Green Fuels in Ports – Holistic Safety Perspectives

DBI

The Danish Institute of
Fire and Security Technology

Køge, Denmark

Photo: TV2 Kosmopol

Tianjin, China

Photo: New York Magazine

Iskenderun, Turkiye

Photo: BM.GE

Beirut, Lebanon

Photo: The Outlaw Ocean Project

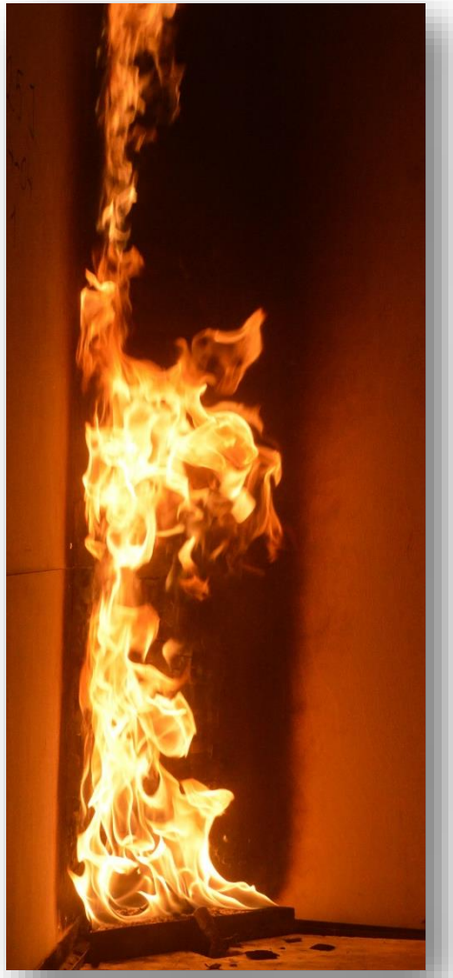
MAIN MESSAGES FOR TODAY

Future Ports are not (simply) Ports

You can’t hurry safety

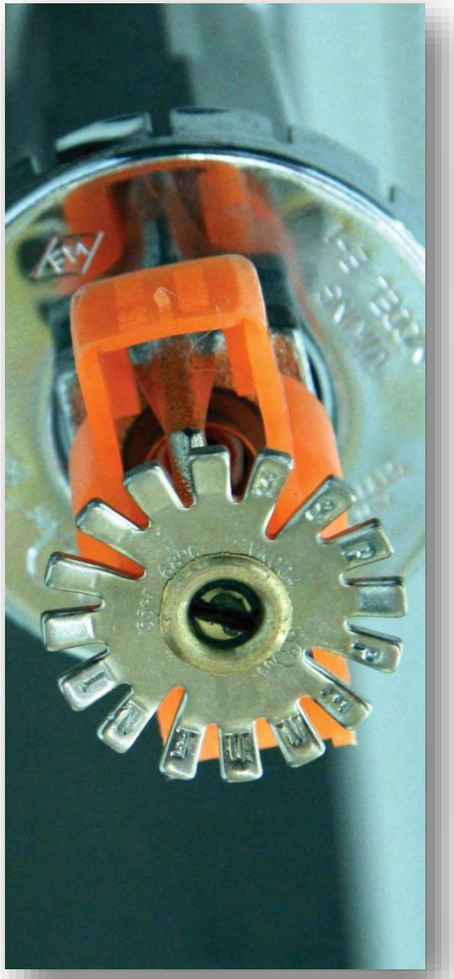
Tomorrow’s Risk Scenarios Require Action Today

DBI – SUPPORTING A SAFE AND FAST GREEN TRANSITION



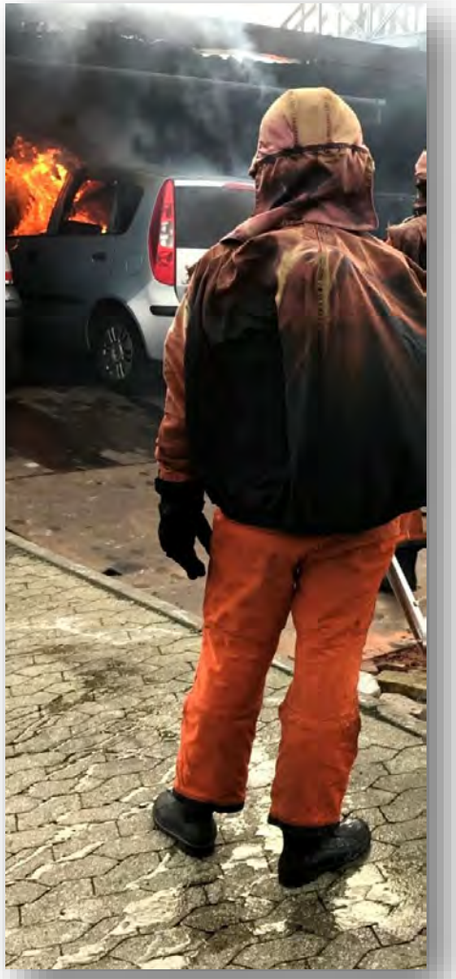
FIRE TESTING

DESIGN



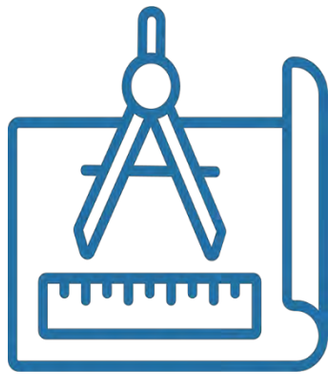
ASSESSING TECHNOLOGIES

FIRE INVESTIGATION



DISSEMINATION AND TRAINING

DBI – WHAT WE DO



DESIGN

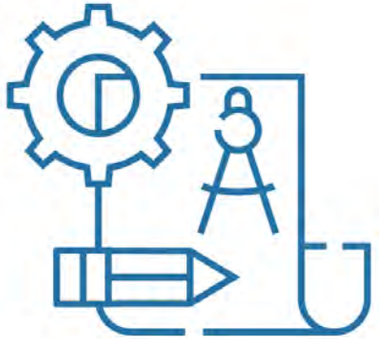
Fire Tests
Simulations
Modelling

APPROVAL

Compliance
Documentation
Beyond compliance

CONSTRUC-TION

HAZID/HAZOP
Scenario based
Risk Assessments



OPERATION

Inspection
Certification
Safety Analyses
Societal factors

INCIDENTS

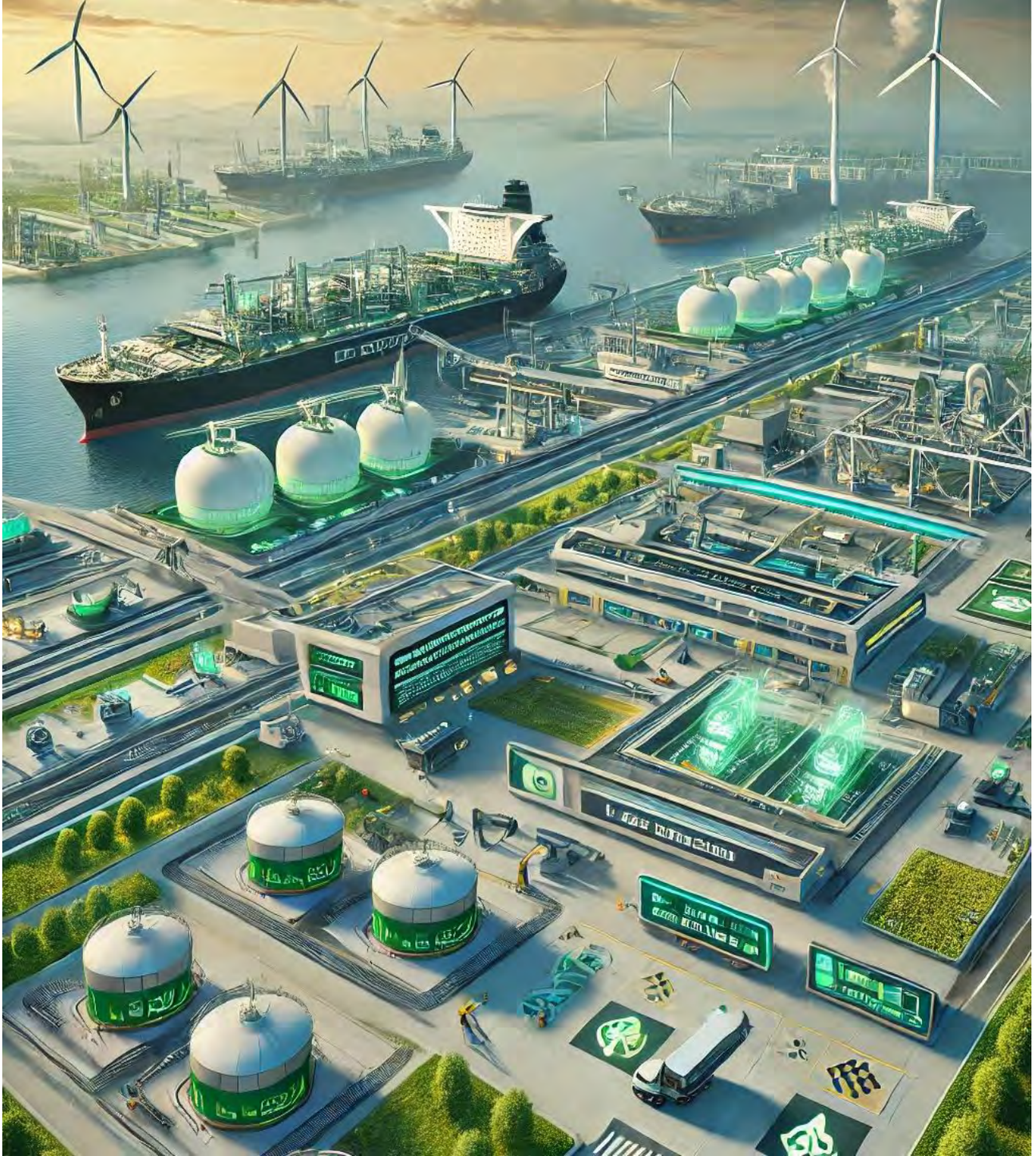
Emergency-Management
Investigation


MAERSK


Ceci n'est pas une pipe.

You can’t hurry safety

- Safety culture takes time to evolve
- There is a critical lack of experienced technical experts and seafarers
- We don’t fully understand the scenarios we need to mitigate



Tomorrow's Risk Scenarios Require Action Today

We need:

- to develop a systemic understanding of safety risks
- new solutions for prevention and mitigation
- to share and cooperate on best practices

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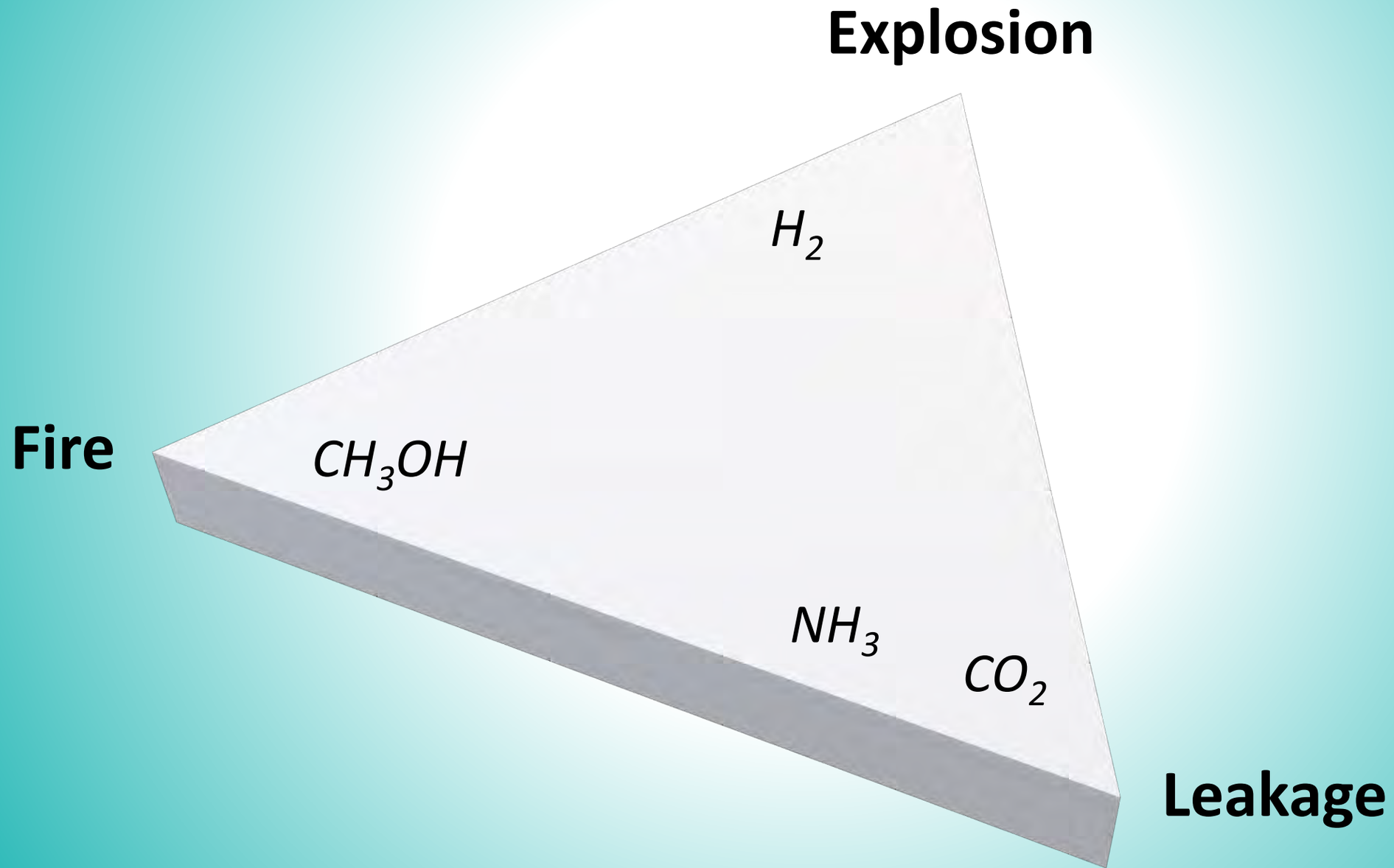
SO, WHAT CONSTITUTES A SYSTEMS APPROACH TO SAFETY?

Hazards of Green Fuels - simplified



Key Risks and Scenarios

- Dynamic storage of various fuel types and other energy sources
- Public concern regarding new energy forms
- New infrastructure added to existing, e.g., hydrogen pipelines
- Additional critical infrastructure in a limited space
- Safety concerns related to climate adaptation

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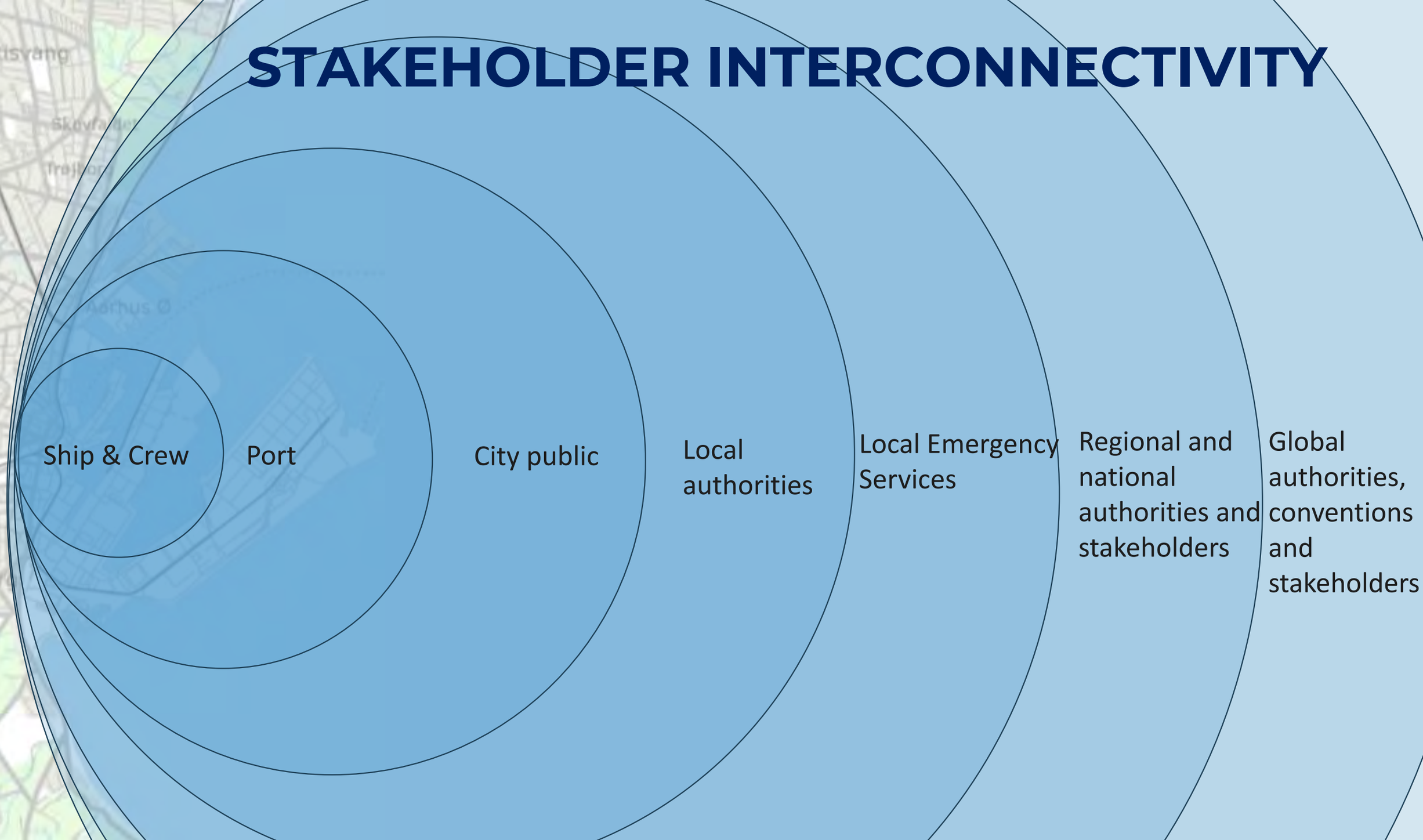
STAKEHOLDER INTERCONNECTIVITY



KEY *ELEMENTS* OF SYSTEMIC SAFETY

Technical solutions

Fire properties, Design, Equipment etc.

Operations

Bunkering, Contingency Planning, Resilience, Logistics etc.

Regulation

Approvals, Environmental Assessments, Local Planning, Standardization, International Law etc.

Societal factors & interaction

Perceived Safety, Training, Public Perception, Involvement, Communication etc.

KEY *SERVICES* OF SYSTEMIC SAFETY

Technical solutions

- *Technology assessment (eg. active systems)*
- *Ad hoc fire testing*
- *Simulation and modelling*
- *Design support and technical documentation*

Operations

- *Risk assessments (eg. storage and ruptures)*
- *Evaluation of procedures*
- *Input for contingency planning and resilience*
- *Safety strategies*

Regulation

- *Documentation for approvals (legal and standards)*
- *Decision support*

Societal factors & interaction

- *Mapping competencies*
- *Investigating perceived safety and public concerns*
- *Input for involvement and communication*
- *Training*

MAIN MESSAGES FOR TODAY

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DBI BELIEVES IN A SAFE AND FAST GREEN TRANSITION – EVEN FOR PORTS

THANKS FOR YOUR ATTENTION

DBI
FIRE AND SECURITY

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