How to Leverage Data to Build Custom Apps

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Speakers

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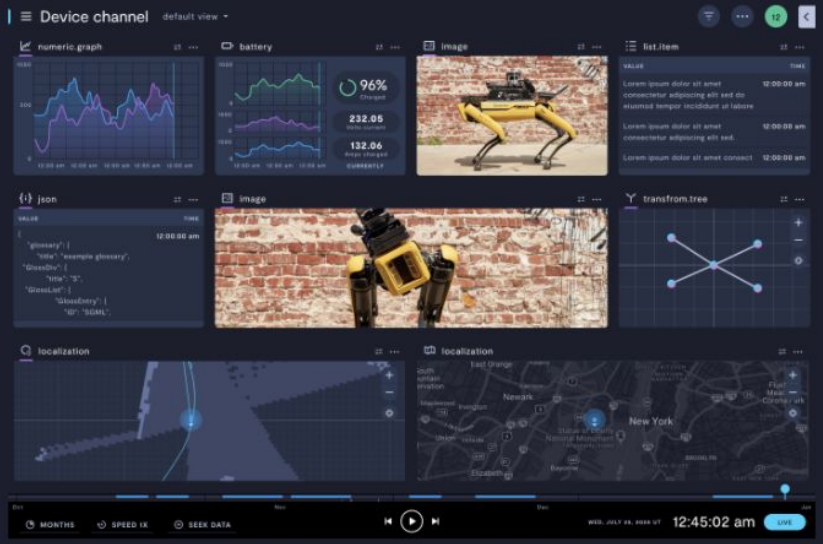
Editor
Robotics 24/7

Changing Robotics Landscape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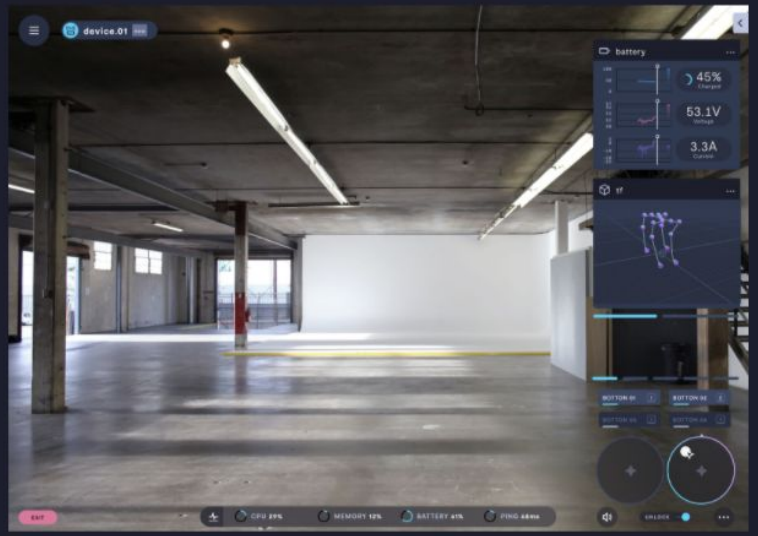
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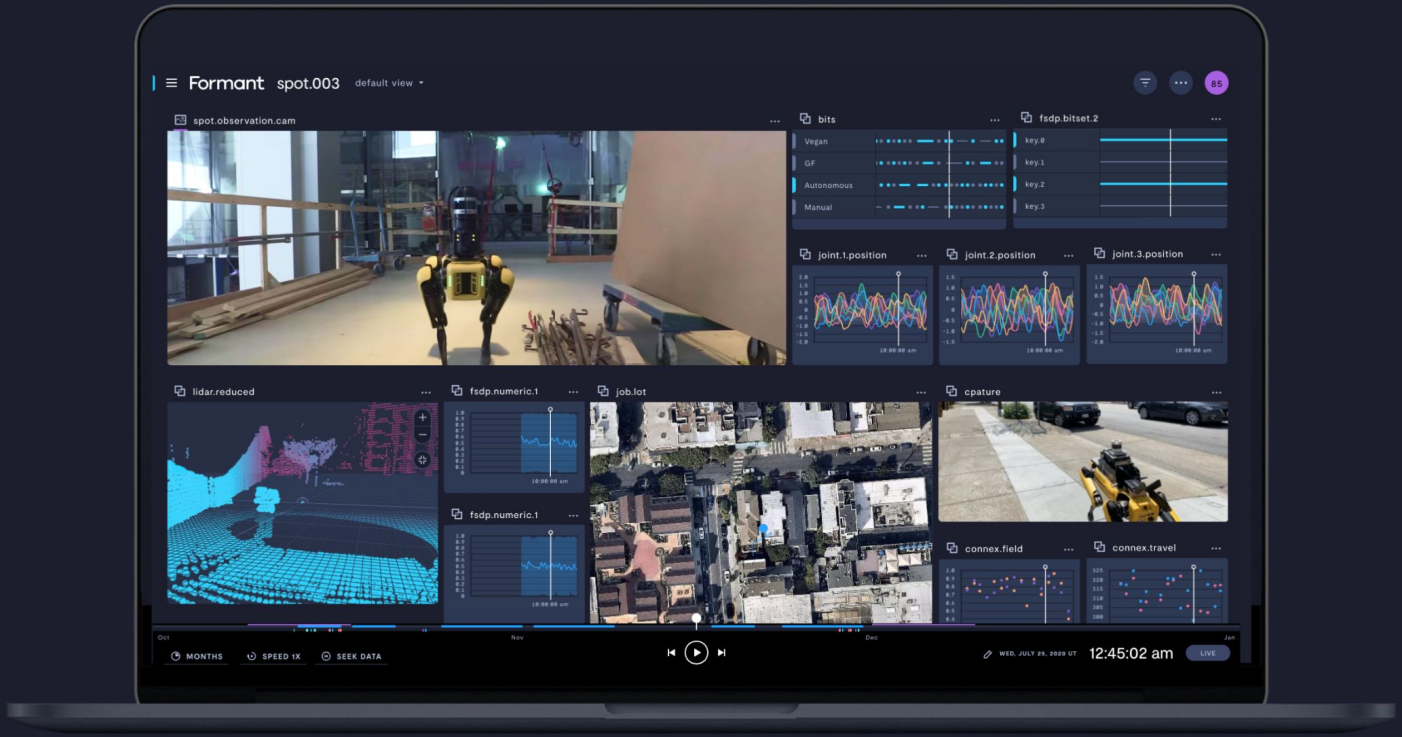
Formant

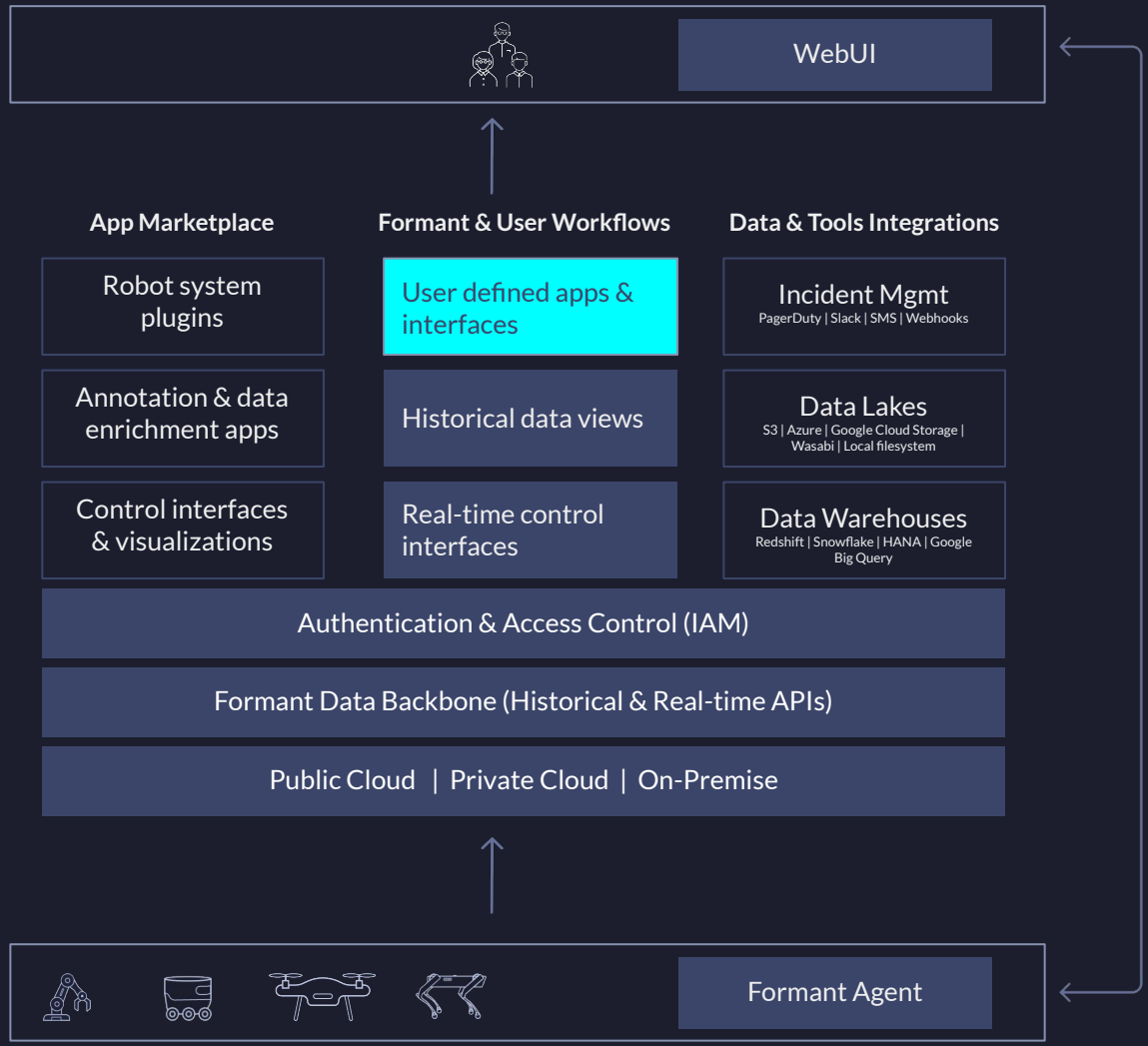
Formant Live Product Demo



General vs Custom Functionality

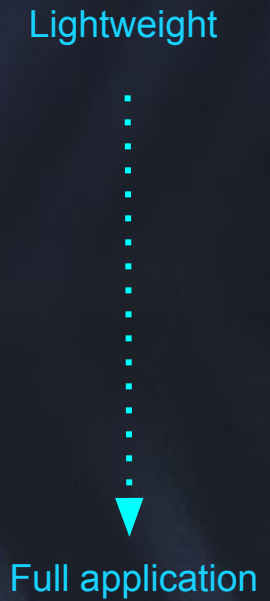
- We spend our efforts on high value **Generalizable** functionality
- We rely on Experts to add functionality whenever possible
- It is critical to make platform extension and modification simple and FAST for roboticists

Formant Architecture



Examples (Extensions to Full Applications)

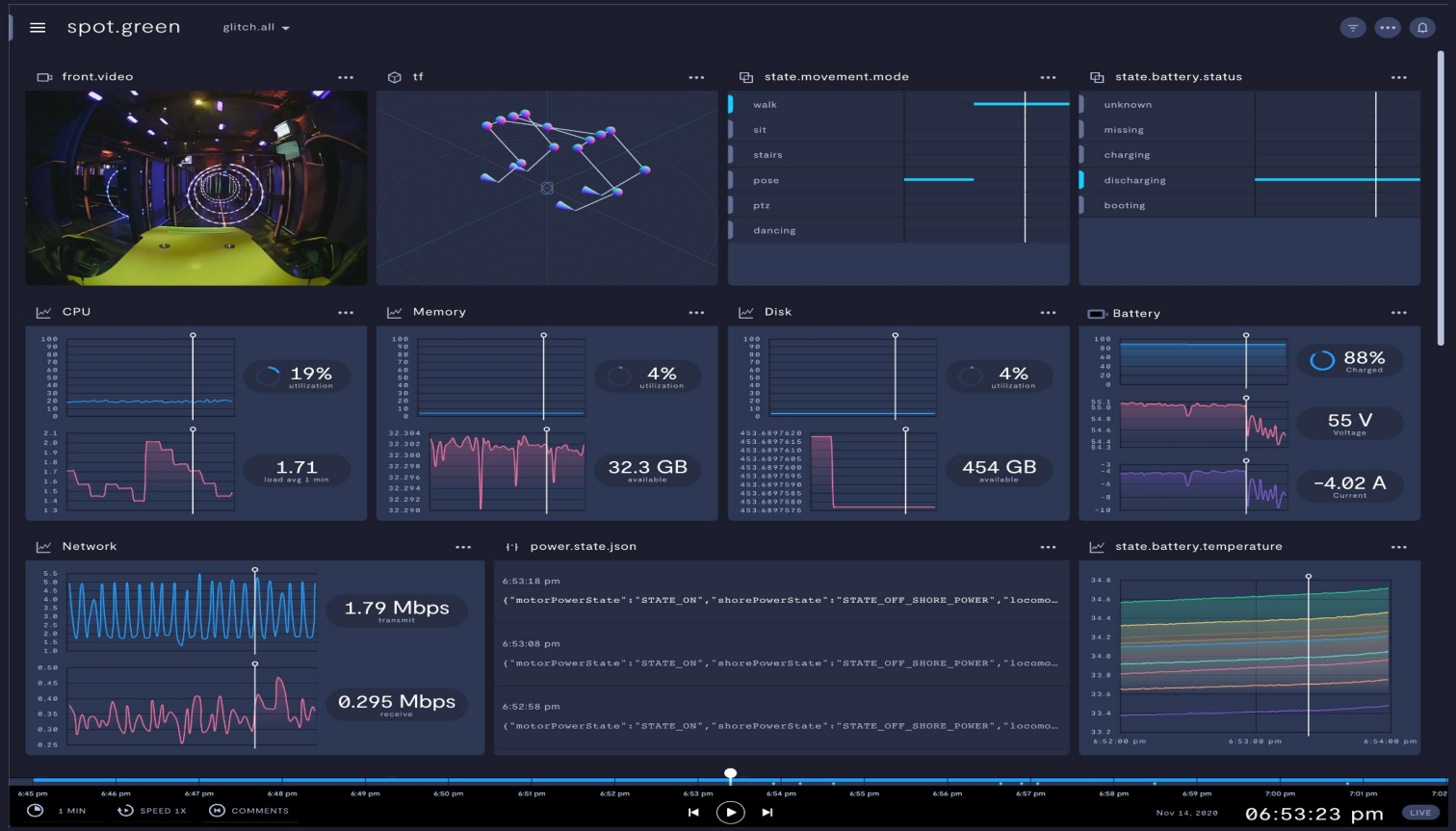
- 1 Electric Sheep: Customization of Formant's modules by customer. Leveraging UX toolkits
- 2 Bitwise Agronomy: Providing a 3rd party service offering within Formant's data platform.
- 3 PickNik: Full custom application embedded along side Formant's standard workflows



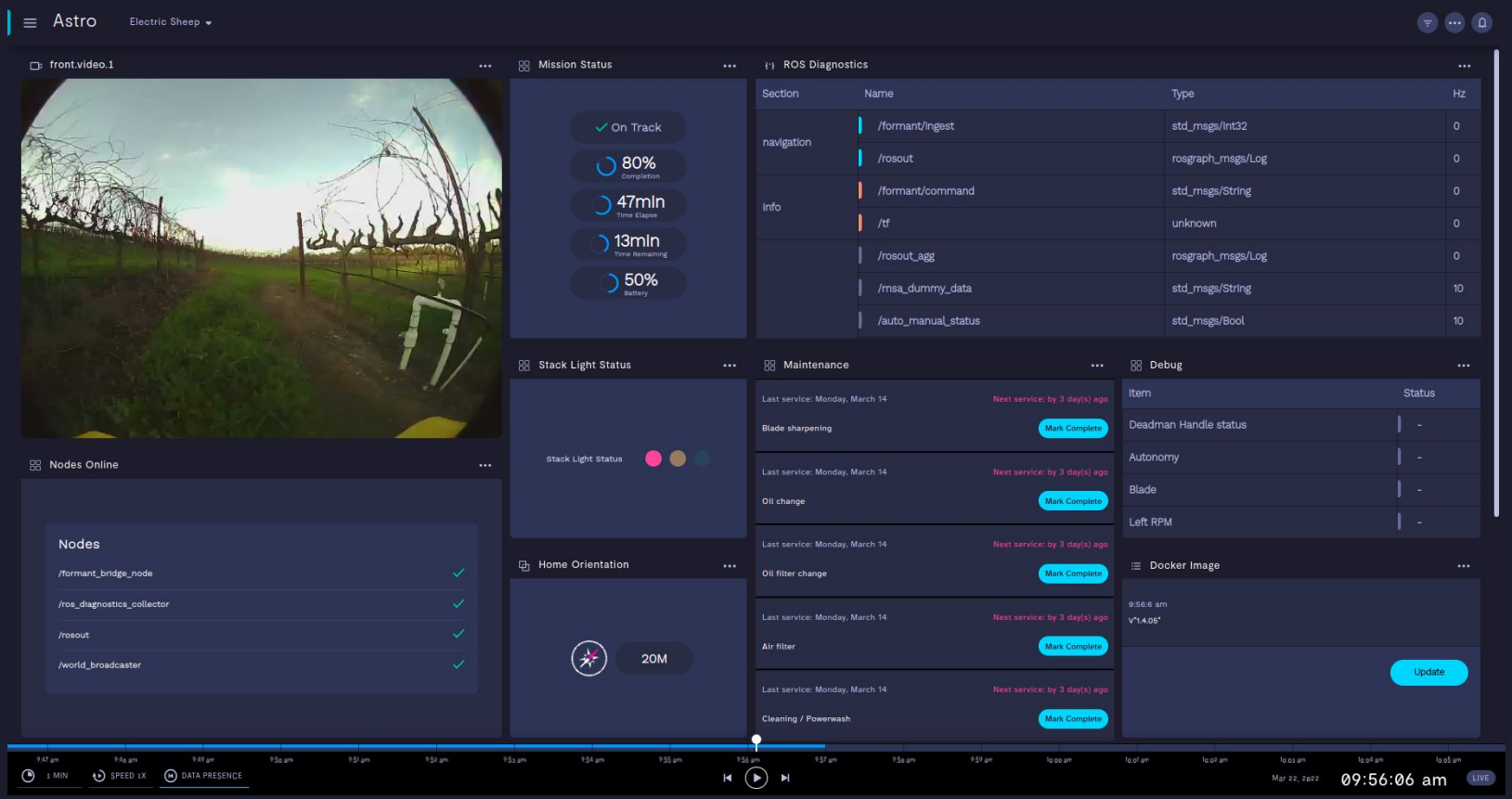
Example: Electric Sheep Robotics

- Scaling RaaS company looking for application-specific modules for managing customer devices
- Customer-built custom modules built on Formant's infrastructure using pre-built UI components
- What would have taken weeks took hours

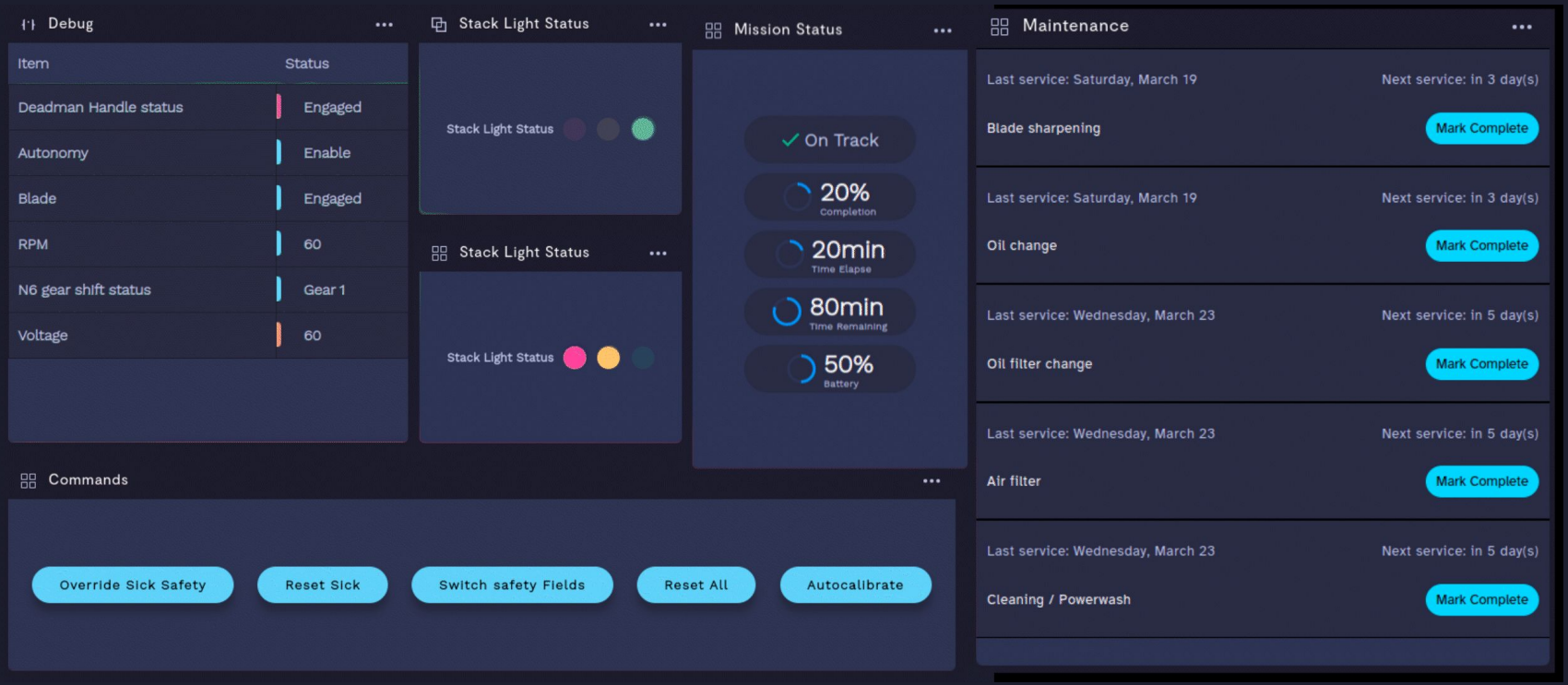
Formant: Standard Modules



Electric Sheep: Custom Modules



Electric Sheep: Custom Modules



Electric Sheep: Backend

User Management

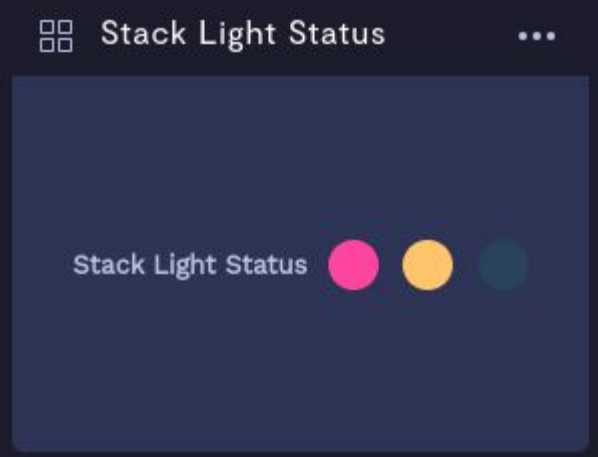
Time Series Database

Authentication

Robust Command Queue

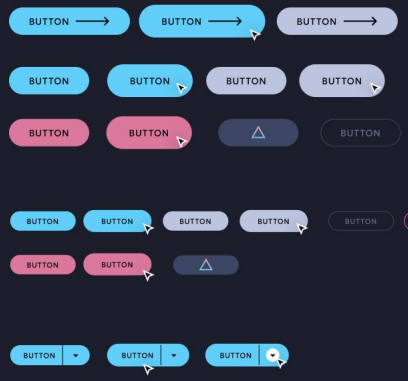
Agent ROS Bridge

Realtime / Historic Data pipes

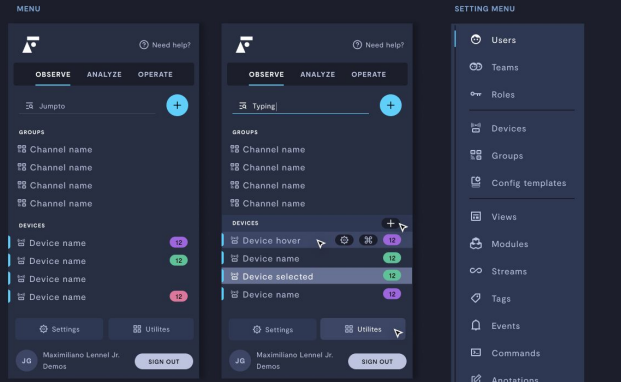


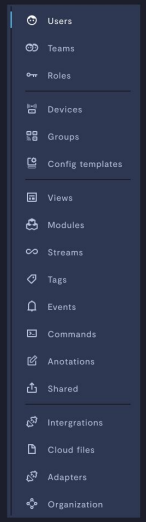
Front End Component Library

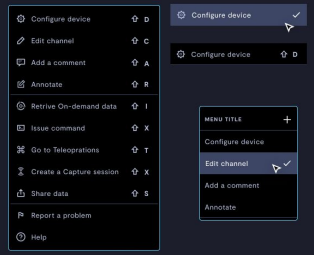
inputs

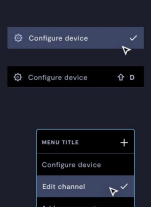


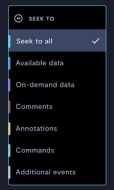
menus and navigation



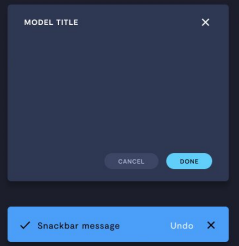


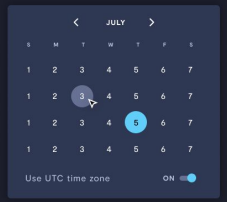


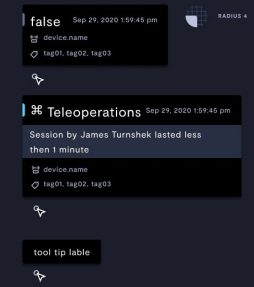


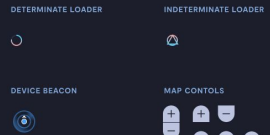


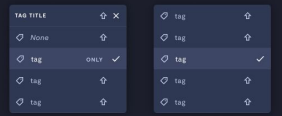
models and helpers





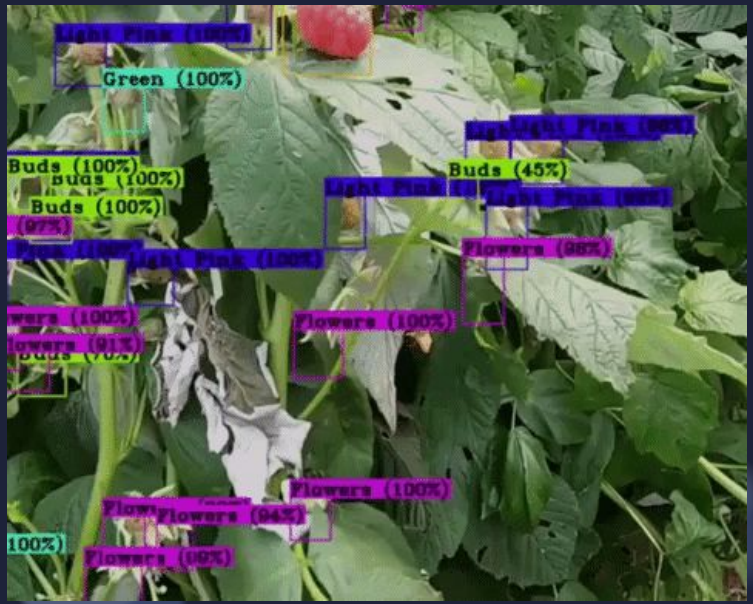






Example 2: Bitwise Agronomy

- Agriculture-specific machine learning company focused on precise analytics and actionable insights for grapes and berries
- Partner-developed solution involving seamless data export, analysis, and (re)ingestion.
- Embedded BI tool within Formant to provide contextual analysis to end users.



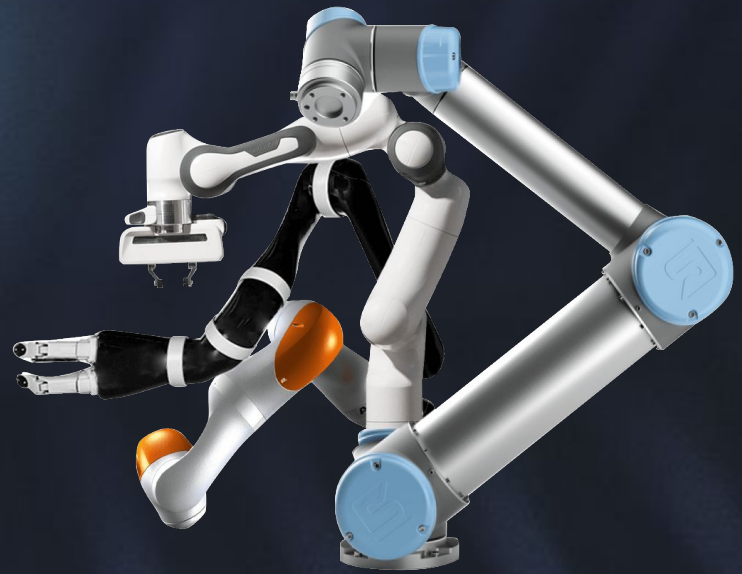
bitwise Agronomy

Bitwise: Telemetry Processing

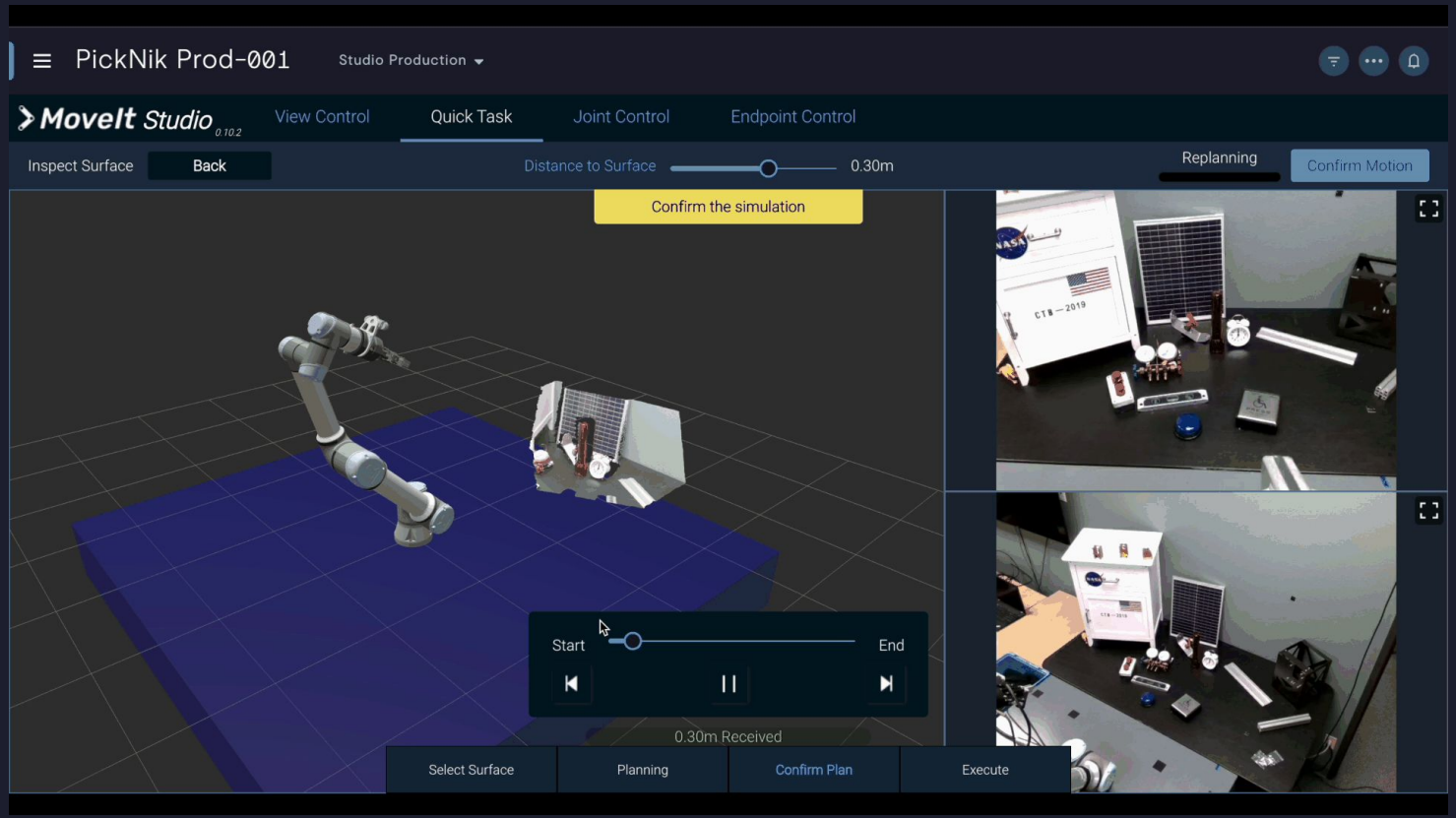
Bitwise: Embedded BI Tool

Example 3: PickNik

- Industry leading open source robot arm IK Solver (MoveIt)
- Entire application built inside Formant leveraging backend services and realtime connections
- Collaborative go-to-market via Formant's marketplace



PickNik: Complete Application in Formant



PickNik: Complete Application in Formant

Recap: Three cases of platform extension

Electric Sheep: Component Level

- Components built with formant services and SDK's
- Heavy utilization of UX Library
- Very rapid development

Bitwise Agronomy: Hybrid extension

- Using formant as data pipes to THEIR service
- Using Formant for authentication, user management and presentation layer
- Greatly expanding their core offering by providing Formant's mission lookback

PickNik: Full Application Level

- A fully customized frontend application for advanced manipulation
- Heavy utilization of realtime data channels
- Enterprise grade security and functionality out of the box

Thank You!

Learn more and get a demo at formant.io.

Q&A

Further Reading

Featured Customers/Partners

- Electric Sheep Robotics
- Bitwise Agronomy
- PickNik Robotics

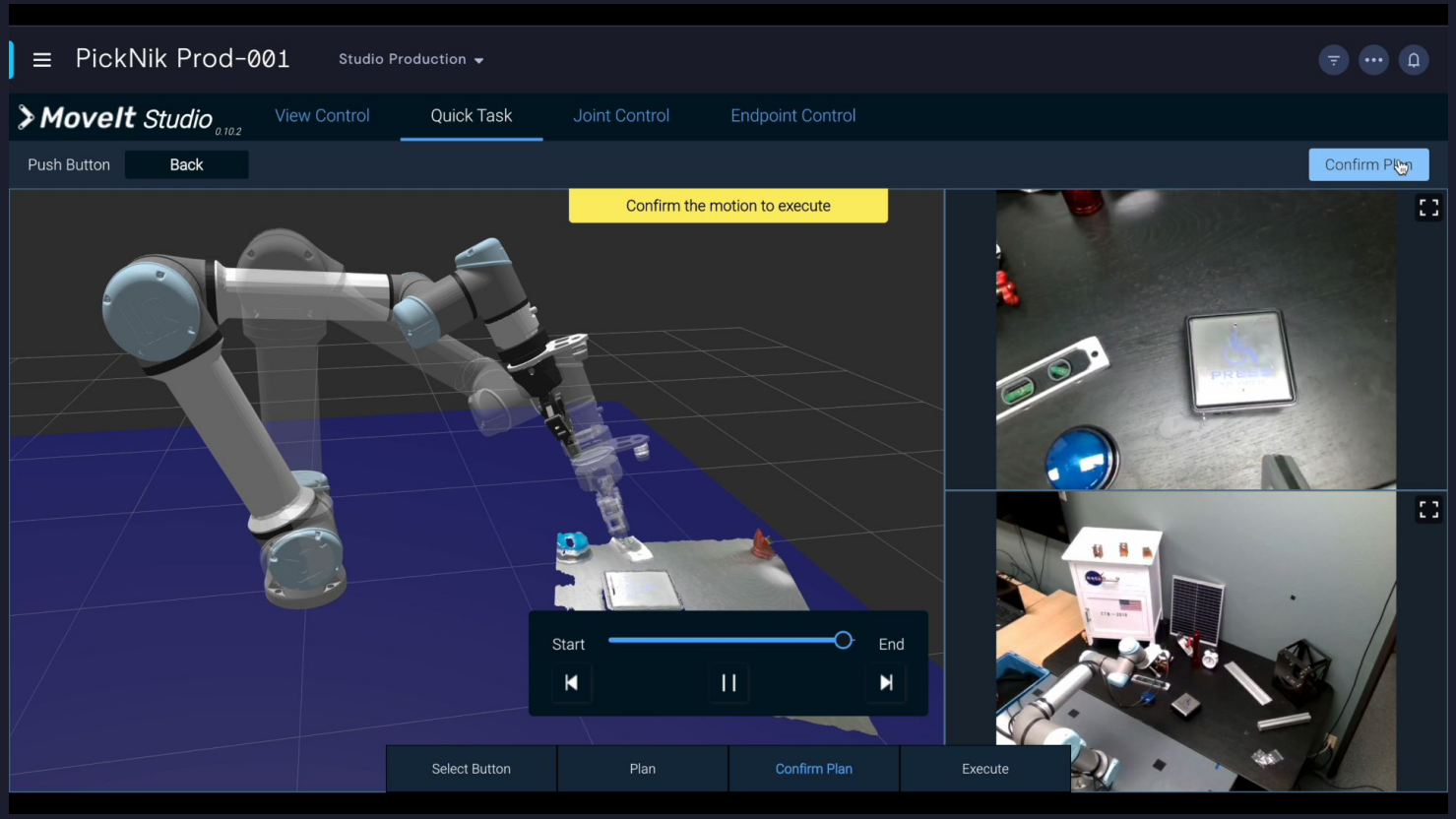
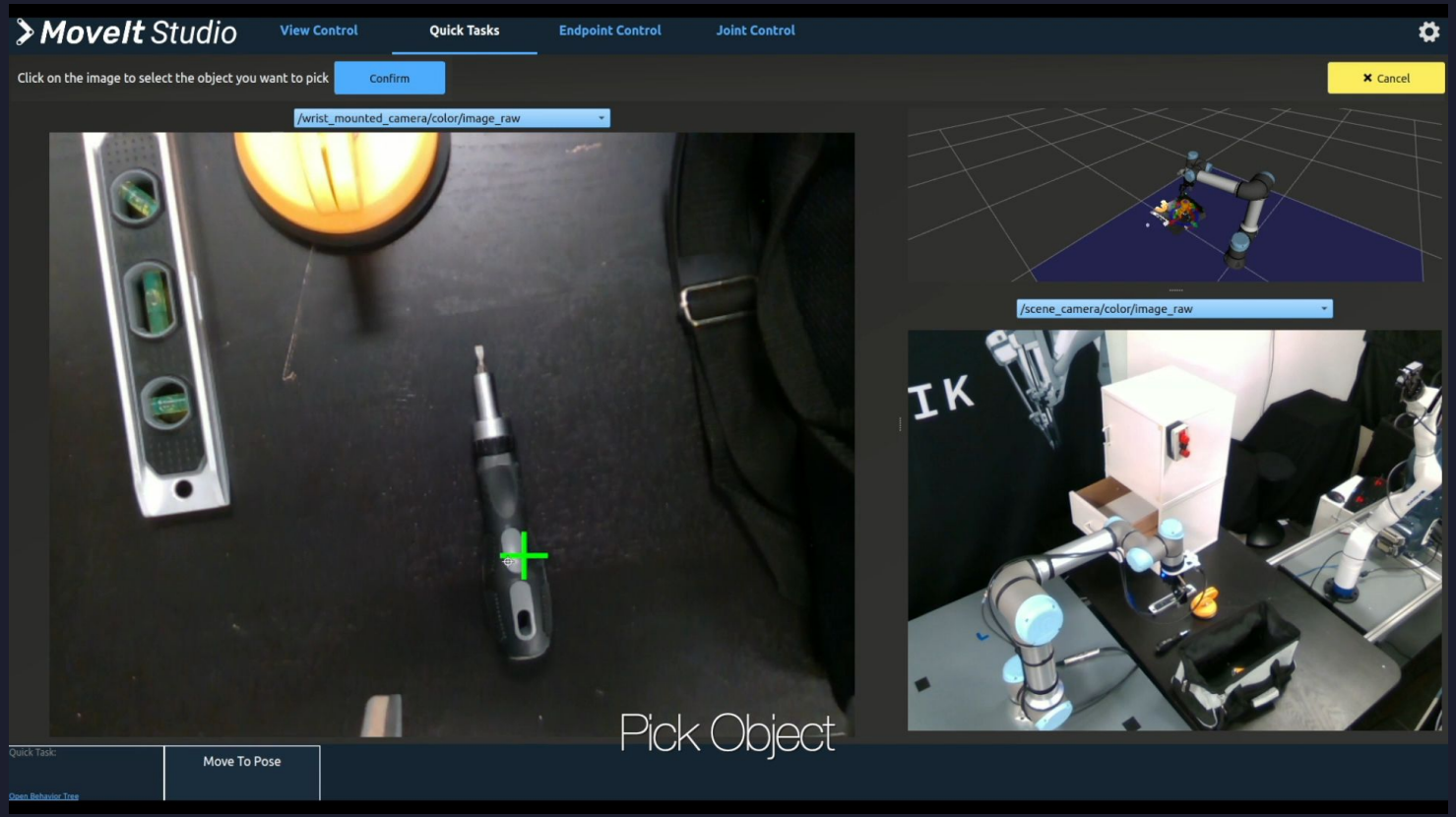
Formant

- Get Started
- Formant Docs
- Formant on GitHub

Appendix

Bitwise: Telemetry Processing

PickNik: Complete Application in Formant



PickNik: Complete Application in Formant