

# The Role of the Technical Advisor in Research Vessel New Builds

Sharing Best Practices from Real-World Experience



**Presenter:**

**Dr. Paul Read, Managing Director, Gelen Marine**

**IRSO 2025 Conference**

# About Me

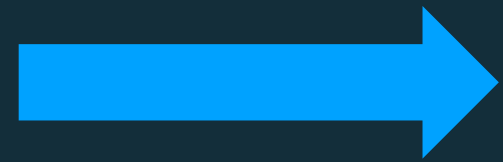


Paul Read  
Phd, MEng, CEng, CMarEng



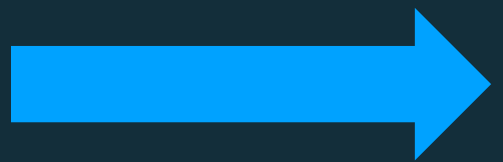
Significant Projects <https://gelenmarine.com/proyectos-de-paul-read/>

**THUWALL II, KAUST,  
Vigo, 2025**



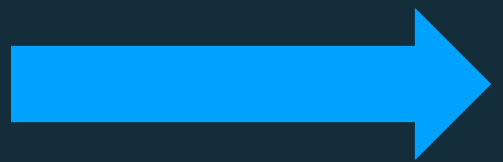
- Technical Advisory
- Consultancy Services
- Plan Approval Coordination

**REGIONAL CLASS  
RESEARCH VESSEL,  
USA, 2017**



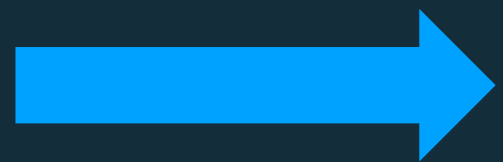
- Development of concept design
- Technical assessment

**RRS DISCOVERY  
Vigo, 2013**



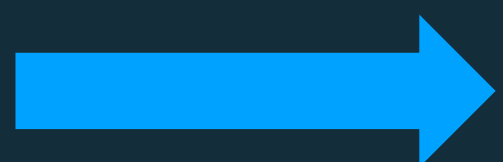
- Preparation of SoR
- Plan Approval
- Construction Supervision on-site
- Commissioning
- Sea Trials

**RSS JAMES COOK  
Flekkefjord, 2004**



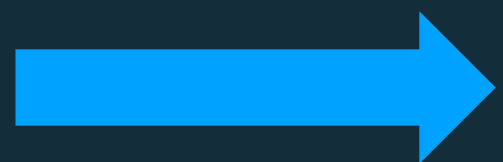
- Design development
- Plan Approval
- Construction Supervision on-site
- Commissioning
- Sea Trials

**TECHNICAL ADVISOR  
AND SUPPORT FOR  
NERC, 1997-2012**



- Technical support
- Trouble shooting expert
- System installation design

**RRS DISCOVERY LIFE  
EXTENSION. Viana de  
Castelo, 1992**



- Production design drawings
- Construction Supervision on-site
- Commissioning

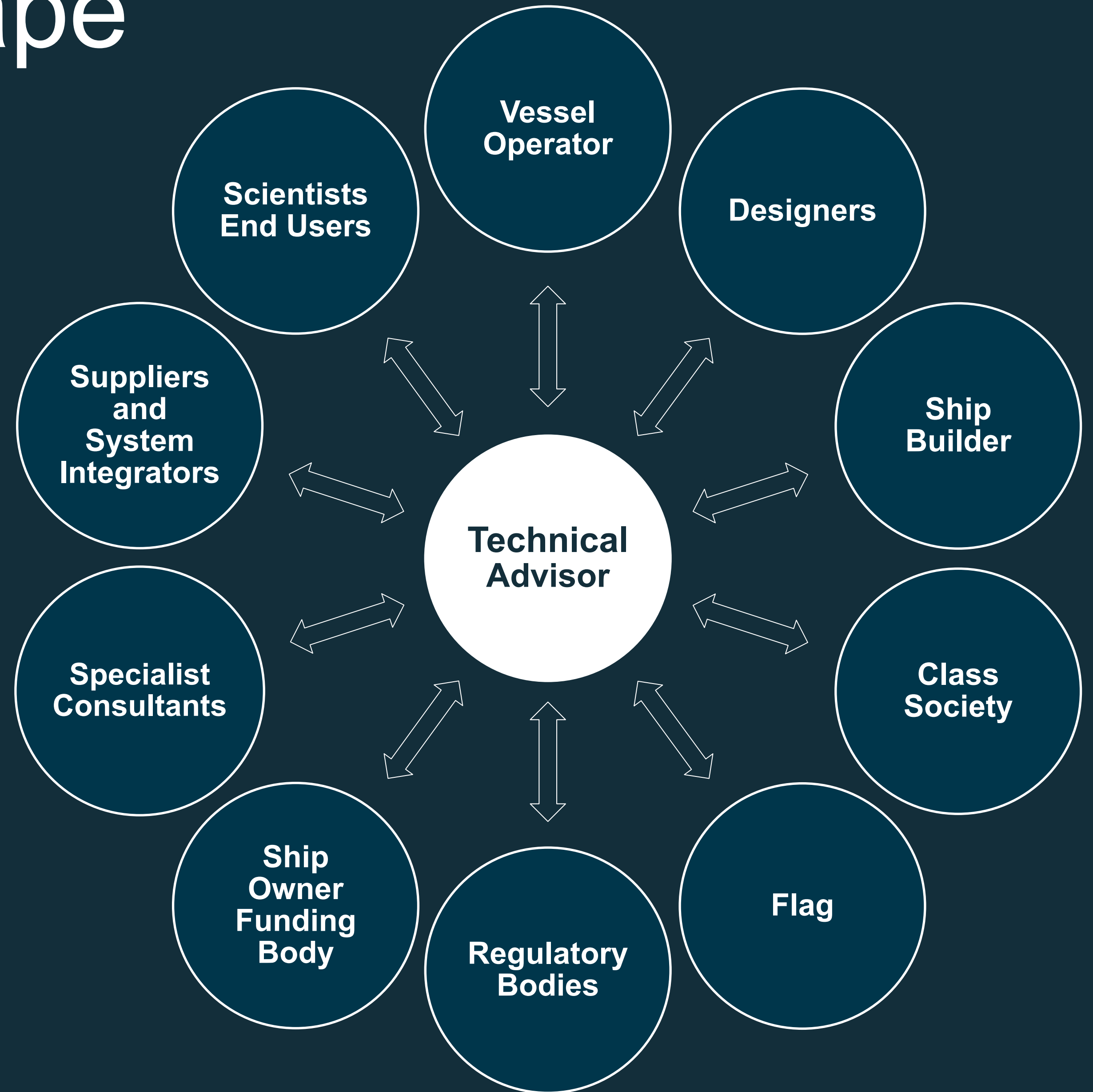


# Presentation's Aim

- ❖ Understand the Technical Advisor's Role
- ❖ Share practical experience and lessons learned
- ❖ Help operators anticipate challenges and avoid pitfalls

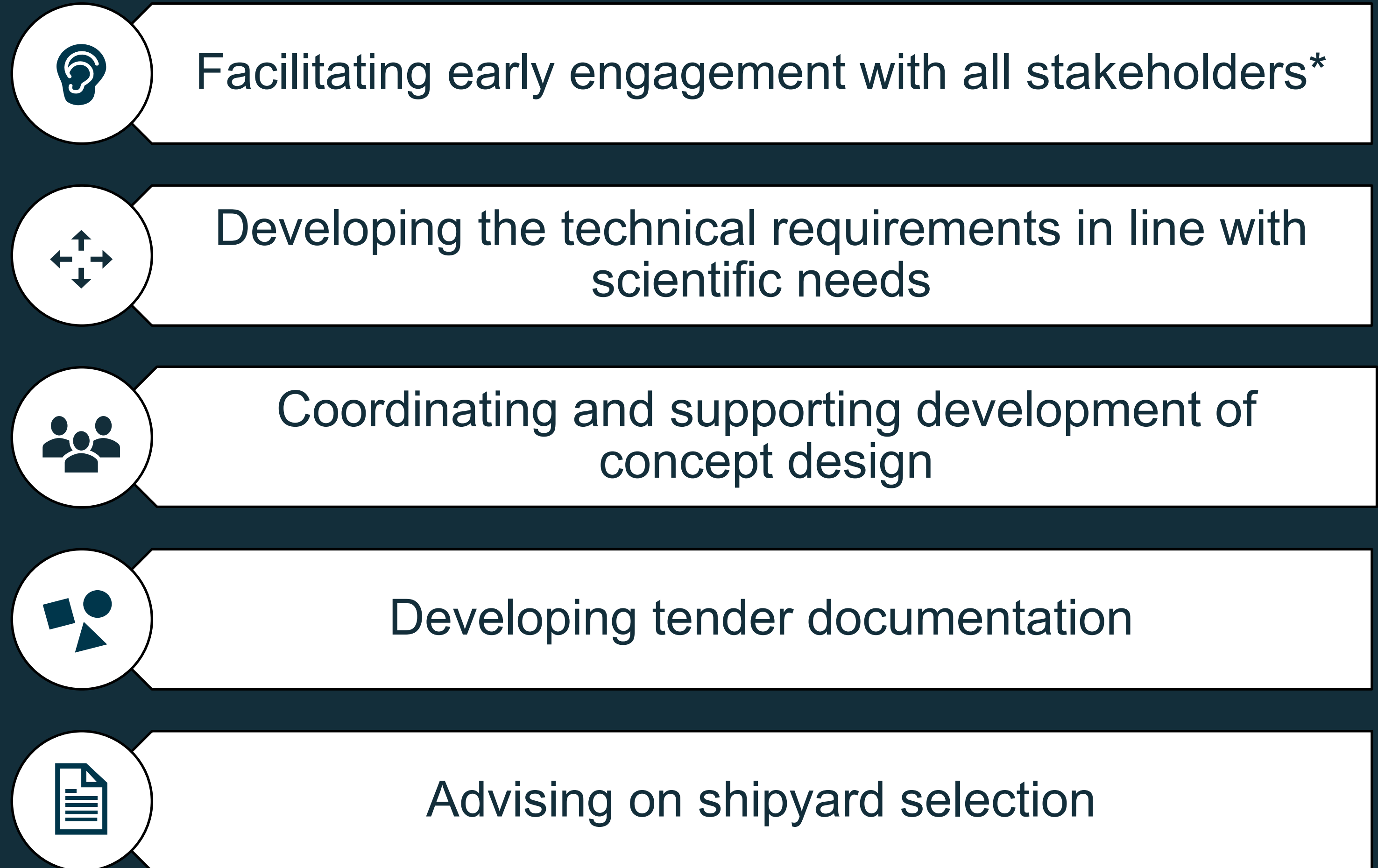


# Stakeholder Landscape in New Builds



# The Technical Advisor's Role


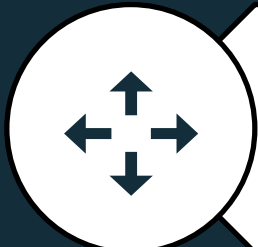


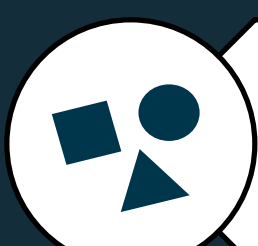

## Lifecycle Overview



(IRSO 2024 identified this need)

# The Technical Advisor's Role

## Lifecycle Overview

-  Coordinating and supporting basic design development by the shipyard
-  Overseeing shipyard's equipment procurement progress
-  Managing and performing the plan approval process
-  Leading and coordinating the onsite construction supervision and inspection team
-  Developing and witnessing commissioning, testing and trials protocols with the shipyard
-  Overseeing delivery of the vessel

# Why Technical Advice Matters?

**Operators know how to do the science—but translating that into a buildable, operable ship design requires specialist technical knowledge.**



# Why Technical Advice Matters?

**Broad and Integrated Understanding needed: science, ship design, construction, outfitting, installation, commissioning, and operations.**



# Knowledge Domains of the Technical Advisor

## UNIQUE OVERVIEW

### Core Competencies:

- Experience in construction, installation, commissioning, trials of RVs
- Knowledge of the science and purpose of scientific equipment
- Awareness of ship's functionality
- Experience in systems integration and design
- Knowledge of rules and regulations

### Bridging Role:

- Facilitating the mutual understanding of science needs and operations
- Translating scientific requirements into technical language
- Communicating effectively with designers and shipyards
- Applying knowledge of RV design and construction to bridge gaps

# Distinguishing between Construction Monitoring vs Supervision

## MONITORING

**Primarily observation:** checking progress or quality, without direction.



PASSIVE ROLE

## SUPERVISION

**Observe *and* direct execution:** ensuring practical adherence to requirements.



ACTIVE ROLE

# Peculiar Challenges in Research Vessel Construction

**Tight systems  
integration in confined  
spaces**

**Unique structural  
features—all requiring  
oversight beyond standard  
shipbuilding practices**

**Avoidance of Bubble  
Sweepdown**

**Specialised Transducers  
with specific installation  
considerations**

**Strict Electromagnetic  
Compatibility and  
Electromagnetic  
Interference**

**Strict Underwater  
Radiated Noise**

**Bench Mark System**

**Specific overside  
handling requirements**

# Lessons Learnt

Early engagement with all Stakeholders



LEADS to clearer requirements

Clear requirements



AVOID later design reworks

Active coordination



PREVENTS clashes between systems

Hands-on supervision



AVOIDS costly post-build fix-ups

Distinct clarity in roles



ENSURES smoother process

# To Wrap up

- The technical advisor is the essential communicator and integrator across stakeholders.
- Broad experience—design and construction—is critical.
- Supervision must be active—not passive—to uphold the vessel's purpose and quality.



THANK YOU !

Core Competencies



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