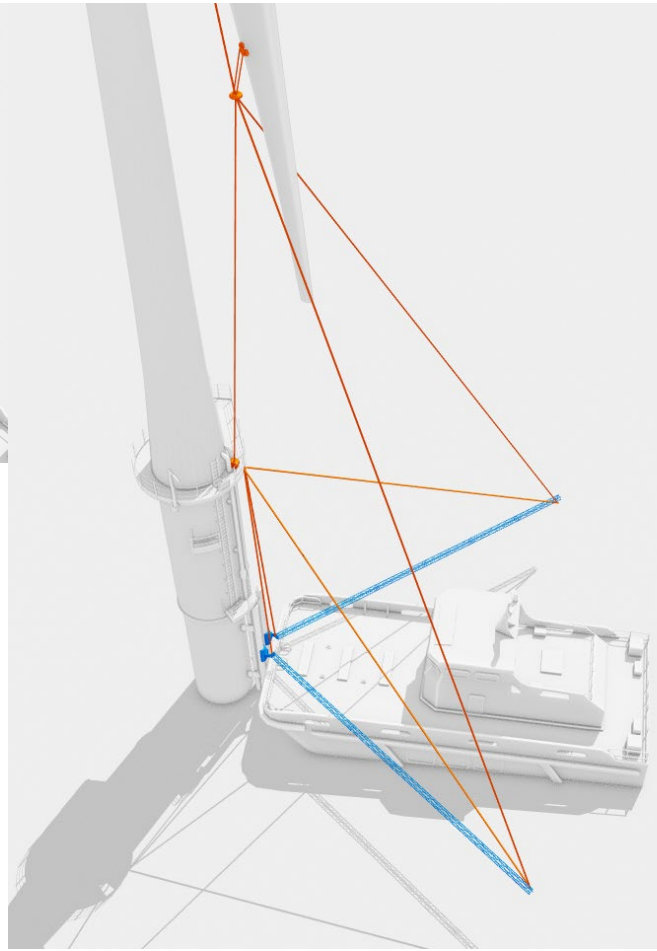
Offshore Robotic Wind Turbine Blade Care System





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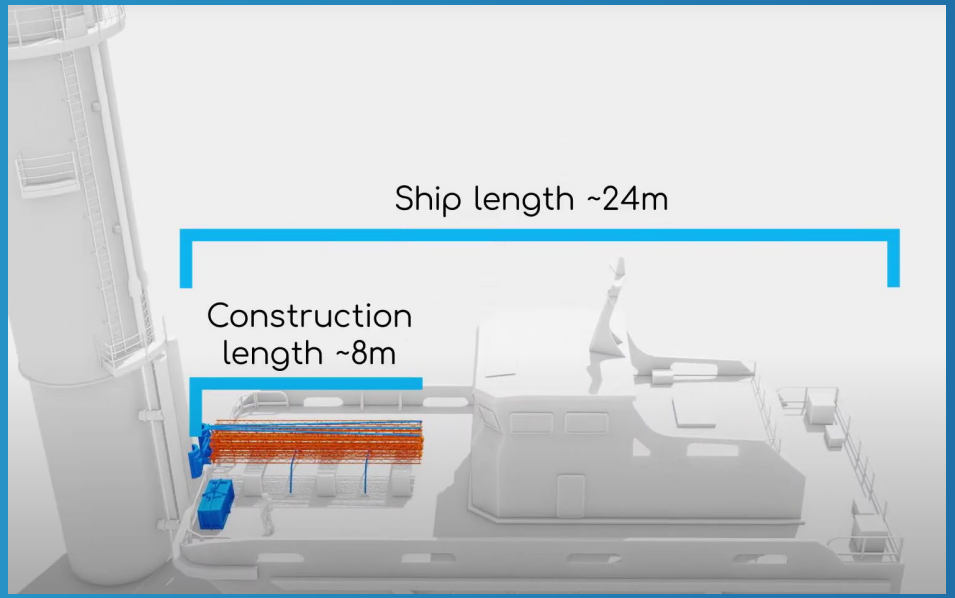
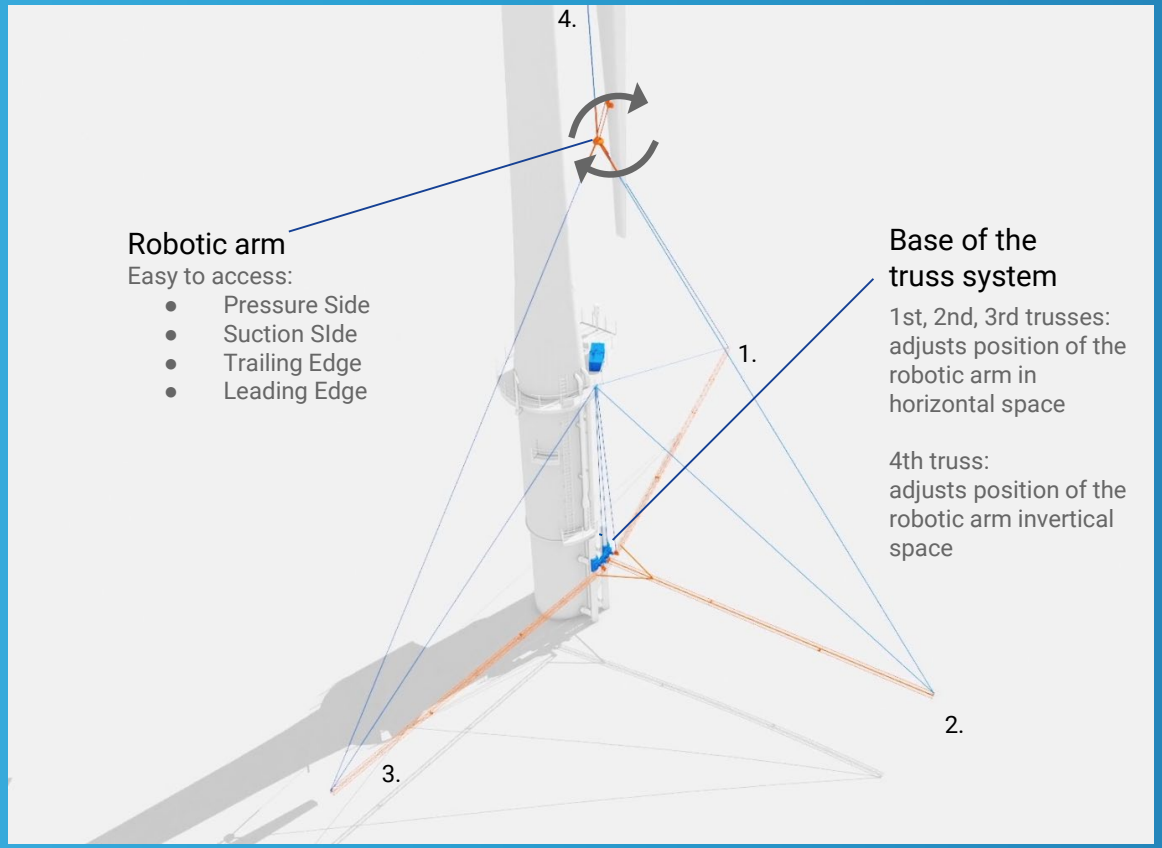
Aerones setup on Crew Transfer Vessel for offshore



Offshore: How it works



Fast

Can move with the speed of 4 meters per second

Safe

No people hanging in the ropes

Precise

Precision up to 1 mm

INCREASED WIND TURBINE MAINTENANCE EFFICIENCY :

- Availability for preventive maintenance
- Extended lifetime of the wind turbines
- Less travel of vessels for the maintenance
- Highly improved speed of the services
- Less idle time of the turbines and more frequent services
- High cost savings for the maintenance services

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Environmental impact

Decarbonizing economy or reduction of CO2

More renewable energy produced and less CO2 emissions to provide maintenance.

Efficient offshore turbine maintenance services allows to emmit 4 times less CO2 than the standard methods.

CO2 emission reduction up to 6,400,000 t per year as a result of the improved WTG efficiency.

Waste reduction via offshore wind turbine lifetime prolongation

Many components are made out of fiberglass or carbon fibre composites that are very difficult to dispose of to recycle.

Without proper maintenance, turbine energy production efficiency is significantly reduced.

Proper, cost effective and efficient maintenance allow to keep up the efficiency and also extend the lifetime.

Reduce marine pollution & diminish the environmental footprint

Frequent maintenance allows for less plastic waste from parts of the blades breaking off.

Less travel of vessels for the maintenance services.

Avoided pollution of the damages because of the lightning strikes by providing proper inspections of protection system

Energy Security

Wind energy is composing a significant part of the total energy market in Europe and offshore wind installations are rapidly rising.

Technology will allow for improvements of power efficiency and for increasing the share of locally-sourced wind-power and renewables making EU less dependent on imported energy.

Thank you!

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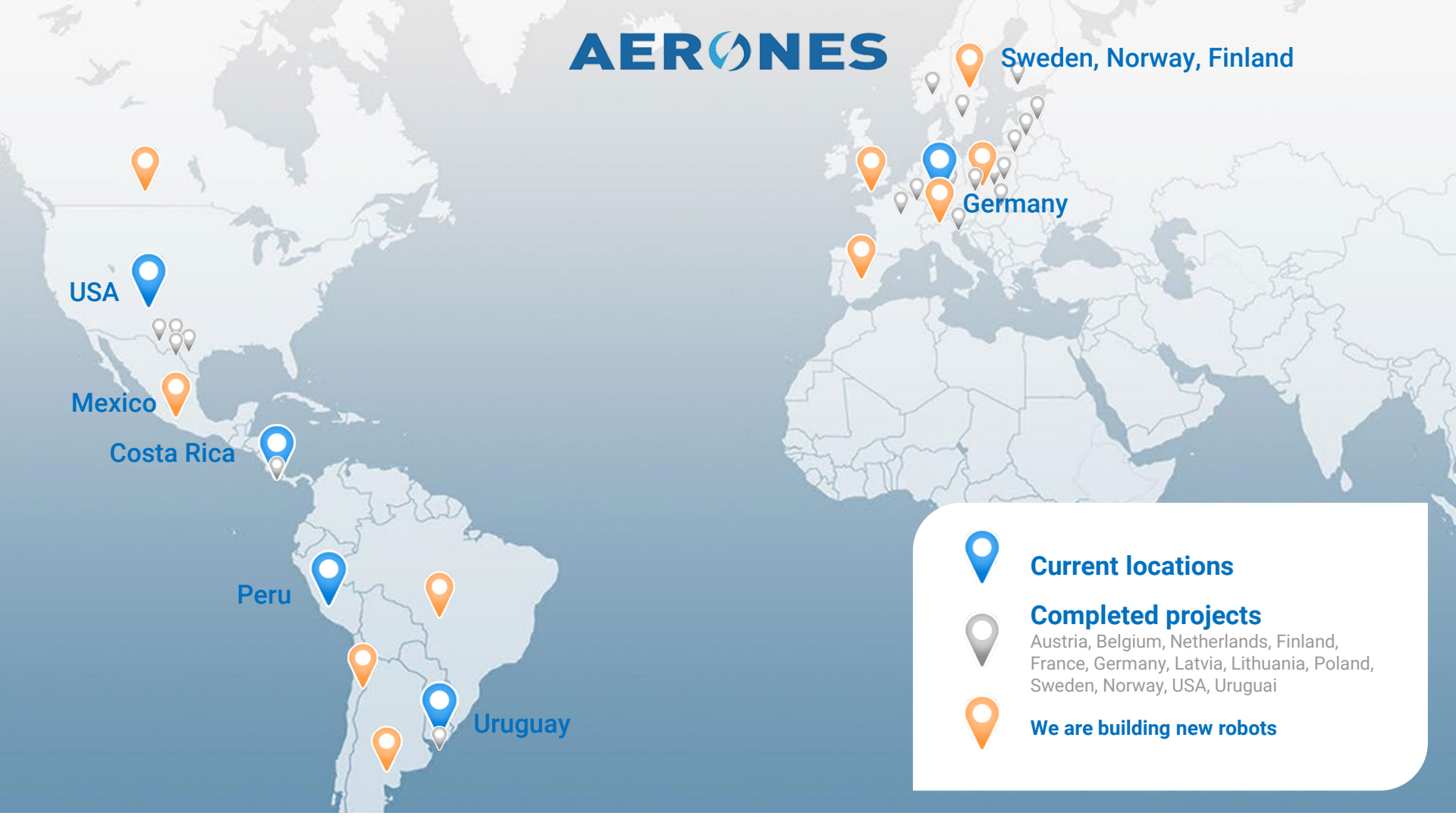
https://offshore.aerones.com/

With the contribution of the European Maritime and Fisheries Fund of the European Union


LPS test + drainage cleaning
IN LESS THAN 2 HOURS


AERONES
Sweden, Norway, Finland
Germany
USA
Mexico
Costa Rica
Peru
Uruguay
Current locations
Completed projects
Austria, Belgium, Netherlands, Finland, France, Germany, Latvia, Lithuania, Poland, Sweden, Norway, USA, Uruguai
We are building new robots

Our experience

2100+

Blades serviced

7000+

LPS receptors tested

Manufacturers:

ENERCON ENERGIE FÜR DIE WELT · GE · NORDEX · acciona Windpower · REPOWER · SENVION wind energy solutions · SIEMENS Gamesa RENEWABLE ENERGY · SUZLON · Vestas

Countries:

Austria · Belgium · Costa Rica · Finland · France · Germany · Latvia · Lithuania · Poland · Sweden · Uruguay · USA

Completed Projects for:

ABO WIND · AREVON · CMI ENERGIA · EDF renewables · enel Green Power · ENERTRAG · GE · KURLAND ENERGY SYSTEMS GREEN ENERGY FOR EACH HOUSE · NORDEX · acciona Windpower · REPROJEKT GmbH Sachverständigenbüro für Windkraft · HYÖTY TUULI · TAALERI ENERGIA · Verbund · Vestas · windkraft SIMONSFELD AG · wpd windmanager

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