



marine/land/space

Robotic Telework Software: Enabling Digitalization of Remote Robotic Operations

—
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VP Commercialization

Outline

- Olis Robotics Company
- Remote Robotics Intervention Trends
 - Variable Autonomy
 - Robotic Telework
 - Living Digital Twins
- Customers of robotic operations information
- Adding value through Analysis

The image shows the Olis Robotics logo on the left side of a slide. The logo consists of the word "olis" in a white, lowercase, sans-serif font, with a horizontal bar above the "o" and a trademark symbol (TM) to the upper right. The background of the slide is a dark orange to black gradient with a white geometric pattern of interconnected lines forming a mesh of irregular polygons. The text "Making robots smarter through progressive autonomy" is written in white, sans-serif font, stacked in four lines below the logo.

olis™

Making robots
smarter through
progressive
autonomy

A vertical orange bar is positioned to the left of the "Olis Robotics" title.

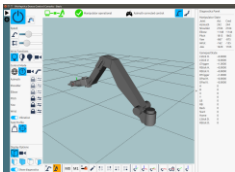
Olis Robotics

- Seattle Based
- Software for Remote Robotic Operations
 - Improve dexterity
 - Reduce risk
 - Increase efficiency
- Core Technologies
 - Living Digital Twins
 - Machine Learning
 - Assistive Robotic Control

Products and Services

Products

Control Software for Intervention



Integrated Control Devices



Product Services

Training

Field Service

Customer Support

Digitalization

Engineering Services

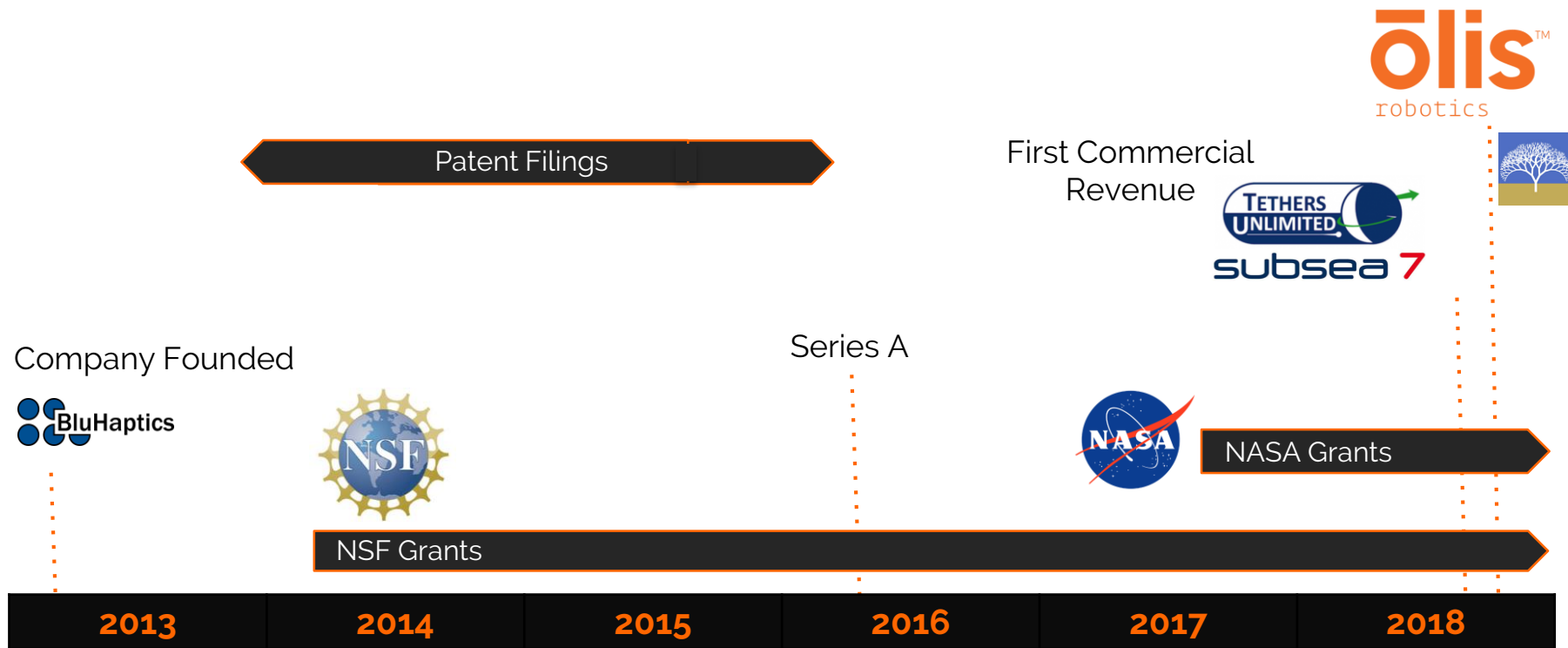
Application Extensions

Lead-the-Field Programs

Joint Development



Olis Corporate Timeline



Remote Robotic Intervention Trends



Variable Autonomy



Mechanization & Automation



Robotic Telework



Robotic Trust Thresholds



Living Digital Twins



RoboOps Control Towers

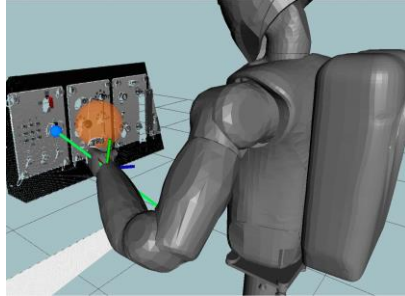
Variable Autonomy



Direct Control
(no computer assistance)



Augmented Control
(assisted tasks)

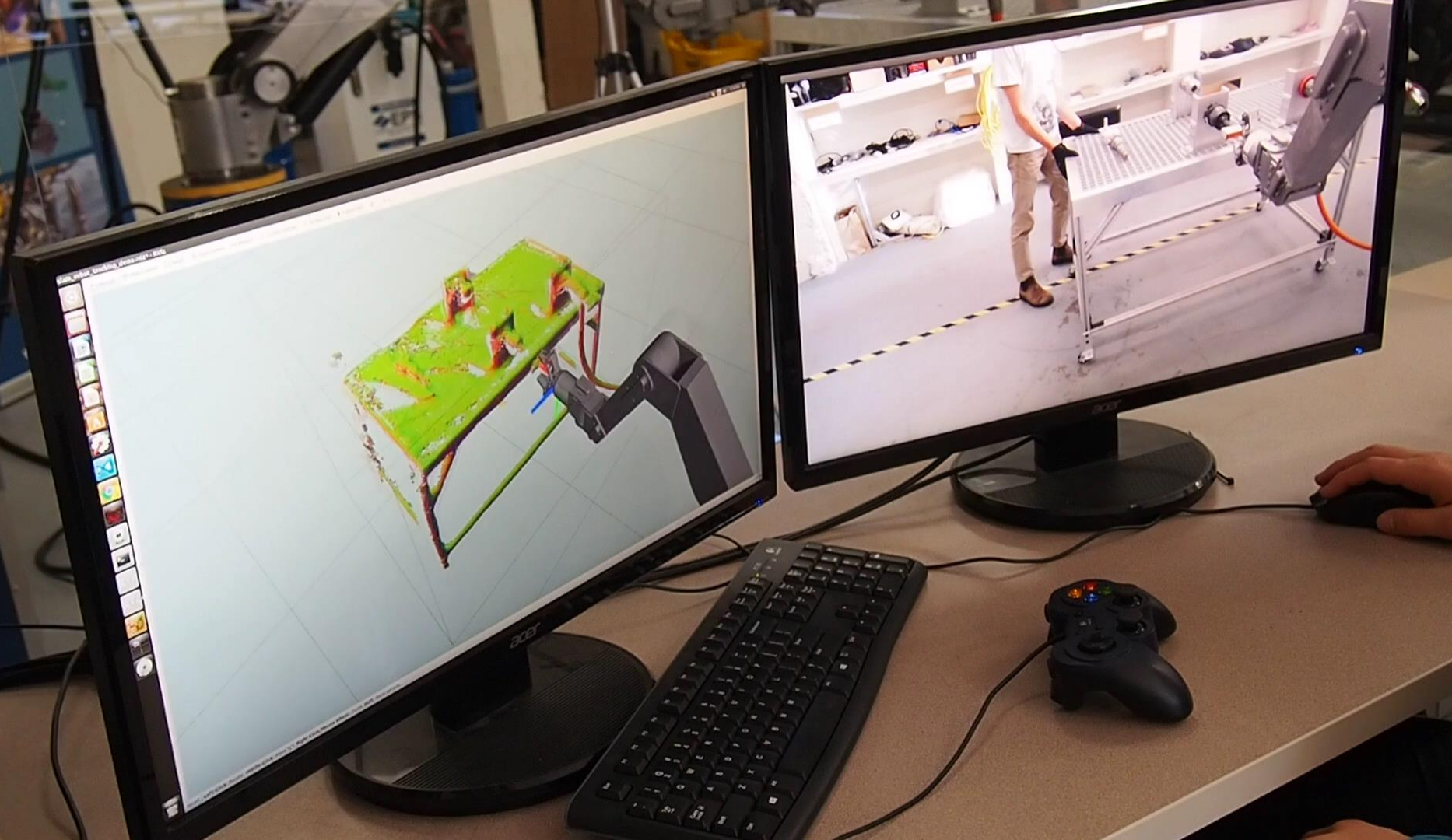


Mixed Autonomy
(human directs tasks)



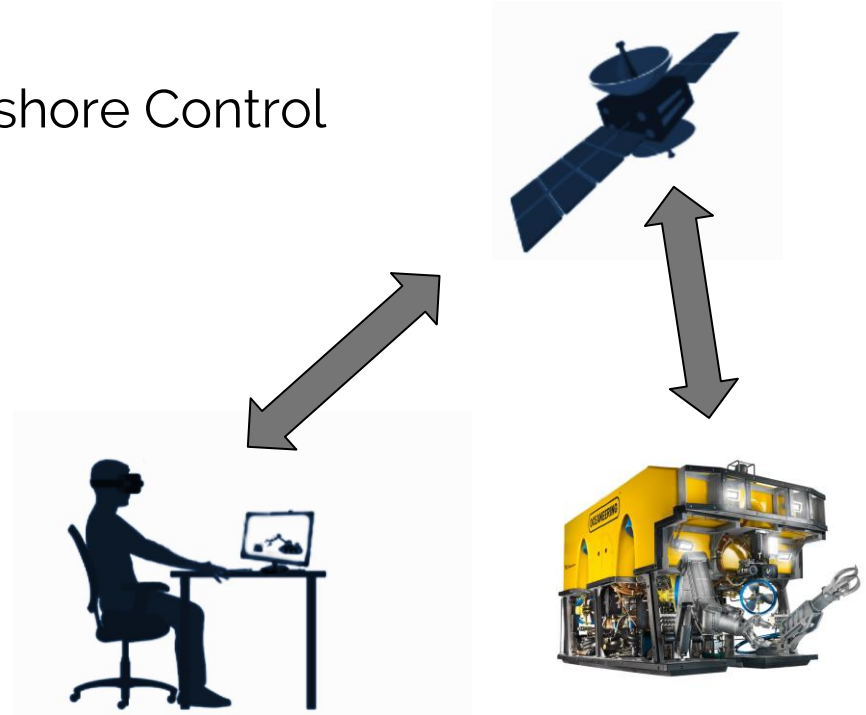
Full Autonomy
(no human assistance)





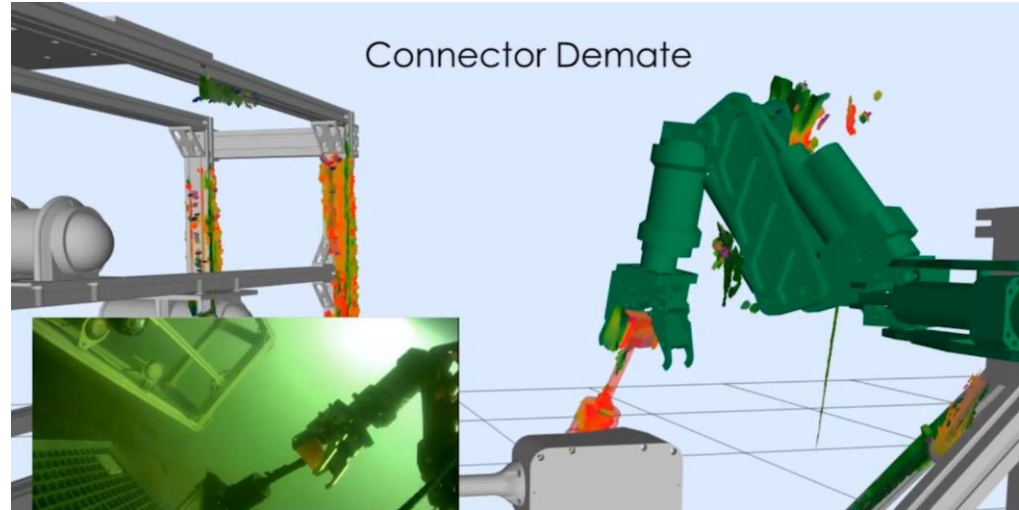
Robotic Telework

- Remote Piloting Facilities for Offshore Control
- Co-locate expert pilots
 - cross pollination
 - Information sharing
- Resources can be with families
- Reduced costs



Living Digital Twins

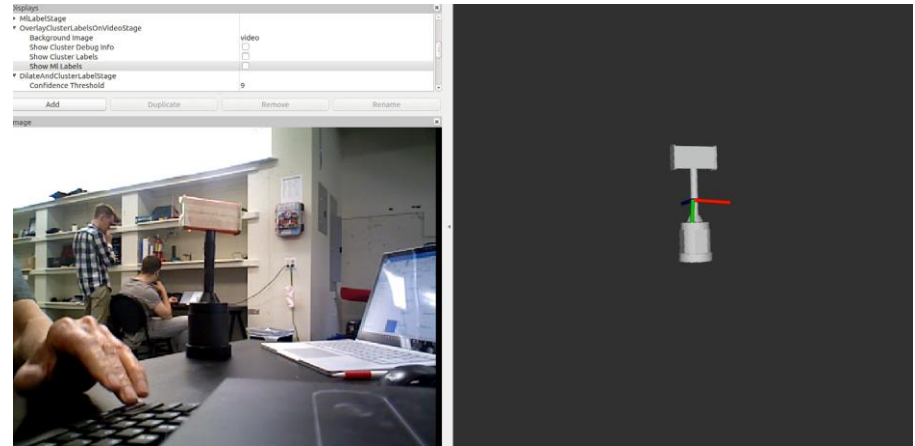
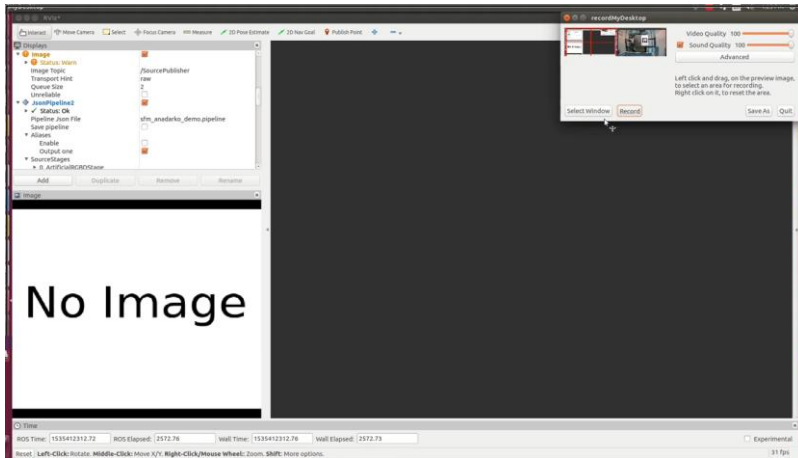
- Aggregate
- Query
- Visualize
- Analyze



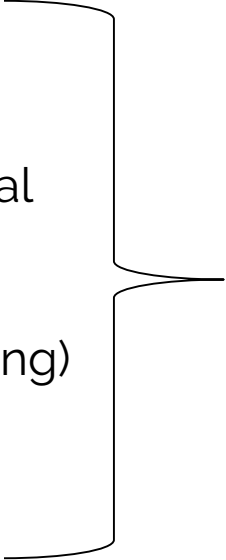
Building Living Digital Twins

3D Workspace Models (2D Camera as Sensor)

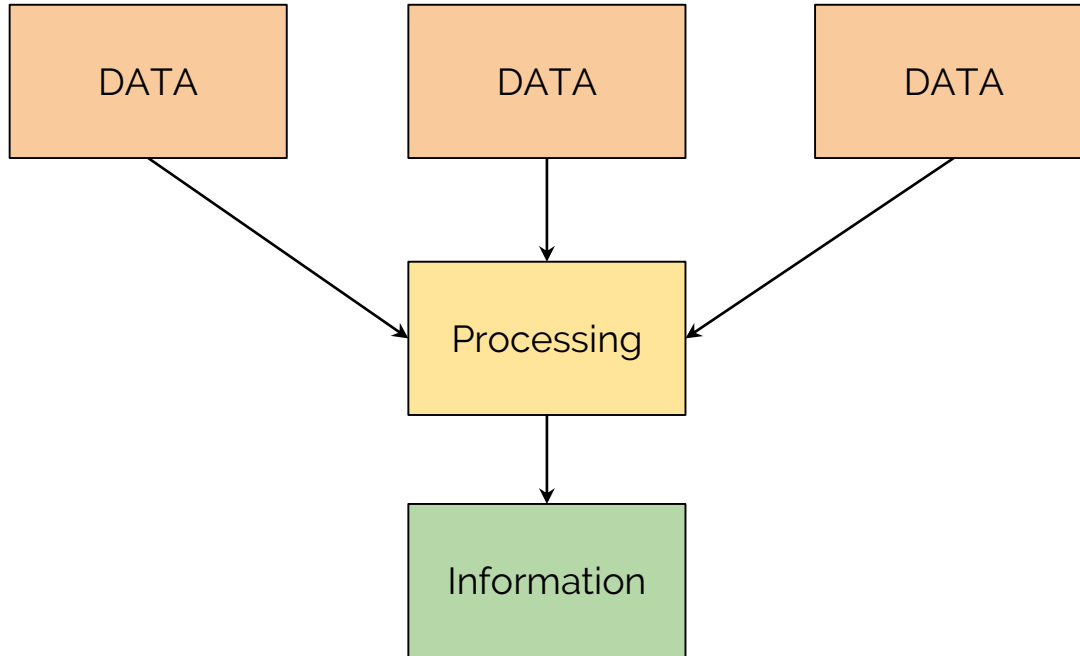
Localization of Significant Objects (6 DOF Object Tracking)



Data Focus: Current Industry Norms

- Flight Log data (manual input)
 - 2D low definition video capture - archival
 - Low resolution scanning sonar
 - Flight telemetry data (black box recording)
 - Maintenance records
- 
- Manual
 - Non-standard
 - Labor intensive
 - Dispersed systems

The Future With Digital Operations



Customers of Information

General Management

- Informing core business functions
- Operations, sales & distribution, financial, HR etc.

Partners/Clients

- Asset management
- Project/program planning & execution

Operations

- Logistics
- Scenario based planning & risk management
- Maintenance planning

Research & Development

- Value-driven technology roadmaps
- Product development & testing
- Technology integration

Adding Value Through Analysis

Focus areas

1. **People** : Who? When? Where? How?
2. **Processes** : How long? Impact? Outcome?
3. **Assets** : How much? How many? Utilization?

Optimize

Profitability

Efficiency

Productivity

Training

Reduce

Operation Expenses

Risk

Resources

Downtime

Improve

Planning

Safety

Training

Asset Utilization

Information : Insights for Clarity of Action

- **People**

- Real time pilot performance data - ***operations evaluation***
- Operator trend analysis - ***training/HR***

- **Processes**

- Client/Customer specific operations data - ***sales/finance***
- Predictive analytics- ***forecasting/risk mgmt***
- Task/Scenario based performance data - ***scheduling/planning***

- **Assets**

- Asset integrity data (Tactical/Strategic) - ***Preventative maintenance***
- Predictive asset management -***Maintenance/Utilization/Inventory mgmt.***
- Environmental impact analysis - ***Legal/PR***

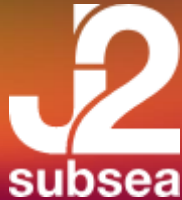
- Real time
- Autonomous
- Fully integrated

Thank you

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olis
robotics

MARKETS PRODUCTS TECHNOLOGY ABOUT CONTACT

making robots smarter through
progressive autonomy
offshore/land/space/defense

Welcome to Olis Robotics, formerly BluHaptics

Built from the ground up, our next-generation software platform greatly expands the capabilities of pilot-controlled service robots in the field. Olis enables vast improvements in robotic dexterity, precision, efficiency, and overall mission success, while simultaneously reducing downtime and driving down costs.

HERE'S HOW IT WORKS

