LISTEN TO YOUR NETWORK

Leveraging Analytics in Submarine Networks
Who better to tell you how the network is feeling than the network itself?

Listen to your network
Application Programming Interface (API)

Open, Standards-based Software & Hardware

NETCONF/YANG
REST
gRPC

Analytics Engine

Resource Adapter

Closed, Proprietary Software & Hardware

Closed, propriety software interfaces
Listen to Your Repeaters

“There’s an 85% chance this repeater will fail within 6 months.”
Listen to Your Whole Network

Machine Learning Algorithm

Streaming Telemetry
Big Data

Terrestrial Network

API

Submarine Network

API

Streaming Telemetry
Big Data

API

Terrestrial Network

Streaming Telemetry
Big Data
What Is Machine Learning?

• Concept explained in the IBM Journal of Research & Development, way back in 1959

• With Machine Learning, the data itself creates the algorithm, and the more data fed to an algorithm, the more sophisticated and accurate the algorithm becomes over time

• Machine Learning is a specific type of Artificial Intelligence (AI) put into practice

Today's Machine Learning Enablers

- Storage
- Compute
- Connect
Analytics: Opportunities

• Predictive maintenance to address issues before they occur
• Increase network availability for competitive differentiation
• Continually optimize the utilization of end-to-end network assets
• Actionable insights enable intelligent and autonomous automation
Analytics: Challenges

- Humans learning to trust machine learning and insights provided
- How much data should we capture (store and compute costs)?
- Where should the ocean of captured telemetry data be stored?
- How much autonomous control should the network be given?
Intelligent Closed-Loop Automation

Network operator is always in control of their network.

Operator-defined policies allow the network to do only what it is allowed to do.
Summary

✓ Your network knows how it’s feeling, so listen to what it’s saying

✓ Old and new network equipment can leverage machine learning

✓ Any data can benefit from machine learning-based analytics

✓ Analytics was borne in the data center, so why not use it on the networks enabling it in the first place, overland and undersea?
Mahalo