“TO CHERISH AND STIMULATE THE ACTIVITY OF THE HUMAN MIND, BY MULTIPLYING THE OBJECTS OF ENTERPRISE, IS NOT AMONG THE LEAST CONSIDERABLE OF THE EXPEDIENTS, BY WHICH THE WEALTH OF A NATION MAY BE PROMOTED. EVEN THINGS IN THEMSELVES NOT POSITIVELY ADVANTAGEOUS, SOMETIMES BECOME SO, BY THEIR TENDENCY TO PROVOKE EXERTION.”

- ALEXANDER HAMILTON
Ongoing Journey

1969
- USCG releases guidance for reducing engineering watches based on automation.

1978
- USCG releases guidance for OSVs with unattended machinery spaces.

1984
- IMO establishes standards for minimally manned and unattended engine rooms.

1988
- Vital system automation, including provisions for minimally and unattended engine rooms added to the CFR.

2017
- IMO initiates regulatory scoping exercise.
Evolving Technology

Changes to Human Element
- Increased Reliance on Automated Systems

Changes to Risk Profile
- System Reliability
- Communication & Interaction
- Cyber Risk

Changes in Regulatory Framework
- Consensus Standards
- IMO Instruments
- Domestic Regulations

Sustained Resiliency & Performance
**Goal:**
Ensure the development and application of new technologies sustain maritime safety, security (cyber & physical) and environmental stewardship.

**Strategy:**

**Managing Early Adoption**
- Establish Approach
- Leverage Existing Authorities
- Guidance

**Standards Development**
- Consensus Standards
- International Standards
- Domestic Regulation
Plotting A Safe Course

Managing Early Adoption

Establish Approach

Leverage Existing Authorities

Guidance

Regulatory Standards

Industry Practices

Shaping Regulatory Structure

Internal & Interagency Concerns

Training

Infrastructure

Cyber Risk Management

USCG Mission Capacity

Legal Risk

US Government Position

International Conventions

Authority

Terms & Definitions

Applicability

Human Element

Voluntary Consensus Standards

Technical Standards

Codes of Practice
Consensus Standards

- Inform Regulatory Bodies
- Technical Standards for Industry
- Aid early adopters

Standards Development

Consensus Standards

International Standards

Domestic Regulation
Int’l & Domestic Regulations

- Current IMO Efforts
- Anticipated Progression
- IMO efforts inform Domestic Regulations
Request for Information (RFI)

- On Integration of Automated and Autonomous Commercial Vessels and Vessel Technologies Into the Maritime Transportation System

- Published in the Federal Register on 11 Aug 2020

- Comment period for the public closed on 13 Oct 2020

Link to RFI: Federal Register Docket Number USCG-2019-0698
Vessel & Waterway Safety

- OCMI Authority
- Equivalencies
- COTP Authorities
Waterways Management's Role

- Ensure safety and security for MTS users
- Facilitate health and promotion of a globally competitive American MTS.
Risk & Mitigation

**Identification**
- Navigation Safety Risk Assessment
  - Operational
  - Environmental

**Mitigation**
- Meet & formulate strategies
- Local Notice to Mariners
- Broadcast Notice to Mariners
- Establish LAA or RNA
Current Efforts

Seek equitable solutions to shared waterways use for traditional users and autonomous systems by applying Ports and Waterways Safety Act authorities and policies.

• Encourage engagement with local stakeholders to promote equal waterway access and constraints.

• Employ current authorities under PWSA (46 U.S. Code, Chapter 700) and policies to find solutions.

• Continue collaboration across USCG.
Available Resources

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