Black Boxes for Boats

Presented by
Brandon Wright, P.Eng.
CEO, Barnacle Systems Inc.

BRNKL

Founding story

Developed surveillance and remote monitoring products for the CIA, US Air Force, and Homeland Security.

BRANDON WRIGHT, *P.Eng.*

B.Eng – Electrical, 2008, UVic
Professional Engineer
Project Manager
Product Manager

About Barnacle Systems

*Award-winning designer and manufacturer
of vessel monitoring and security products.*

- Incorporated 2017
- Victoria, BC + US Entity
- Products made in Canada (96%+ CCV)
- Delivered products in 40+ countries
- In-house engineering team

NMEA 2024 Best New Product

Defining data residency vs sovereignty

Data Residency
Where data is physically stored

Data Sovereignty
Who controls access to the data

Why data sovereignty matters

Jurisdiction control

Data is governed to the laws of the country where it is stored, including potential access by foreign governments.
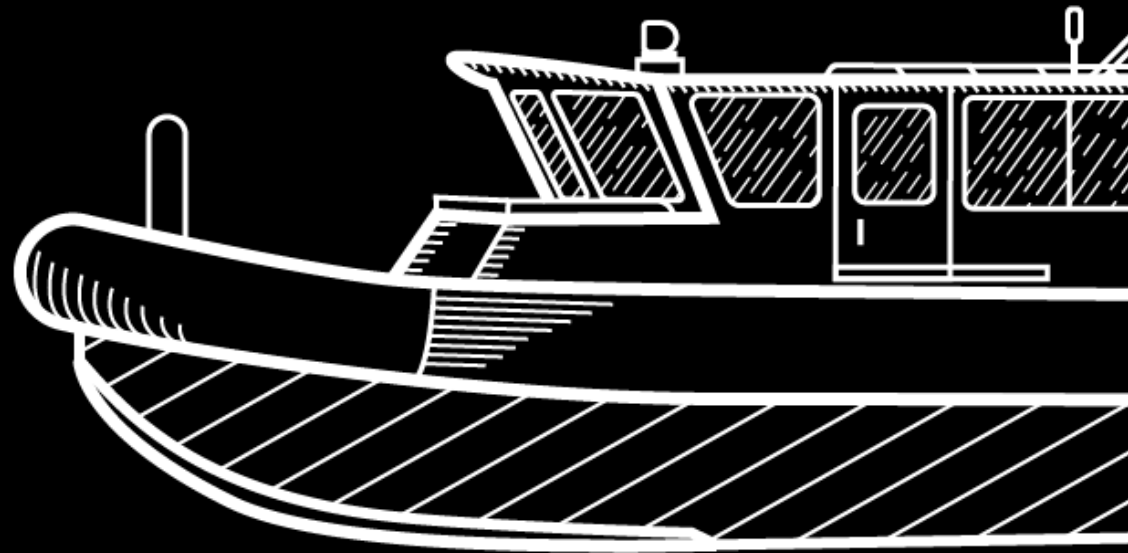
Implications of cloud storage

Do you know where your data lives and who has jurisdiction over it?
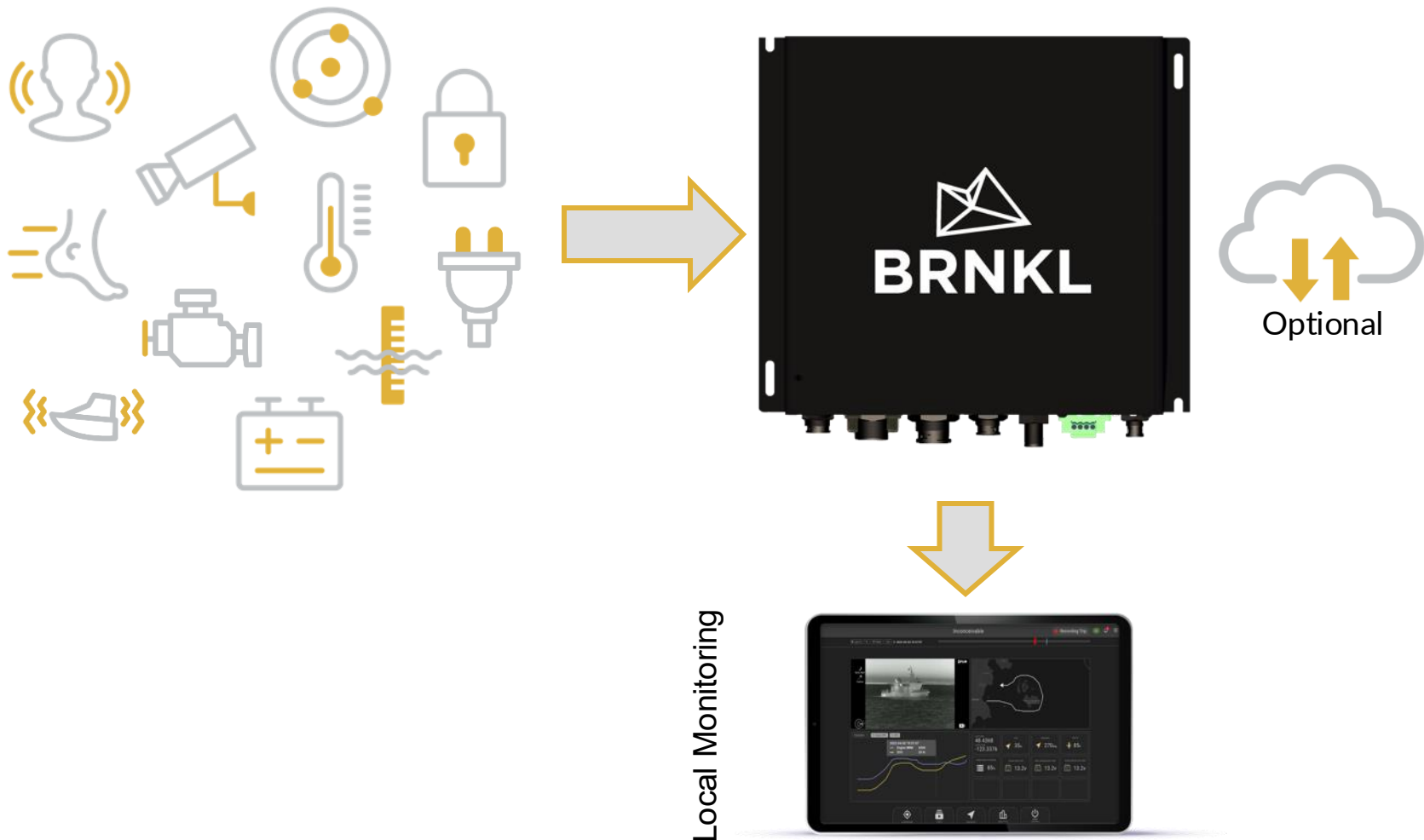
National security considerations

Maintain full control of your data pipeline. Can you securely extract and audit who accessed your data?

BRNKL Black

The black box built for sovereign operations.

The sensor hub where you own your data

Optional

Remote Monitoring

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Local Monitoring

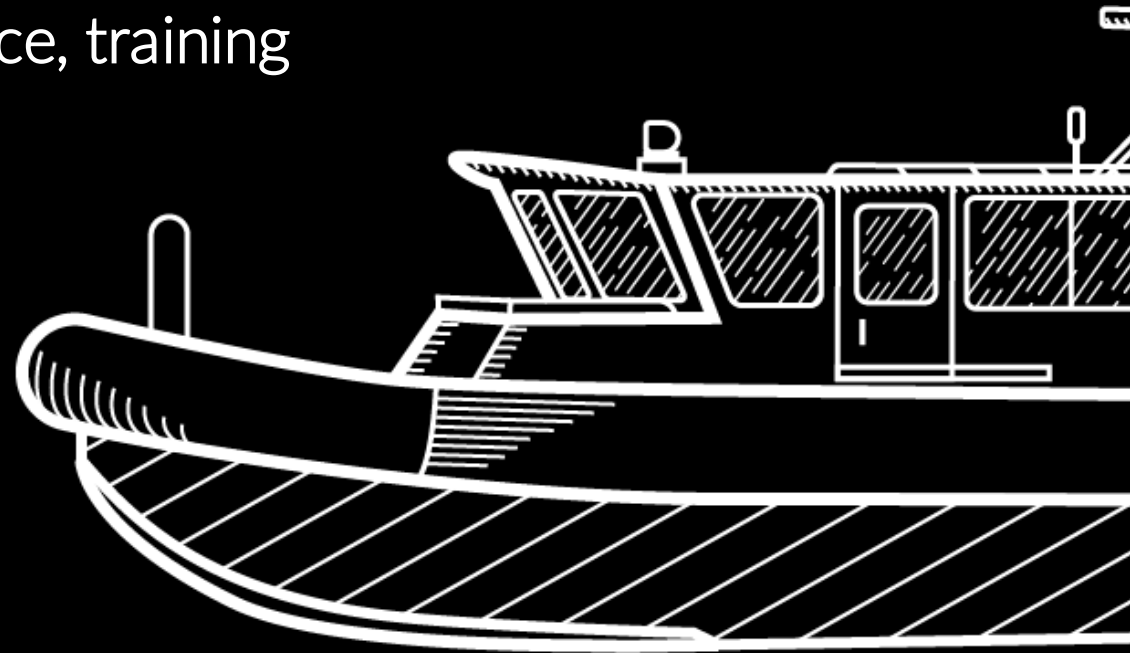Fleet Maintenance / Digital Twin

Vessel Vanguard.

Helm CONNECT

OVA STELLARX

DATIFEX

Use case:

Mission Analysis

Human factors, condition-based maintenance, training

Mission Analysis

Replay all sensor data on a single dashboard and export simple reports:

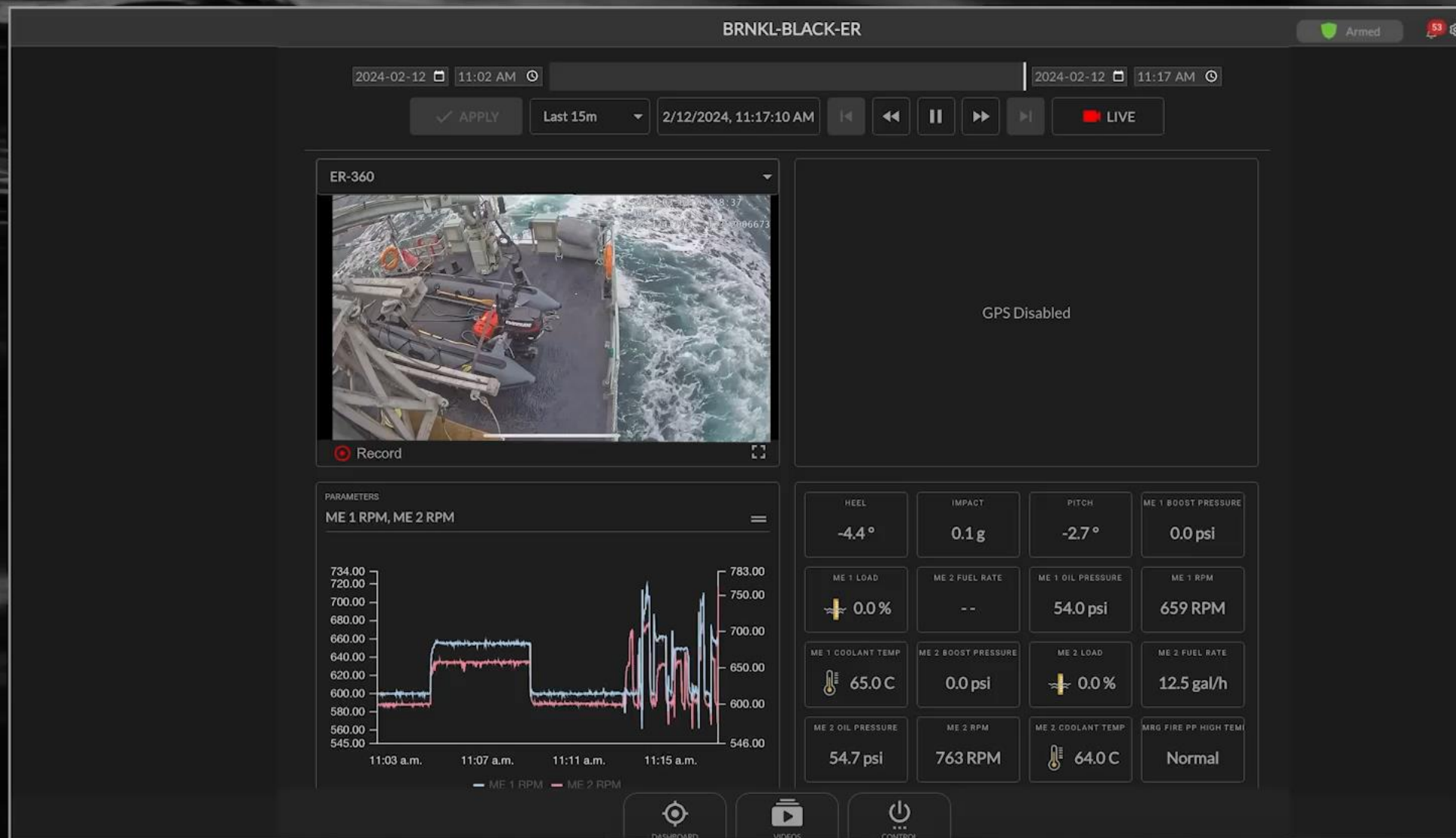1. **Vessel and human impact exposure**

   Compile biometric data, hull impact, and vessel sensor inputs into a simple PDF or Zip file for reporting.

2. **Condition-based maintenance**

   Consolidate engine, power system, environmental, audio, and video data for analysis and export.
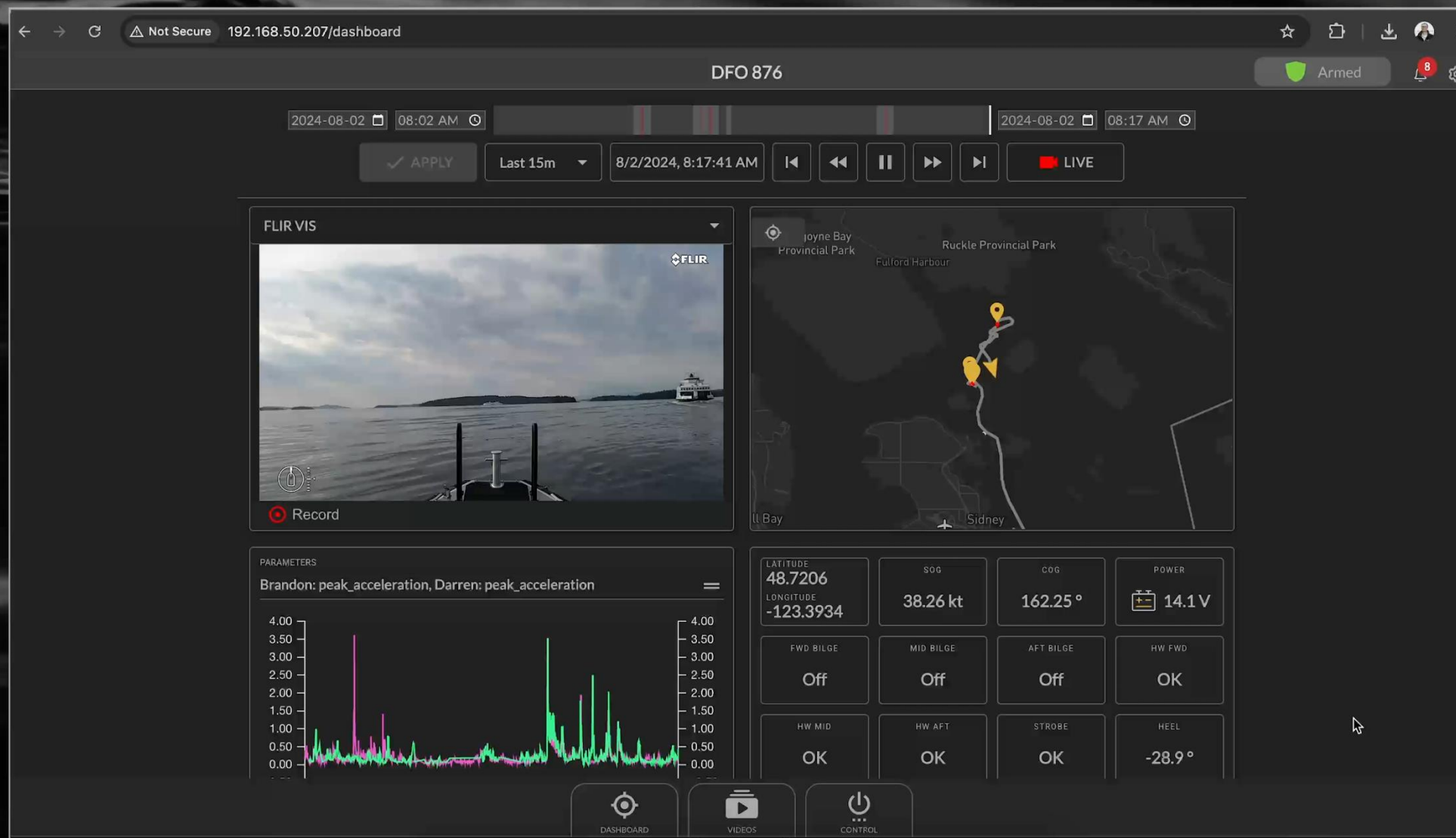
3. **Training**

   Replay exercises using synchronized sensor data for review and evaluation.

Choose what you monitor

Ensure crew safety and operational efficiency with alerts.

Trip Impact

Coastal Response IV
Aug 02, 2024
07:45 PST

SEAKEEPER

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Vibration (avg)	Force (max)	Events	Duration	Speed (avg)
0.5	**3.1**	**2**	**00:45**	**27.1**
grms	g	count	h	kt

Finish time	Speed (max)	Start position	Finish position
08:30	**41.7**	**48° 39' 0.15" N, 123° 23' 21.03" W**	**48° 41' 42.16" N, 123° 23' 6.50" W**
PST	kt		

Hull Impact: 0.4 g
Body Impact: 3.6 g
Speed: 34.0 kt

Hull Impact: 3.1 g
Body Impact: 0.9 g
Speed: 36.4 kt

Impact (g) / Speed (kt)

Time (h)
00:00   00:17   00:45
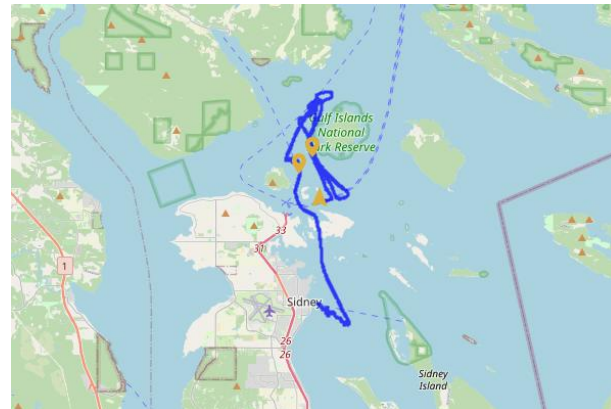
Hull Impact   Body Impact   Speed

Distance
20.5
nm

Event threshold
2.5
g

Force (avg)
0.5
g

Force (max)
3.1
g

Trip Impact

Coastal Response IV
Aug 02, 2024
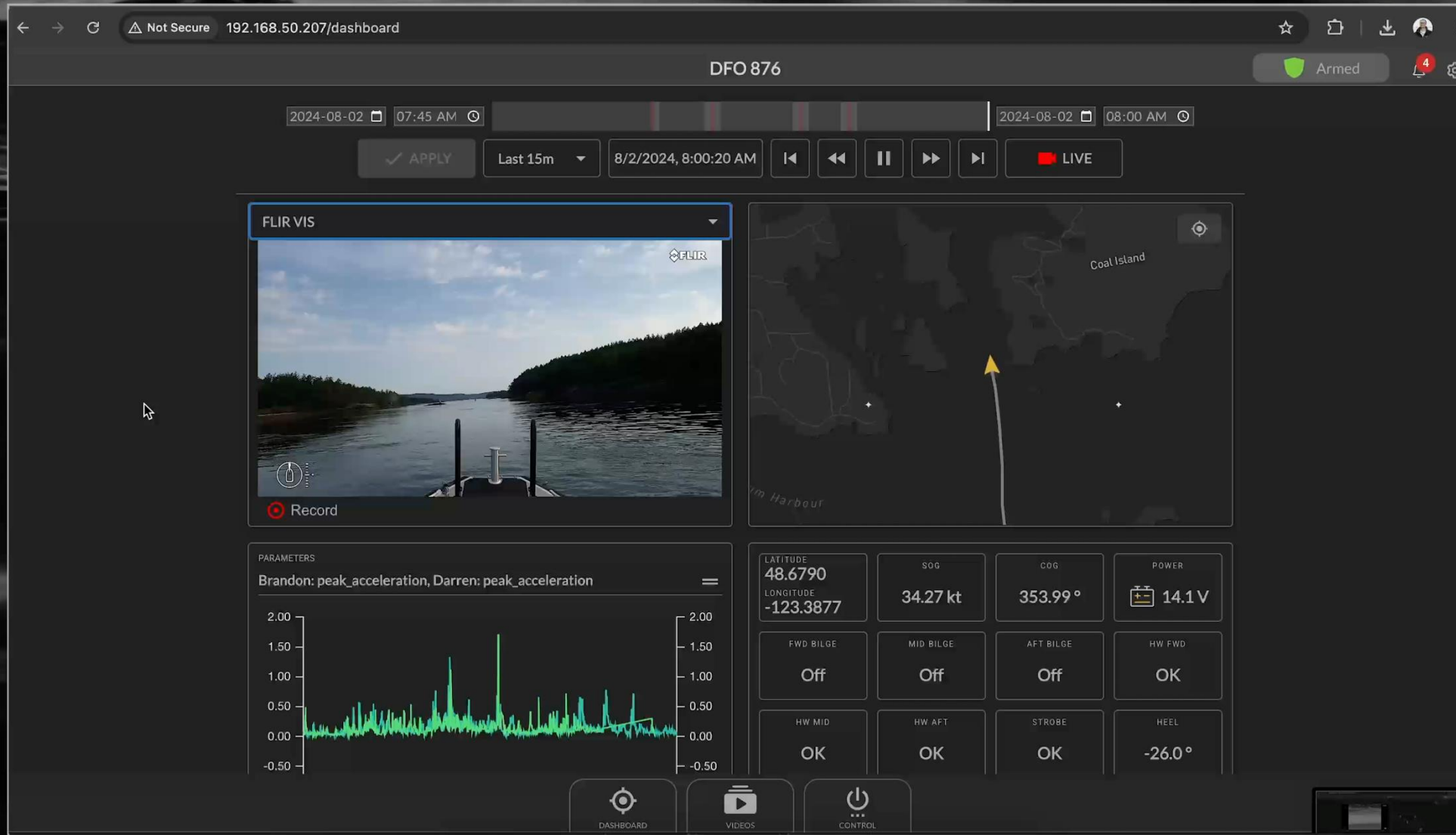07:45 PST

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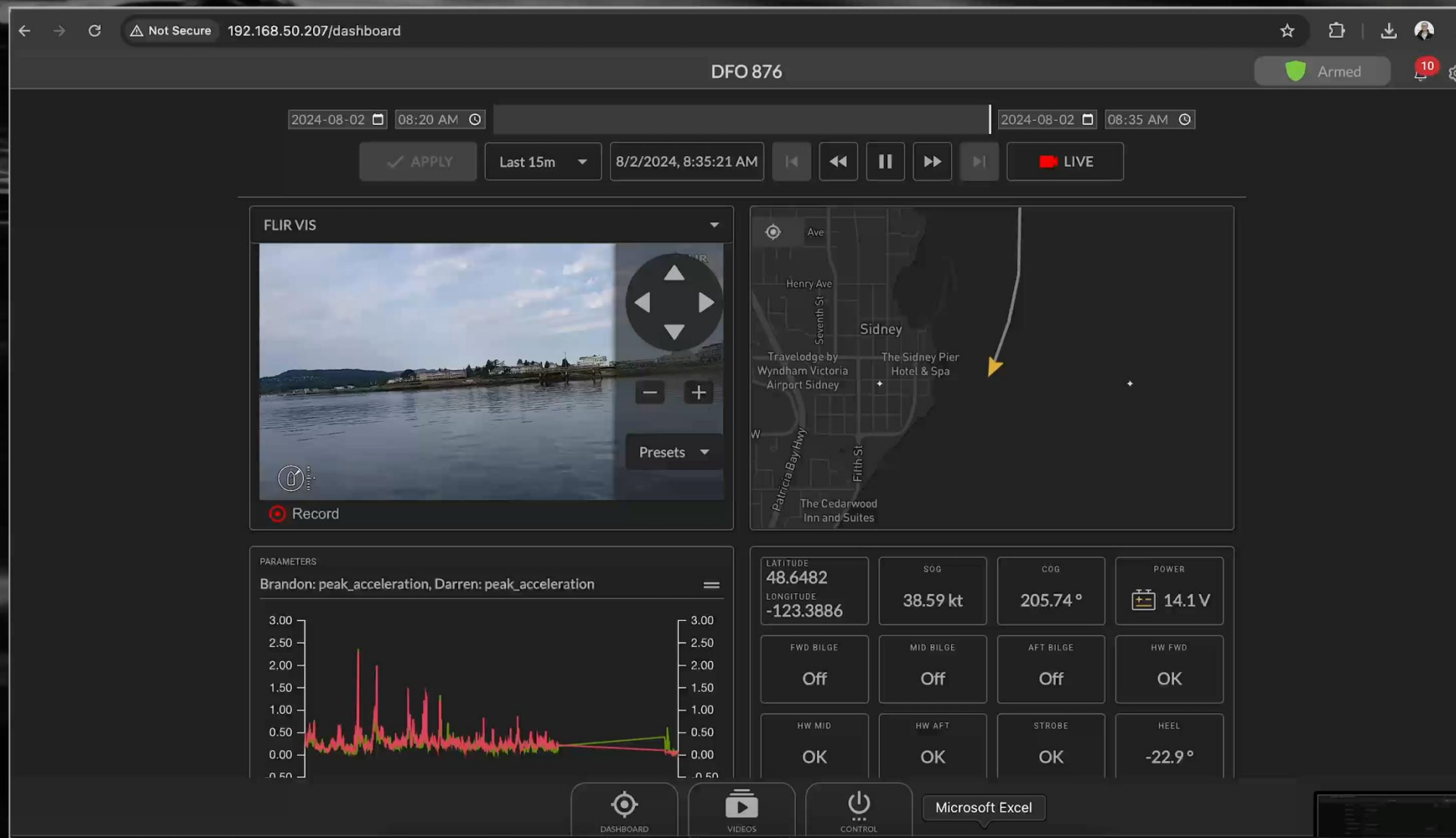Body Impact: 3.6 g
Speed: 34.0 kt

Hull Impact: 3.1 g
Body Impact: 0.9 g
Speed: 36.4 kt

Live viewing through private network or secure VPN

Enhanced situational awareness.

For sportfishing
Fish On!

Sep 14, 2024   7:17 AM   Sep 14, 2024   9:36 AM   ✓ APPLY

Last hour ▼   2024-09-14, 7:36:22 AM |◀ ◀◀ ❚❚ ▶▶ ▶| 1 ▶▶   📹 LIVE

Panorama ▼

PARAMETERS
Power, Shore power, 24 volt   ☰

15.00
14.50

Connected   29.00
28.50
28.00

LATITUDE
42° 25' 2.81" N
LONGITUDE
70° 28' 16.96" W

SOG
0.00 kt

COG
98.15 °

POWER
🔋 12.6 V

SHORE POWER
Dis...

24 VOLT
🔋 ...

MAIN BILGE
Off

MAIN BILGE 24H COUNT
...

⊕ DASHBOARD   ▶ VIDEOS   ⏻ CONTROLS

Thank you!

Brandon Wright, P.Eng.
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Summary

- Data sovereignty – do you control access?

- BRNKL Black for human factors, condition-based maintenance, mission replay

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