

RAMSSES - Realisation and Demonstration of Advanced Material Solutions for Sustainable and Efficient Ships

E-LASS/RAMSSES workshop

October 11th, 2017

Pula, Croatia

Introduction to RAMSSES

Technical overview, collaboration opportunities

Matthias Krause, Center of Maritime

Technologies (CMT)





- CMT's introduction (focus: role in RAMSSES)



- RAMSSES - Objectives, targets and verifiable goals

CMT'S INTRODUCTION

In RAMSSES, CMT acts as **Co-coordinator** next to CETENA

- **Technical Manager** of the project
- Leader of the **Communication Management Group**

Objectives, targets and verifiable goals

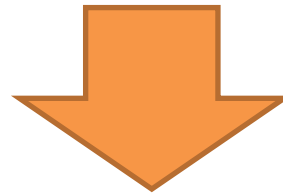
TECHNICAL OVERVIEW

Proposal was **highly rated** by evaluators

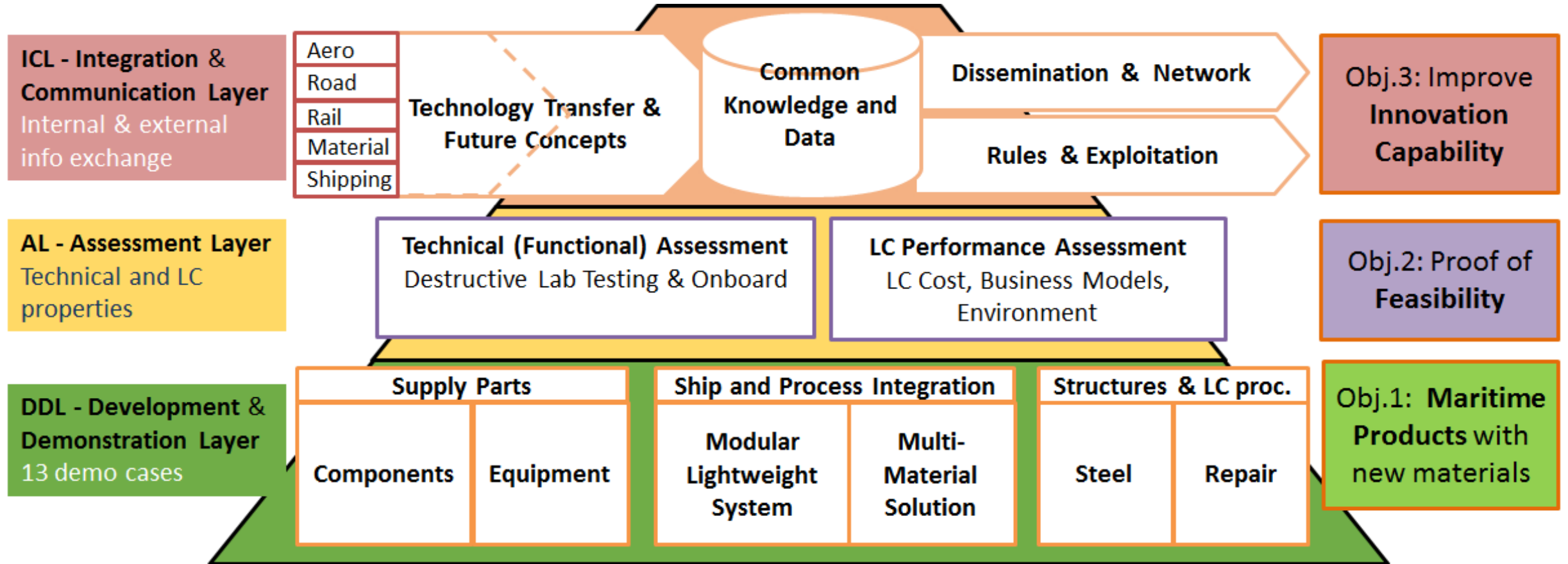
Comparably **large** project with a **wide** technical scope

Highly relevant **strategic goals**

Integrative aspects (external collaboration)



High expectations
High responsibility



Develop

- Maritime Products and processes



Validate

- Proof of technical and LC feasibility



Integrate and Cooperate

- Improve Innovation Capability

- 1.1 Physical demonstrators, validated and with a targeted TRL
- 1.2 Demo specific exploitation and market uptake plan
- 1.3 Foster material innovation (process chains, integration in large products)
- 1.4 Prove feasibility of processes and products (technical, safety)
- 1.5 Provide summary information on material and process innovation

- 2.1 Prove readiness for (pre-) approval of demo cases
- 2.2 Efficient testing and valid models of relevant demo properties
- 2.3 Assessment of LC costs and environmental impacts
- 2.4 Documentation of tests and unified testing standards

- 3.1 Analyse innovative non-maritime material applications (TTG)
- 3.2 Collect feedback from external ship operators (MAG)
- 3.3 Common Knowledge/data repository
- 3.4 Strategic dissemination including a sustainable network (E-LASS)
- 3.5 Approach towards 'fast track to approval'; to be fed into the rule making process
- 3.6 maintain forecast on expected impact; provide plans for exploitation and market uptake

Demo cases - areas of application



RoRo-Deck



Hull



Cabins

Ship and Process Integration



Superstructure



Deck houses



Supply Parts:
Equipment and Components



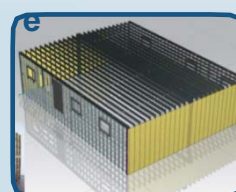
Rudder



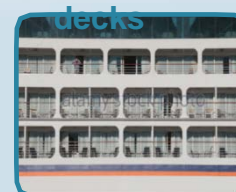
Propeller



Walls & bulkhead



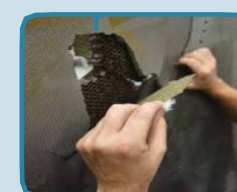
Superstructure



Steel decks



Steel details Long. Bulkhead



Repair

Structures and LC process:
Steel & Repair

- TRL estimation wrt real maritime application
- Interaction opportunities between demo cases
- Commercial approval outside RAMSSES

No	Cluster Title / WP Title	Lead	Focus Material	TRL Target	Validation
Components & Equipment		NetComp			
09	Modular Light System for Less Critical Internal Walls and superstructure	BALTICO	various	6-7	(pre)approval*
10	Lightweight Components for High Loads and Fire Class	BLA	composite	6-7	(pre)approval*
11	Propeller blades by additive manufacturing	DCNS	metal	4-5	shore based
12	Lightweight Rudder Flap	BMS	composite	6-7	onboard
Ship integration: Composite		DSNS			
13	Integration of System for Internal Walls and Superstructure of Cruise Ships into shipyard processes	MW	composite	7	onboard
14	Modular Decks for RoRo vessels	ULJ	composite	7	onboard
15	Lightweight aluminium and composite walls for Work Boats	MEC	various	6	onboard
16	Composite superstructure module on steel deck for multi purpose vessels	DCNS	composite	6	shore based
17	Custom Made Hull for Offshore vessel	DSNS	various	6	shore based
18	Multi material lightweight cabin for passenger ships	STX FR	various	6-7	shore based
Ship integration: Steel&repair		CET			
19	Highly Loaded structural details from high tensile steel in passenger and research vessels	FC	steel	6	shore based
20	Lightweight Decks using High Tensile Steel in cruise ships	MT	steel	7	onboard
21	Composite Overlay to repair and improve metallic and non-metallic structures	CARDA	various	7	(pre)approval* onboard
<i>* commercial approval to be done outside the project based on data elaborated in RAMSSES</i>					

- **Demo cases**

- Each with a clear focus, complementary to each other
- Covering fabrication technology and products
- Harmonised working procedure → allowing for interaction with AL and ICL

- **Testing**

- Development tests in the demo cases → qualify materials and structures
- Approval tests in the AL, following existing rules or risk assessment → Readiness for approval

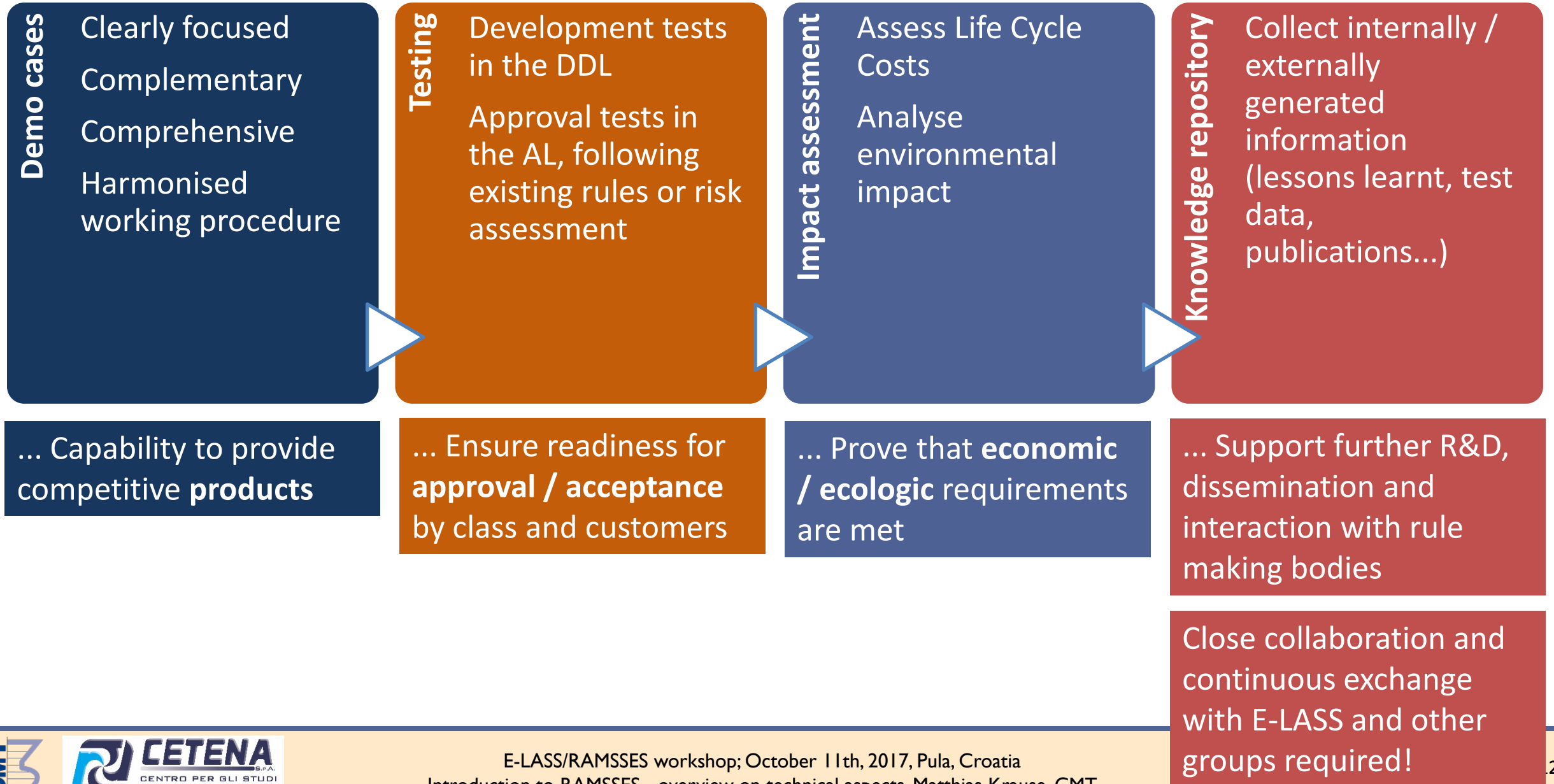
- **Impact assessment**

- Assess Life Cycle Costs and environmental impact of demo cases

- **Knowledge repository**

- Collect information generated (internal) and collected (external) by RAMSSES (lessons learnt, test data, publications)
- ... For internal use as well as for dissemination, input to rule making bodies

→ Close collaboration and continuous exchange with E-LASS and other groups is crucial!



COLLABORATION OPPORTUNITIES IN THE RAMSSES PROJECT

Identify technologies from other industries to be introduced to the Maritime Industry

Technology
Transfer
Group



Steady Exchange with maritime end-users on requirements and possibilities
(ship owners and operators)

Maritime
Advisory
Group



Provide recommendations on procedures and processes required to implement a complete technology transfer from other industries

E-LASS

Maritime Advisory Group

Regular and continuous exchange with ship owners and operators

Impact

Influence rule-making and standardisation processes

Foster Market-uptake for innovative materials



Join now!

Invitation letters will be sent to interested parties. Contact us!



www.e-lass.eu

Maritime lightweight materials network

RAMSSES ' main communication platform for stakeholders

- Building up a sustainable network
- Steady updates on upcoming events
- Steady updates on project developments
- Participation free of charge

Public workshops 2x a year



The project RAMSSES has received funding under the European Union's Horizon research and innovation programme under the grant agreement No **723246**.

The information contained herein reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained herein.