Making Global Maritime Trade Safe

10th Philippines Port and Shipping 2019

Introduction

- Presenter: Everhardus (Van) van den Heuvel
    - Deputy Head of Global Sales and Marketing, Maritime Traffic Management, Saab
    - Background: Maritime transportation; Naval combat systems; Telecommunications
- Our Why: *"We Make Maritime Trade Safe and Efficient Around the World"*
- Maritime Traffic Management
    - Operations in Canada, Australia, Netherlands, Belgium, India, Sweden, Hong Kong, USA
    - "Fairway to Freeway" solutions – integrated end to end solutions for ports
    - Coastal Surveillance solutions – integrated solutions for countries and coasts
- Solutions include
    - Terminal Operating System - TERMINAL**CONTROL**
    - Port Management Information Systems - PORT**CONTROL**
    - VTS and VTMIS solutions – MARITIME**CONTROL**
    - Coastal Incident Management solutions - COAST**CONTROL**

ARE YOU READY TO MAKE THE **WINNING** MOVE?

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What is happening in the Port?

Agents & Port Community

Traffic Management
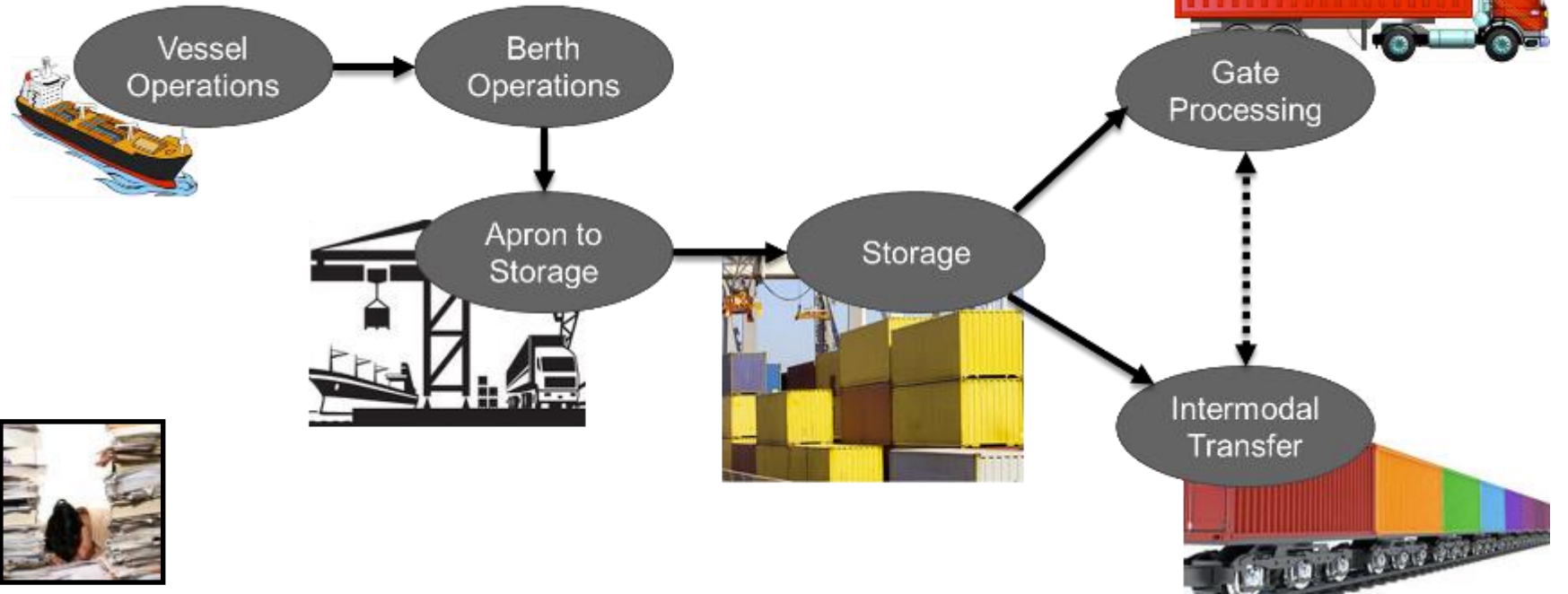
Pilot Scheduling

Tug Scheduling

Port Services Planning

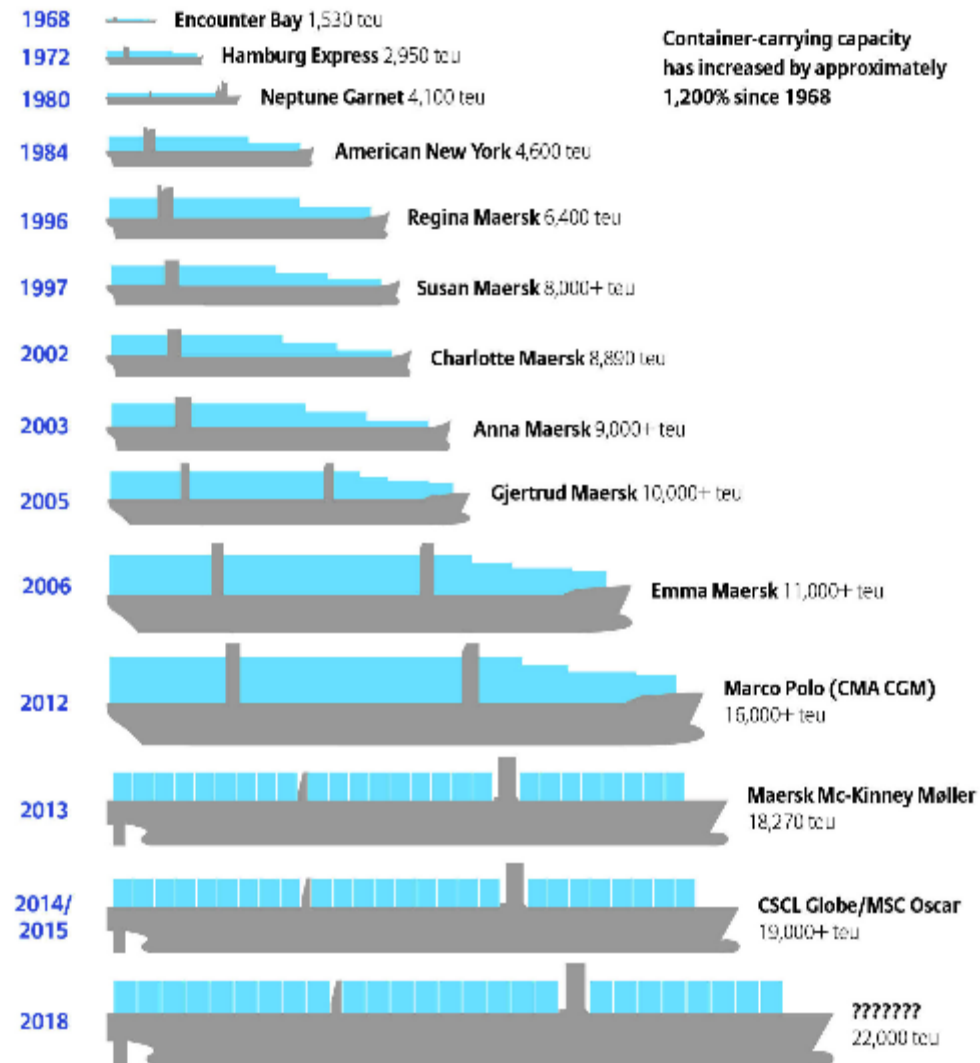Cargo & Dangerous Goods

Warehouse Management

Billing & Accounting

Vessel Operations → Berth Operations → Apron to Storage → Storage → Gate Processing

Storage → Intermodal Transfer

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Changes taking place in the industry?

- Globalization

- Bigger ships

- Rising cost of infrastructure development

- Regulations (VGM)

- The environment, especially emissions (CO_2)

- New levels of security along with new threats

- The world economy affecting the import/export bala

Year	Ship	Capacity
1968	Encounter Bay	1,530 teu
1972	Hamburg Express	2,950 teu
1980	Neptune Garnet	4,100 teu
1984	American New York	4,600 teu
1996	Regina Maersk	6,400 teu
1997	Susan Maersk	8,000+ teu
2002	Charlotte Maersk	8,890 teu
2003	Anna Maersk	9,000+ teu
2005	Gjertrud Maersk	10,000+ teu
2006	Emma Maersk	11,000+ teu
2012	Marco Polo (CMA CGM)	16,000+ teu
2013	Maersk Mc-Kinney Møller	18,270 teu
2014/2015	CSCL Globe/MSC Oscar	19,000+ teu
2018	???????	22,000 teu

Container-carrying capacity has increased by approximately 1,200% since 1968

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Other complexities (Technology Challenge)

- Volume of Information; increasing data growth

- Various types of users; internal and external

- Information Dispersed across many systems

- Different Information Formats; integration challenge

- Different views of information (data, graphical)

- Dispersed locations of input and reporting
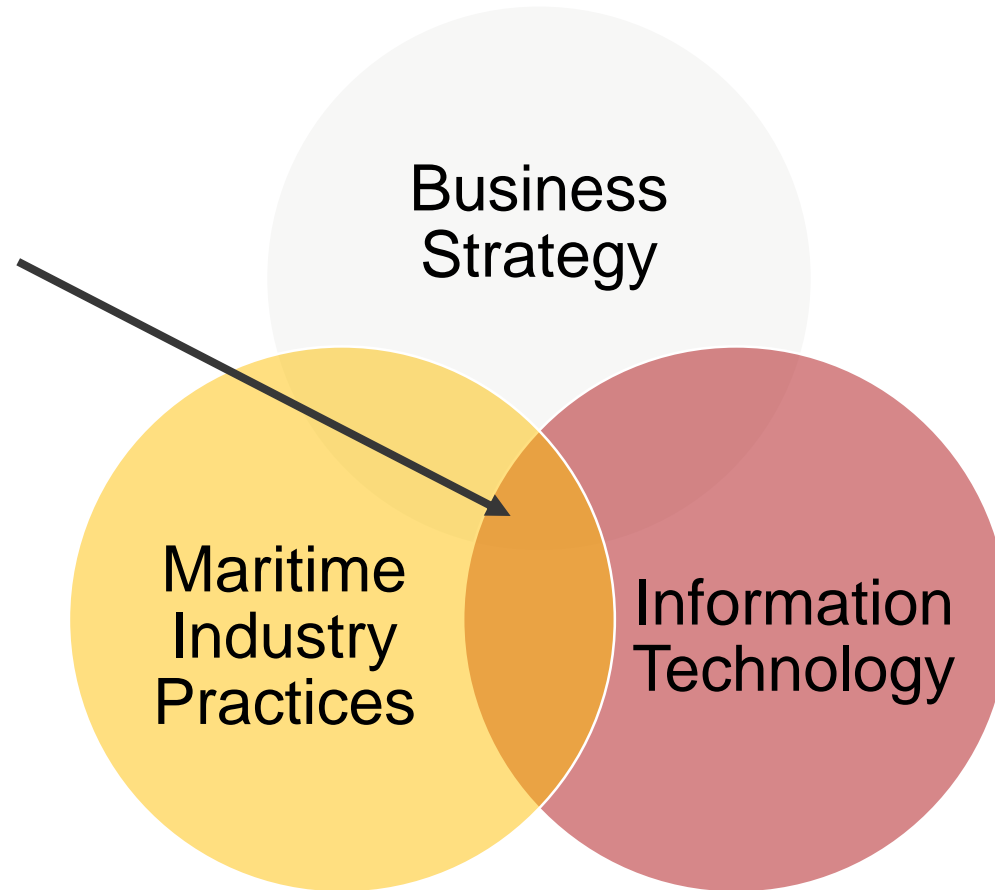
- Extensive Reporting (Detailed, General, Formal)

VAB
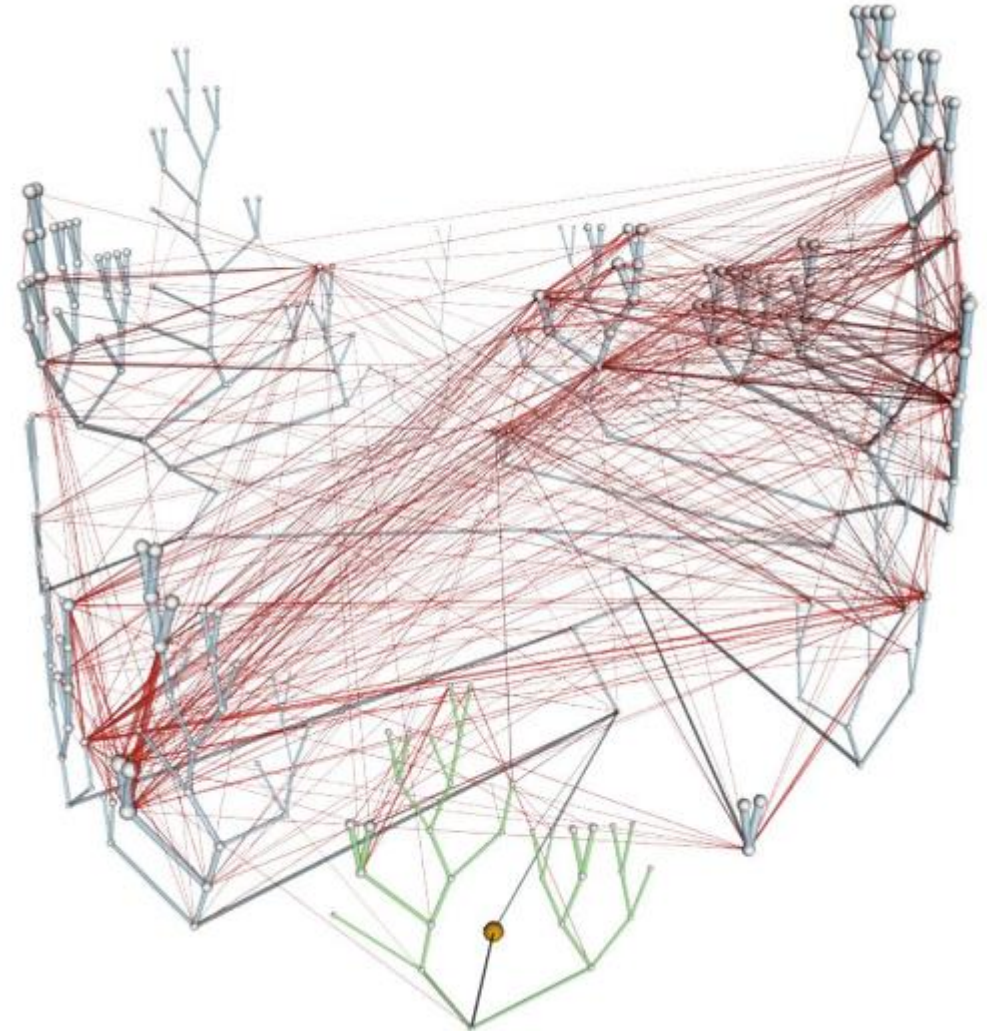
Several areas to address

- **Silos of Information**

- **Independent processes between departments and groups**

- **Need to communicate and share accurate data**

- **Desire to operate in more efficient & timely way**

Is there a solution?

SOLUTION SPACE

Business Strategy

Maritime Industry Practices

Information Technology

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Systems Concept

- Think about the port as a system of systems.

- A process has inputs & outputs

- When you have many parts it gets complex

- Issues to deal with in complex systems thinking
  - Are the outputs what I want?
  - Are there unintended consequences?
  - Are the inputs going to the right parts of the system?
 - Which parts could be more efficient?

Simple system

Complex systems
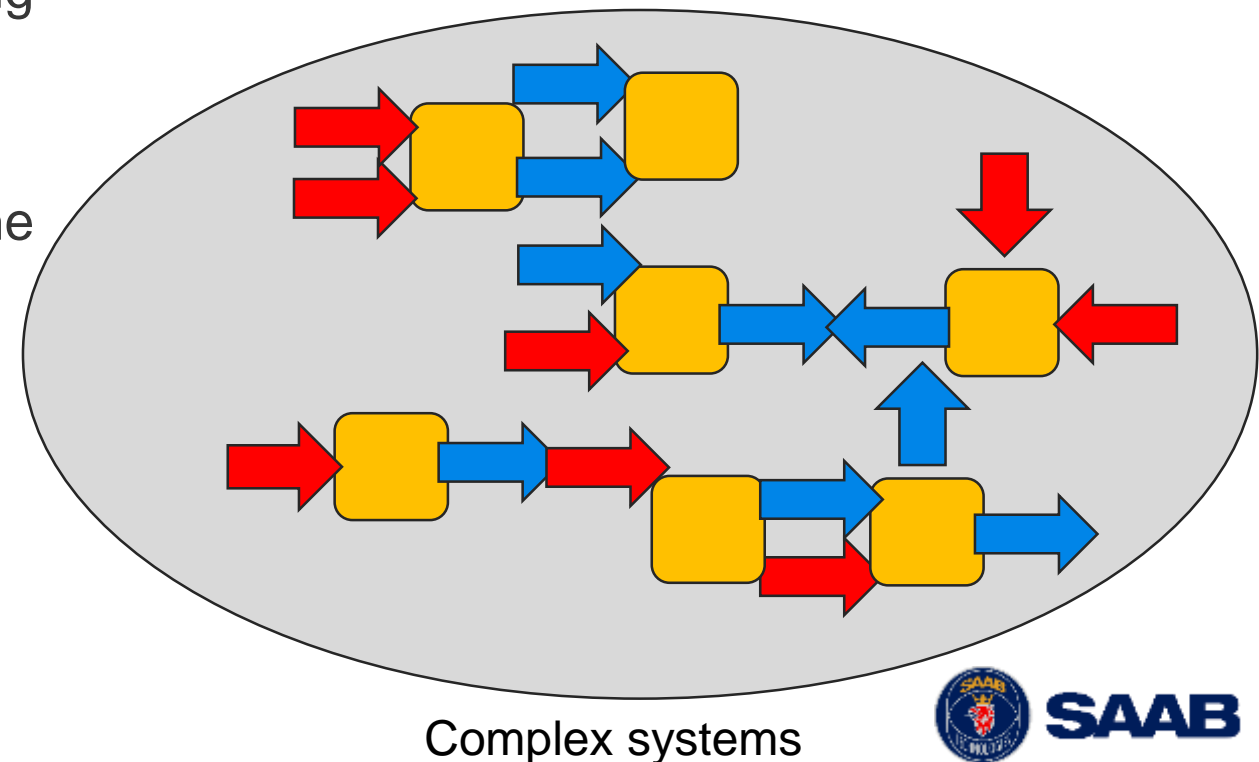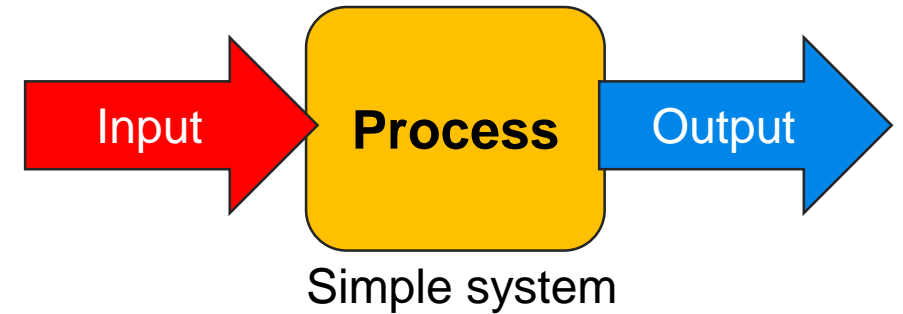
How to improve Safety and Efficiency?

- Provide everyone with secure and consistent information

- Deliver information "anytime and anywhere"

- Create effective business processes with partners

- Make it easy to collaborate and share information

- Streamline communication

- Collect and use real data to optimize the outcome

How to get there?

1. Expert systems 'best of class' – Workflow optimization

2. Planning and real-time integration – Data availability

3. Integrated communication – Seamless communication

4. Common Operating Platform (COP) – Information access

5. Collaboration Decision Making system (CDM) – Collaborative choices

6. Operational Optimization – Enhanced safety and efficiency

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Step 1 – Expert systems / workflow automation
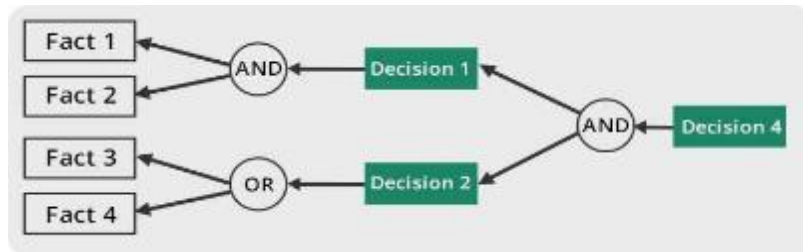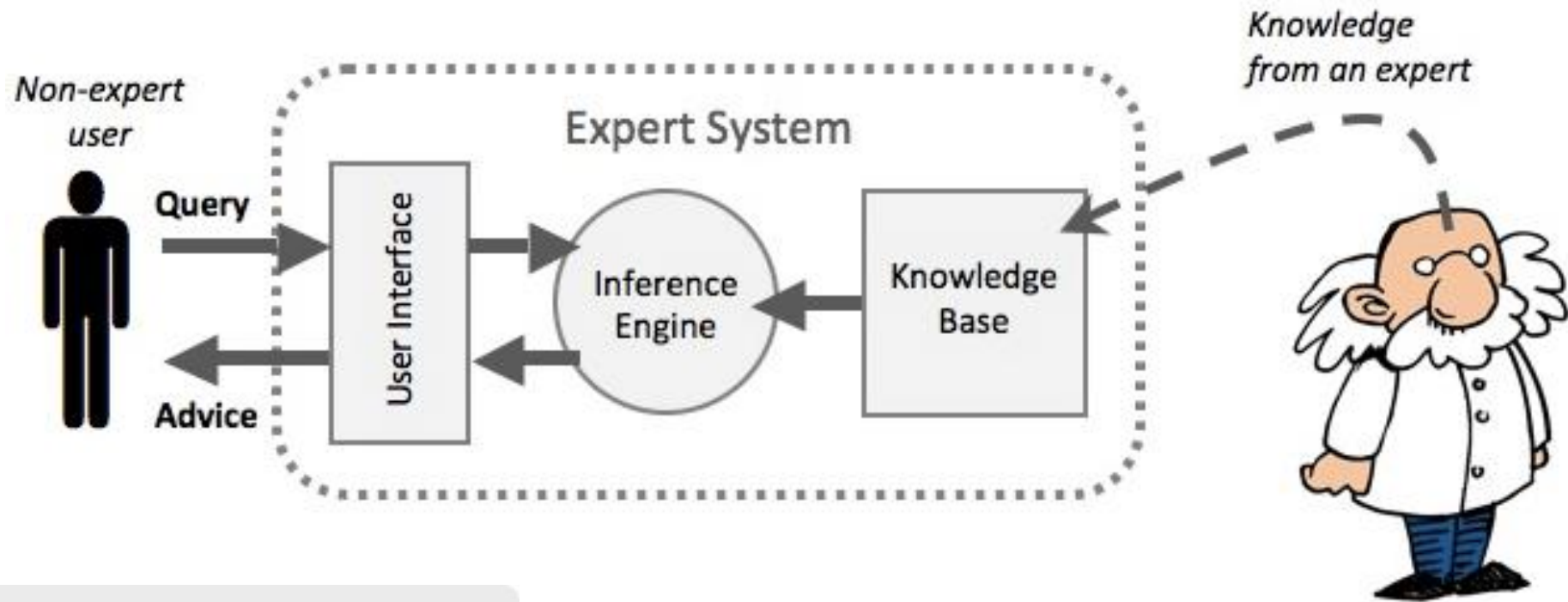
USER INTERFACE + KNOWLEDGE
INCREASED FOCUS FOR EACH ROLE

Step 2 – Planning & Real-time integration

PLANNING DOMAIN

Visit Management

Resource Management

Cargo Management

Billing Management

Property Management

Terminal Management

REAL-TIME DOMAIN

AIS Networks Management

Vessel Information Management

Vessel Traffic Management

Coastal Incident Management

If I put two or more things together the result should be better than the parts alone!

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Step 3 – Integrated Communication

- Integrated voice communication

- EDI and other 3rd party interfaces

- Email, SMS or other type of messages

- Customs or regulatory needs reporting

- Management & Customer reporting

- Web interface for General Public, Shipping lines, Agents, Service Providers

Step 4 – Common Operating Picture (COP)
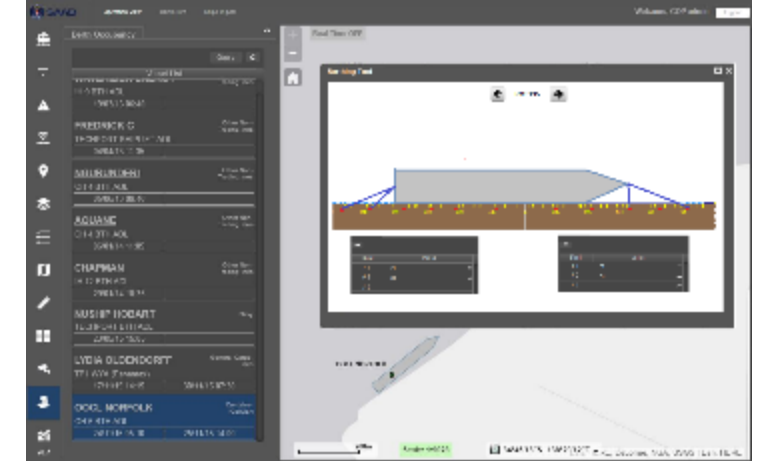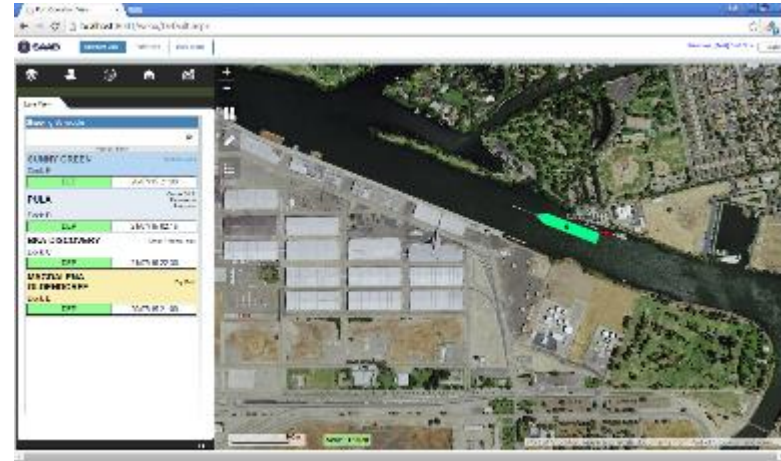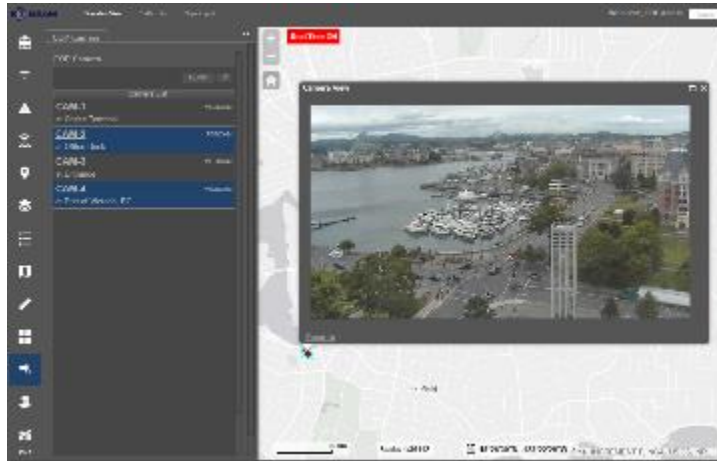
*A **COMMON** view of everything happening, planned or that has happened*

HOW

- Web access
- Map based presentation
- Layering of information
- Integrated systems sharing data

WHY?

- Ease of access; independent of device or location
- Geographical orientation
- Relevant information needed
- Best representation and of up-to-date reality

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Step 5 – CDM

Collaborative Decision Making (CDM) is an approach for making better decisions that:

- Brings the right people together,

- Enables them to work collectively from a common picture with better information,

- In order to develop a shared understanding and mutual commitment,

- And ultimately improve both the safety and efficiency of operations.

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Step 6 – Operational Optimization

- Determine what you want to optimize

- Analysis of the data

- Define rules (hard and soft)

- Create improved operation model
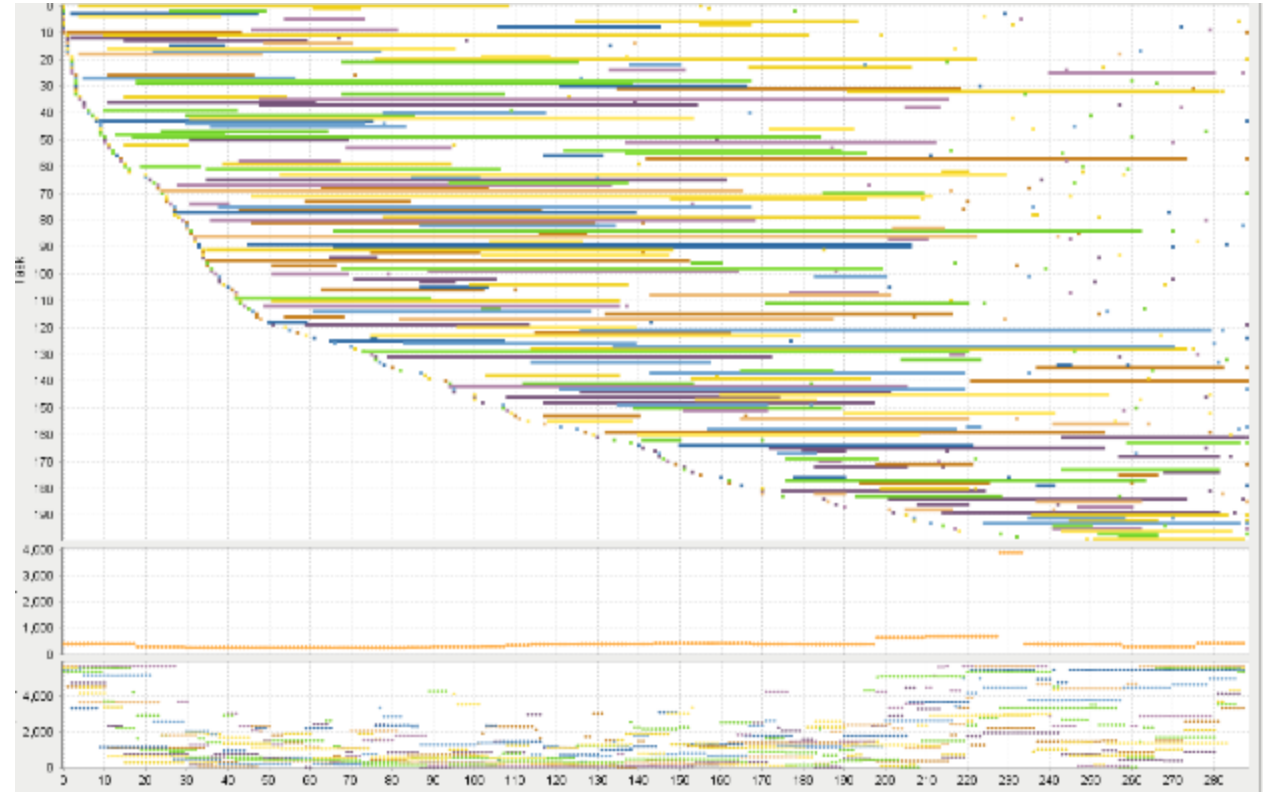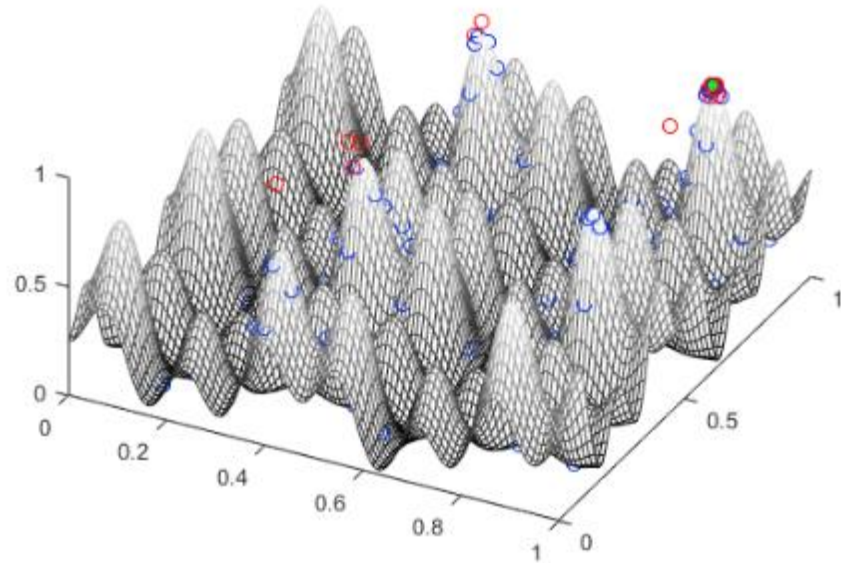
Systems Integrator: "Fairway to Freeway"
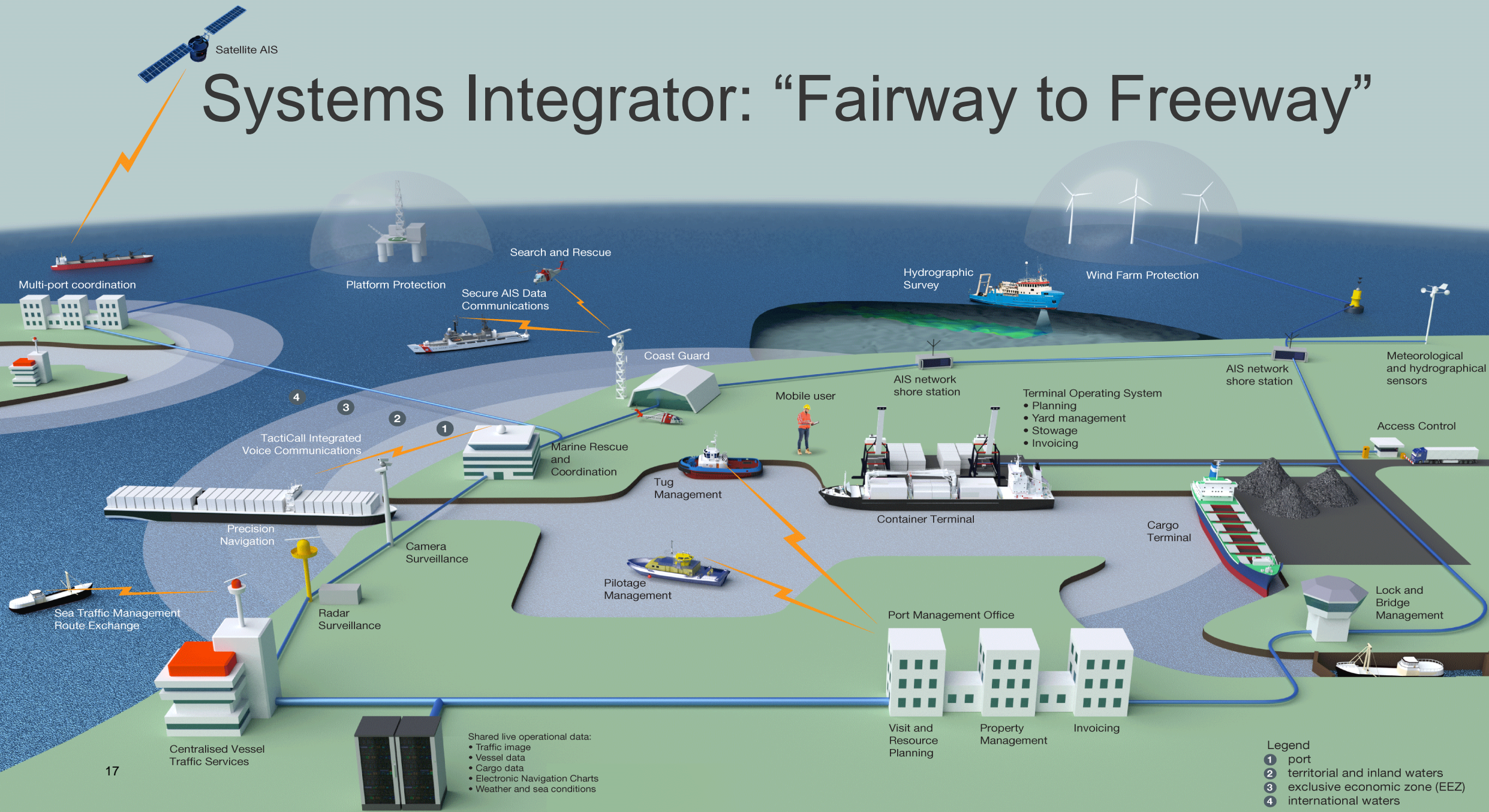
Satellite AIS

Multi-port coordination

Platform Protection

Search and Rescue

Secure AIS Data Communications

Hydrographic Survey

Wind Farm Protection

Coast Guard

Meteorological and hydrographical sensors

AIS network shore station

Mobile user

AIS network shore station

4

3

2

1

TactiCall Integrated Voice Communications

Marine Rescue and Coordination

Tug Management

Terminal Operating System
• Planning
• Yard management
• Stowage
• Invoicing

Access Control

Precision Navigation

Camera Surveillance

Pilotage Management

Container Terminal

Cargo Terminal

Lock and Bridge Management

Sea Traffic Management Route Exchange

Radar Surveillance

Port Management Office

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Centralised Vessel Traffic Services

Shared live operational data:
• Traffic image
• Vessel data
• Cargo data
• Electronic Navigation Charts
• Weather and sea conditions

Visit and Resource Planning
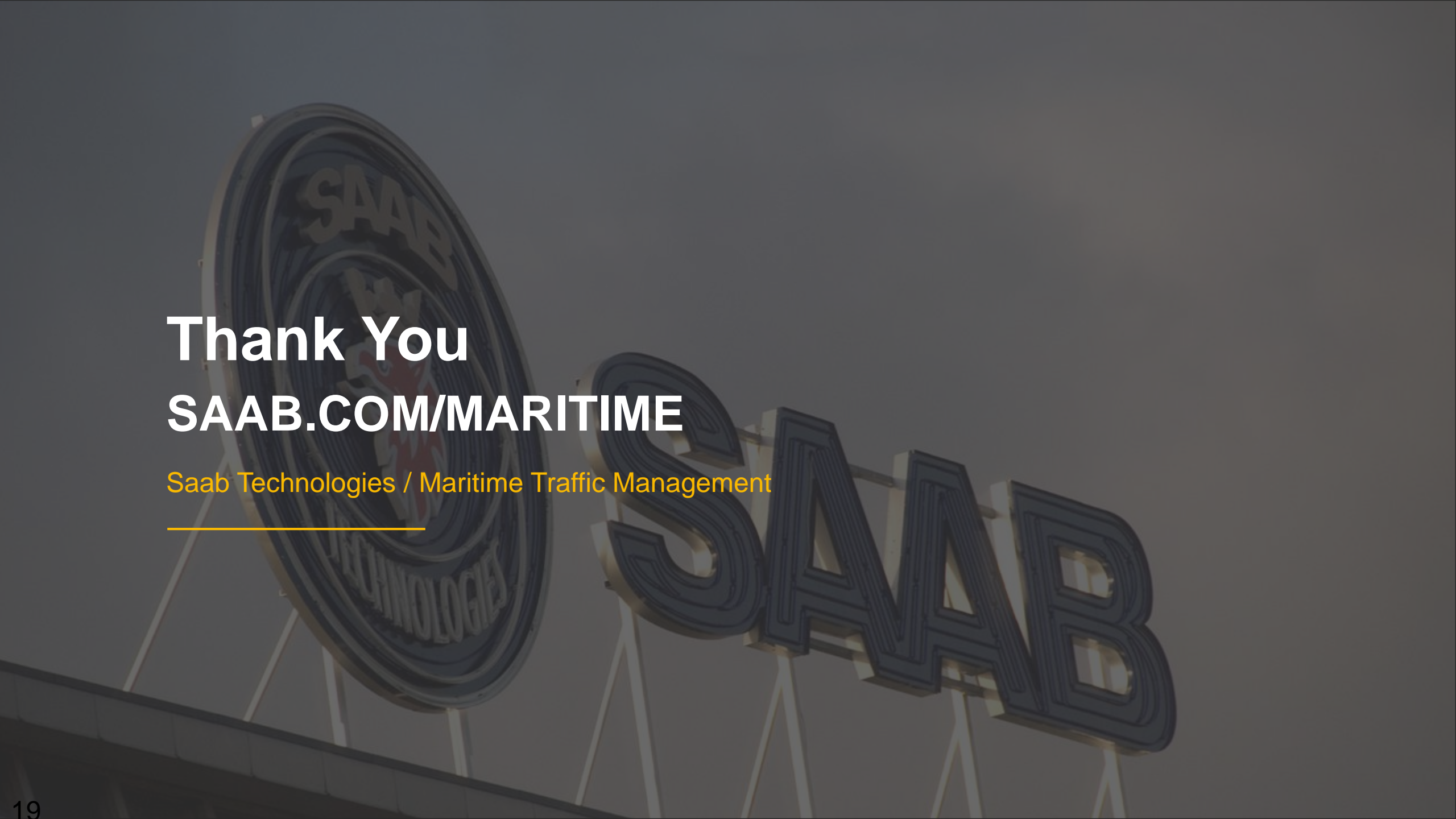
Property Management

Invoicing

Legend
1 port
2 territorial and inland waters
3 exclusive economic zone (EEZ)
4 international waters

DELIVERED BY **DEDICATED SPECIALISTS** SHARING DECADES OF **INDUSTRY KNOWLEDGE**, OUR **THINKING EDGE** GIVES YOU **COMPLETE CONTROL** OVER THE SAFETY AND EFFICIENCY OF YOUR MARITIME OPERATIONS

Thank You
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