

Funding for Business

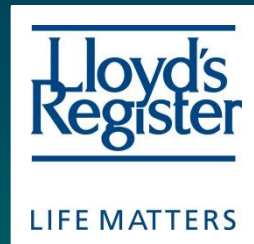
Funded Support for Maritime Business

Kevin Forshaw
5th December 2013



University of Southampton and the Southampton Marine and Maritime Institute

- 40% of annual £100m research income is for collaborative projects working with industry
- Southampton is one of the top UK Universities for working with SMEs
- SMMI has so far attracting over £12m public funding for collaborative projects with maritime business
- New campus will include state of the art testing facilities including a 140 metre high-speed towing tank



Why fund business and where does it come from?

- Research and development is financially risky for companies
- However, the benefits in terms of export sales and new jobs are good for the economy
- So, support for R&D is provided
 - By the EC (FP7 and now H2020)
 - Nationally by the TSB and Research Councils
 - Regionally via the Solent LEP and Local Authorities



EC Funding, a quick overview

- Typically funds collaborative R&D, but can also support the development of clusters
- Usually established as Framework programmes, and we are now moving from FP7 to Horizon 2020 (budget of €80 bn)
- Most appropriate where you lead in what you do
- Will fund 50 - 75% of R&D costs for consortia research with other companies in the supply chain
- EC funds supported our first collaboration with Halyard



EC Funding – a few specifics

- Calls for projects launched within Work Programme, inviting applicants to apply
- Applicants form a consortium which as minimum includes 3 independent partners from different EU Member States
- For most collaborative projects, it will be a 2 stage application
- Also ‘SME’ Instrument in H2020
 - Targeted at innovative SMEs
 - Can be for single company support
 - Topic needs to meet defined Societal Challenge



EC Funding – where next?

- Register Interest and access to information

<http://ec.europa.eu/research/participants/portal>

- National Contact Point:

Cliff.funnell@tsb.gov.uk

- Speak to us at SMMI

smmi@southampton.ac.uk



Regional Funding

- The Solent LEP has identified the maritime sector as a priority
- SMMI and the BMF will continue to work with them to lobby on behalf of the needs of the Solent Maritime Sector
- Eastleigh Borough Council 'Future Solent's Green Growth Programme' (grants of up to £100k and loans from Green Bank for low carbon projects)
- <http://www.futuresolent.org.uk/our-programme/green-growth-programme-rgf/>



UK Funding / Research Councils

- The University has been awarded funding under the EPSRC Impact Acceleration Account (IAA) to support greater collaboration with industry. Specifically these support:
 - Knowledge Transfer Secondments (inwards and outwards) with industry
 - Knowledge Transfer Internships to industry
- One of these has just been completed with Halyard, and a further project is planned with Naiad Dynamics in Portsmouth



Technology Strategy Board, Vessel Efficiency Competition

- £8m of UK Govn and MOD funds to support innovative projects with industry re the Greening of Shipping
- SMMI is engaged with 3 of projects funded under this call:
 - High Efficiency Work Vessel (Cox Power Train and Cheetah Marine)
 - Advanced Weather Routing (Fugro Geos)
 - Composite Cabins (Carnival)



Access to Knowledge and Skills

- We also operate a number of Knowledge Transfer Partnerships (KTPs) with UK business
 - Grant supported, high-impact projects from 6 months to 3 years
 - Graduate employee + academic support + access to University facilities with up to 67% of costs met by grant
- Example maritime collaborations include:
 - CJR Propulsion Ltd
 - RNLI
 - Victor Marine Ltd
 - Kittiwake Developments Ltd
 - Haydale Ltd



Support for Manufacturing Businesses

- The Manufacturing Advisory Service is looking for manufacturers who want to grow their business, and have matched funding available to help bring specialist knowledge into companies to do this
 - Up to 50% funding towards the cost of a project
 - Projects must have a demonstrated business benefit
 - Up to three grants in a rolling twelve months
 - An average of £1,500 per grant
 - Also offer free on site Manufacturing Review

Richard Teal on 07921 971 751 or
Richard.Teal@mymas.org



Support for Export from UKTI

- Developing an export plan
- Counselling on the right markets, and people to deal with in those markets
- Advising on grants for trade missions or overseas trade fairs
- Setting up meetings and generally helping to make business happen

International Trade Advisor

E christopher.uniacke@uktisoutheast.com

T +44 (0)7958 056 278



Contact us:

The Southampton Marine
& Maritime Institute

smmi@southampton.ac.uk

023 8059 2316



KTP Project: CFD Optimisation of sterngear design for high speed planing craft

Simon Lewis

5th December, 2013

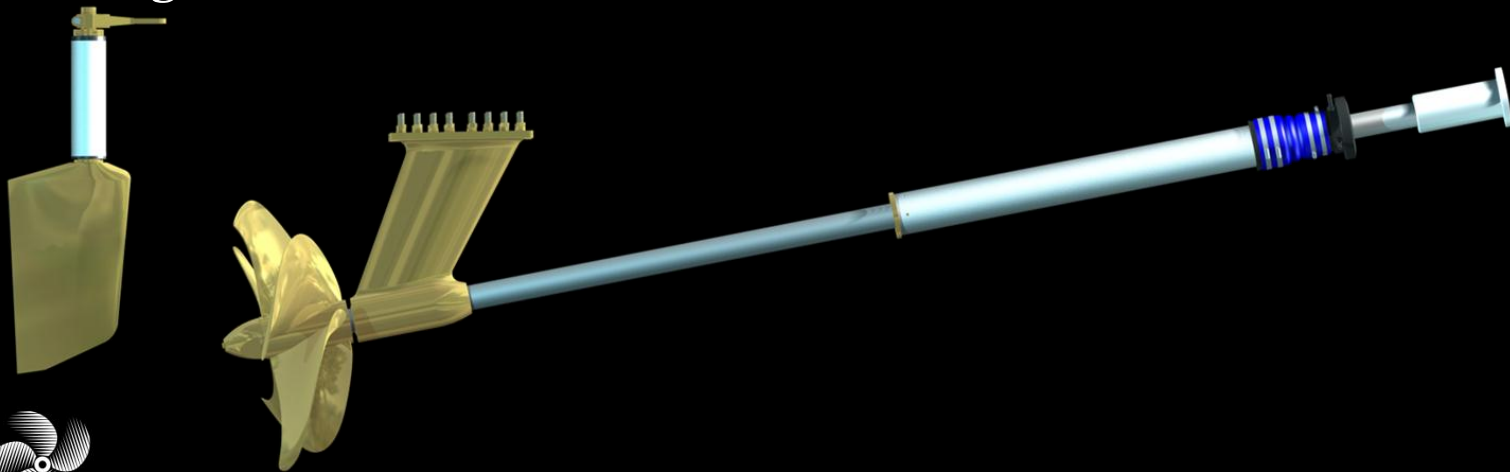


CJR Propulsion – Company background

CJR propulsion is a leading propeller design and manufacture company.

We also manufacture other underwater hull appendages such as rudders, P-brackets and propeller shafts.

World leader in advanced manufacturing methods – The only company in Europe with the capability to machine propellers with a 5-axis CNC milling machine.



Problem to be solved by KTP

- CJR had an excellent design and manufacture procedure, but some information was missing:
 - The flow into the propeller was assumed to be uniform. In reality, this is not the case.
- The lack of propeller wake data meant that sometimes the propeller design was not optimum for each boat.
- If the propeller is not designed correctly, cavitation erosion can occur – which destroys a propeller blade and increases noise and vibration
- The other appendages under the hull affect the flow into the propeller.

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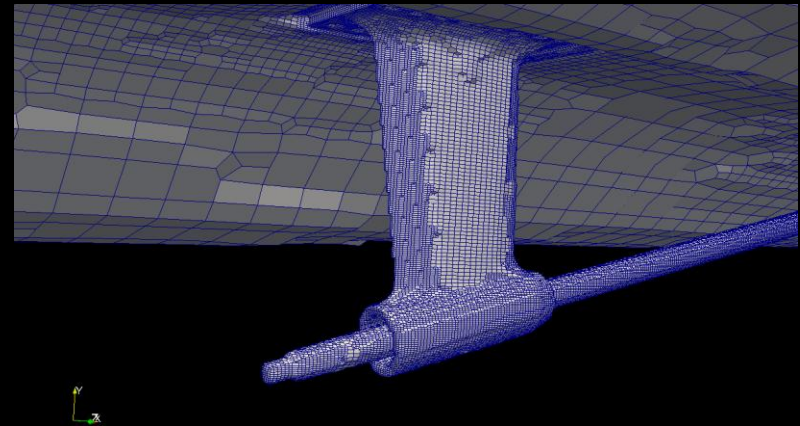
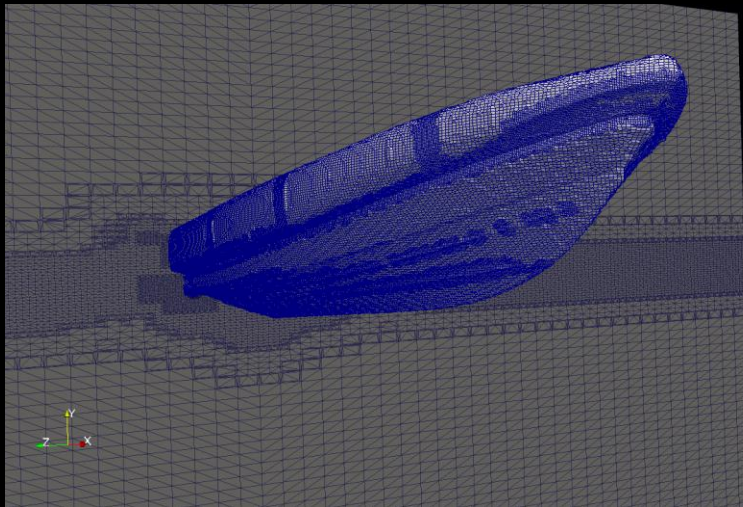
that sometimes the boat.

cavitation erosion can and increases noise and

the flow into the

How the problem was solved

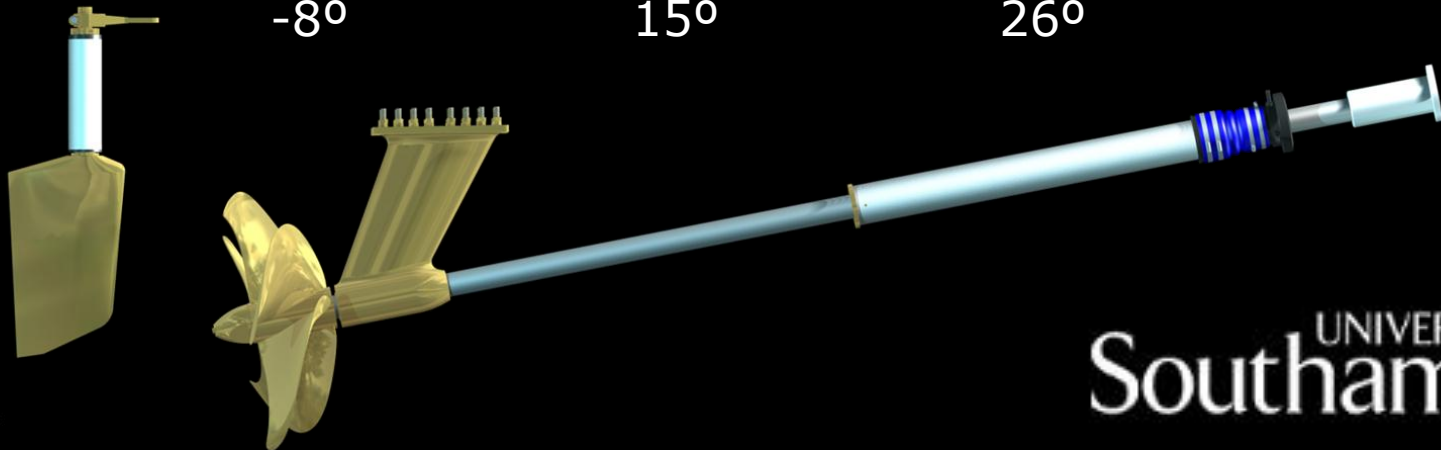
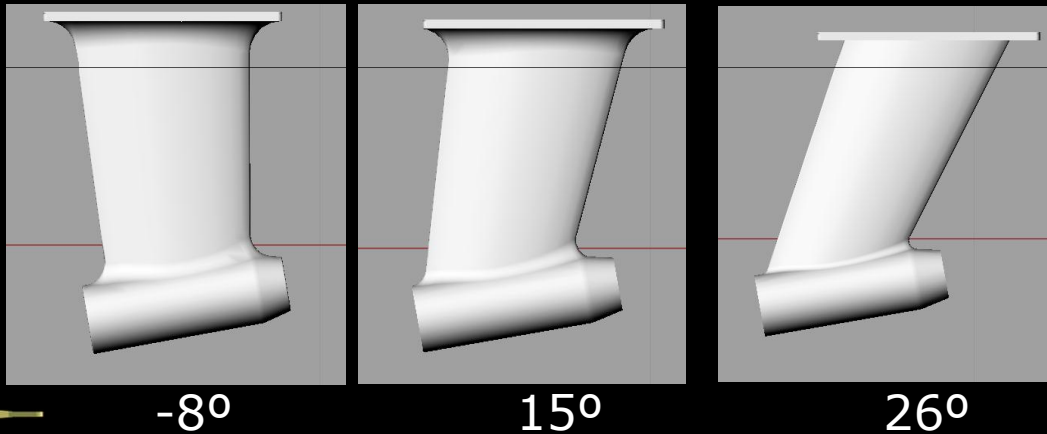
- Computational fluid dynamics analysis of the flow around a hull was identified as the best method of calculating the propeller wake information
- CJR did not have the computational power, or the money to develop this as a design tool.
- They approached the University of Southampton, and a KTP was started.



Shaft-bracket case study

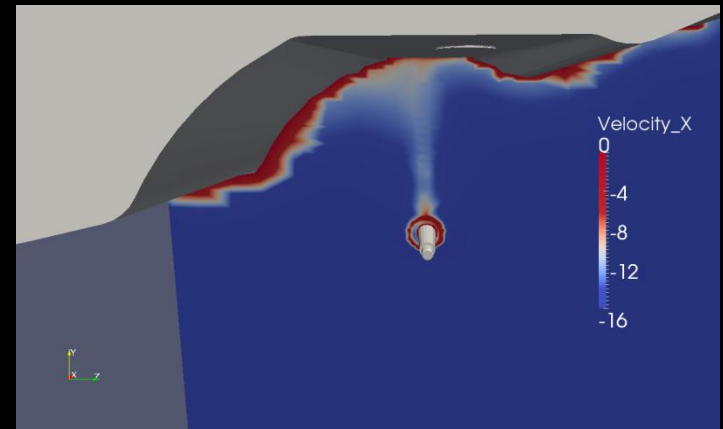
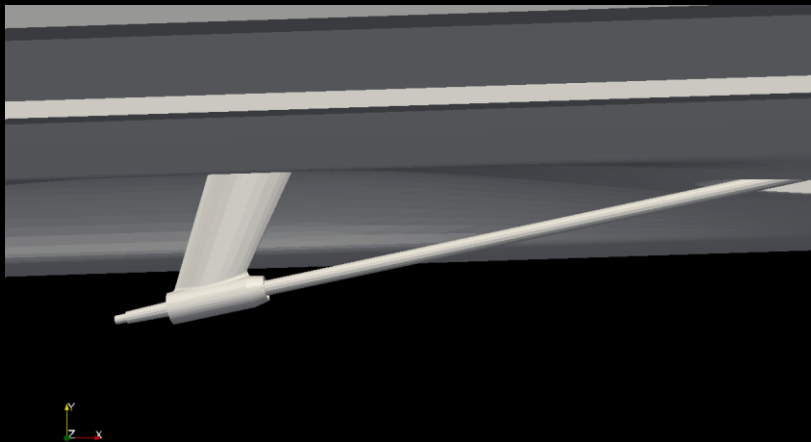
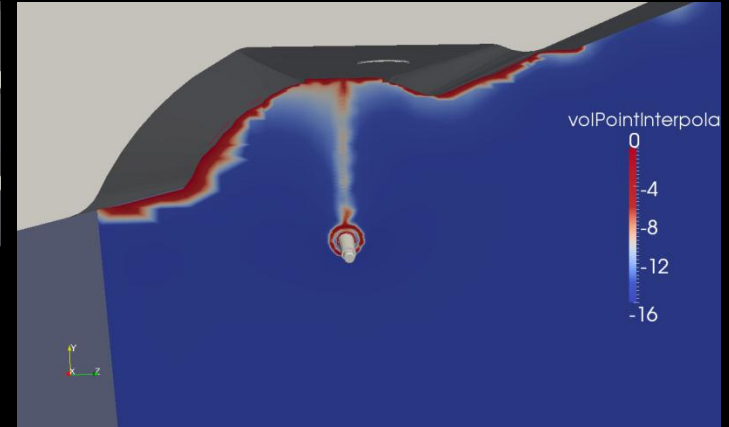
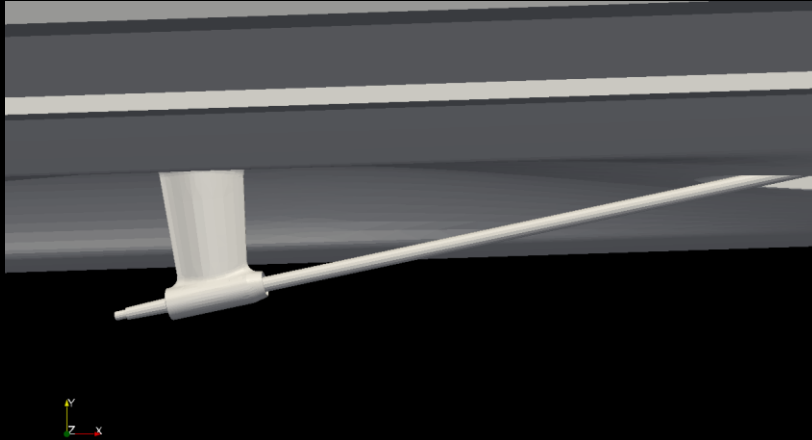
The aim is to demonstrate how the P-bracket design alters the flow into the propeller. This is achieved by

- Altering the P-bracket design and analysing the effects:



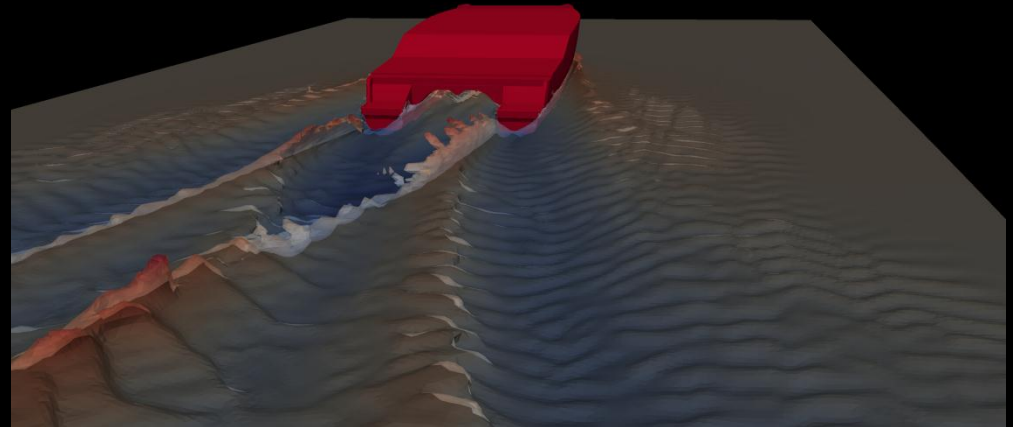
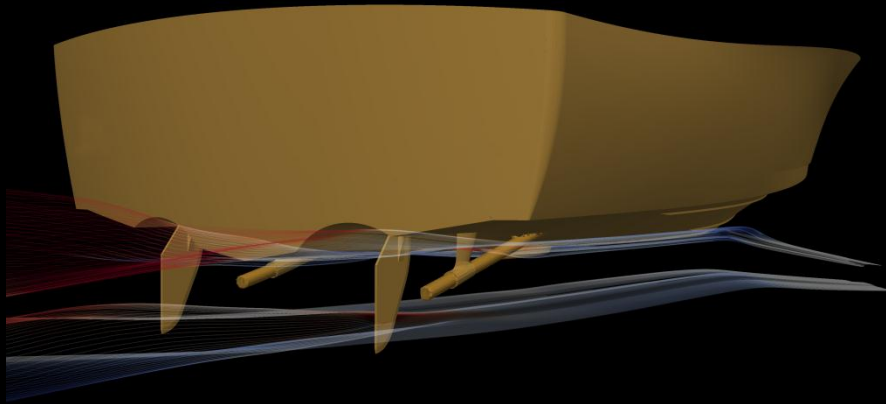
Preliminary CFD Study – Propeller plane

Velocity in the x direction (forward velocity)



CFD Simulation

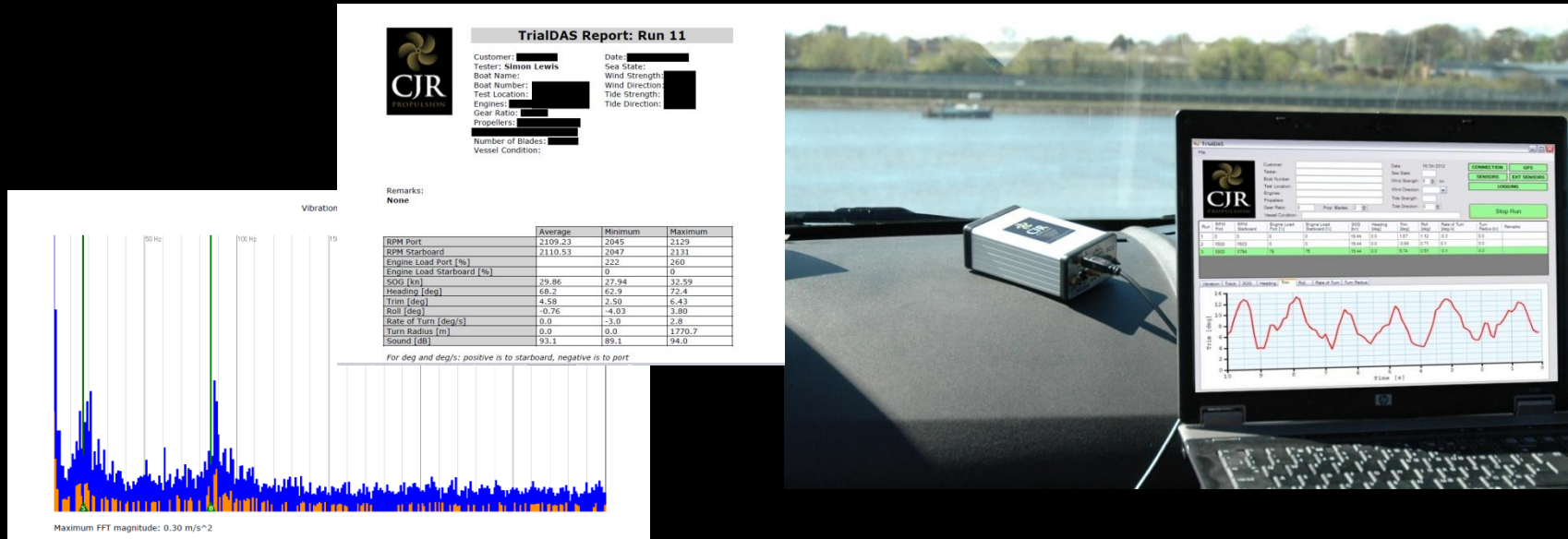
CFD also used for resistance prediction, running trim, and free surface analysis.



KTP Benefits to CJR Propulsion Ltd.

- Expertise gained from university advisors
- University resources such as the Iridis 3 supercomputer
- Good publicity for CFD capabilities;
- Improved propeller design
- Improved company image – perceived to be green by improving efficiency and fuel consumption;
- Increase in profits from customer jobs.

KTP Benefits to CJR Propulsion Ltd.



- Easy to use and accurate – TrialDAS provides valuable boat performance data.
- Highly customisable, the system can be tailored to individual needs.

Benefits to Southampton University

- A number of published papers
- Closer links with industry ensures that the research carried out in the department is current and applicable to real world problems
- Summer placement students
- Funding
- Opportunity to carry out industry based research

Benefits to the KTP research associate (me)

Funding set aside for development and travel

Management qualifications at the end.

Increase in CFD expertise.

Experience in dealing with customers.

Industrial technical report writing and academic papers

R & D project management experience.

Opportunity to go on sea trials to validate CFD work

Technology Strategy Board

Driving Innovation

Technology Strategy Board

The UK's Innovation Agency



Technology Strategy Board

Driving Innovation

What we do in Marine & Maritime?



Technology Strategy Board

Driving Innovation

Work with a range of stakeholders

Government:



Industry:



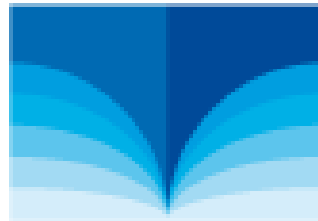
Academia:



Technology Strategy Board

Driving Innovation

Direct Support



Technology Strategy Board

Driving Innovation



Smart

Proof of market

- market research, market testing and competitor analysis
- intellectual property position
- initial planning to take the project to commercialisation, including assessing costs, timescales and funding requirements.

Key features

duration - up to 9 months
maximum grant - £25k
up to 60% of total project costs.

Proof of concept

- initial feasibility studies
- basic prototyping
- specialist testing and/or demonstration to provide basic proof of technical feasibility
- intellectual property protection
- investigation of production and assembly options.

Key features

duration - up to 18 months
maximum grant - £100k
up to 60% of total project costs

Development of prototype

- small demonstrators
- IP protection
- trials and testing
- market testing, marketing strategies
- identifying routes to market
- product design work

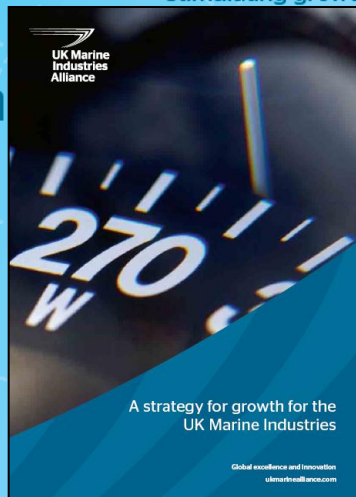
Key features

duration - up to 2 years
maximum grant - £250k
up to 45% of total project costs.

UK Marine Roadmap for growth

Stimulating growth in the UK marine and maritime industries

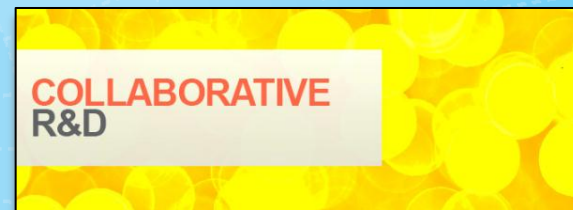
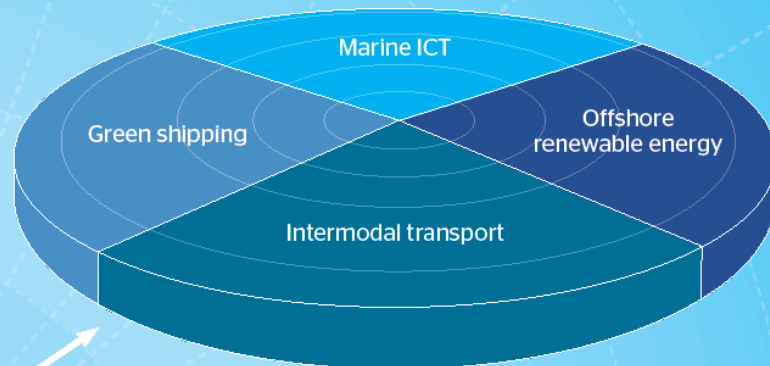
GVA
£25bn



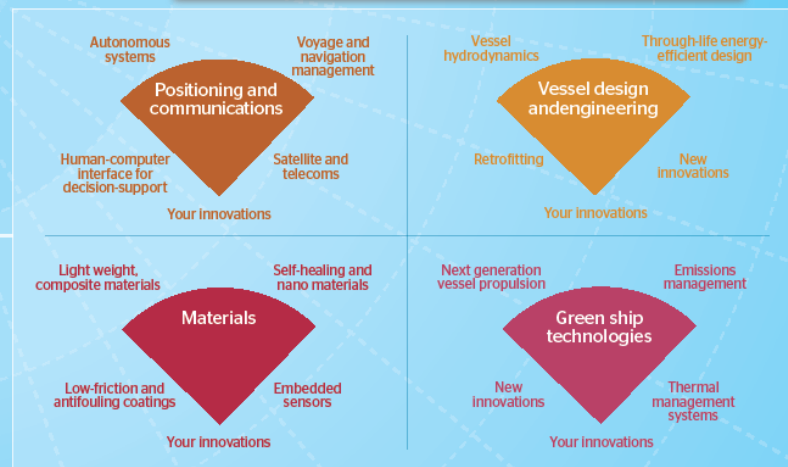
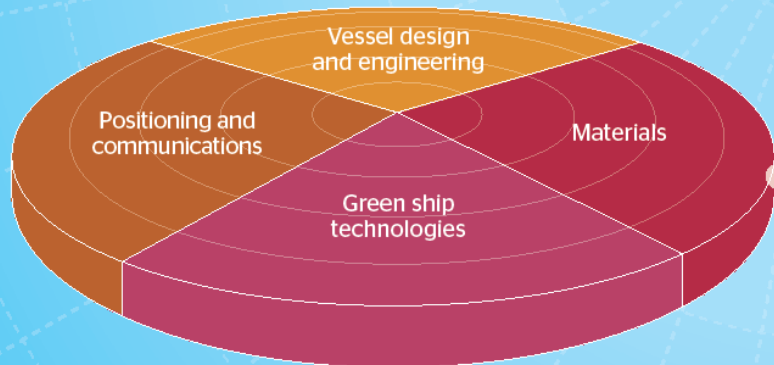
Enablers



Market opportunities



Technologies



£19bn

YEAR
2013

Roadmap and strategy available at www.ukmarinealliance.com

YEAR
2020



Vessel efficiency: Piloting UK marine and maritime innovation

COMPETITION FOR FAST-TRACK
AND COLLABORATIVE R&D FUNDING
JANUARY 2013

[dstl]



Scottish Enterprise

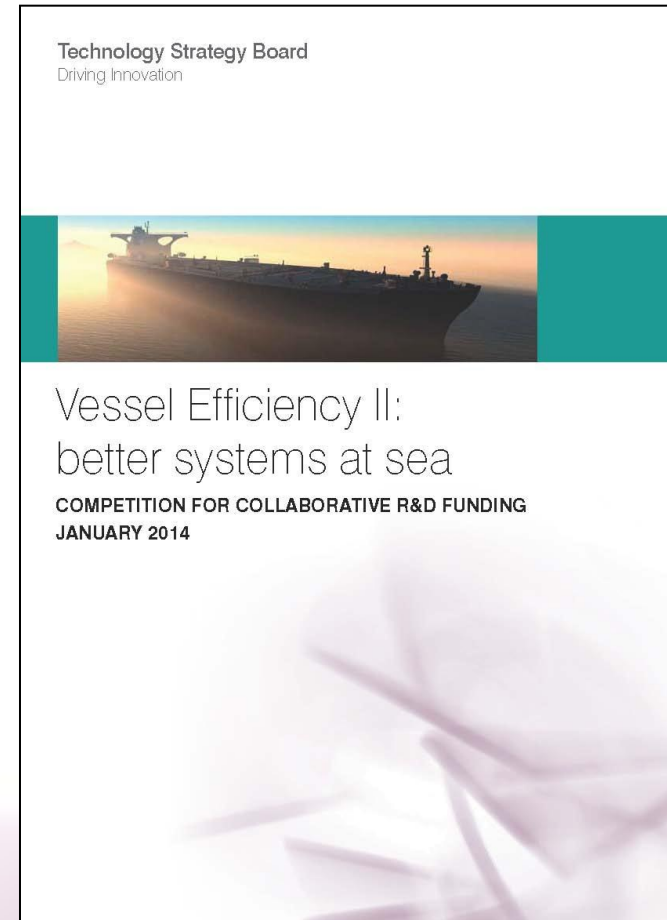
- First marine-specific Collaborative R&D Competition
- Launched January 2013
- Co-funded by TSB (www.innovateuk.org) and Dstl (www.dstl.gov.uk)
- Projects invited within green shipping and marine ICT
- High level of interest
- £7 million funding offered
- Total project cost approaching £12 million

Successful Projects

- **Magnetically Geared Propulsion Motor**, led by Magnomatics Ltd
- **Composite Cabin Module**, led by PE Composites Ltd
- **Wave Augmented Foil Technology**, led by Rolls-Royce plc
- **High Efficiency Work Vessel**, led by Cox Powertrain Ltd
- **Vessel Clean**, led by Applied Inspection Ltd
- **Holistic Vessel Performance and Routing System**, led by Fugro GEOS Ltd
- **High Efficiency Marine Energy**, led by Pendennis Shipyard Ltd
- **Novel Hull Coating to Reduce Friction and Fouling**, led by Thales Underwater Systems
- **Glycerine fuel for Engines and Marine Sustainability**, led by Marine South East Ltd
- **Energy Harvesting Technology From Vessel Motion**, led by A&P Falmouth Limited

Vessel Efficiency II 'Better systems at sea'

- Investing a further £3m in collaborative R&D projects
- Opens 6th January 2014
- Projects to demonstrate technologies that deliver significant improvements in:
 - Fuel efficiency
 - System energy efficiency
 - Operational efficiency
 - Emissions
- Projects to be business-led and collaborative
- Last between 12 and 36 months
- Industrial research: businesses attract 50% public funding (60% for SMEs).



Vessel Efficiency II

- Voyage Performance Management could include, but is not limited to, the development of:
 - the human/ machine interface, including decision support tools, on-vessel data management and marine ICT
 - voyage optimisation for specific objectives, such as voyage speed or minimum fuel consumption
 - satellite applications
 - autonomous systems and sensors
 - vessel condition management
 - modelling and simulation tools
- System Technologies could include, but is not limited to, the development of:
 - emissions reduction systems and management
 - innovative energy production, management and storage
 - reduction of onboard power demand
 - fuel consumption monitoring and optimisation
 - minimal-loss propulsion systems

Technology Strategy Board

Driving Innovation

www.innovateuk.org

david.elson@tsb.gov.uk





SOLENT
LOCAL
ENTERPRISE
PARTNERSHIP

Steve Futter Solent Local Enterprise Partnership

TOGETHER.STRONGER

Solent Local Enterprise Partnership

Formed in late 2010 after the Government offered local areas the opportunity to take control of their future economic development.

It is a locally-owned partnership which determines economic priorities and undertakes activities to drive economic growth and the creation of local jobs.

Led by the business community and supported by Higher Education, Local Authority and Community sector partners.

All working together to secure a more prosperous and sustainable future for the Solent area.

Economic Ambition

With a population of 1.3m and over 50,000 businesses operating in the area, the Solent Local Enterprise Partnership (LEP) is one of the UK's key engines of growth. As a functional economic area our economic output equates to £48.5bn (GVA of £23.7bn) and we support 485,000 full-time equivalent (FTE) jobs.

“In the period to 2026 it will capitalise on identified strengths and through collaboration commit to:

- **...create 10,000 new jobs in the Solent LEP area;**
- **...GVA growth of 2.1% equating to an extra £1bn or £6,400 per capita.”**

Enterprise and the Marine / Maritime sector

- Solent LEP has Enterprise as one of its five key strategic priorities
- Marine and Maritime features as one of the LEP's key strategic sectors
- SMEs are a key part of driving future economic success
- Start Up rates are significantly lower in the Solent area than the national and regional averages
- Solent LEP has secured over £13m of Regional Growth Fund **grant** funding from central Government for SMEs and other businesses

Bridging the Gap

- £3.7m of grant funding for SMEs and new Start-Ups in Portsmouth, Southampton, Isle of Wight, Havant, Gosport and New Forest Waterside
- Grants from £5,000 - £50,0000
- Focus is on creating / safeguarding sustainable jobs and leveraging other investment
- Start Up projects – up to 70%; Growth projects – up to 50%
- Two stage competitive process – EOI and Full Business Case
- £1.8m already allocated to 59 SMEs, creating and safeguarding 357 jobs
- Next deadline – 17th January 2014

Enterprise Zone Expansion Fund

- £2.73m of grant funding for existing advanced manufacturing SMEs relocating to the EZ prior to March 2015
- Grants from £50,000 - £200,000
- Focus is on creating / safeguarding sustainable jobs and leveraging other investment
- 20% funding available for eligible projects
- Single stage competitive process – but complete EOI phone request form
- Open for applications at any time

Solent Futures SME Programme Fund

- £4.7m of grant funding for existing businesses located in the Solent region and in the SME supply chain which serve the Portsmouth Naval Base
- Grants from £10,000 - £300,000 (typically £50,000 to £300,000)
- Focus is on safeguarding / creating sustainable jobs and leveraging other investment
- 20% funding available for eligible projects
- Single stage competitive process – but complete EOI phone request form
- Next deadline – 17th January 2014
- Also – loans of £100K - £3m available under Growing Places LEP fund

Isle of Wight Expansion Fund

- Details of this fund are currently under development and review by LEP Board
- £2.46m of grant funding for businesses based on, or moving to, the IOW and working in the marine, maritime or advanced manufacturing sectors
- Grants from £50,000 - £500,000
- Likely to be similar to EZ Expansion Fund application process
- Launch due in mid-January 2014
- Watch this space!

Suggestions for potential applicants...

- Funding can be used for any new activity which will unlock business growth, but not existing working capital (rates, rent, utilities, salaries, stock etc)
- Ensure you read (and adhere to) the guidance notes for the relevant fund
- Complete all the sections on the form – ineligible if incomplete
- Tell us as much as you can about your project – but keep it focused
- Remember to submit any additional information which is requested
- Average cost per job is around £10K of grant funding
- Ensure match funding is identified before applying
- Employment focus – ensure you apply when business ready to create jobs



SOLENT
LOCAL
ENTERPRISE
PARTNERSHIP

**Guidance documents and
application forms available at:
www.solentlep.org.uk/downloads**

TOGETHER.STRONGER

Government Lending Schemes and Business Plans

5th December 2013 – BMF Event



Government Backed Lending Schemes

- In the first 6 months of the year, HSBC helped more than 12,400 SMEs in the South East.
- We approved more than £381million of gross new lending to SMEs in the South East (£5.5bn nationally).
- FUNDING FOR LENDING – Bank of England launched FFL in July 2012 by reducing the cost of funding, allowing the majority of Banks to lend at a reduced margin...as long as they lend.
- HSBC's FUNDING FOR GROWTH – HSBC did not engage in the BoE scheme because of the strength of Balance Sheet, but we wanted to be competitive.
- ENTERPRISE FINANCE GUARANTEE - is a loan guarantee scheme to facilitate lending to viable businesses that have been turned down for a normal commercial loan due to a lack of security or a proven track record.

- 
- REGIONAL GROWTH FUND - Regional Growth Fund programmes are schemes run by national or local organisations which have been awarded Regional Growth Fund cash to offer grants and/or loans to small and medium sized enterprises (SMEs). Invest and strengthen their business, create or protect jobs, build on creativity.
 - BUSINESS GROWTH FUND- was established in 2011 to help Britain's growing smaller and medium sized businesses. Backed by five of the UK's main banking groups – Barclays, HSBC, Lloyds, RBS and Standard Chartered – BGF is an independent company with up to £2.5bn with which to make long-term equity investments. BGF also works closely with other key business organisations. £2m-£10m into £5m + turnover businesses.
 - Overdrafts and Loans are still available....where required.
 - Structured Debt – Invoice and Asset Finance.
 - Trade Finance – LCs, Import Loans, Export Loans, Bonds. UKTI backed Export initiatives.

Business Plans and Top Tips for Approaching your Bank for Credit.

- Have a credible Business Plan – Confidence, testing, measuring, previous track record, professional input.
- Build your financial understanding – know your numbers, does it make sense, is it achievable – We are Bankers - we like numbers – the Bank will test.
- Cash generation – Cash is King. Does your business create or consume cash. The Bank will test affordability.
- Approach as early as possible – if you place Banks under pressure unnecessarily they may decline.
- Be open and honest, provide all information requested. Historic numbers, current, forecasts.