RFID JOURNAL LIVE!

20 YRS

2003 - 2022

MAY 17 - 19, 2022

MANDALAY BAY | LAS VEGAS, NV

[Lockheed Martin Advanced Capabilities - YouTube](#)

NextGen Asset Management Technologies and the Digital Transformation Revolution

Corey A. Cook

Advanced Technology Concepts

LOCKHEED MARTIN

AERONAUTICS

MISSILES AND FIRE CONTROL

SPACE SYSTEMS

ROTARY AND MISSION SYSTEMS

Agenda

- What drove Lockheed Martin to invest in the most recent advancements in Total Asset Visibility and fulfillment technologies

- Lockheed Martin's unique requirements and challenges

- Collaborative technologies in the defense supply chain of the 21st century
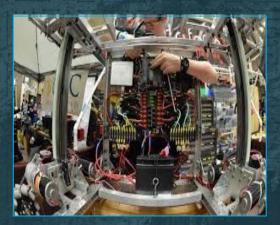
BUT FIRST.....

A LITTLE FUN

Lockheed Martin maintains the U.S. Air Force's Industrial Product-Support Vendor (IPV) contract which manages all supply chain items for production depot maintenance activities at the 3 primary USAF Air Logistics providing worldwide engineering, maintenance, and logistics management for all USAF fighters, transports, missiles, and munitions.

U.S. AIR FORCE

Jet Fighters = Parts…… *a lot of parts!*

170,000

350,000

425,000

30,000

616,350,000 parts

Lockheed Martin Supply Chain Challenges

- Complex dynamic work environments

- Significant security requirements

- Workforce personnel issues

- Non-standardized processes

- Inventory validity issues

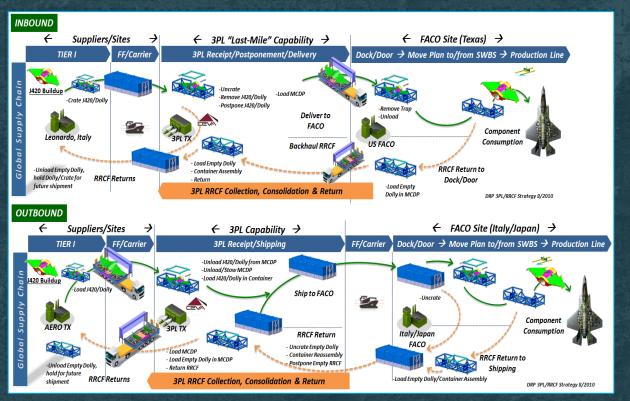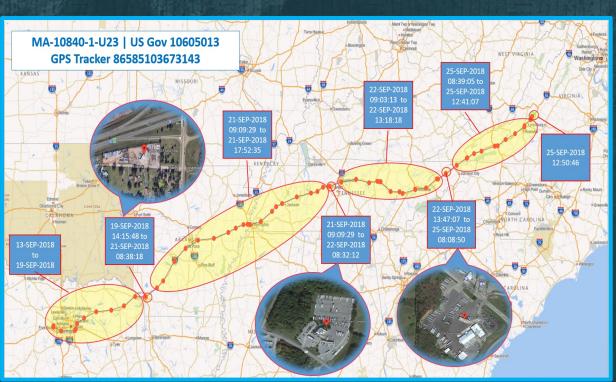- Inconsistent productivity

- Poor metrics definition capability

F-35 Supply Chain Distribution System

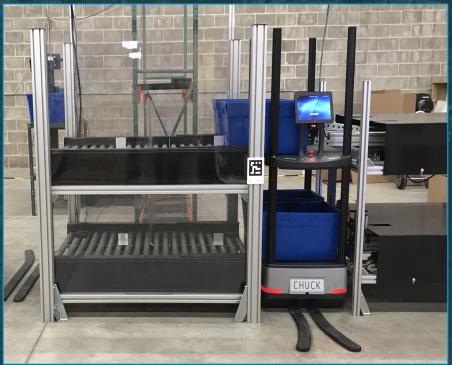## Delays Cost Time & Money

Collaborative technologies in the defense supply chain of the 21st century

- Autonomous Warehousing and Wall to Wall Inventory

- Personnel Tracking for Operational Efficiency and COVID Containment

- Real Time Location Holographic Visualization for Assets

- Virtual Reality and Augmented Reality RFID Enabled Warehousing

- Program Discriminators and Outcomes

Autonomous Loading & Unloading

- **Empower associates -** keep your best people

- **Flexibility and then Productivity –** maximize utilization with continuous updates

- **No New Infrastructure -** simpler, faster, and cheaper. Keep existing racking and layout while enhancing legacy systems

- Reallocate indirect labor to high-value activities

- Position separately at induct and take off points

- Works with existing systems and automation

1 INDUCT

Smart allocation groups similar work to reduce associate travel. Autonomous loader places the totes for the assignment onto Chuck.

FAST LANE
Fully automated picking.

2 MEET

Chuck eliminates the long walk by bringing the work directly to the associates in the active area.

3 PICK

Chuck leads the associates through their assigned tasks.
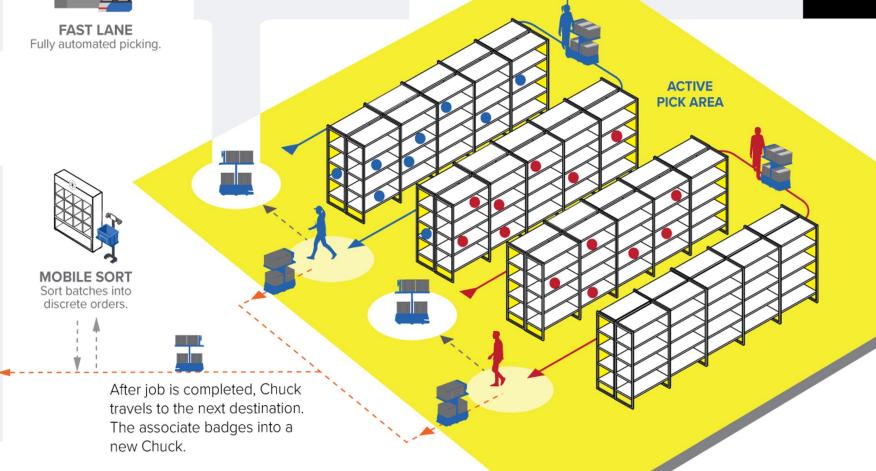
ACTIVE PICK AREA

4 PACK
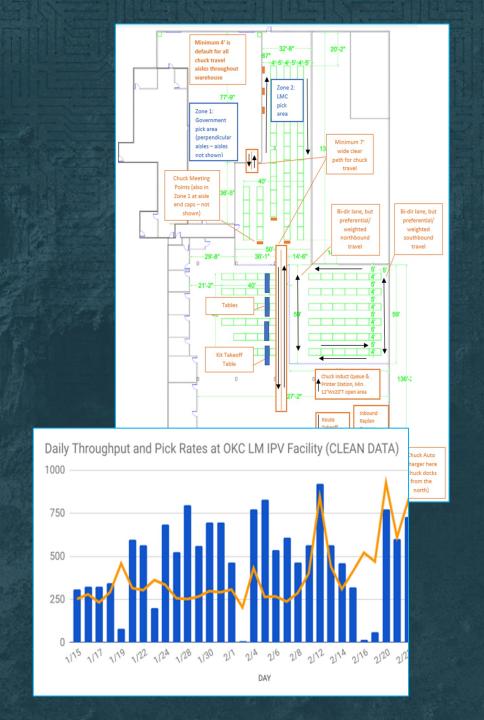
Inspect and pack orders for shipment. Chuck can sort exceptions and deliver completed assignments to different points across the warehouse.

MOBILE SORT
Sort batches into discrete orders.

After job is completed, Chuck travels to the next destination. The associate badges into a new Chuck.

IPV Program Outcomes

- Ease of 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.
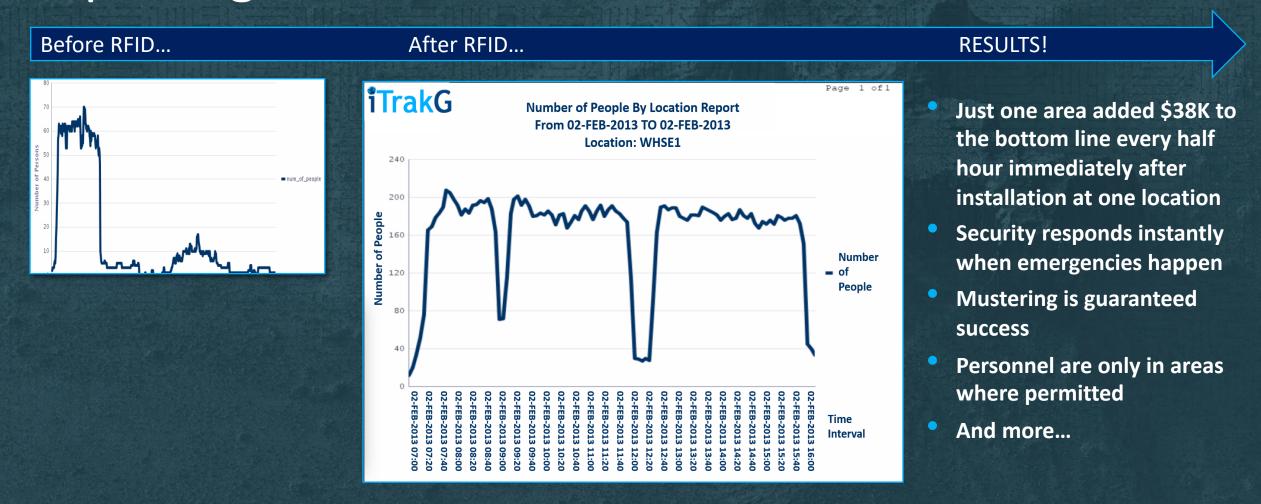
Wall to Wall Inventory Using Autonomous Systems

- Autonomous Inventory Counts in fully mapped (x-y-z axis) warehouse

- Item Location Validation to shelf location

- Tracking Technology Agnostic (RFID, BLE, etc.)

- 100% Item Accountability Without Manual Processes

- Passive RFID (pRFID) Eliminates Tag Re-Use Leaving Tags on Items During Full Lifecycle

- pRFID works for Calibration and SCIF Assets

- Reading Passive and Active RFID Simultaneously

Personnel Tracking Production M-Curve Reporting

Before RFID…   **After RFID…**   **RESULTS!**

Number of People By Location Report
From 02-FEB-2013 TO 02-FEB-2013
Location: WHSE1

- Just one area added **$38K** to the bottom line every half hour immediately after installation at one location
- Security responds instantly when emergencies happen
- Mustering is guaranteed success
- Personnel are only in areas where permitted
- And more…

Personnel Tracking for Operational Efficiency and COVID Containment

In Contact

Possible Contact

Report Name: **Possible Contact Report**

Report No: **135B - Contact**
Run Date: 23-FEB-2021 09:58:48
User Name: Denzel Isaac
Start Date: 21-FEB-2021 09:58:00
End Date: 23-FEB-2021 10:58:40

Type	Badge ID	First Name	Last Name	Scan Time	Location	Reader	IN/OUT
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:28:11	Assembly Hall	190	O
CONTACT	0F:04694	Joel	Cottreau	02/22/2021 07:29:08	Muster Station B	235	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:29:09	Muster Station B	235	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:29:35	North Gate	173	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:29:39	North Gate	177	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:31:10	Pier 8	244	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:32:56	Pier 8	245	I
CONTACT	0F:04314	Rodrigo	Ruiz	02/22/2021 08:07:10	Pier 8	244	O
CONTACT	0F:03255	Jordan	Brown	02/22/2021 08:07:17	Pier 8	245	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:22	Pier 8	247	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:25	Pier 8	245	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:42	Pier 8	244	O
CONTACT	0F:03579	Jordan	Leblanc	02/22/2021 08:09:12	Assembly Hall	158	O
CONTACT	0F:03579	Jordan	Leblanc	02/22/2021 08:09:14	Assembly Hall	160	O
CONTACT	0F:03579	Jordan	Leblanc	02/22/2021 08:09:25	Assembly Hall	162	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:09:31	Assembly Hall	160	O
CONTACT	0F:04476	John	Cameron	02/22/2021 08:09:38	Assembly Hall	160	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:09:42	Assembly Hall	158	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:09:42	Assembly Hall	160	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:09:50	Assembly Hall	162	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:10:11	Assembly Hall	161	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:10:14	Assembly Hall	137	I
CONTACT	0F:03216	Richard	Smithson	02/22/2021 08:10:37	Assembly Hall	137	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:13:28	Assembly Hall	133	I
CONTACT	0F:01436	Cristian	Tules	02/22/2021 08:14:17	Assembly Hall	137	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:14:54	Assembly Hall	137	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:15:13	Assembly Hall	133	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:15:24	Assembly Hall	137	I
CONTACT	0F:03216	Richard	Smithson	02/22/2021 08:15:26	Assembly Hall	137	I
CONTACT	0F:03216	Richard	Smithson	02/22/2021 08:27:02	Assembly Hall	133	I
CONTACT	0F:03216	Richard	Smithson	02/22/2021 08:27:11	Assembly Hall	133	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:27:11	Assembly Hall	133	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:51:52	Assembly Hall	135	I
CONTACT	0F:04679	Richard	Cross	02/22/2021 08:51:54	Assembly Hall	135	I

Report Name: **Possible Contact Report**

Report No: **135C - In Possible Contact**
Run Date: 23-FEB-2021 09:58:48
User Name: Denzel Isaac
Start Date: 21-FEB-2021 09:58:00
End Date: 23-FEB-2021 10:58:40

Type	Badge ID	First Name	Last Name	Scan Time	Location	Reader	IN/OUT
CONTACT	0F:00528	Cory	Hyslop	02/22/2021 07:31:08	Pier 8	246	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:31:10	Pier 8	244	O
CONTACT	0F:00875	Tony	Stone	02/22/2021 07:32:04	Pier 8	247	I
CONTACT	0F:03511	Peter St	George	02/22/2021 07:32:15	Pier 8	244	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:32:56	Pier 8	245	I
CONTACT	0F:04314	Rodrigo	Ruiz	02/22/2021 08:07:10	Pier 8	244	O
CONTACT	0F:03255	Jordan	Brown	02/22/2021 08:07:17	Pier 8	245	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:22	Pier 8	247	I
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:25	Pier 8	245	I
CONTACT	0F:03833	Everett	Hagen	02/22/2021 08:07:30	Pier 8	246	O
CONTACT	0F:03660	Steven	Gillis	02/22/2021 08:07:31	Pier 8	246	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:42	Pier 8	244	O
CONTACT	0F:01839	Scott F	Bannister	02/22/2021 10:24:03	OST #3	130	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 10:24:51	OST #3	243	I
CONTACT	0F:01189	Michael Van der	Wijst	02/22/2021 10:24:53	OST #3	153	I
CONTACT	0F:04040	Amirnader	Boostani	02/22/2021 10:27:04	Pier 8	245	I
CONTACT	0F:03216	Richard	Smithson	02/22/2021 10:27:22	Pier 8	244	O
CONTACT	0F:04553	Reginald	Allen	02/22/2021 10:27:22	Pier 8	244	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 10:27:24	Pier 8	244	O
CONTACT	0F:03342	William	Beaman	02/22/2021 10:27:27	Pier 8	245	I
CONTACT	0F:03943	Brian D	Govang	02/22/2021 10:27:27	Pier 8	247	I
CONTACT	0F:04348	Christopher	Townsend	02/22/2021 10:27:28	Pier 8	244	O
CONTACT	0F:04553	Reginald	Allen	02/22/2021 10:27:34	Pier 8	245	I
CONTACT	0F:00875	Tony	Stone	02/22/2021 10:27:36	Pier 8	245	I
CONTACT	0F:04348	Christopher	Townsend	02/22/2021 10:27:36	Pier 8	245	I
CONTACT	0F:03033	Jared	Peckford	02/22/2021 10:28:07	Pier 8	244	O
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 10:28:08	Pier 8	245	I
CONTACT	0F:04161	Ryan	MacDonald	02/22/2021 10:28:15	Pier 8	247	I
CONTACT	0F:03342	William	Beaman	02/22/2021 10:28:16	Pier 8	244	O
CONTACT	0F:01369	Christopher	White	02/22/2021 10:28:21	Pier 8	244	O
CONTACT	0F:03299	Tyson	Hughes	02/22/2021 10:28:27	Pier 8	245	I
CONTACT	0F:01369	Christopher	White	02/22/2021 10:28:38	Pier 8	245	I
CONTACT	0F:03645	Jenell	Ahenakew	02/22/2021 10:31:08	Pier 8	247	I
CONTACT	0F:04178	Jorge	Fidalgo	02/22/2021 10:31:10	Pier 8	245	I

Real Time Location Holographic Visualization

Real-Time…

- Data Visualization
- Planning
- Forecasting
- Location
- What moves where?
- What If?

Asset Visibility, Planning & Forecasting

euclideon HOLOGRAPHICS

NSN:4630-24-345-8109
Cable Assy 1 EA

JLTV 16

JLV 15

LOCKHEED MARTIN

iTrakG integrates into Euclideon to reflect assets in a holographic model of RMS Orlando.

Virtual Reality and Augmented Reality RFID Enabled Warehousing

iTrakG Program Discriminators

- Real Time In-Transit Visibility and Improved Asset Management that agnostically integrates with various vendor technologies under one platform

- User-friendly, simple to maintain & sustain across the enterprise

- Highly advanced with autonomous system and VR integration

- 5G Compliant and operationally tested

- Demonstratable lower cost than our competitors

- Manufactured in the U.S. and approved member nations (Australia, UK, etc.)

- ITAR, NATO, TAA, and BAA Compliant. Air – Flight and Cargo Lux Approval

- Allows single channel tracking from LM to DoD customers

- SAP/CEVA/iTrakG Systems and Process Integration

- Meets Federal Acquisition Supply Chain Security Act of 2018

- Security (Behind the Lockheed Martin Firewall)

- Encompasses a mobile iPhone app available to LM users

Questions?

For more information:

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Website: www.LockheedMartin.com

THANK YOU

RFiD
JOURNAL
LIVE!

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