



Lockheed Martin Internship Experience Overview

VLS Software Team and LCS Environmental QUAL Team
Mission Systems and Training

Sarah Taylor
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About Lockheed Martin



- **World's Largest Defense Contractor (~126,000 employees)**
- **Areas of Business:**
 - **Aeronautics**
 - **F-35, C-130, F-16, F-22, C-5M, Sikorsky**
 - **Information Systems & Global Solutions**
 - **IT, Biometrics, Cybersecurity, Cloud Computing**
 - **Missiles and Fire Control**
 - **Weapons Systems**
 - **Mission Systems and Training**
 - **Ship and Submarine mission and combat systems**
 - **Space Systems**
 - **Satellites, missile-launch detection, Orion, intercontinental ballistic missiles**

VLS – Vertical Launching System



- The only launching system that can simultaneously accommodate the weapon control system and the missiles of every warfighting mission area
 - anti-aircraft, anti-surface, antisubmarine and land attack
- System is designed to accept any missile into any cell
- Deployed by 12 navies, in more than 20 different ship classes in more than 180 ships



LCS- Littoral Combat Ship



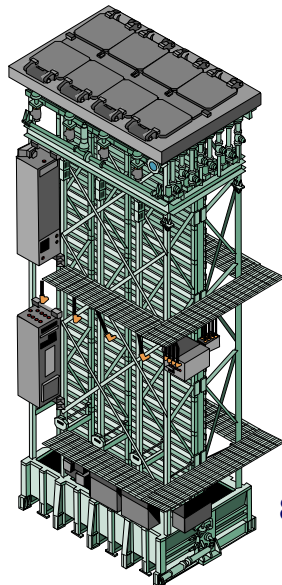
- **US Navy's newest fleet of ships**
- **Environmental Qualifications Testing: Ships undergo extensive Shock Testing in order to ensure survivability- the capacity to absorb damage and maintain mission integrity**



VLS BLV



- Supported Baseline V by updating Iteration 2 SDD (Software Design Document) with the updated Iteration 2 Ada code for both the controller and new missile applications.
- Updated SDD allows software developers to correctly develop future BLV applications.



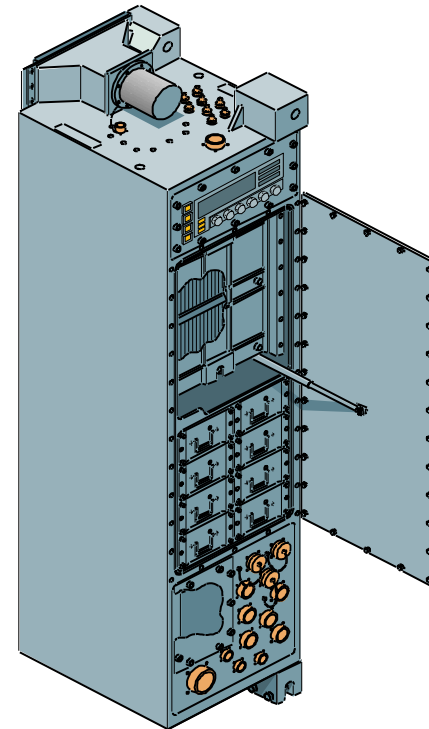
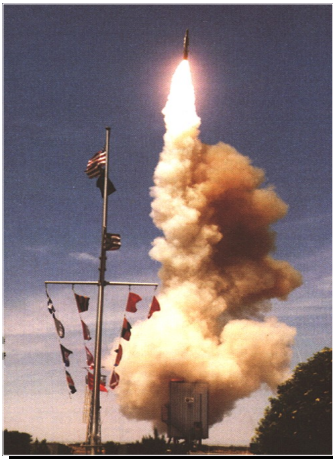
8-Cell Launcher Module



VLS BLV



- Worked to document the new procedures used for configuration management creation of the new program memory for Baseline V Configuration 9.
- Preserving processes to ensure longevity of operational functionality.

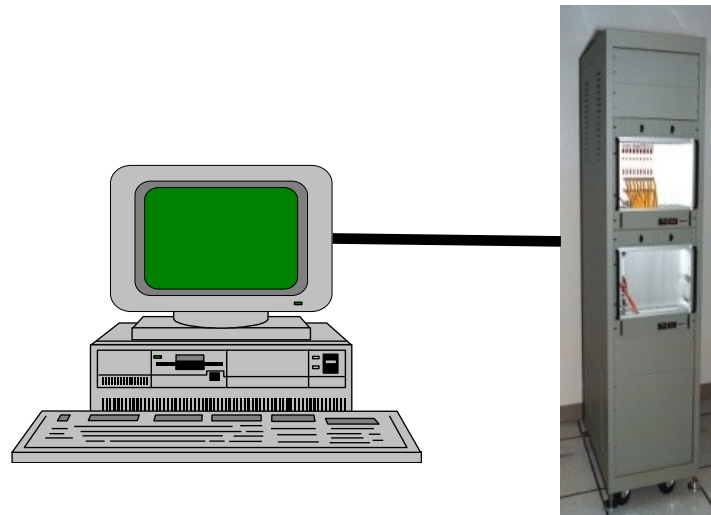


VLS BLVII



- **Data analysis of IDSIM “go launch” fault scenario log files for Baseline VII MECS 2C**
- **Become aware of and investigate reported anomalies within the scenarios in order to correct known problems prior to combat use**

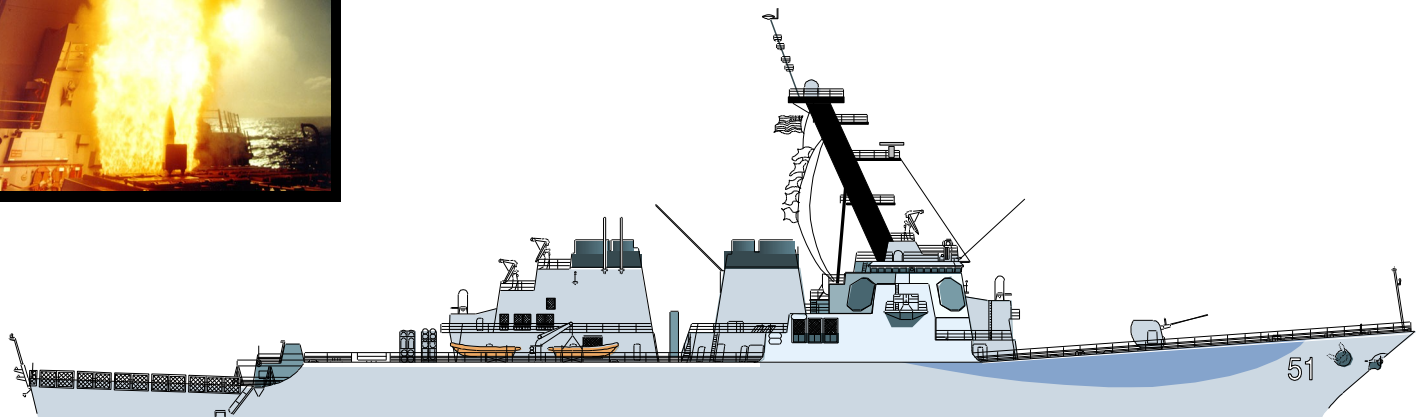
IDSIM



VLS BLVII



- Worked with BLVII engineers to develop and provide a solution for testing to fix a UTD (Unit Test Defect)
- Brought BLVII closer to expected functionality.



VLS BLVII



- **Worked task to update BLVII design documentation/UML to incorporate latest design changes related to new missile integration.**



LCS QUALS



- **Account for received ancillary equipment for LCS Environmental Qualifications by documenting and organizing all received equipment, handling GFE equipment, and being responsible for requested shipping of equipment.**
- **Accounting for and providing test materials is an essential step in the process of Environmental QUALS Shock testing**





Challenges

- **Working with an unfamiliar language and project**
 - Utilize resources
 - Ask questions
- **Encountering design documentation voids/errors**
 - Important to emphasize accuracy and detail
- **Times of confusion or lack of organization**
 - Patience and communication are key

Summary & Reflection



- **Internship was a valuable learning experience.**
 - **Practical applications of schooling**
 - **Low-level applications of COSC 250**
 - **Basic understanding of languages and algorithms**
- **Reinforced my career goals**
- **Benefits: Learned valuable skills, made many connections, gained work place experience, furthered career goals**



Questions?