

The Digital Transformation Revolution: Lockheed Martin Leads the Way

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Chief, Advanced Technology Concepts for Logistics and
Sustainment



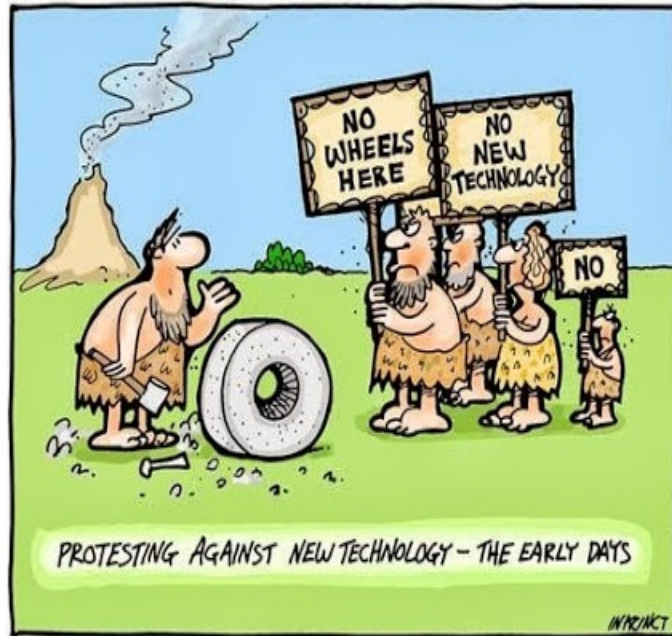
Industry 4.0 For Defense

We are now in the midst of the **fourth industrial revolution** (Industry 4.0), where a wide range of new technologies connect people and machines together in an integrated digital/physical ecosystem.

Industry 4.0 for Defense follows a similar track that enables seamless generation, analysis, and communication of data, which provides new capabilities for automating supply chain and manufacturing processes and making better business decisions.

Some of the key Defense Industry 4.0 technological hallmarks include advanced collaborative visual technologies, autonomous systems, artificial intelligence, cloud-based data, internet-connected sensors, Asset Based IoT, and supply chain security just to name a few.

Technology Adoption In History



Innovation Demonstration Next Gen Future Logistics Center

Showcases the latest advanced technologies highlighting air, ground and next generation training and logistics capabilities.

- Asset Visibility/ IoT
- AI/ Machine Learning
- Augmented Reality
- Autonomous Warehousing
- Holographic C2
- 3D Visualization
- MicroSurety
- Modeling and Simulation
- Virtual Reality Training
- Automated Test Equipment
- Ground Support Equipment
- 5G Integration
- udStream/Milverse
- Additive Manufacturing



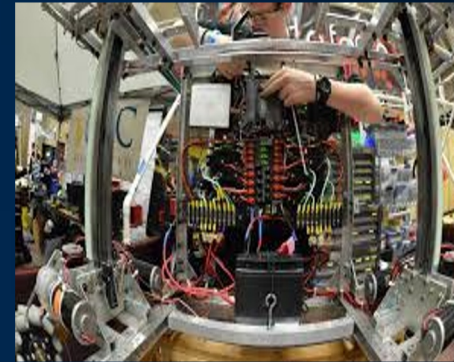
Solving the challenges of tomorrowtoday!

Jet Fighters = Parts.....A lot of parts!



Lockheed Martin Supply Chain Challenges

- Complex dynamic work environments
- Significant security requirements
- Workforce personnel issues
- Non-standardized processes
- Inventory validity issues
- Inconsistent productivity
- Poor metrics definition capability



616,350,000 parts

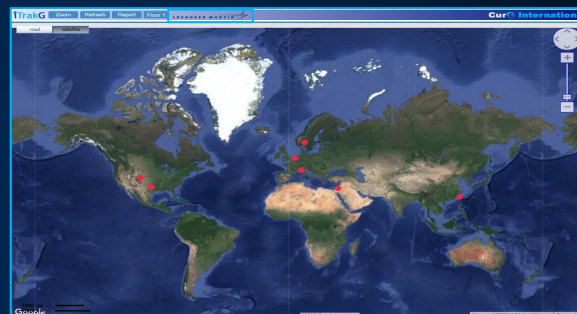
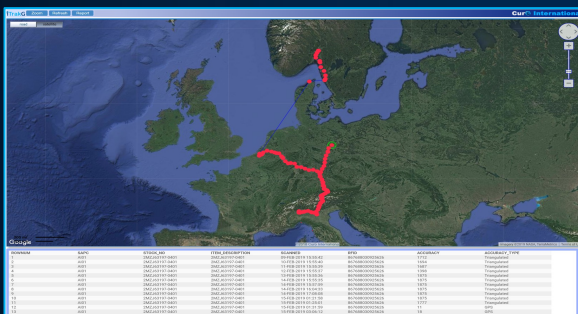
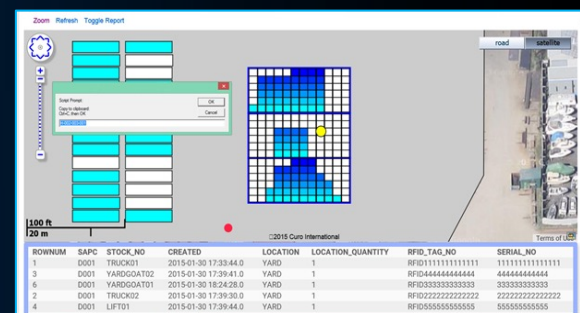
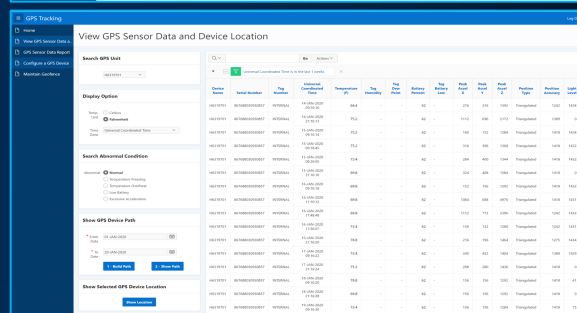
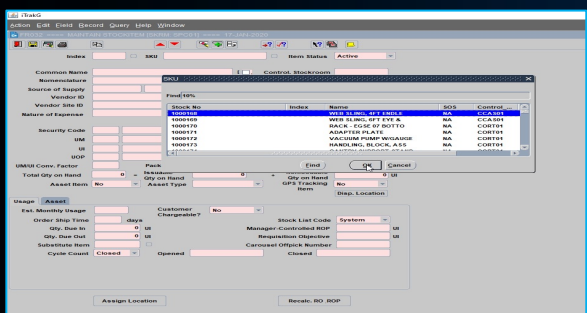
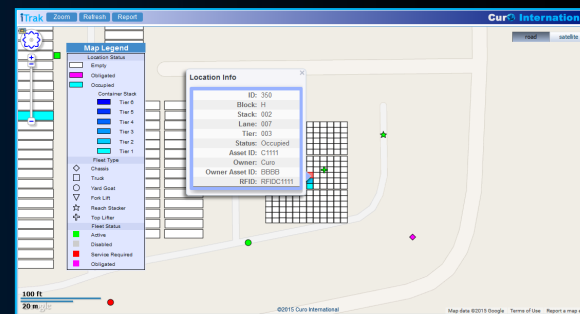
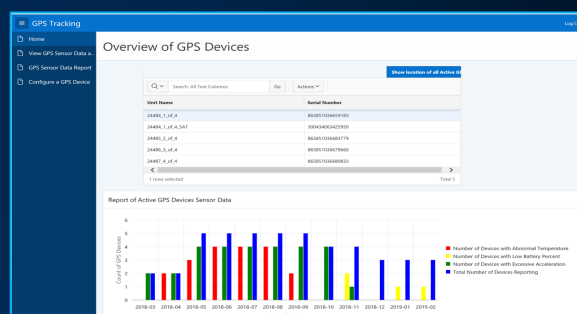
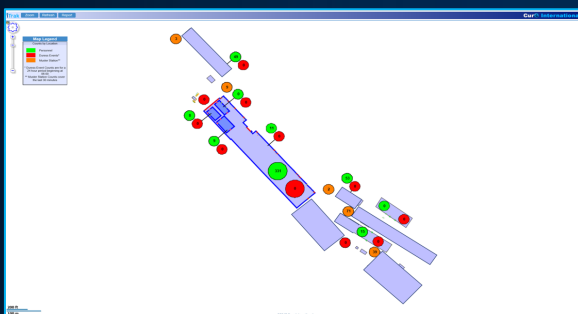
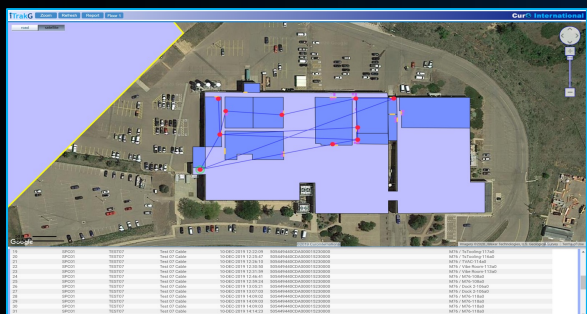
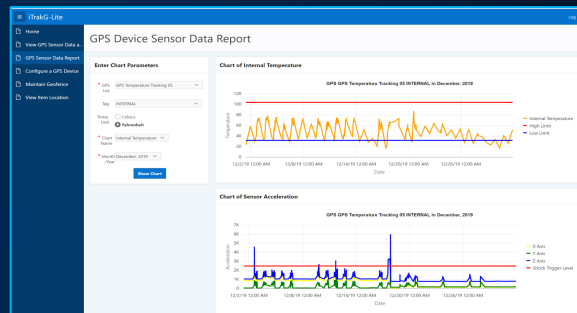
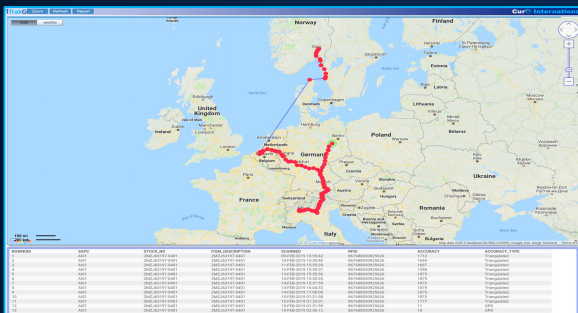
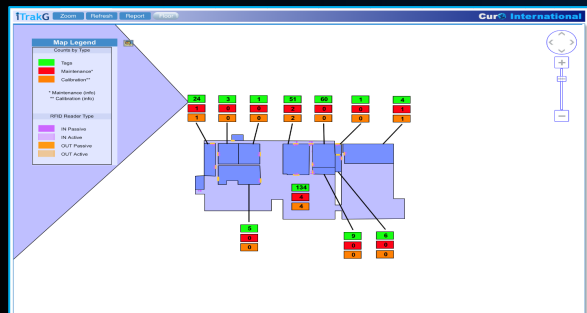


iTrakG –Defense IoT Asset Management & Tracking

Core elements:

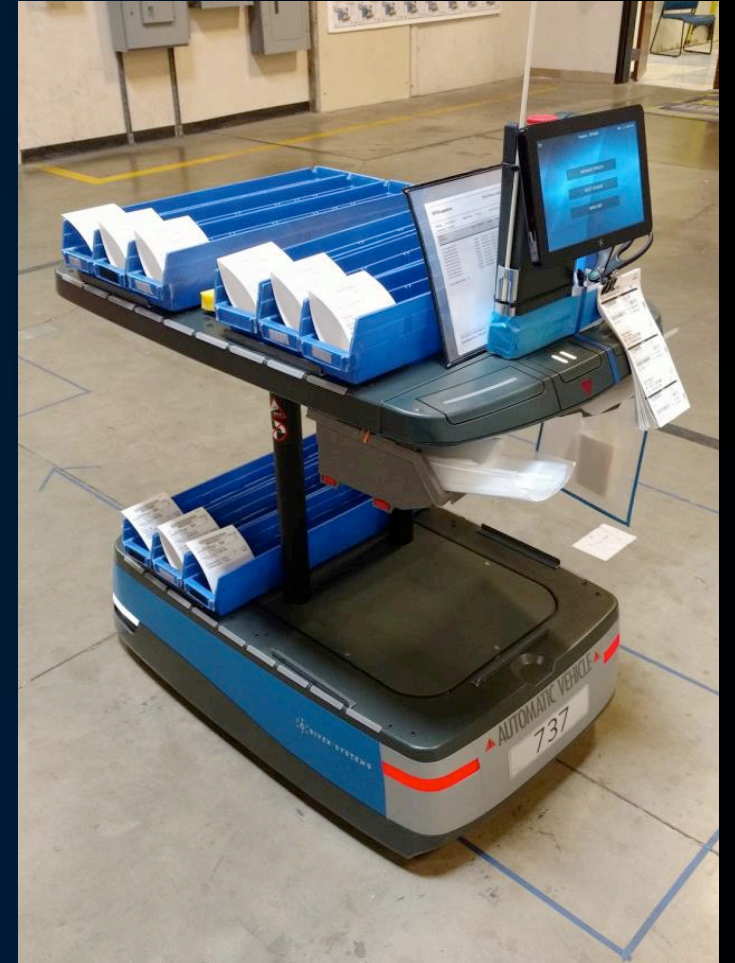
- 5G Ready and Enabled
- DoD and NATO Compliant
- Vendor Agnostic
- Item Level Tracking and Inventory
- Asset Tracking and Management
- iPhones integrating with pRFID
- Purchasing & LM P2P Integration
- Software and IT Assets
- Maintenance Contracts
- Local & Enterprise Reporting
- Parent-Child Relationships



[illegible]



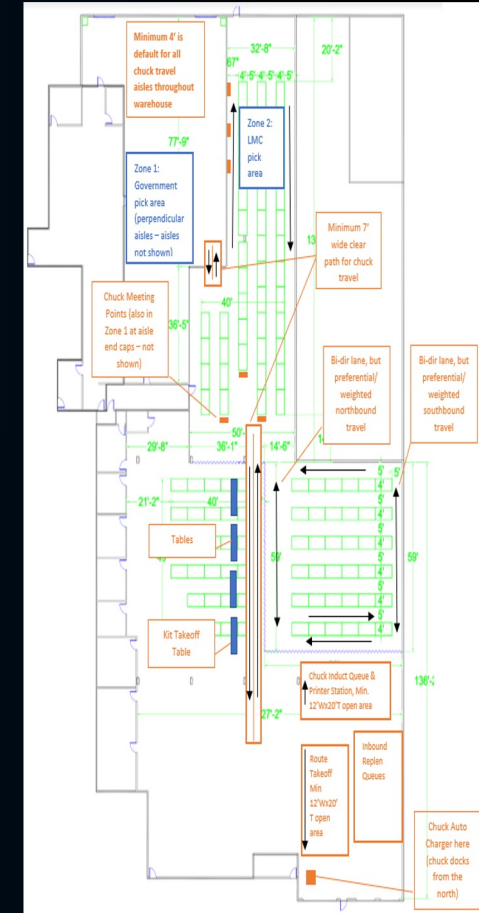
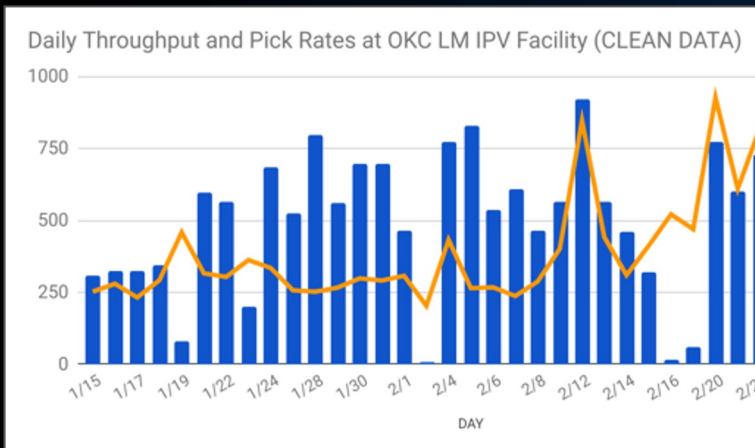
“Talk To Me Chuck!”



Autonomous Warehousing



- Ease of autonomous IoT platform installation
- Defined & standardized the supply chain process
- Rapid training and worker acceptance
- 381% LPH rate increase (16 to 77) in 6 weeks
- Inventory validity from 66% to 99.98%
- ROI in 9 months with estimated savings of \$1.5M
- Developed a “Warehouse of the Future” for collaborative robotic supply chain R&D



Autonomous Enabled IoT Inventory



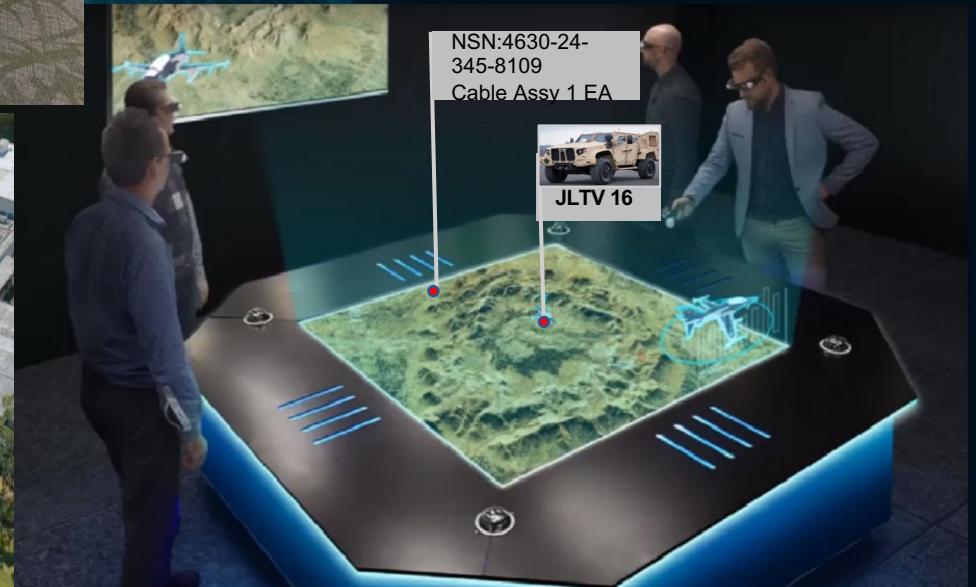
- Autonomous Inventory Counts During Non-operating Hours
- Tracking Technology Agnostic
- 100% Item Accountability Without Manual Processes
- Passive RFID (pRFID) Eliminates Tag Re-application
- Reading Passive and Active RFID Simultaneously up to 30'
- AI/ML Recommends Improved Warehouse Design and Operation
- 100% ROI in 2 Months and 327% Increase in Ops efficiency



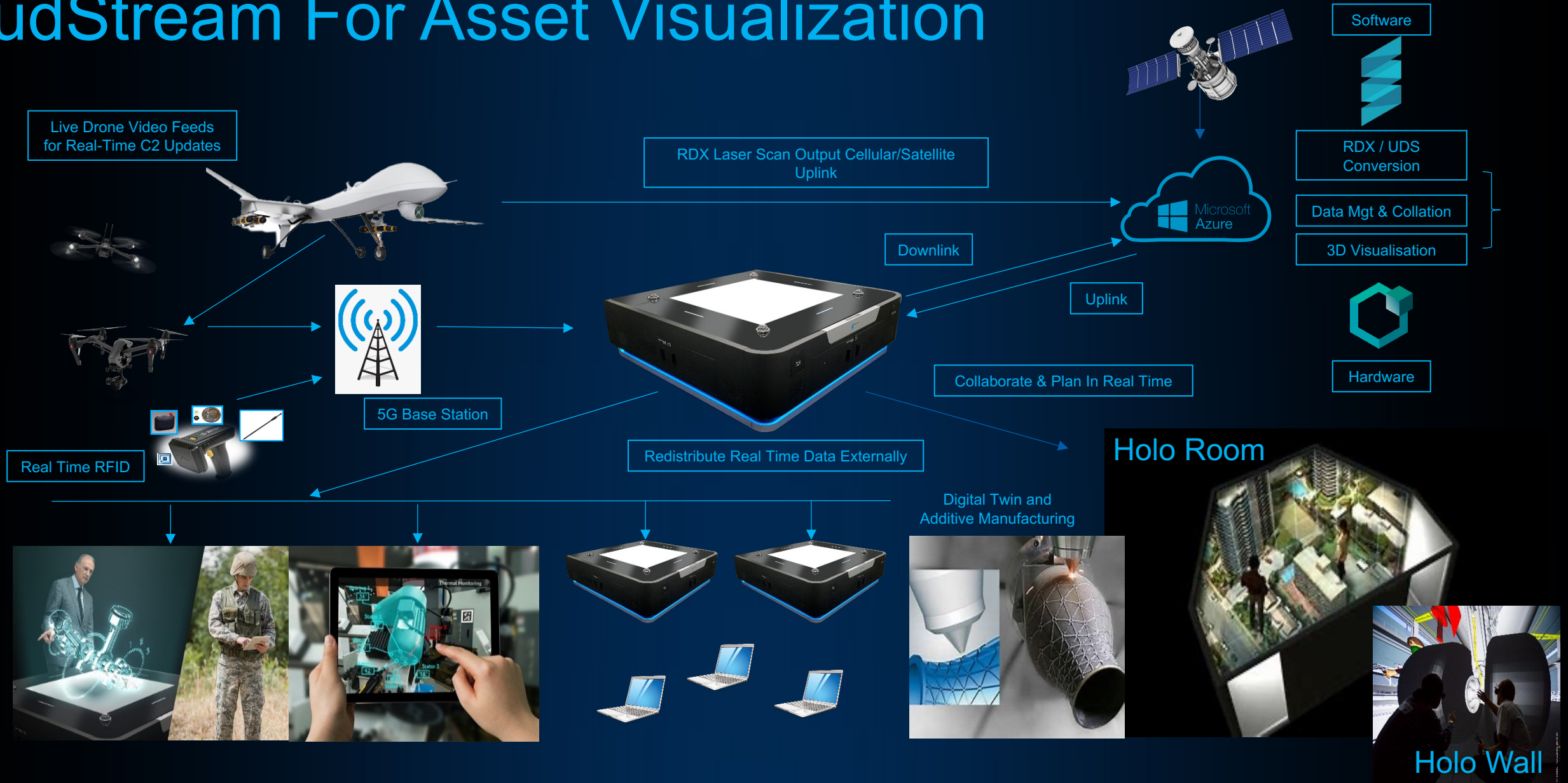
Holographic Asset Visualization (HAV)

Real-Time

- Command and Control
- Data Fusion and Visualization
- Planning and Forecasting
- Asset Visibility
- Digital Twin
- AR SME at the Edge
- udStream Collaboration

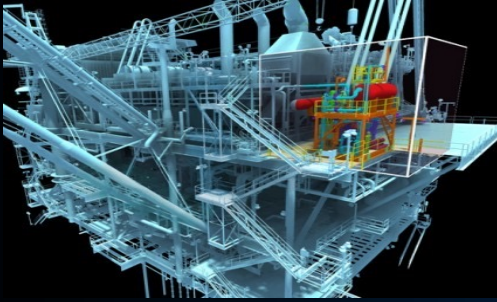
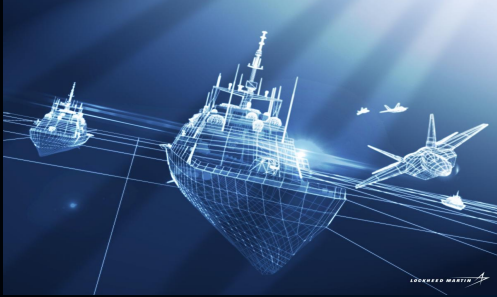


udStream For Asset Visualization



Supports Digital Twin, AR Maintenance, Additive Manufacturing, and Real Time Asset Visibility

AR/VR Maintenance Collaboration



Connects SME with the Maintainer



udStream connects unlimited users anywhere in the world providing real time collaboration in the same environment facilitating 3D AR/VR content to maintainers via laptop, tablet, HoloLens 2, and other peripheral devices.



Logistics HAV C2





Command/Fleet C2

and Operational Recommendations



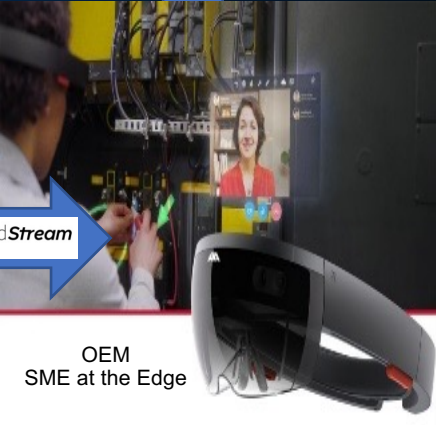
Intelligent Decision Support Engine





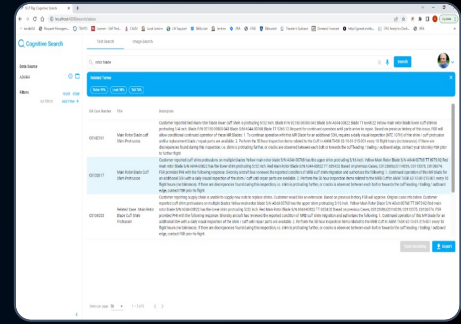
- Asset Readiness
- Predictive and Prescriptive Analytics
- COA Recommendations
- Optimization





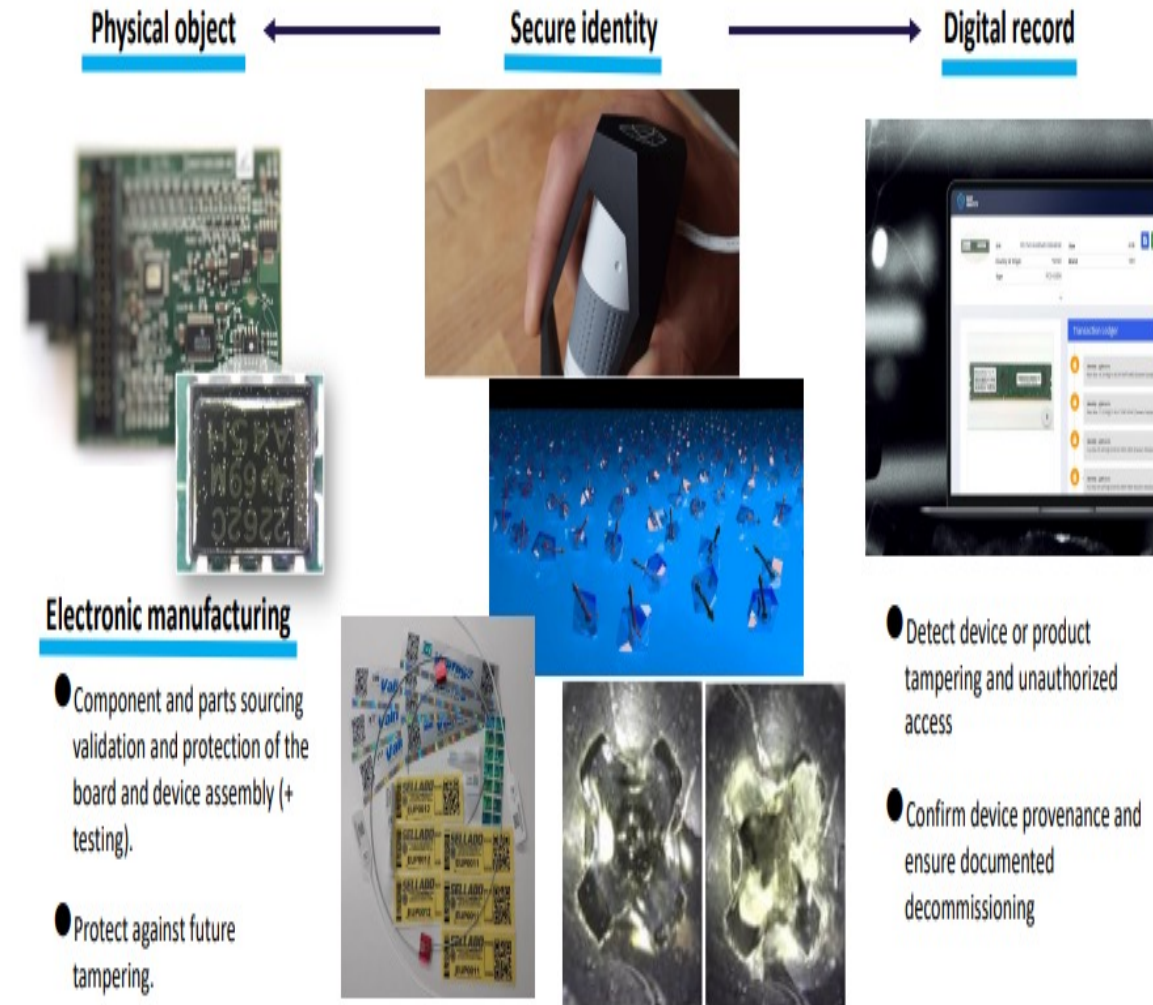
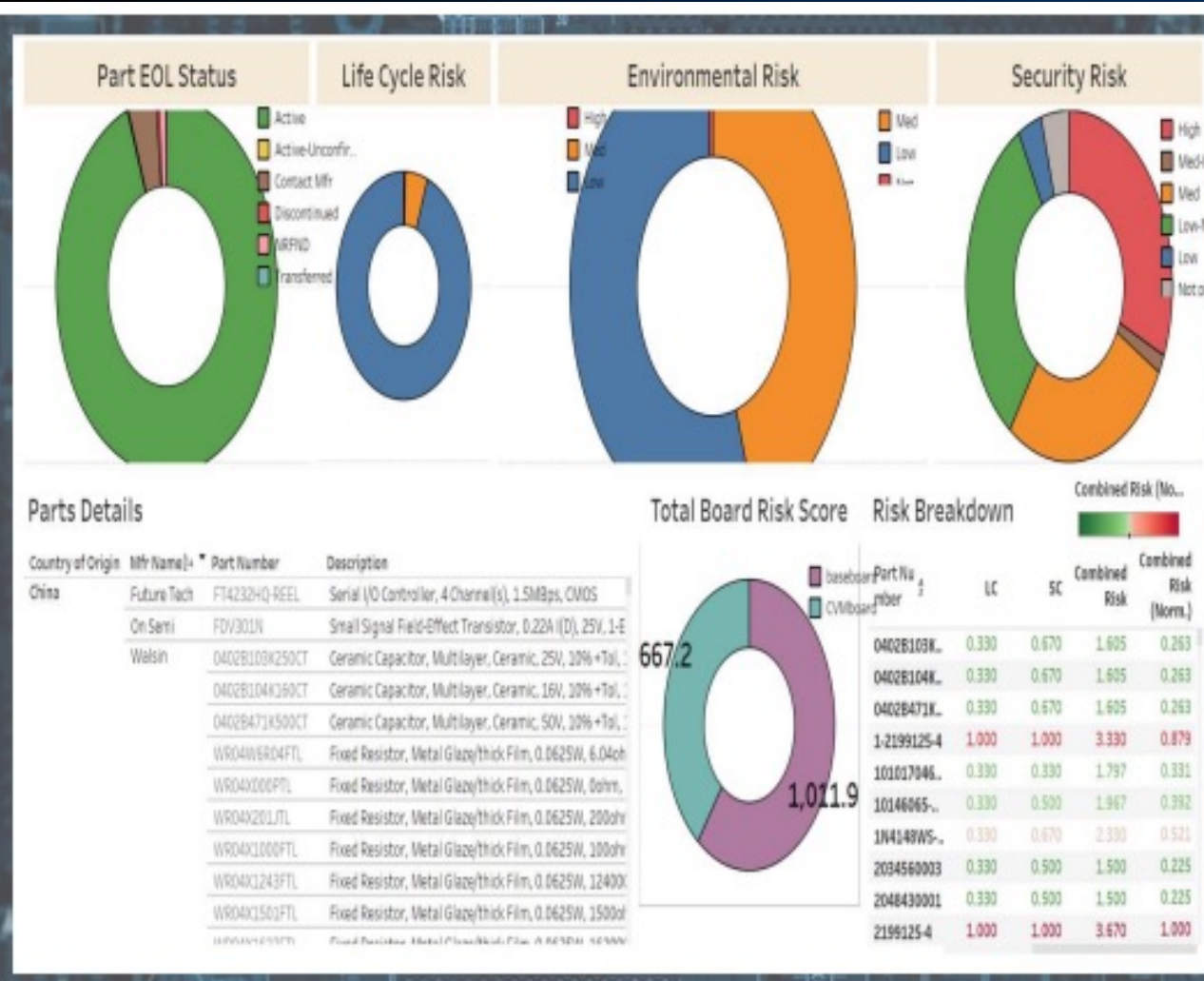
OEM
SME at the Edge

ADaRa

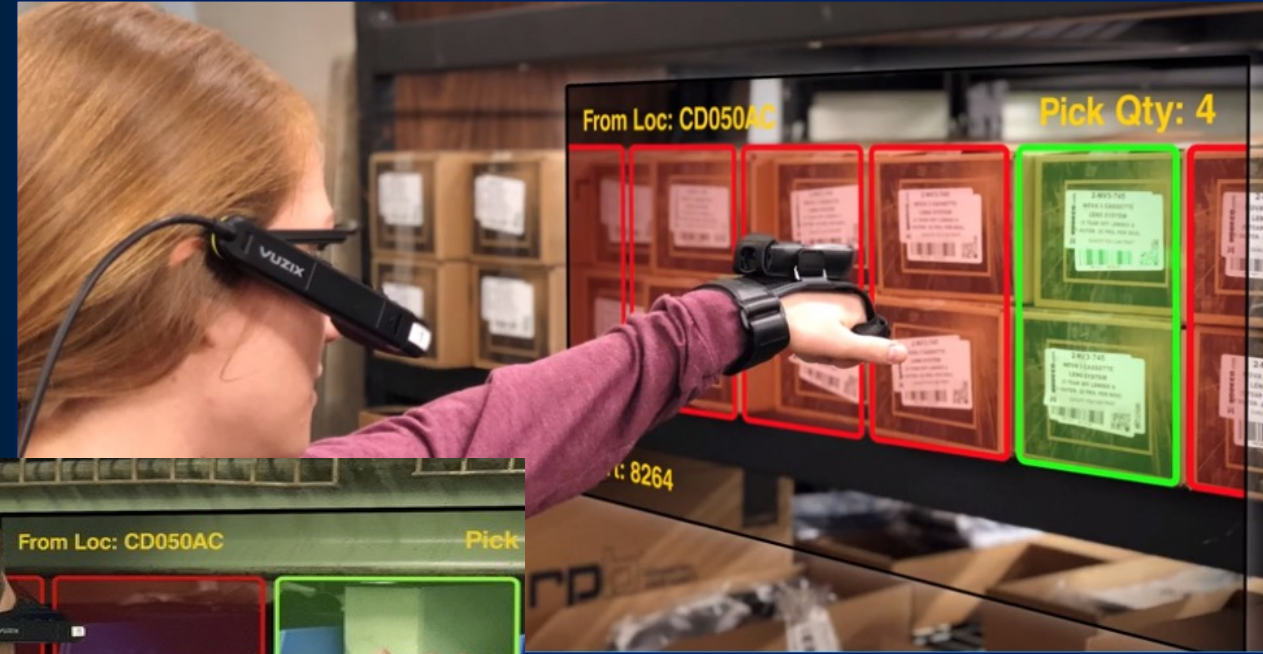


MicroSurety Supply Chain

System Adopted by Aero F-35 and approved by the PMO



Virtual Reality and Augmented Reality RFID Enabled Warehousing



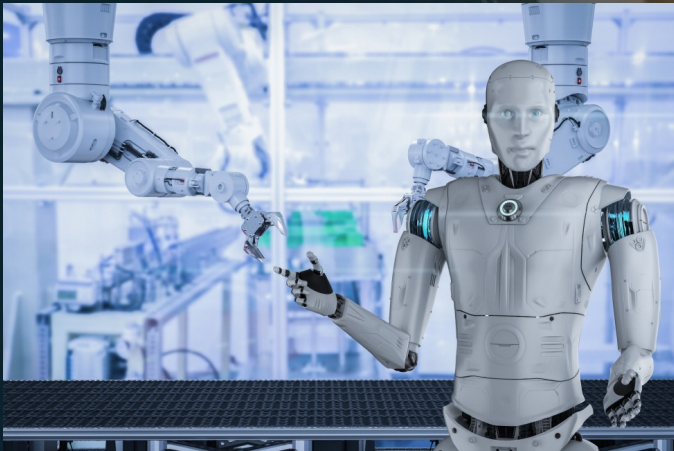
Looking Into The Future.....



Transition to 6G



NFC (Near Field Communication)



Symbiotic Automation



Dark Factory



Synaptic Interface

The Future Is Closer
Then You Think





THANK YOU

RFID
JOURNAL
LIVE!

MAY 9-11, 2023
ORLANDO, FLORIDA
