



# RealTide & MONITOR Workshop



EWTEC Conference  
Plymouth, 7<sup>th</sup> September 2021  
17:00 – 18:30



# Agenda

- **PART 1 – PROJECT OUTLINES**

- REALTIDE - Stéphane Paboeuf<sup>1</sup> & MONITOR - Michael Togneri<sup>2</sup>

- **PART 2 – PERFORMANCE IN TIDAL ENERGY**

- FMEA/RAM Assessment and VMEA Comparison of results and applicability - Vincent Le Diagon<sup>1</sup> and George Pexton<sup>2</sup>
- Site Characterisation - Brian Sellar<sup>1</sup>
- Tank Testing by David Ingram<sup>1</sup> and Gregory Pinon<sup>2</sup>
- Modelling & CFD simulations by Sébastien Loubeyre<sup>1</sup> and Iestyn Evans<sup>2</sup>

- **PART 3 – IMPACT OF IMPROVEMENT ON CHARACTERISATION AND MODELLING**

- Cost reduction & technico-economic demonstration - Jan Erik Hanssen<sup>1</sup> and Mitra Delivand<sup>2</sup>
- Standardisation - Stéphane Paboeuf<sup>1</sup>
- Reality bites: the challenge of adapting your device in a real site by Erwann Nicolas<sup>12</sup>

- **PART 4 – PANEL DISCUSSION AND Q&A**

<sup>1</sup> RealTide

<sup>2</sup> Monitor

# Part 1

Project Outlines 1700-1710



This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 727689



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# RealTide Project Presentation

## Stéphane Paboeuf

### Bureau Veritas Marine & Offshore

# RealTide Project

**REALTIDE: Advanced monitoring, simulation and control of tidal devices in unsteady, highly turbulent realistic tide environments**

- **Objectives:** to identify main failure causes of tidal turbines at sea and to provide a **step change** in the design of key components, namely the **blades** and **power take-off systems**, adapting them more accurately to the **complex environmental conditions** of real tidal energy sites.



**2018-  
2021  
5 M€**



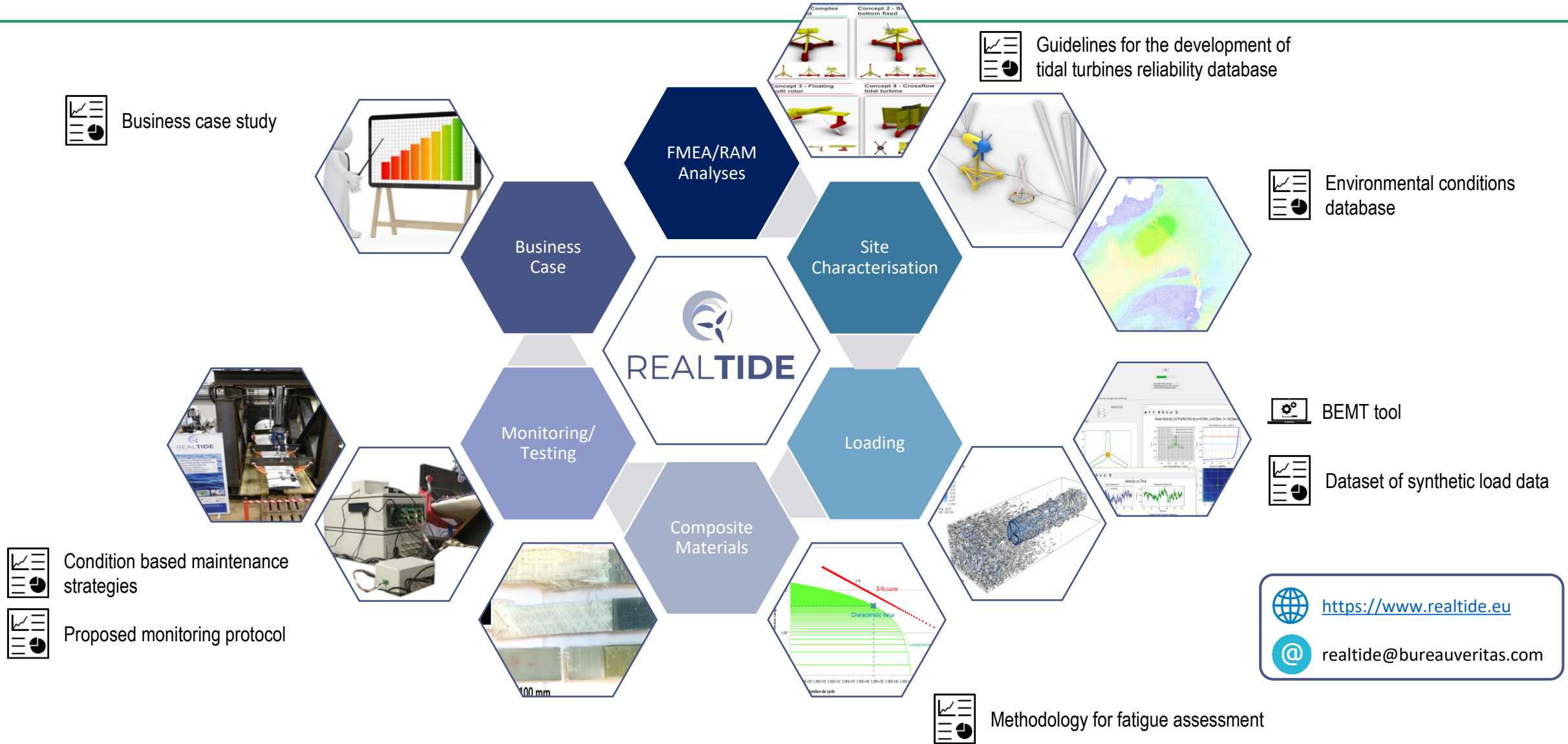
**20 Public  
Reports**



Horizon 2020 research and  
innovation programme under  
Grant Agreement n°727689



# RealTide Project



<https://www.realtide.eu>

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## Overview of MONITOR project

Michael Togneri

Swansea University

# MONITOR project

## MONITOR

- The MONITOR project is investigating the reliability of TECs
- Uses “multi-model” approach to tie multiple sources of test data into a central reliability model
- Output will be a tool for predicting reliability of TEC blades/structures

## PROJECT TEAM

- Industrial-academic collaboration with partners across Atlantic coast of EU





# Why study reliability?

- Early stage tidal costs dominated by O&M
- Two ways to reduce O&M costs:
  - Cheaper maintenance
  - Less maintenance
- More reliability  $\Rightarrow$  less maintenance

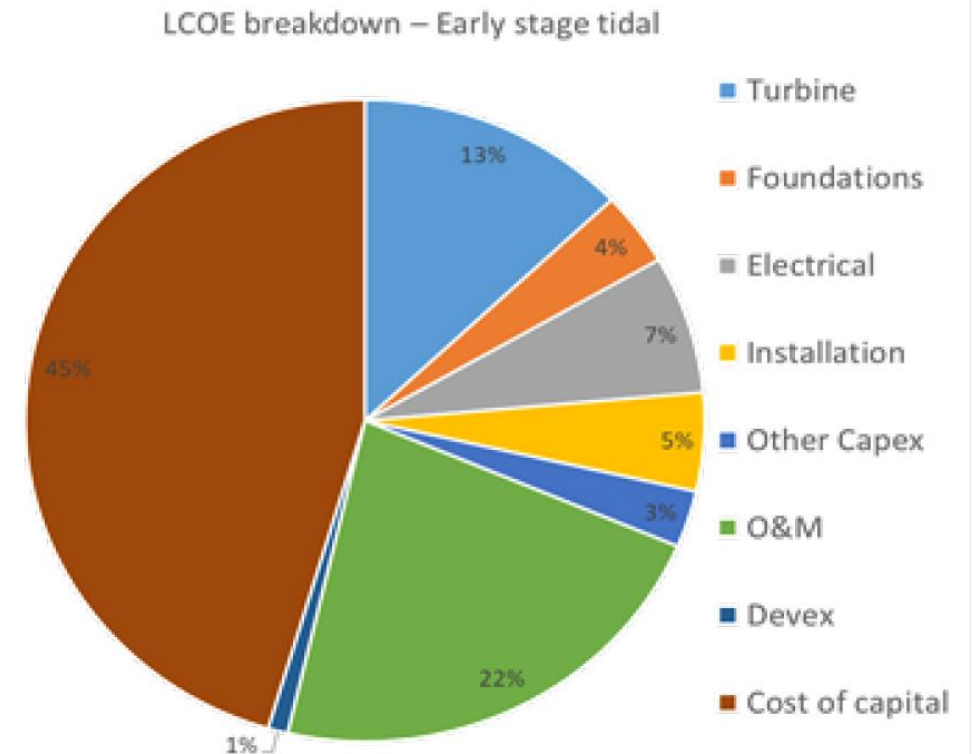


Image credit: M. Noonan, Catapult ORE “Tidal Stream: Opportunities for Collaborative Action”, Feb. 2019

# MONITOR partners



# MONITOR structure

