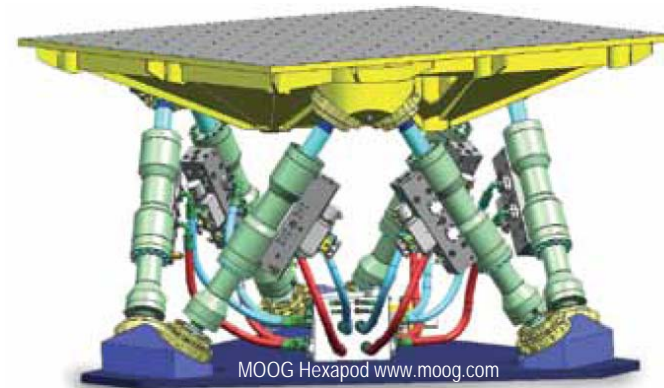


Marine Operation and Component testing



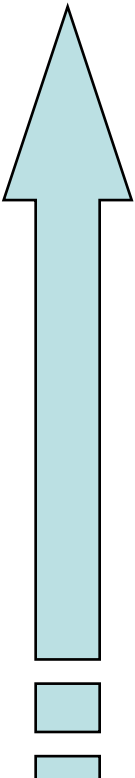
Dr Lars Johanning, Dipl.-Ing., PhD, FHEA

Contents

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4. Conclusion

Business support

- Applied research in Marine Renewable Energy (MRE)
- Implementing Blue Sky research to obtain understanding in non-established areas within MRE -> informing business
- Provide access to knowledge base within MRE (work both directions)
- Establishing Research Facilities supporting businesses within applied/blue sky research (example: SWMTF, MCaD)

	<p>MORE INTENSE ENGAGEMENT</p>	High level industry sponsorship	Professors, academic staff funded by industry; potentially corporate partners or investors
	Research Collaboration	Academic research collaboration - Research Councils, CASE awards et. Longer term, often over three years, publishable	
	EU Collaborative research programmes (eg FP7)	Clusters of businesses and research institutions across Europe.	
	Contract research	High level contract research for individual industry partners, IP intensive, usually retained by business, IP ownership important, likely to be exploited in some way. Industry partners specify in detail. Can be relatively short term. 100% funded by industry at FEC	
	Knowledge Transfer Partnerships	Generally more applied, uses new graduate with academic mentoring, based in industry, 1 – 3 years in duration. Demonstrated success	
	Consultancy	Engagement of academic staff on commercial consultancy basis	
	Technology Commercialisation	Access to specialist resources within university (IP, access to specialist mentors and investment networks)	
	Unlocking Cornish Potential and Graduate Business Partnerships	Shorter term graduate placement programmes with limited academic mentoring support	
<p>LESS INTENSE</p>	Student Projects, Placements, STEP Dissertations	Low level KE, can address small projects, also assists businesses in recruitment of graduates	
	Access to specialist facilities	Use of specialist PRIMaRE equipment by businesses	

The South Western Mooring Test Facility (SWMTF)

- To significantly aid the research and development/testing of:
 1. **MOORING CONFIGURATIONS** for marine energy devices

and

 2. **COMPONENTS** allowing secure and cost efficient installations of marine energy devices





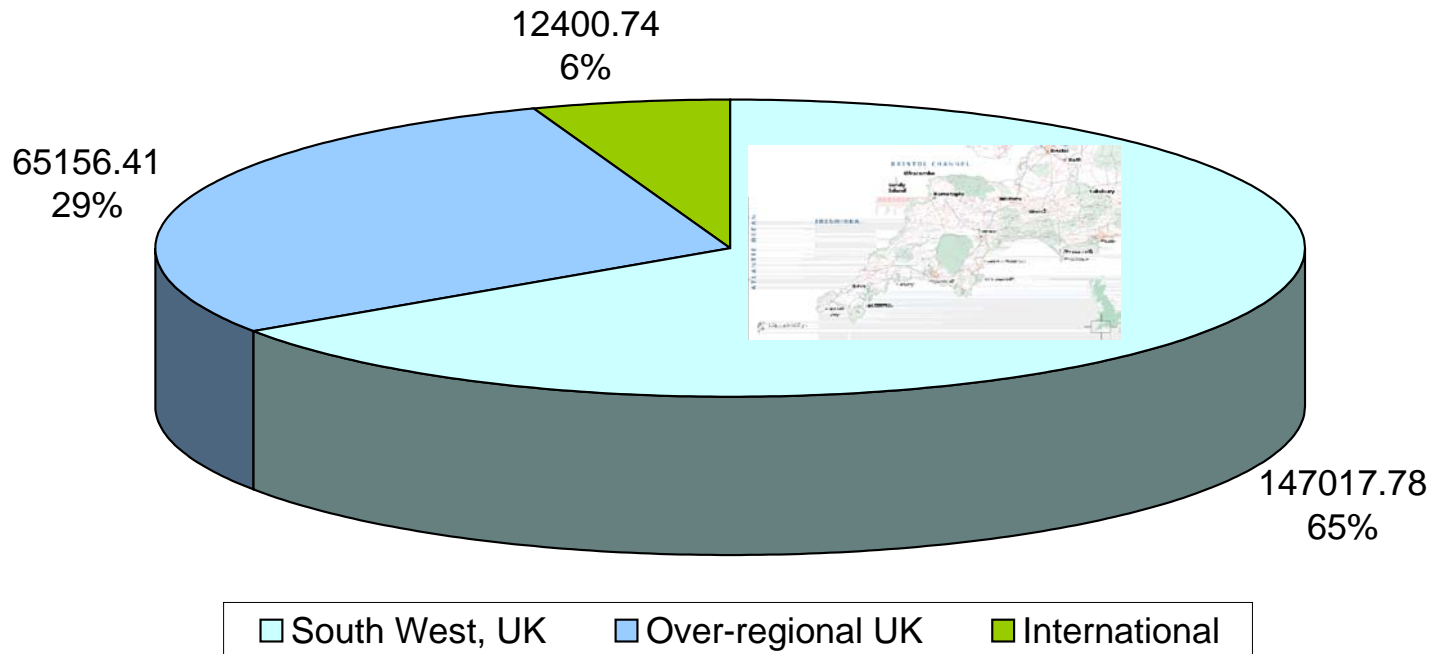
Development of the South West Mooring Test Facility

(SWMTF)

Lead academic: Dr Lars Johanning
Project engineer: David Parish



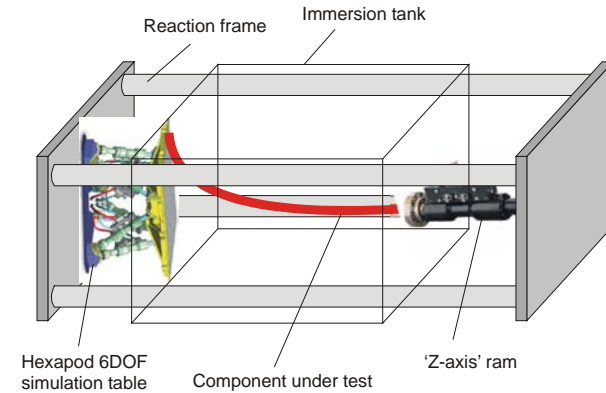
Financial commitment



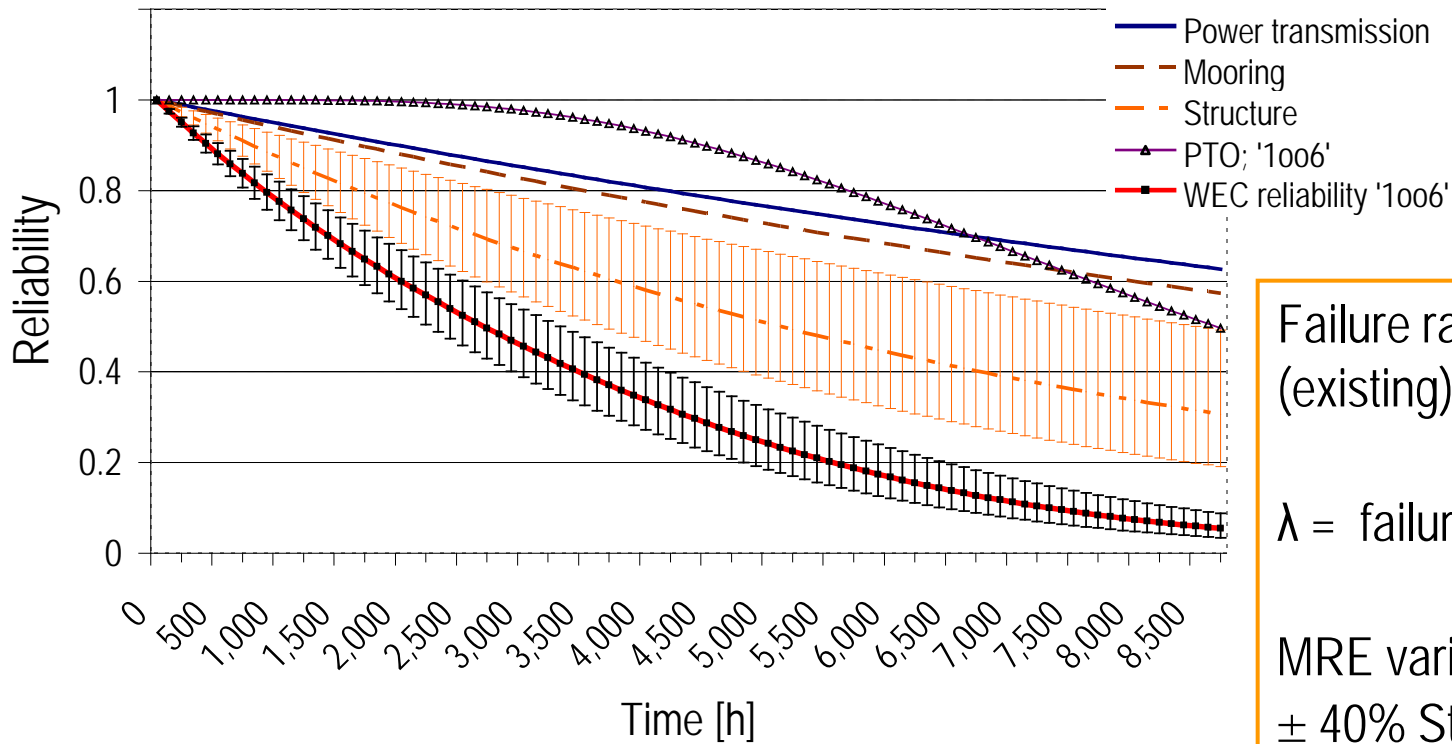
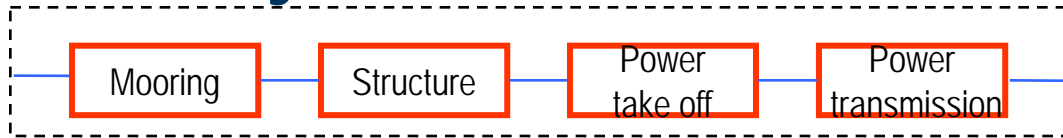
Dynamic Marine Component Test Facility (DMaC)

➤ To significantly aid the research and development/testing of Components through:

1. realistic accelerated load reliability measurements for marine component



System reliability



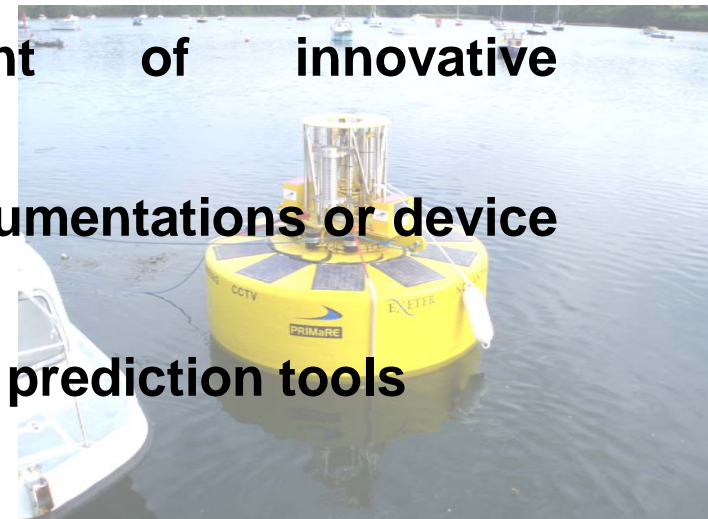
Failure rate data (existing):

$\lambda =$ failure per year

MRE variation:
 $\pm 40\%$ Structure

Conclusions – Support within Marine Renewable Energy

- Testing of standard or novel Mooring/Umbilical configurations and Anchoring systems (SWMTF/DMaC)
- Support within the development of innovative materials/components (DMaC)
- Development and testing of subsea instrumentations or device specific instrumentations (SWMTF)
- Support in the development of numerical prediction tools



Further Information

l.johanning@exeter.ac.uk

or

http://www.exeter.ac.uk/cornwall/academic_departments/csm/research/renewable-energy/facilities.shtml

Acknowledgment:



**Project Part-Financed
by the European Union**

**European Regional
Development Fund**



**South West of England
Regional Development Agency**