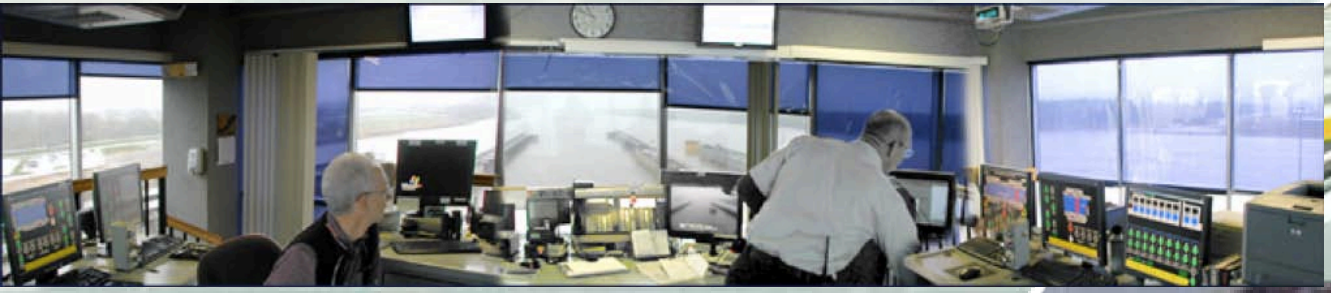
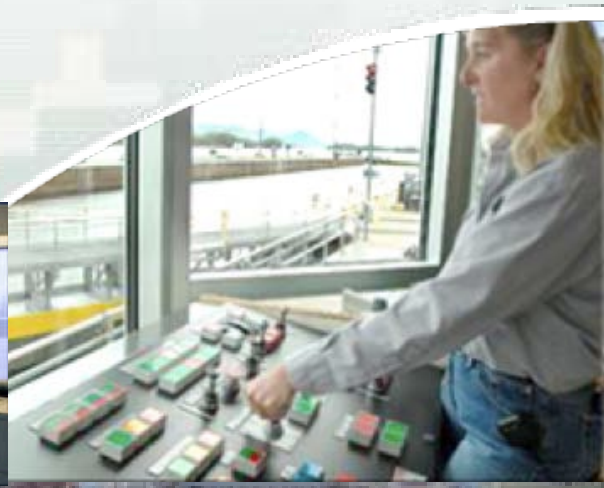
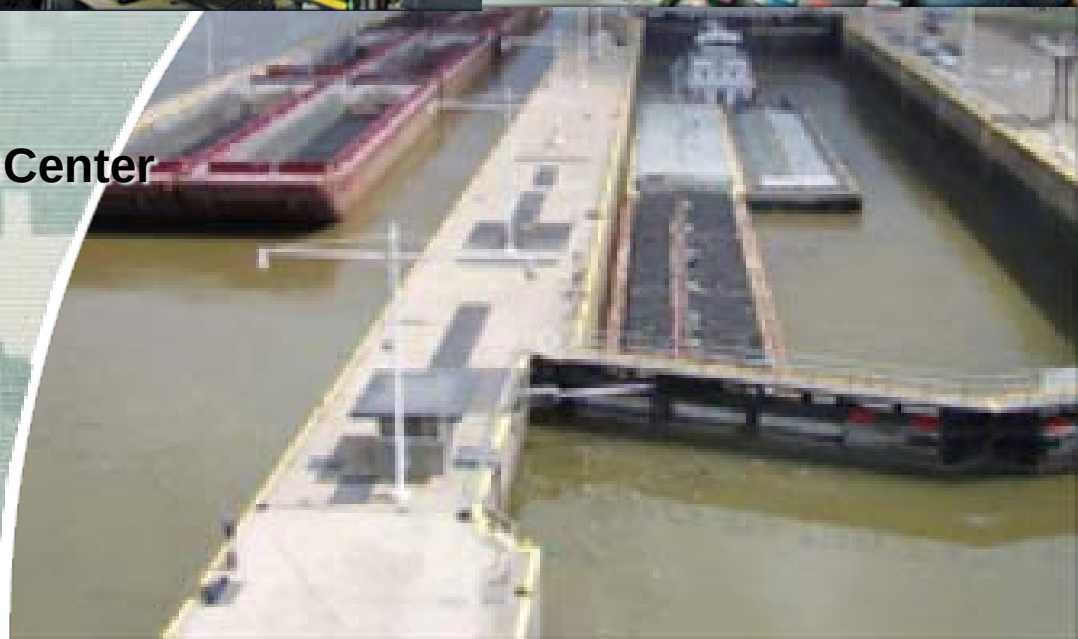
e-Navigation & River Information Services

Inland Waterways Users Board Meeting
Pittsburgh, PA
06 June 2012





Brian Tetreault
US Army Corps of Engineers
Engineer Research & Development Center
Coastal and Hydraulics Laboratory



US Army Corps of Engineers
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e-Navigation

International definition:

"e-Navigation is the harmonised collection, integration, exchange, presentation and analysis of maritime information onboard and ashore by electronic means to enhance berth to berth navigation and related services, for safety and security at sea and protection of the marine environment"

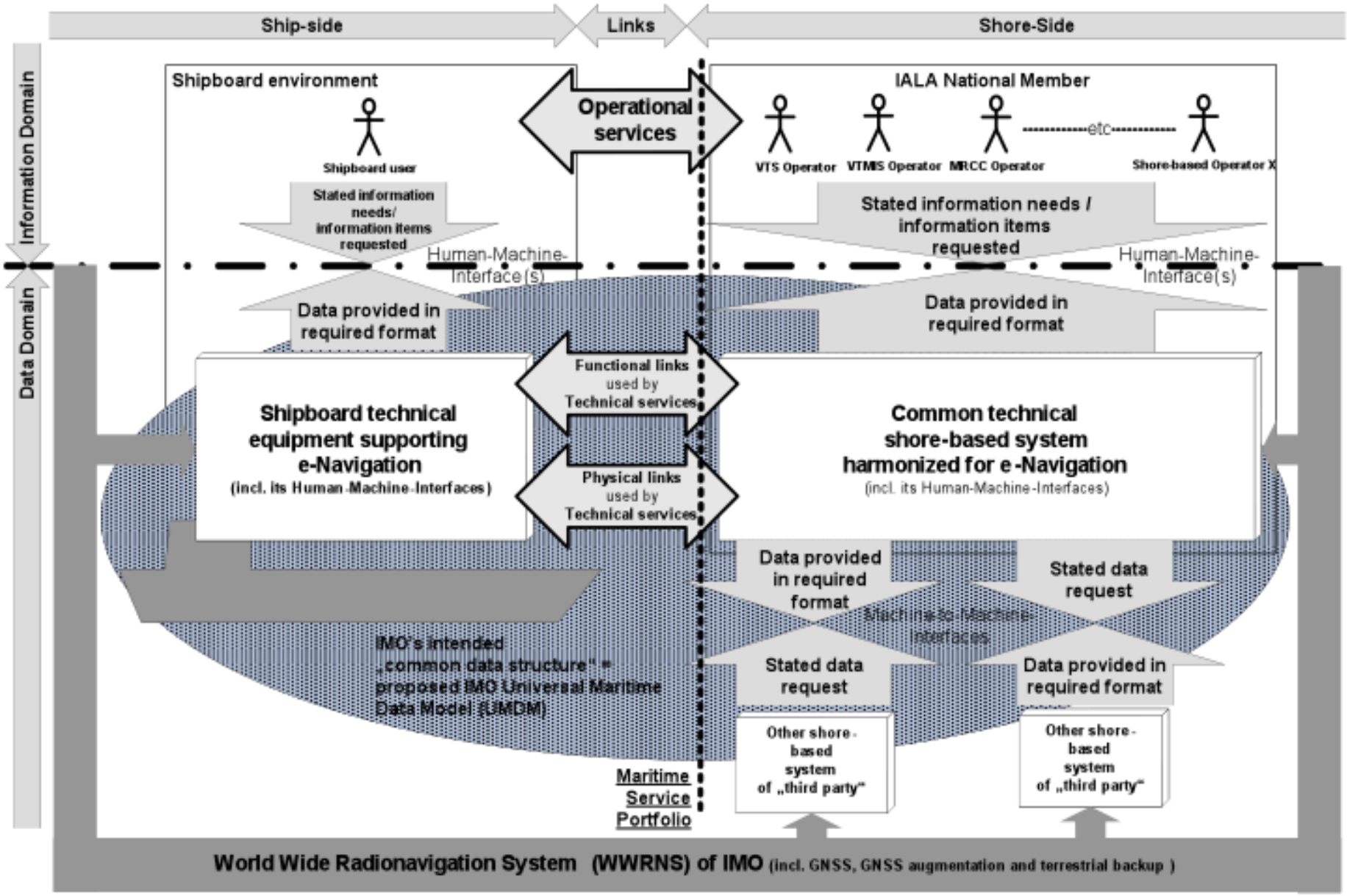
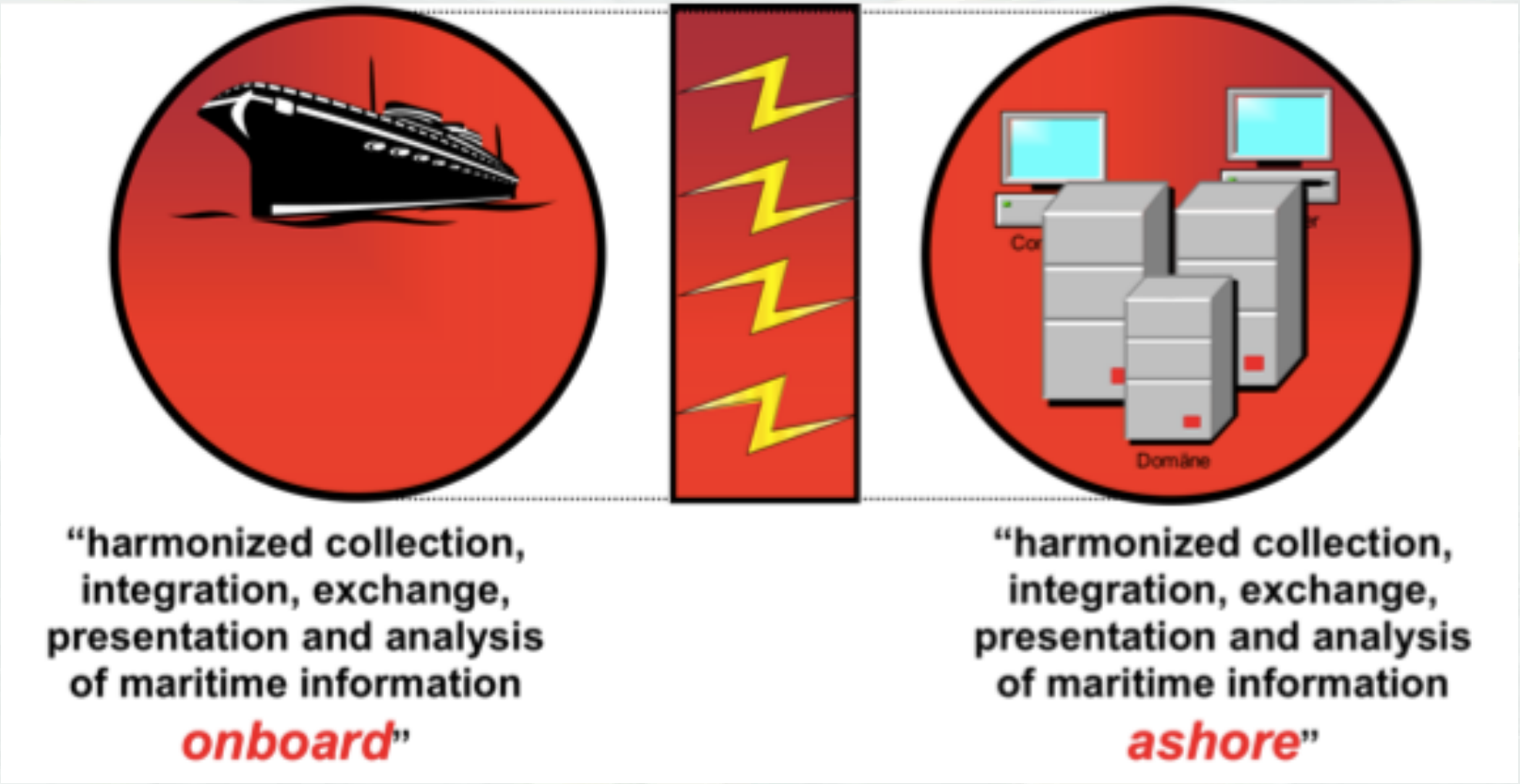


Figure 4 The overarching e-Navigation architecture – complete presentation

e-Navigation:

“three sides of the coin”



“Information Paper on the Draft IALA Recommendation e-Nav 140 on e-Navigation Architecture – the shore perspective”

Key elements of e-Navigation

- Standard technology onboard and ashore
  - Provides commonality for users and known capabilities
- Communications capabilities
  - Flexible wireless comms, adaptable to dynamic needs
  - AIS, VHF Data Exchange, WiMAX, etc.
- Common data structure
  - “speak the same language”

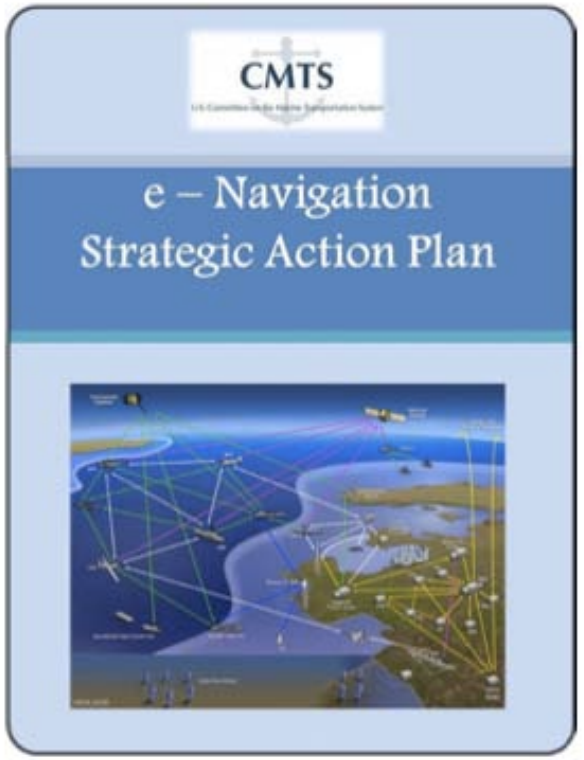
US CMTS
e-Navigation Strategic Action Plan

Principles:

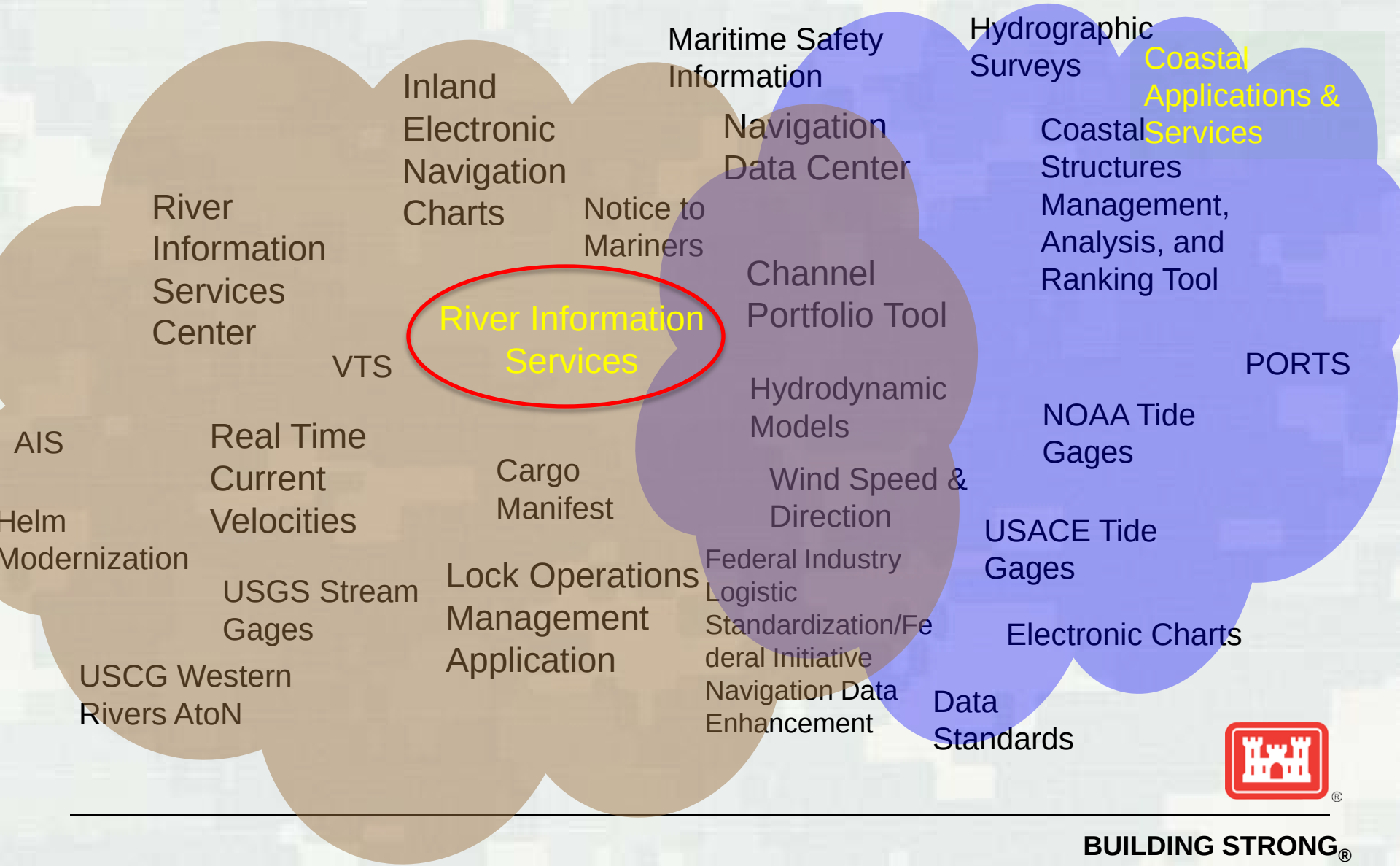
- Action – from concept to capabilities
- Alignment with international efforts
- Built on existing capabilities
- User needs

Activities:

- IAT established
- Workplan
- Inventory of capabilities and projects

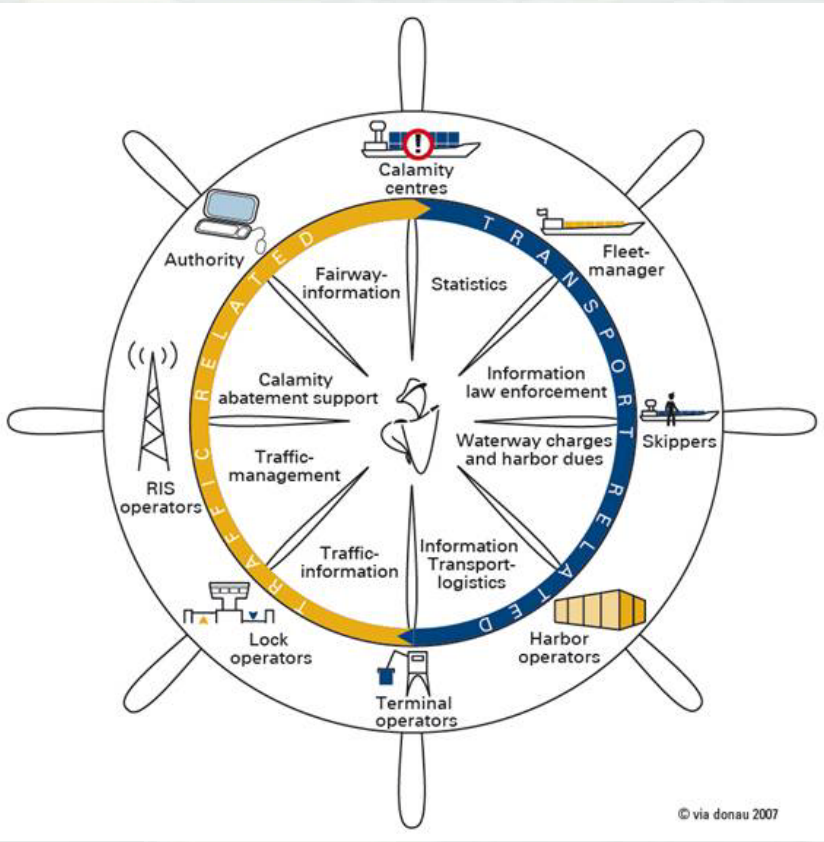


Existing capabilities



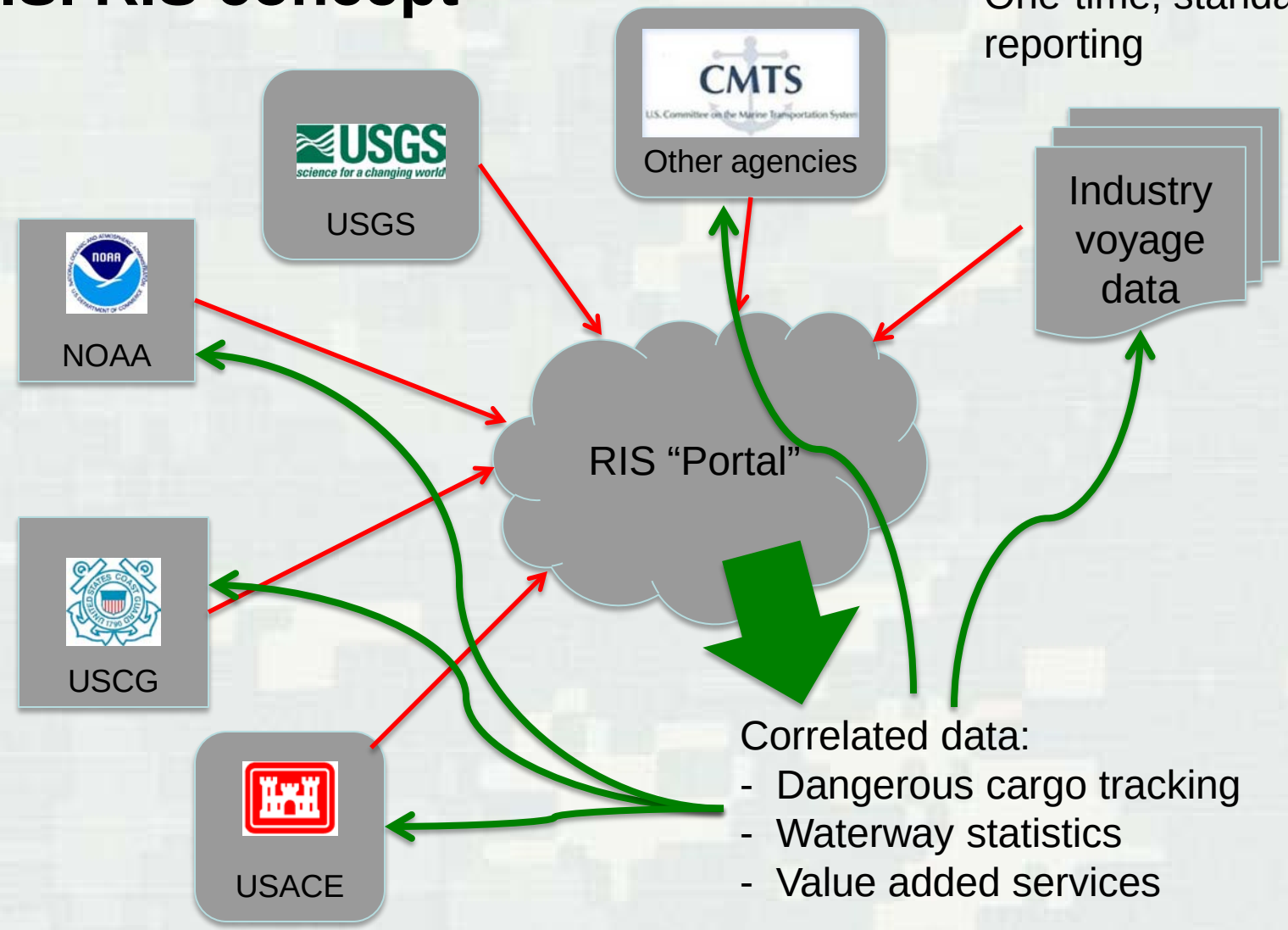
Main functions of RIS

- Fairway information services
  - IENCs
  - Notices to Skippers
- Vessel traffic information services
  - Traffic monitoring
- Traffic management
  - Lock management
- Calamity abatement support
  - Support for responders
- Transport logistics support
  - Voyage information
  - Electronic cargo reporting
  - Voyage planning
  - Navigation Notices/Notices to Mariners



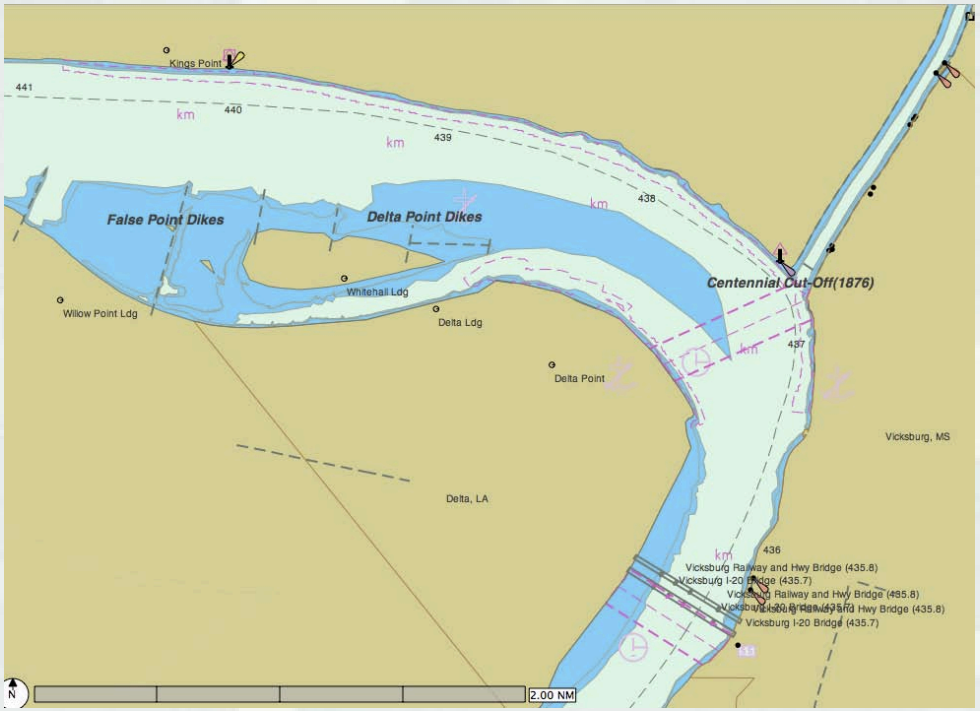
U.S. RIS concept

One-time, standardized reporting



RIS Key Technologies

- Inland ECDIS
  - ▶ IENCs
- Inland AIS
  - ▶ LOMA, USCG NAIS
- Electronic Reporting
  - ▶ Industry, interagency
- Notices to Skippers
  - ▶ Harmonization between USACE and USCG
- RIS Index
  - ▶ FILS/FINDE, Master Docks+

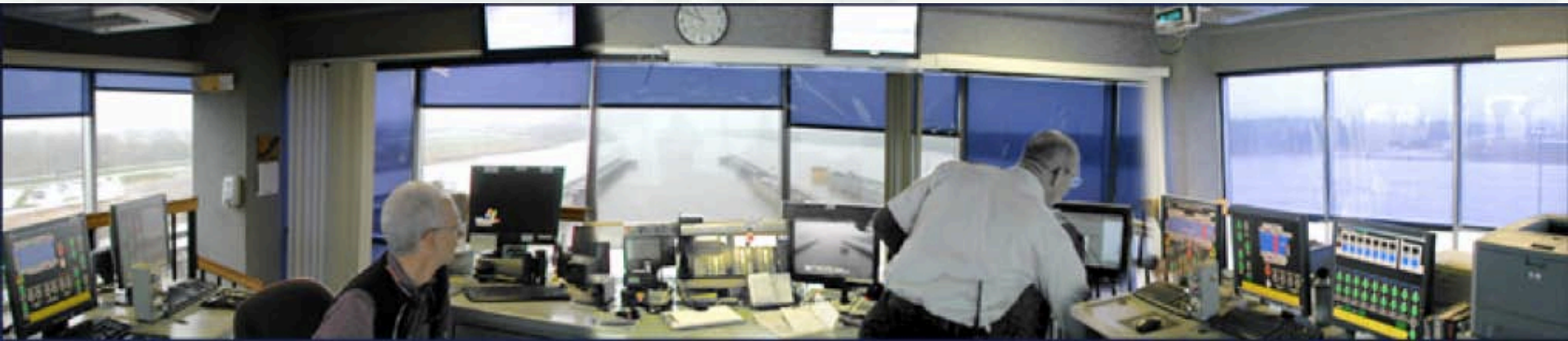


US RIS Implementation

- Build on existing capabilities
  - USACE: LOMA, FILS/FINDE, LPMS
  - USCG: Vessel data, NAIS services
  - NOAA/USGS: met/hydro obs and predictions
- Start providing services
  - “low hanging fruit”
  - Lock operational information
  - Water levels, met/hydro observations and forecasts
- Establish a RIS Center
  - Public-private partnership
  - Personnel

Lock Operations Management Application (LOMA)

- Purpose:
  - Provide end users information needed for decision support
- Goals:
  - Increase lock operator situational awareness
  - Provide vessel operators better information
  - Provide better information to Corps management
  - Exchange information with external users
- AIS is the central LOMA technology



LOMA overview

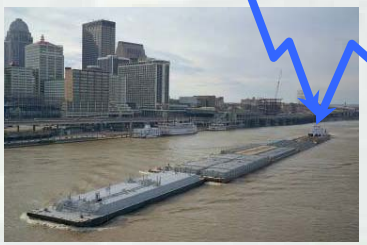
USCG data capabilities:
AIS archive, validation, etc.

USCG

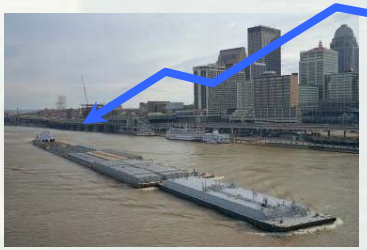
Internal applications:
- LPMS/OMNI
- CPT
- Other apps

Internal and external Navigation data sources:
- Met/hydro
- Commodity
- Voyage plans
- Other

Industry



AIS aboard vessels



AIS Service Manager

Data Storage

Internal/External web access

Web Services: XML, RSS, etc.

Public

Other Gov't agencies

Lock Operator GUI

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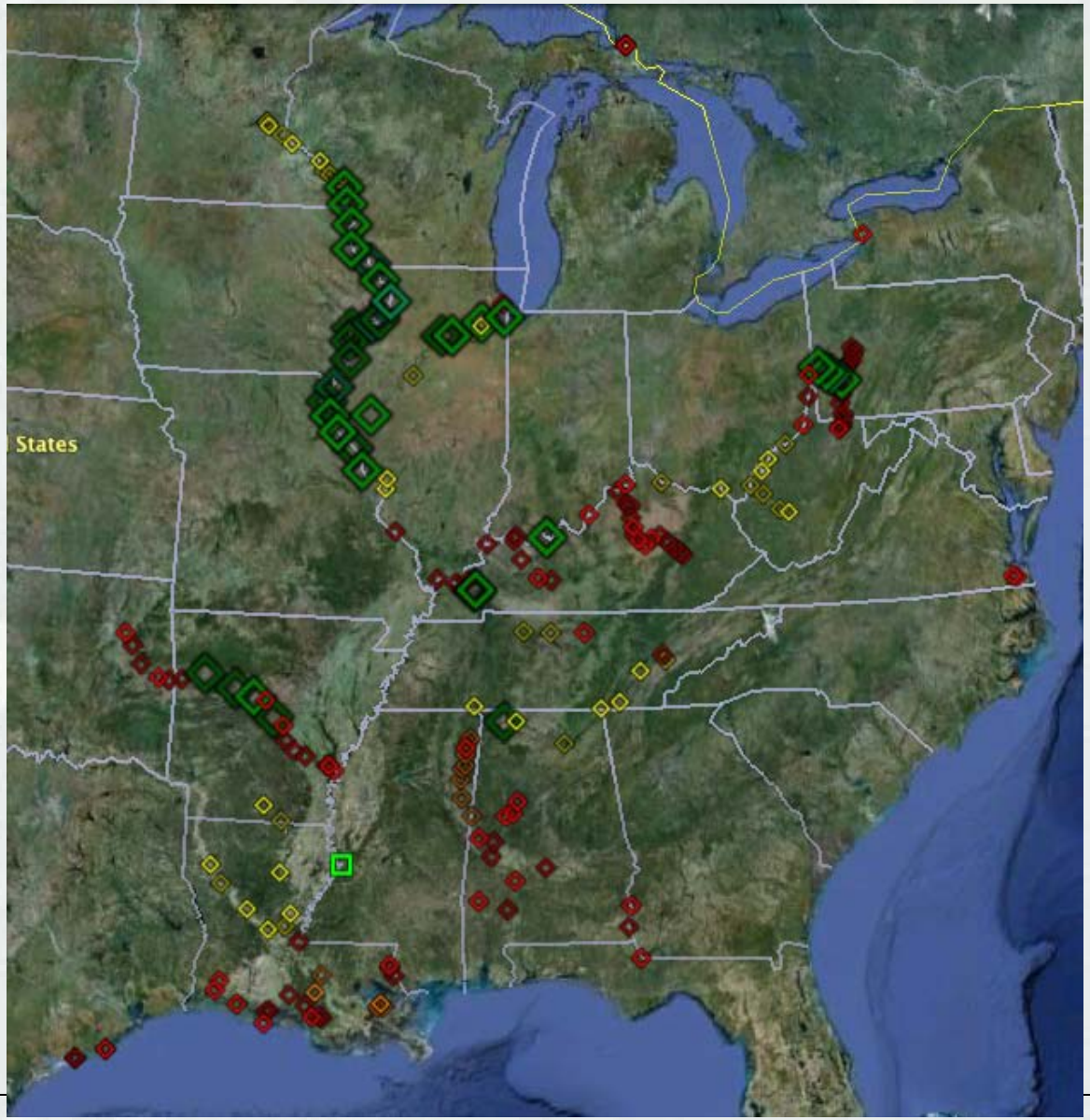
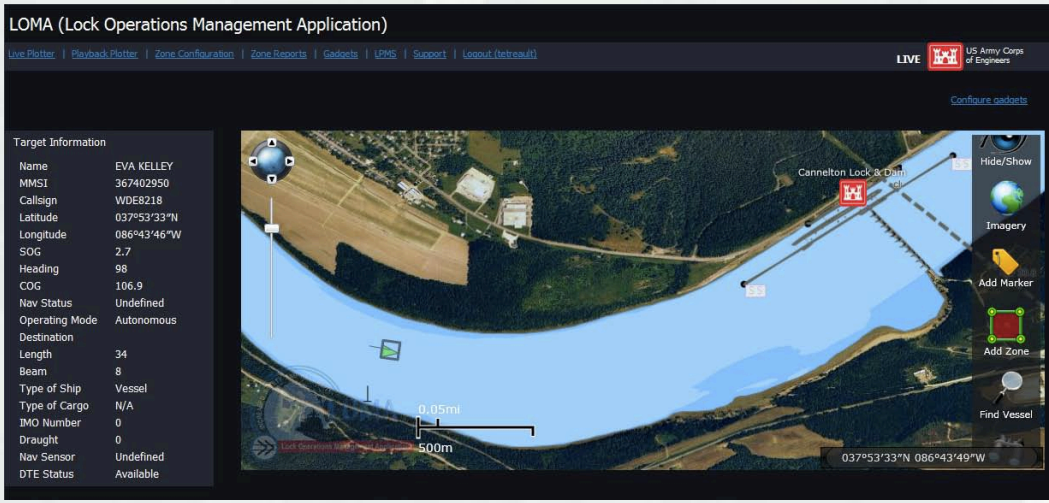
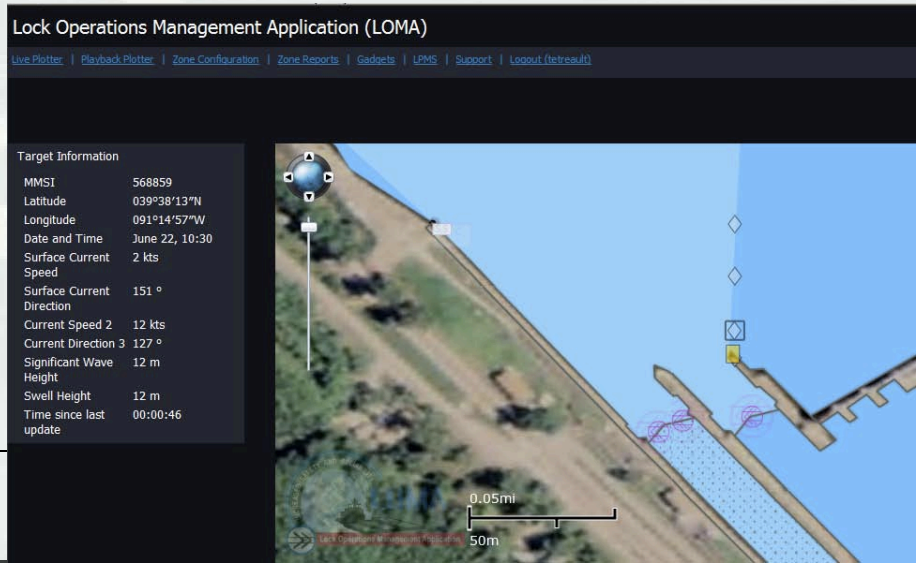
LOMA AIS equipment deployment May 2012



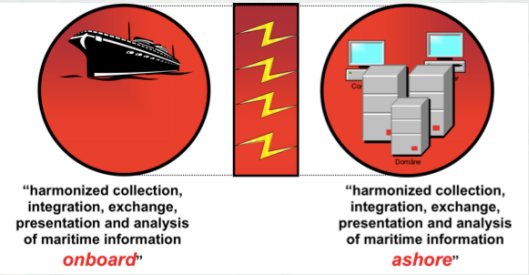
LOMA capabilities

- Situational display
  - Vessel locations, info
- Data functions
  - Playback, zone alerts
- USCG data exchange
- Integration with other systems, tools and data sources:
  - Lock Performance Monitoring System
  - Real Time Current Velocity
  - Channel Portfolio Tool
  - Industry data:
- Data dissemination:
  - Real time met/hydro information
  - Lock status information

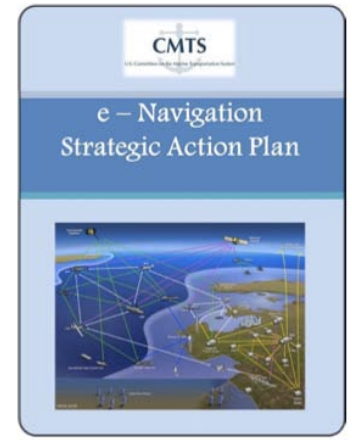




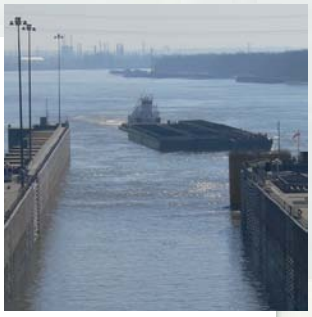
Summary



- e-Navigation concept and US implementation
- US RIS implementation
- LOMA as foundational RIS capability
  - AIS capabilities
  - Interoperability – e.g., USCG data exchange
  - Future capabilities
- e-Nav events:
  - RIS workshop, 30-31 Aug 12, Pittsburgh, PA
  - e-Navigation conference, 06-07 Nov 12, Seattle, WA



Thank you for your attention!



INCREASED SAFETY AND RELIABILITY

LOMA

Lock Operations Management Application

US Army Corps of Engineers®

Engineer Research and Development Center

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