An Overview of Space Robot Operating System

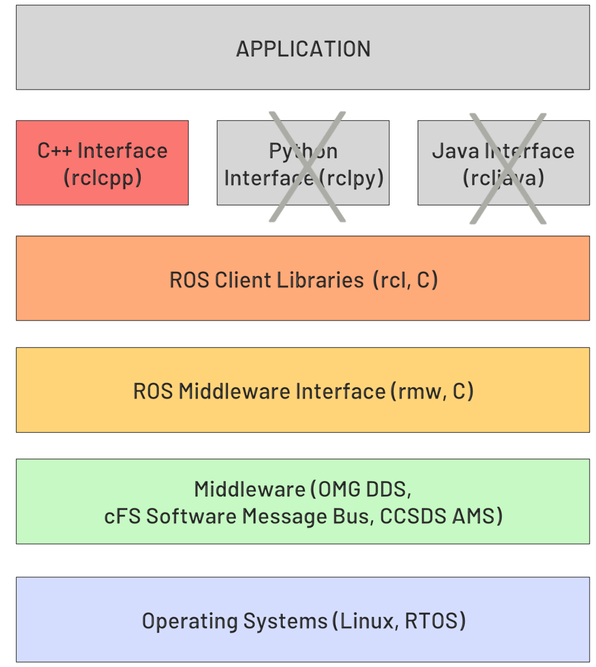
OBJECTIVE

Space ROS (Robot Operating System) is an open-source framework for flight-quality robotic software being matured by Blue Origin and NASA (Ames, Goddard and Johnson).

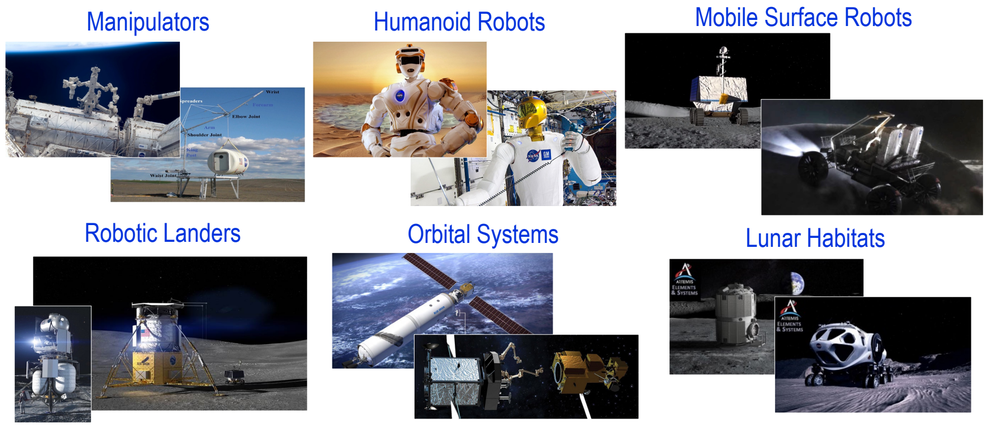
- In-space sustainability will benefit from robots.
- Space robotic systems will require space qualified software.
- Currently no software framework for space robotics.

- Space-Relevant Applications
- C++ Dominant
- Strict Memory Management
- Exception Handling
- Fault Management
- Multiple Middleware
- Realtime and Deterministic

ARCHITECTURE



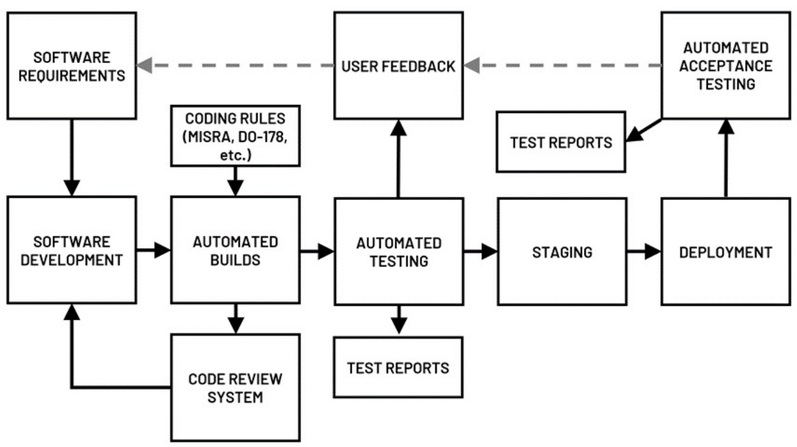
Amalaye Oyake: AOyake@blueorigin.com



A Reusable and Accessible Framework Applicable to Many Robotic Systems

APPROACH

- Space ROS = ROS2 + Delta
- Safety Critical Software Design
- Code Quality Rules
- Continuous Qualification



IMPACT

Space ROS will shift the paradigm of space robotics software development, qualification and maintenance.

Space ROS will provide:

- Substantial Cost Savings
- Streamline Software Integration
- Robot-to-System Interoperability
- Enhanced Robotic
- Capabilities
- Enhanced Missions

In Ten Years, Space ROS will become the de facto software standard that enables the proliferation of low-cost Space Robots

BLUE ORIGIN