A BIG R&D ORGANIZATION NEEDS SYSTEM COMPETENCIES

for success, transfer and program acceptance

DLR

THE INNOVATION GAP

- Excellent technology is not yet operational impact
- The hardest step is often crossing the system boundary.



THE MISSING CAPABILITY
Seven competencies connect research to reality

- Not another discipline, but an integrative capability.

Systems thinking	See interactions, not isolated components
Requirements	Translate operational needs into evidence
Stakeholders	Co-create with users and decision-makers
Interfaces	Manage technical and organizational boundaries
Validation	Test in the real operating context
Risk awareness	Address safety, trust and constraints
Transfer readiness	Design the path to adoption early

SmartKai System Video



SMARTKAI - A port innovation becomes valuable as a system

Co-Creation with Stakeholders

Early Validation

Design the path to adoption early





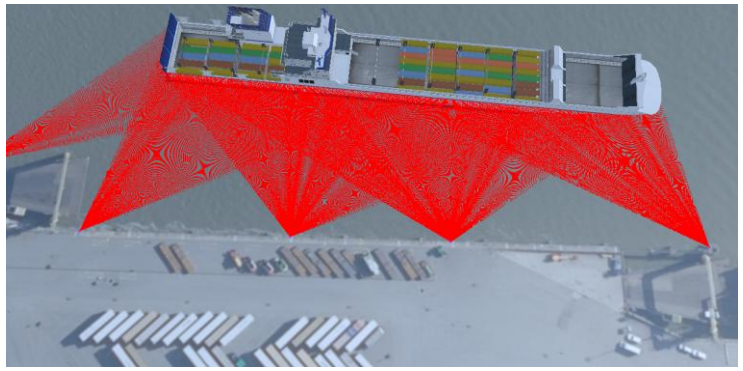


Sensors and software matter. Operational integration creates value.

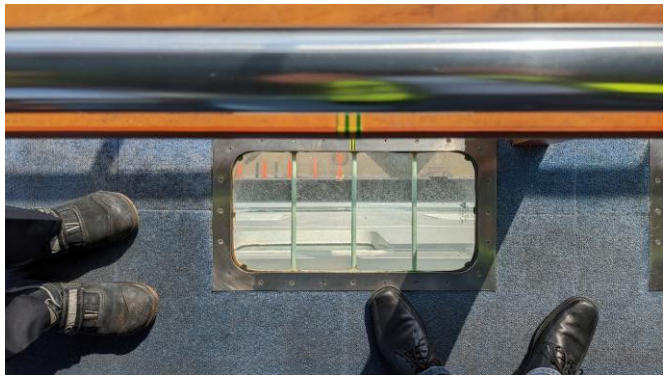
FROM PROTOTYPE TO ACCEPTANCE

Technical validation is necessary. System evidence wins trust.

Does it work?



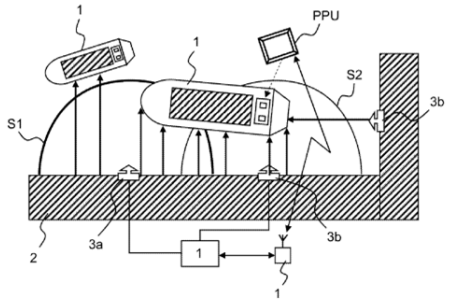
Can we trust it?



Does it fit?



Who carries it forward?



IP / Knowledge

Spin-Off

MARIVATION
Maritime Innovations

LEADERSHIP RESPONSIBILITY
Create the conditions for system-level innovation

1. Frame programs around outcomes
   - Start with operational value, not components
2. Build cross-boundary teams
   - Research, users, operations, regulation, transfer
3. Fund evidence, not only prototypes
   - Requirements, field validation and interfaces
4. Make transfer a design constraint
   - Ownership and implementation from day one



Leadership must reward integration, evidence and transfer readiness.

CONCLUSION

Research creates possibilities.

System competencies create impact.

Connect technology, users, infrastructure, regulation and transfer into one coherent program logic.

Think beyond components. Build system-level value.

Imprint

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