



Webb Institute

NIST
Marine Industry
Standards Project



NIST Marine Industry Standards Project – Kickoff Meeting

03 December 2021

Webb Institute
US Coast Guard Academy
American Bureau of Shipping

The Ship as a City: The Use of Standards to Design, Build and Operate Marine Vehicles

Team background

- Team Lead: Matthew Werner, PE
 - Dean, Webb Institute (Glen Cove, NY)
- Dr. Thomas DeNucci
 - Associate Professor, USCGA (New London, CT)
- Meg Dowling
 - Engineer, ABS Corporate Technology (Houston, TX)
- Rich Delpizzo
 - Director, ABS Global Government Services (Arlington, VA)



The Ship as City: The Use of Standards to Design, Build and Operate Marine Vehicles

Main Goals

Goal - Create course material for incorporation into:

- Graduate and Undergraduate level curricula for maritime technical programs (both marine engineering and naval architecture) and capstone projects,
- Undergraduate level curricula for maritime license programs (both Deck and Engine Licenses), and
- Non-degree technical programs for both licensed and unlicensed mariners

Objectives

Intended to serve approximately 10,000 undergraduate and graduate students annually

- Maritime related degree programs
- Other programs such as mechanical or electrical engineering
 - May not directly apply to marine vehicles but have comparable standardization practices

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Selective Material for Instructors



Standards and the Maritime Industry

- What standards are used in marine vehicle design, construction and operations
- Why and how standards are developed in the maritime industry



U.S. Government Shipbuilding Industry

- Specifications and standards for:
 - Combatant ships
 - Non-combatant ships
 - Small craft
- National and international requirements
- Classification variations for government assets



U.S. Commercial Maritime Industry

- Commercial marine vehicle specifications
- National and international maritime regulations
- The process of classification and compliance verification

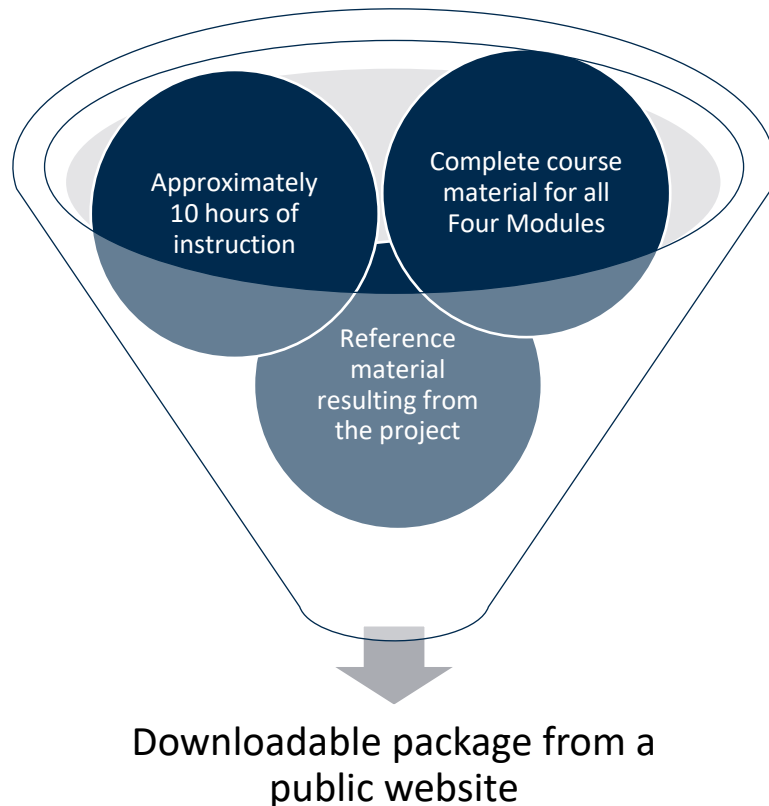


Applying a Standardization Process to Innovation

- Applying standards and approval processes to:
 - Innovation
 - New technology
 - Novel Concepts

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Teaching Materials



Course Outline (Tentative)

Standards and the Maritime Industry

- Why/How are standards developed in the shipbuilding industry?
- What standards are used in ship design and construction?

The U.S. Commercial Maritime Industry

- Commercial Ship Specifications & Maritime Regulations
 - Ship Classification and Related Standards Organizations

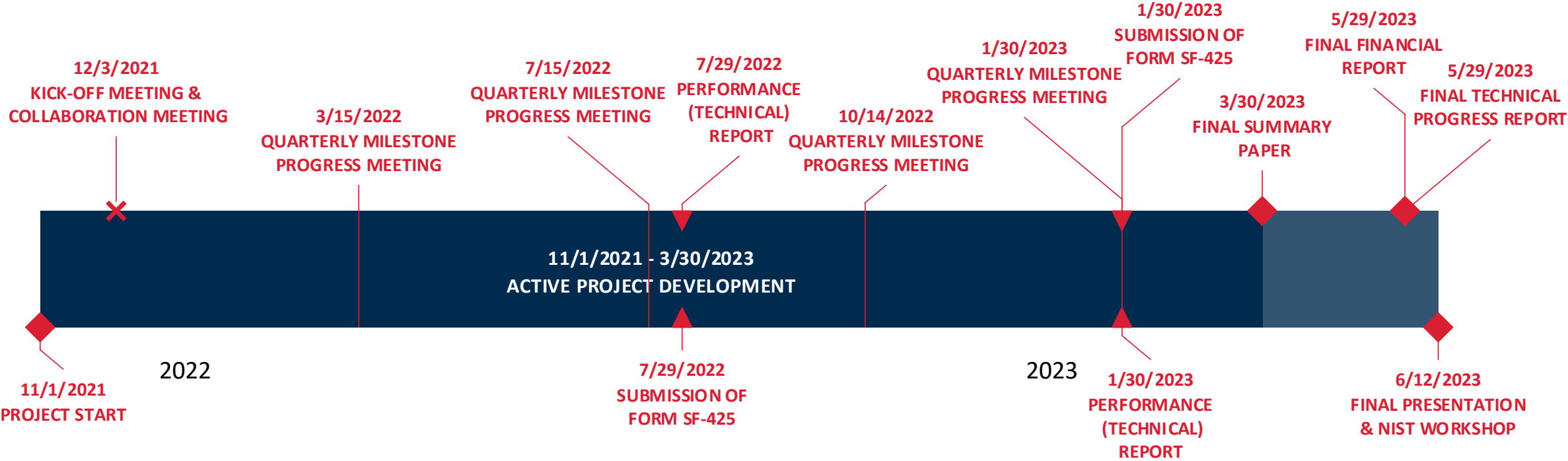
The U.S. Government Shipbuilding Industry

- Ship Specifications, Regulations, Classification

Applying a Standardization Process to Innovation

- Standards for Innovation
- Case Study: Emerging Technology Standardization - Hybrid Power

Current Project Timeline



The Ship as a City: The Use of Standards to Design, Build and Operate Marine Vehicles

Final Summary Paper

- Submitted to the NIST Federal Program Officer
- Within 45 days after end of the project period
- Estimated submission date of 30 March 2023



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Opportunities to Present at Conferences, Workshops and other Forums

National Institute of Standards and Technology (NIST)

- Conference, Workshop or Seminar
- 2023-2024 timeframe

American Society of Naval Engineers (ASNE)

- Annual symposium
 - ASNE Technology, Systems and Ships
 - Design Sciences Series;
 - Fleet Maintenance and Modernization Symposium
- Regional chapter presentations
 - E.g., Flagship or Tidewater Chapters
- Focused emphasis towards ASNE Undergraduate Student Sections

American Society of Mechanical Engineers (ASME)

- Annual Conference or ASME Virtual Classroom event
- 2023-2024 timeframe

Society of Naval Architects and Marine Engineers (SNAME)

- Maritime Conference (SMC 2023 or 2024)
- Regional Sections with focused emphasis towards the 40 North American SNAME Student Sections

American Society for Engineering Education (ASEE)

- Technical Paper describing the importance of standards education to the maritime community and beyond

Institute of Electrical and Electronics Engineers (IEEE)

- Marine Systems Coordination Committee

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Communication Plan

Produce a Short promotional video



- 2 – 4 minutes long
- Cover overview of course material
- Added to media websites such as LinkedIn, YouTube, and college websites for outreach
- Guidance on presenting and execution of lesson plans may be considered as part of this video

Feedback will be collected to determine opportunities for material improvement



Replicating & Building on Deliverable

Presentations or Exhibits



- Focus on sharing Final Summary Report
- Public announcements in Webb Institute's marketing platforms using news releases, newsletters, website posts
- Respective re-posting to organization's social media platforms (e.g., LinkedIn) for broadcasting
- Typical maritime industry news sites for these releases are:
 - gCaptain
 - MarineLink and Maritime Reporter
 - MarineLog
 - Industry society websites and email distributions



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Future Plans

- Collaboration discussions
- Collection of applicable resources
- Work distribution



Thank You!