Fastener Coatings for Subsea Critical Equipment

This is one of the ongoing initiatives OESI is working on in collaboration with BSEE, the motive of this research effort is to address the recurring problem of faulty connector bolts in safety critical equipment currently deployed in offshore. The objective of this research is to further understand and prevent the failure of subsea critical equipment fasteners.

This project evaluates the use of various coatings for subsea critical equipment fasteners used in the oil and gas industry. The study will provide a better understanding of the functional behavior of zinc electroplated coatings with paint and allow for consideration of alternative coatings that may enhance the corrosion performance of the fasteners used for subsea critical equipment.

This research initiative will emphasize the following key disciplines: materials, current and alternative coatings, paint, corrosion performance, best practices, and integrity engineering. The project also aims to conduct a literature survey assessing current coatings used in the subsea environment and provide alternative coating capabilities and technologies.
In addition to researching alternative coatings, the report will discuss coating processes and future research programs that could enhance fastener corrosion performance in subsea critical equipment. The literature review will focus on the following key areas:

- The use of zinc electroplating for subsea critical applications.
- The availability of new and/or alternative coatings for subsea fasteners.
- Availability of new and/or alternate non-metallic paint for subsea fasteners.
- Current industry research efforts on alternate zinc replacement metallic coatings.
- Subsea critical equipment fasteners corrosion performance criteria.
- Implementation of alternate fastener coatings for offshore operations.