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INTERNATIONAL
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2018 Fall Convention |

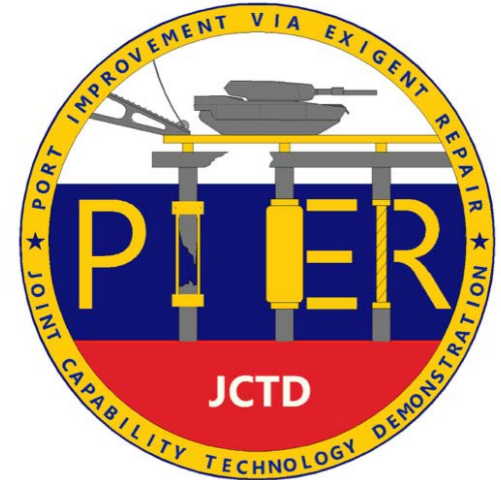
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Omaha, Nebraska

The Port Improvement via Exigent Repair (PIER)

Created by the US Department of Defense. The Engineer Research and Development Center (ERDC) of the US Army Corp of Engineers was tasked with overseeing this program with the goal of repairing a structurally deficient port or pier quickly.



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PIER OVERVIEW



Pillar – Multifunctional Assessment Reconnaissance Vessel (MARV)

Spiral 1 – Pile Jacketing

Spiral 2 – Mechanical Repair Kit

Spiral 3 - Superstructure Bypass

Spiral 4 – Mooring and Fendering system



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PILLAR

Meet the Marvs



Rapidly deployed Unmanned Surface Vehicle (USV) that assesses pile-supported marine structures.



Eats lots of hot dogs



MARV Capabilities:

- Assesses piers for structural damage within 24 hours
- Operational from one mile away
- Scans above and below the surface of the water
- Beams out 32 laser pulses to generate precise, three-dimensional data and software that translates information to a high-resolution graphic.
- Multifunctional camera and multi-beam sonar for digital imagery.
- GPS, an accelerometer and gyroscope increase the accuracy of GPS within two centimeters.



Spiral 1 - Pile Jacketing Objectives

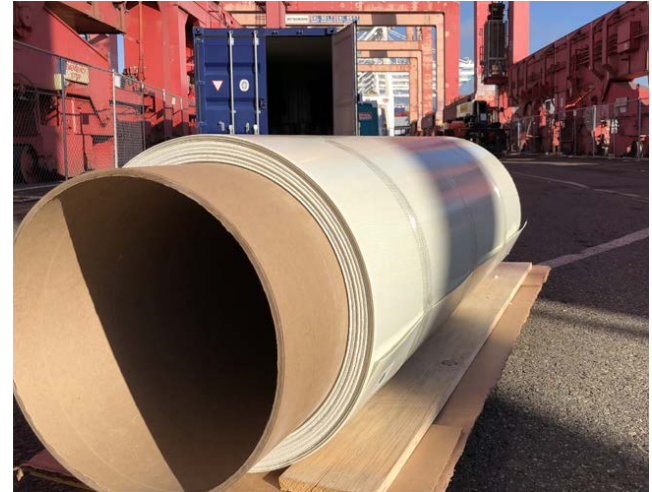
- Pile Jackets VS Pile Replacement
- COTS Technology VS Product Development
- Identify and adapt a COTS pile jacket technology to restore pile capacity expeditiously.



Spiral 1 - Program Approach

1) Identified technical requirements to be met by a pile jacketing technology.

- A) Ability to quickly restore structural capacity
- B) Speed and ease of installation
- C) Low logistical requirements
- D) Installation Speed
- E) Adaptability to piles of different sizes
- F) Perform in seawater and freshwater applications
- G) Shelf life
- H) Cost



Spiral 1 Program Approach

- 1) Identified technical requirements to be met by a pile jacketing technology.
- 2) Pile Jacket market research conducted.
- 3) Three vendors selected to demonstrate their system.
- 4) Select a single pile jacket technology and demonstrate technology to stakeholders.
- 5) Limited Operational Utility Assessment (LOUA)
- 6) Full Operational Utility Assessment of PIER is scheduled for summer 2019.





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