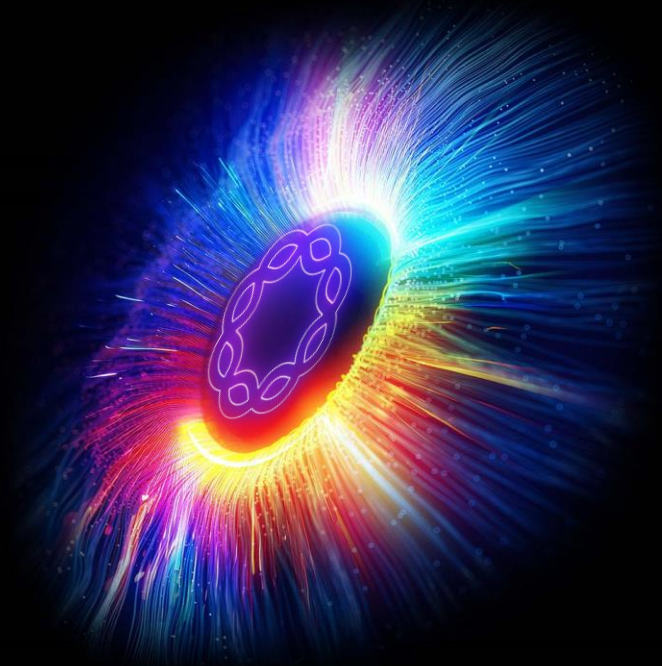


ribbon
INSIGHTS



Integrated Solutions

David Boruchowski

Integrated Solutions



Ribbon - a Turn-KeY *Solutions* Provider



Ribbon Integrated Solutions – Full Turnkey

Flexible Solutions to meet Customer's Technical Requirements and Budget

Facility

Shelters/Huts, Ruggedized Enclosures, Mobile Shelters & Enclosures, Outdoor Cabinets

Infrastructure

DC Power Systems, UPS, Gensets, Green Energy Solutions, Racks, Air conditioning

Networking

Wireless Solutions, Synchronization, Ruggedized Switching, Test Equipment, Data Center Switches

Intelligent Middle Mile

Security

Firewalls, IPS/IDS, SCADA, AD, Encryption, Preventative Tools

Applications

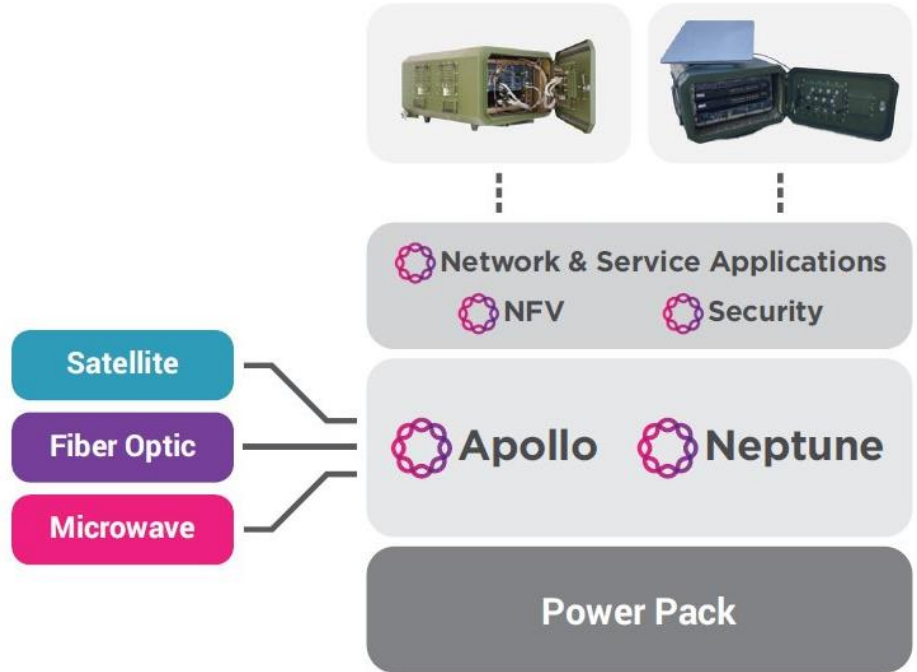
 TELCO CLOUD

 Muse

MoM, SoC

Ribbon's Network In A Box

Rapid Disaster Recovery



Network in a Box – Networks Survivability

Customized Solutions

• Tailored Hardware Options

- Lightweight, aluminum case
- Integrated Shock Absorbers
- Fans
- Customized power distribution units
- Sizes: Trolleys, 4U, 6U, 10U
- Military grade connectors
- Secured environment
- In case lights
- Easy Removal Filter
- Dedicated case for UPS
- Special case for Cellular deployments

• Tailored Equipment

- Built for NPT, Apollo & Third Party
- Various Applications: mobile sites, DR, Cellular, temporary deployments

Various Configurations



Various Sizes, For Various Terrains

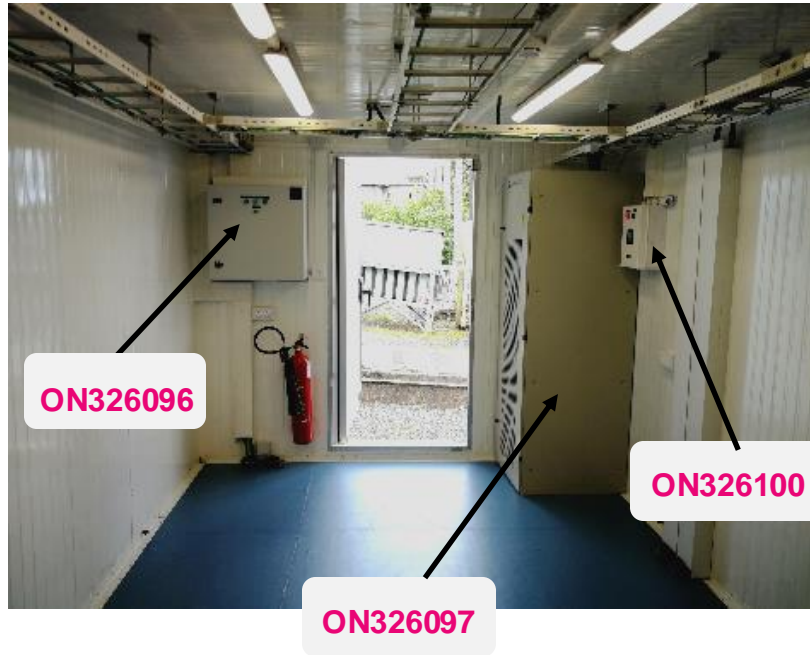
ON326090



ON325947

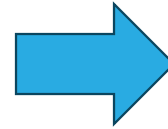
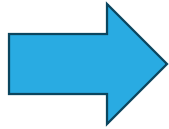


Interior Design



Container Based Transportable Data Centers

6 Weeks from High Level Requirements to Hand-over



Street Cabinets

Design For Long Periods Of Power Outages

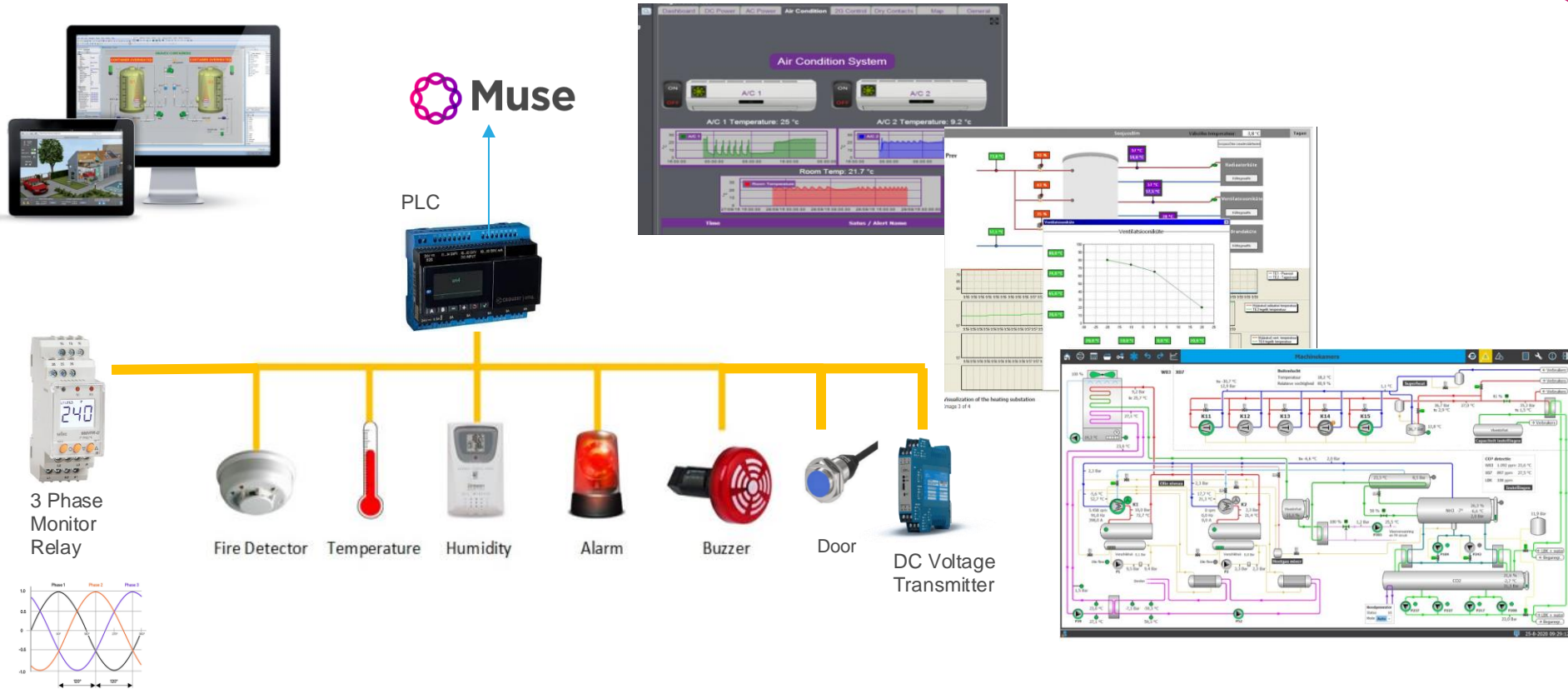


- Custom cabinets, for Apollo 9608
- 36 hours backup:
 - 9KW Delta Power System
 - 24 x 150AH batteries
- Sensors: Door, Heat, Smoke, A/C
 - integrated intomanagement system
- DC & A/C
- Backup Fans
- Rear and Front doors
- Rear & Front 25U 19” Racks
- Three Point Locking System

“Ribbon provided us with a **customized solution** that allowed us to both meet our current bandwidth needs and easily scale as we continue to grow, while delivering **specialized outdoor cabinets** for housing valuable equipment at add and drop points along the route.”

Damien de Lamberterie,
General Manager of Blueline

Site Monitoring System – Integrated to Ribbon Muse



Power Solutions Broad Portfolio

Integrated to Muse

Power Supply



Several types of DC systems



Controller



24v Rectifiers

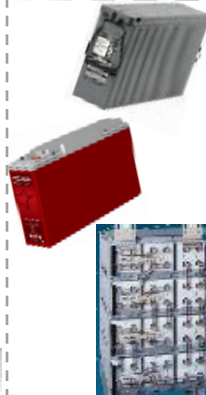
48v Rectifiers



DCtoDC Converters



Lead Acid



Lithium Ion



Fuel Cell



Inverters



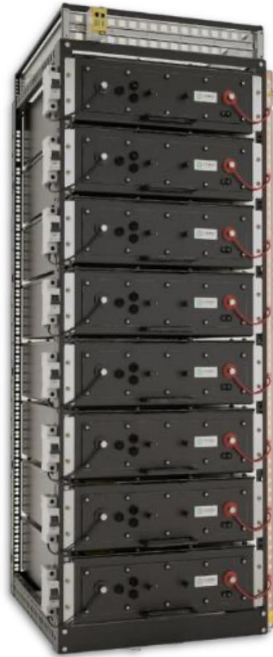
Power Line Filters



Genset



Ribbon – a Global Reseller of US Vendors (Examples)



- California headquarters
- US manufacturing facilities
- Offices in LatAm
- Operations in 14 countries
- Production capacity 500 systems/mo and 8,000 battery packs per month
- 2,000+ Sites
- Established management team with strong operational track record
- 9,000 metric tons of CO2 avoided
- 690 MWh of clean energy delivered

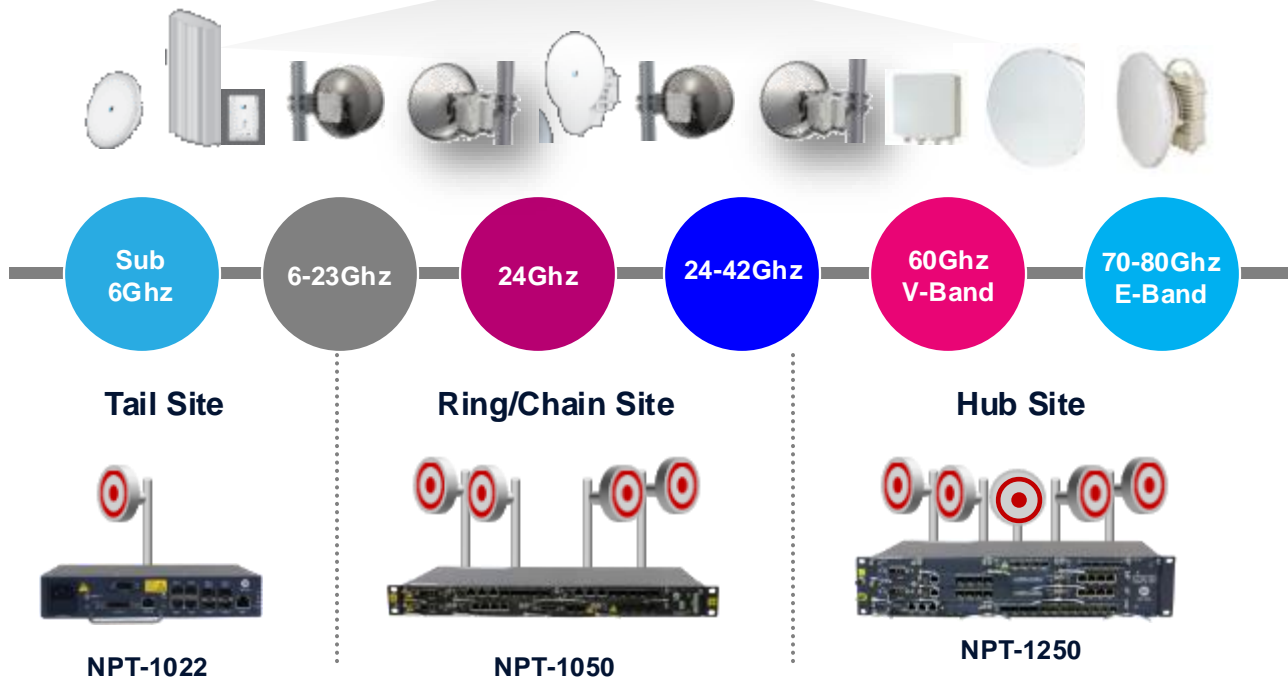
- In 1914, Dale Bard launched Bard Manufacturing Company in Bryan, Ohio. Today, Bard Manufacturing is an international leader in the commercial heating and cooling industry.
- Market Segments: Equipment Shelters & Telecom, Light Commercial, Data Center, Schools
- Economizer solution - Economizer vent options are available for increased energy efficiency during cooling operation when outdoor conditions are favorable.



Microwave



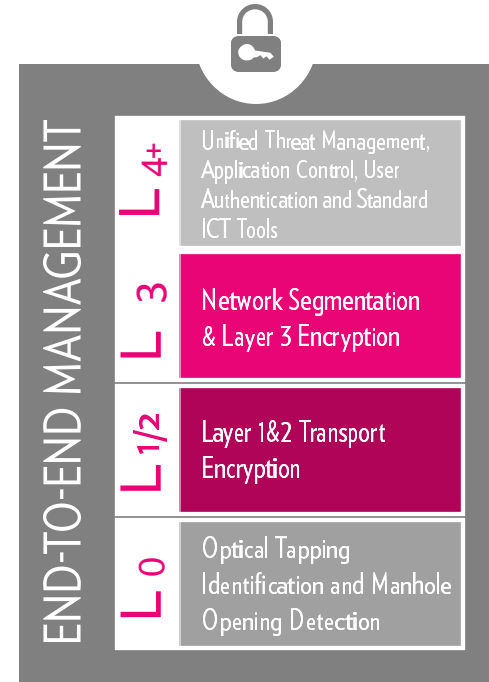
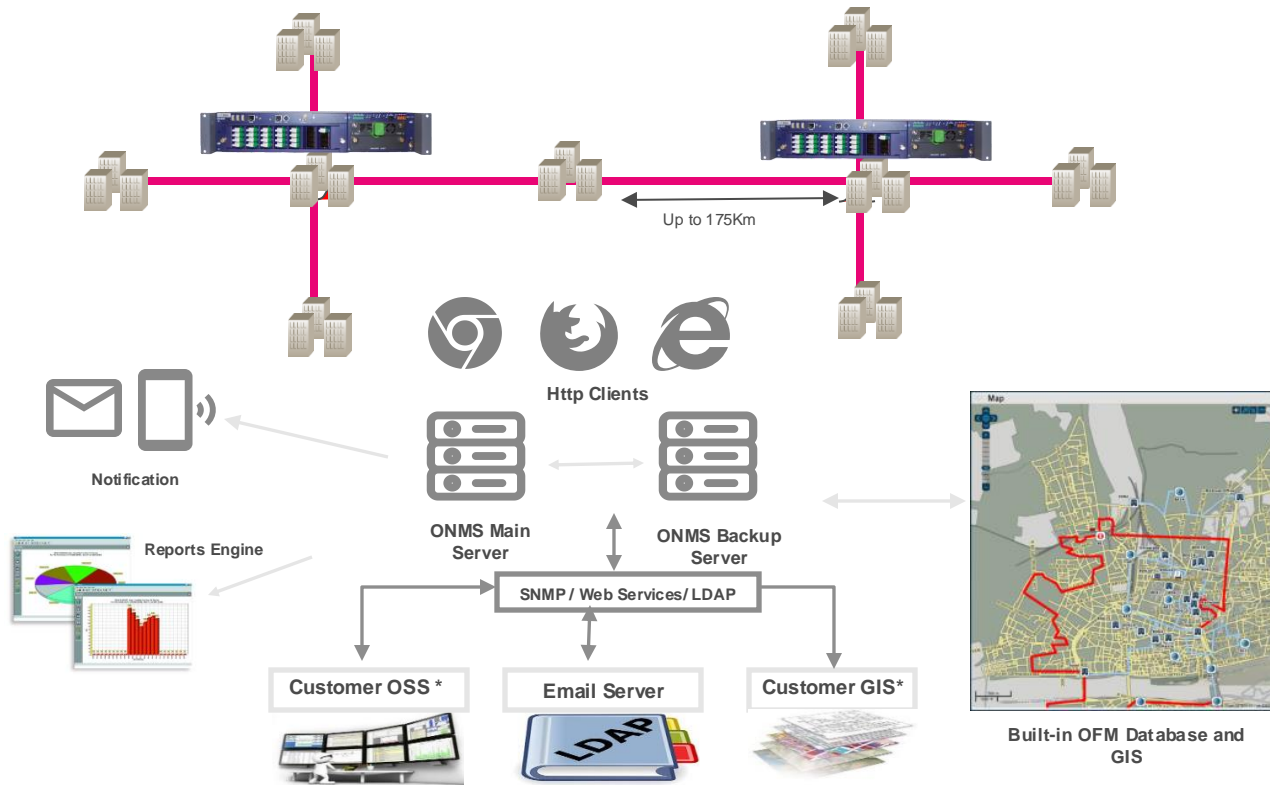
End-to-end point-and-click network management



Wireless - SATCOM



Multi Layer Cyber Protection



Ribbon's Integrated Solutions



Tailored



**Turnkey
Multi-technology
Multi-Vendor**



**End to end
management
and control**



**Global
Experience**



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