



Autonomous Surface Vehicles Risk & Reliability Management

A Knowledge Transfer Partnership Project

Dr Mario P. Brito, Dr Carolina Dopico-Gonzalez, Richard Daltry

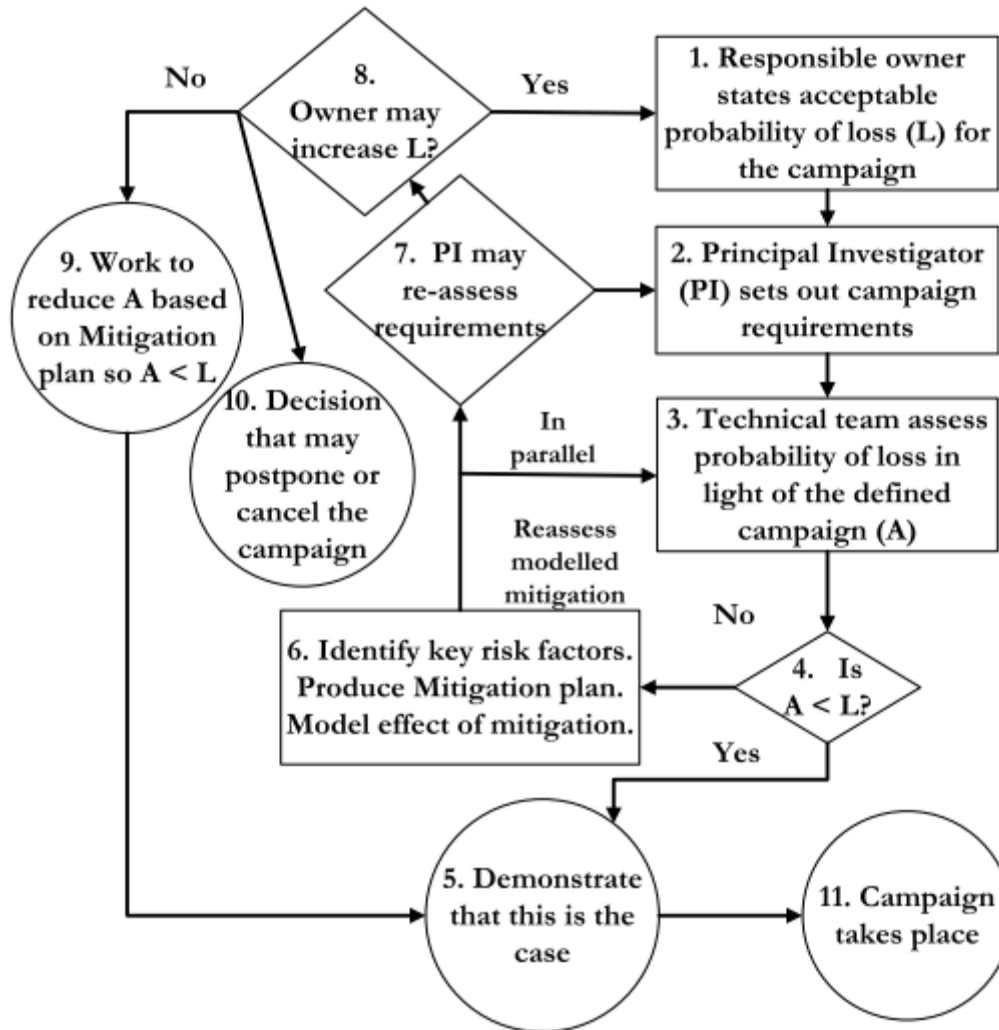
Risk and Reliability of ASVs

- 30 days – 3 months autonomy
- Oil and gas operations
- Positioning
- Surveying
- Environmental monitoring
- Security
- Oceanographic data collection
- Seismic applications
- Mine detection
- Naval gunnery training



Design, build and operate marine autonomous systems: Transferring best practice to innovative company

Risk and Reliability of ASVs



Moving from a science based to an industry based risk management process

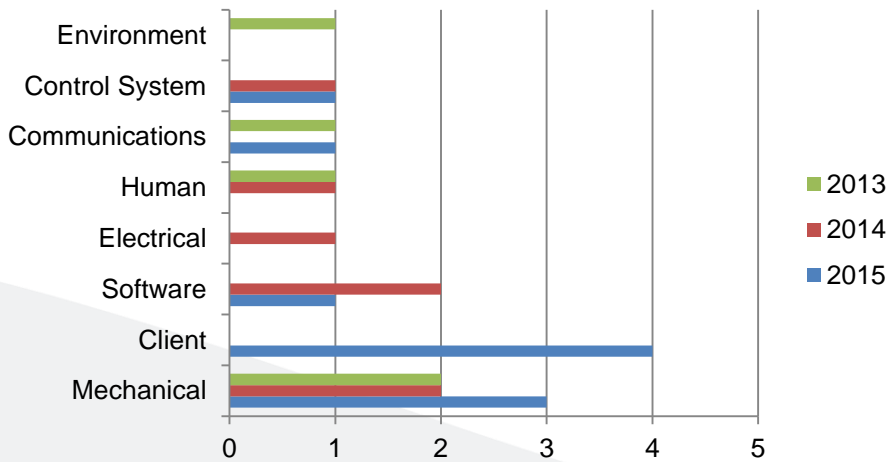


Compliance with statutory regulations

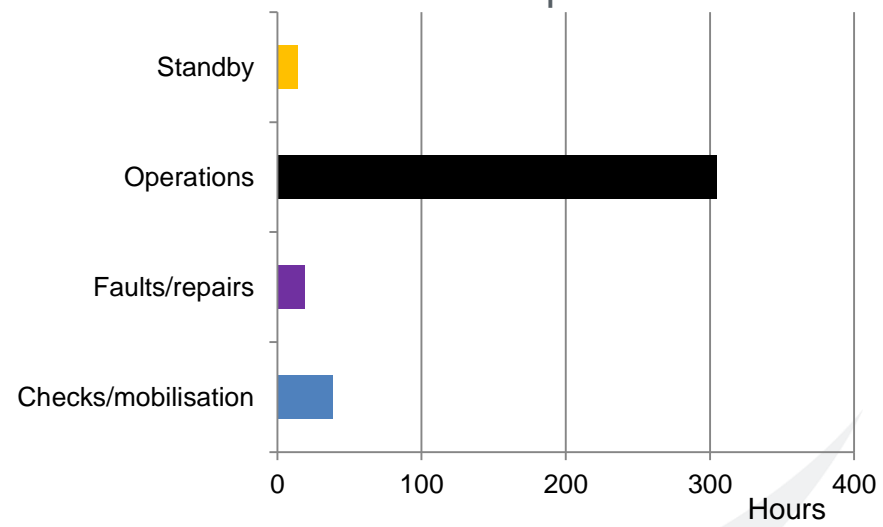
Operation Risk Acceptance Process proposed by Griffiths and Trembranis⁽¹⁾.

Risk management process for ASV

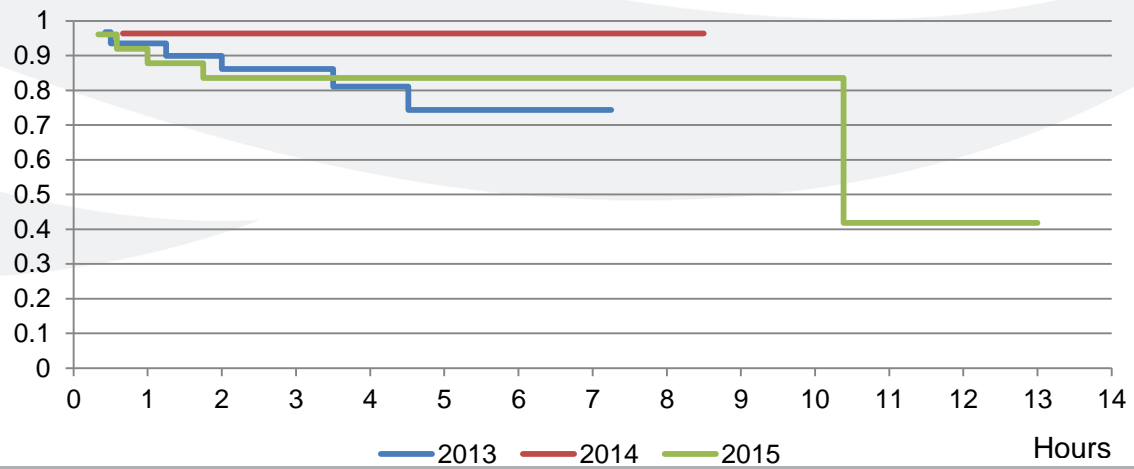
Root cause of fault



Time plots



Survival



Achievements

- Implemented a new culture for suitable data collection
- Collected requirements for a risk management system
- Implemented an intranet-based fault reporting and monitoring system

The screenshot shows the JIRA Client interface for creating a new issue. The main window is titled 'New Issue - JIRA Client' and contains the following fields and sections:

- Project*:** ASV Engineering Change Requests
- Issue Type*:** Engineering Change Request
- Summary*:** (Empty text box)
- Description*:** (Large text area)
- Priority:** <Default Priority>
- Affects Product/s:** (Empty list box)
- Team:** (Empty list box)
- Reporter*:** Carolina Dopico-Gonzalez
- Links:** (Empty text box)
- Attachments:** A table with columns: File Name, Type, Date, User, Size, State.

At the bottom of the form, it indicates: 2 problems: **Description, Summary**

The left sidebar shows a navigation tree with 'JIRA TEST' selected, containing 'User Queries', 'Sample Queries', and 'Temporary Queries'. The top menu includes 'Issue', 'Search', 'Connection', 'Time', 'Tools', and 'Help'.