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PMS-403 Remote Minehunting System (RMS)

Practical Systems Engineering

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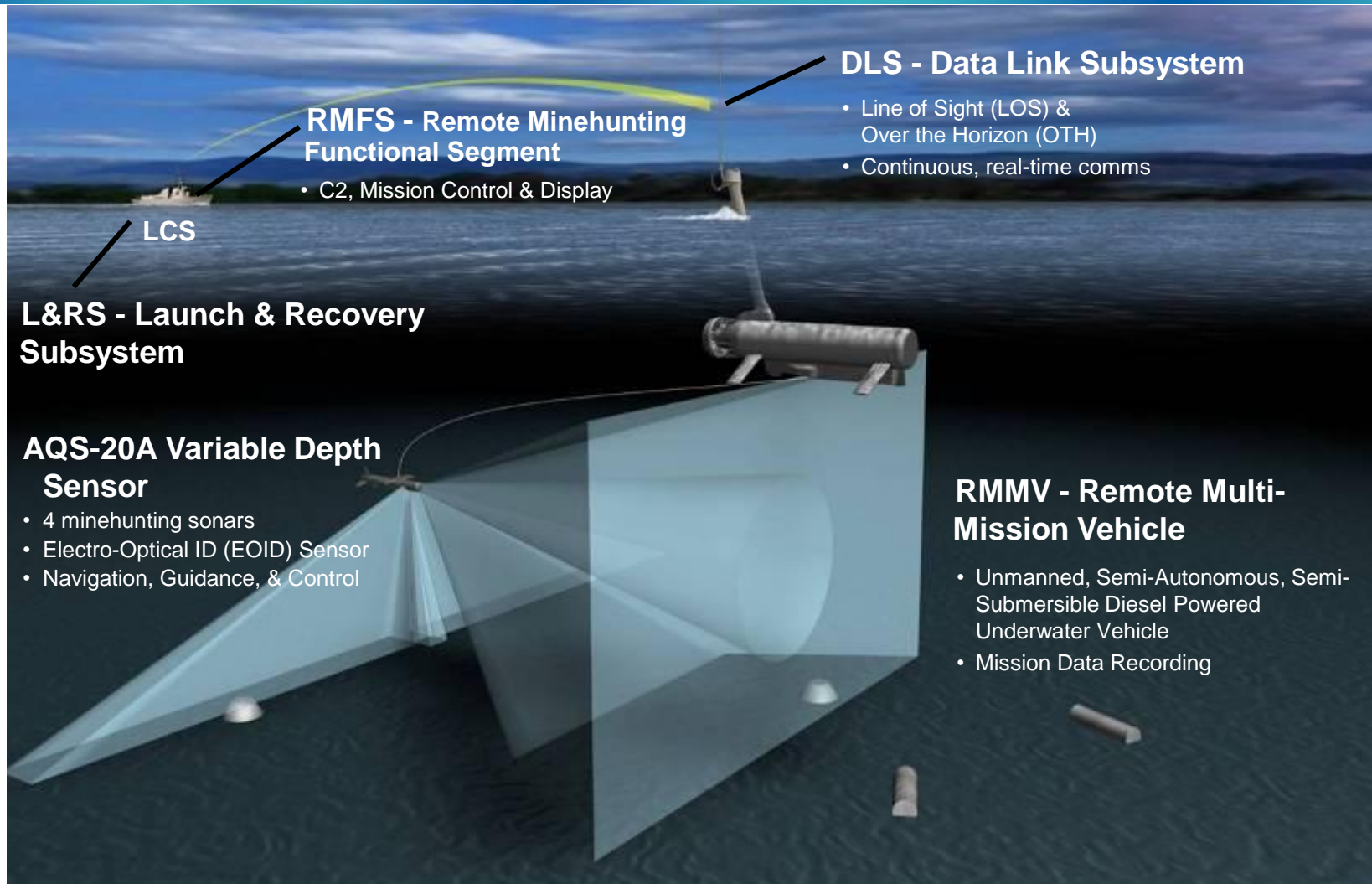


Program Overview

- **RMS is one of the mission systems that make up the Littoral Combat Ship (LCS) Mine Countermeasure (MCM) Mission Package (MP)**
- **Program restructured following Nunn McCurdy in 2009 and subsequent certification in 2010**
 - As part of the restructuring, a 3 Phased Reliability Growth Program was directed to be implemented to increase the MTBOMF of the Remote Multi Mission Vehicle (RMMV)
- **Program is currently executing in water testing of the first reliability spiral phase and concurrent development of the 2nd Phase**



Remote Minehunting System (RMS) Overview



Mission: Detect, Classify, Localize and Identify Bottom and Moored Mine Threats in Shallow and Deep Water





System Engineering and RMS



- **Sound system engineering was not done as part of the RMS original design**
 - Robust Failure mode, effects and criticality analysis (FMECA) not performed
 - Reliability & Maintainability not included as part of core effort
 - Allocated Baseline done by Physical Section of the vehicle
 - Failure Reporting And Corrective Action System (FRACAS) process not initially employed
- **Program utilizing two pronged approach for reliability improvement as defined in the Program's System Engineering Plan (SEP)**
 - Test – Analyze – Fix
 - Design for Reliability
- **Program is employing predictive modeling tools to assist in selection of the best value changes**



RMS SE Challenges

- **Should Cost – SE needs to be actively involved and help drive the development and execution of Program Should Cost**
- **Integration of Reliability and Maintainability (R&M) Engineering into programs that over 10 years old**
- **Alignment of the SE Processes used for the Mission Package (MP) and the Mission System (MS)**
- **Maintaining required discipline in the rapid and parallel development and test of multiple reliability increments/spirals while also participating in the LCS MP DT/TECHEVAL/IOT&E**
- **Balancing Degree of Change implemented vs. program risk**