BIFE DINAL OUR NAL

SEPTEMBER 26 - 28, 2021

PHOENIX CONVENTION CENTER | PHOENIX, AZ

RFID JOURNAL LIVE!

Lockheed Martin and the Future Factory

Corey A. Cook

Chief of Advanced Technology Concepts for Logistics

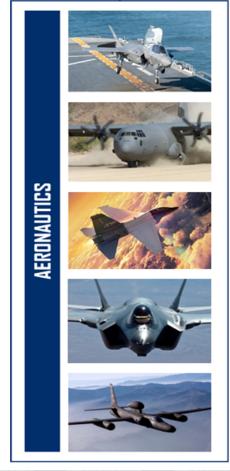
Agenda

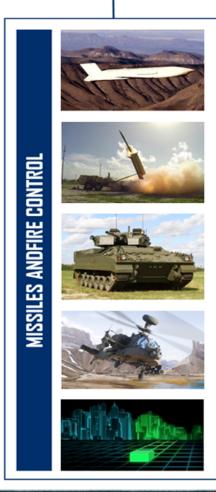
- LM Challenges and RFID IoT Applications
- Personnel Tracking for Operational Efficiency and COVID Containment
- Real Time Location Holographic Visualization
- Virtual Reality and Augmented Reality RFID Enabled Warehousing
- Factory Wall to Wall Inventory Using Autonomous System Robot Tracking
- Program Outcomes and Discriminators

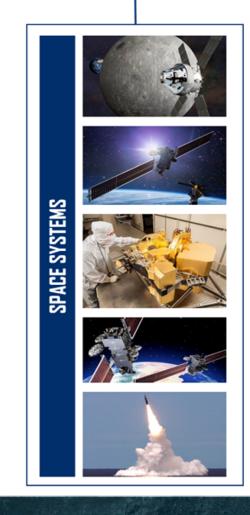


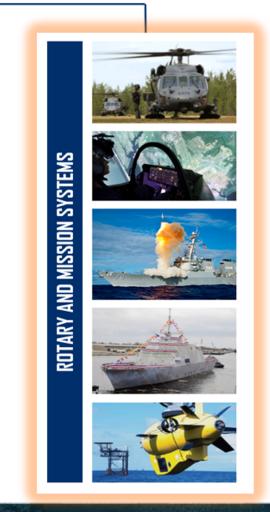


LOCKHEED MARTIN







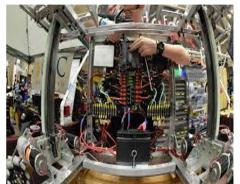






Lockheed Martin Supply Chain Challenges

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













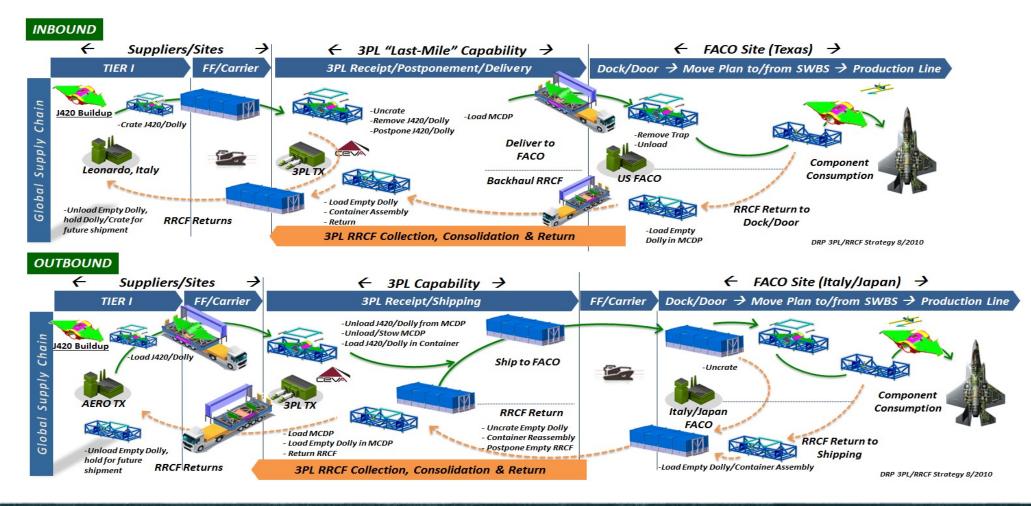
F-35 Global Asset Management

Central Characteristics **Hub and Spoke Operation** Bi-directional Materiel Movement U.S. is the central materiel movement hub North America Pacific Europe





F-35 Supply Chain Distribution System







Delays Cost Time & Money







Continue the iTrakG Innovation

- Personnel Tracking for Operational Efficiency and COVID Containment
- Real Time Location Holographic Visualization
- Virtual Reality and Augmented Reality RFID Enabled Warehousing
- Wall to Wall Inventory Using Autonomous System Robot Tracking
- Program Discriminators and Outcomes





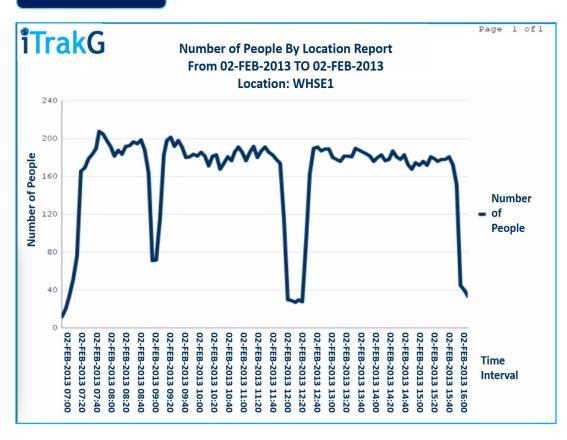
Personnel Tracking Production M-Curve

Reporting

Before RFID



After RFID



Results

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





Personnel Tracking for Operational Efficiency and COVID Containment

In Contact

Туре	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	0	
CONTACT	0F:04694	Joel	Cottreau	02/22/2021 07:29:08	Muster Station B	235	1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:29:09	Muster Station B	235	- 1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:29:35	North Gate	173	1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:29:39	North Gate	177	1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:31:10	Pier 8	244	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:32:56	Pier 8	245	1	
CONTACT	0F:04314	Rodrigo	Ruiz	02/22/2021 08:07:10	Pier 8	244	0	
CONTACT	0F:03255	Jordan	Brown	02/22/2021 08:07:17	Pier 8	245	1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:22	Pier 8	247	- 1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:25	Pier 8	245	1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:42	Pier 8	244	0	
CONTACT	0F:03579	Jordan	Leblanc	02/22/2021 08:09:12	Assembly Hall	158	0	
CONTACT	0F:03579	Jordan	Leblanc	02/22/2021 08:09:14	Assembly Hall	160	0	
CONTACT	0F:03579	Jordan	Leblanc	02/22/2021 08:09:25	Assembly Hall	162	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:09:31	Assembly Hall	160	0	
CONTACT	0F:04476	John	Cameron	02/22/2021 08:09:38	Assembly Hall	160	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:09:42	Assembly Hall	158	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:09:42	Assembly Hall	160	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:09:50	Assembly Hall	162	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:10:11	Assembly Hall	161	1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:10:14	Assembly Hall	137	1	
CONTACT	0F:03216	Richard	Smithson	02/22/2021 08:10:37	Assembly Hall	137	- 1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:13:28	Assembly Hall	133	- 1	
CONTACT	0F:01436	Cristian	Tules	02/22/2021 08:14:17	Assembly Hall	137	- 1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:14:54	Assembly Hall	137	- 1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:15:13	Assembly Hall	133	1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:15:24	Assembly Hall	137	1	
CONTACT	0F:03216	Richard	Smithson	02/22/2021 08:15:26	Assembly Hall	137	1	
CONTACT	0F:03216	Richard	Smithson	02/22/2021 08:27:02	Assembly Hall	133	- 1	
CONTACT	0F:03216	Richard	Smithson	02/22/2021 08:27:11	Assembly Hall	133	1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:27:11	Assembly Hall	133	- 1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:51:52	Assembly Hall	135	1	
CONTACT	0F:04679	Richard	Cross	02/22/2021 08:51:54	Assembly Hall	135	- 1	

Possible Contact

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

Туре	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	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:31:10	Pier 8	244	0	
CONTACT	0F:00875	Tony	Stone	02/22/2021 07:32:04	Pier 8	247	- 1	
CONTACT	0F:03511	Peter St	George	02/22/2021 07:32:15	Pier 8	244	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 07:32:56	Pier 8	245	- 1	
CONTACT	0F:04314	Rodrigo	Ruiz	02/22/2021 08:07:10	Pier 8	244	0	
CONTACT	0F:03255	Jordan	Brown	02/22/2021 08:07:17	Pier 8	245	- 1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:22	Pier 8	247	- 1	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:25	Pier 8	245	1	
CONTACT	0F:03833	Everett	Hagen	02/22/2021 08:07:30	Pier 8	246	0	
CONTACT	0F:03660	Steven	Gillis	02/22/2021 08:07:31	Pier 8	246	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 08:07:42	Pier 8	244	0	
CONTACT	0F:01839	Scott F	Bannister	02/22/2021 10:24:03	OST #3	130	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 10:24:51	OST #3	243	- 1	
CONTACT	0F:01189	Michael Van der	Wijst	02/22/2021 10:24:53	OST #3	153	1	
CONTACT	0F:04040	Amirnader	Boostani	02/22/2021 10:27:04	Pier 8	245	1	
CONTACT	0F:03216	Richard	Smithson	02/22/2021 10:27:22	Pier 8	244	0	
CONTACT	0F:04553	Reginald	Allen	02/22/2021 10:27:22	Pier 8	244	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 10:27:24	Pier 8	244	0	
CONTACT	0F:03342	William	Beaman	02/22/2021 10:27:27	Pier 8	245	1	
CONTACT	0F:03943	Brian D	Govang	02/22/2021 10:27:27	Pier 8	247	1	
CONTACT	0F:04348	Christopher	Townsend	02/22/2021 10:27:28	Pier 8	244	0	
CONTACT	0F:04553	Reginald	Allen	02/22/2021 10:27:34	Pier 8	245	1	
CONTACT	0F:00875	Tony	Stone	02/22/2021 10:27:36	Pier 8	245	1	
CONTACT	0F:04348	Christopher	Townsend	02/22/2021 10:27:36	Pier 8	245	1	
CONTACT	0F:03033	Jared	Peckford	02/22/2021 10:28:07	Pier 8	244	0	
TRACKING	0F:03400	Denzel	Isaac	02/22/2021 10:28:08	Pier 8	245	- 1	
CONTACT	0F:04161	Ryan	MacDonald	02/22/2021 10:28:15	Pier 8	247	1	
CONTACT	0F:03342	William	Beaman	02/22/2021 10:28:16	Pier 8	244	0	
CONTACT	0F:01369	Christopher	White	02/22/2021 10:28:21	Pier 8	244	0	
CONTACT	0F:03299	Tyson	Hughes	02/22/2021 10:28:27	Pier 8	245	1	
CONTACT	0F:01369	Christopher	White	02/22/2021 10:28:38	Pier 8	245	1	
CONTACT	0F:03645	Jenell	Ahenakew	02/22/2021 10:31:08	Pier 8	247	1	
CONTACT	0F:04178	Jorge	Fidalgo	02/22/2021 10:31:10	Pier 8	245	1	





Real Time Location Holographic Visualization

Real-Time

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







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







Virtual Reality and Augmented Reality RFID

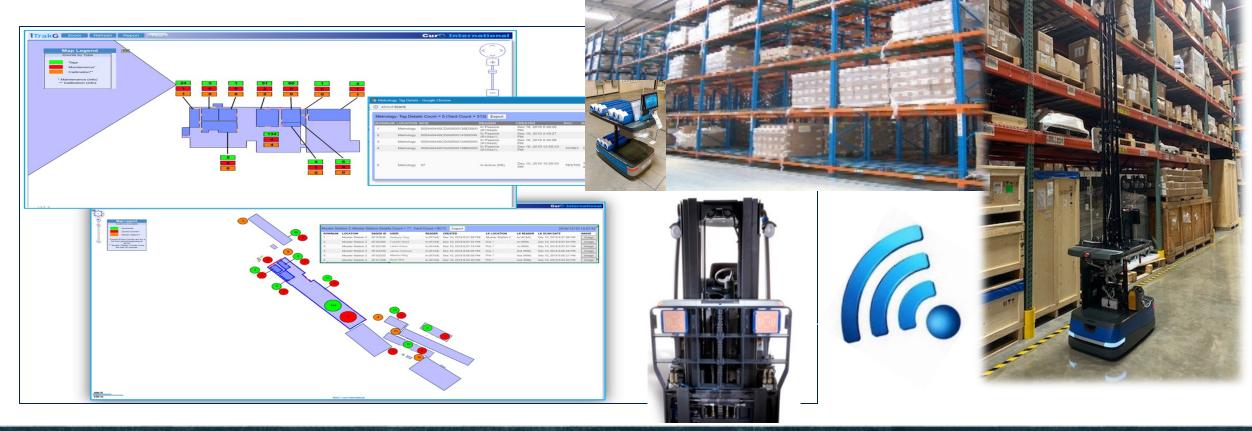
Enabled Warehousing







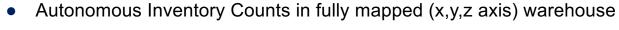
Wall to Wall Inventory Using Autonomous System Robot Tracking







AS RFID IOT Applications



- 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, Space and SCIF Assets
- Reading Passive and Active RFID Simultaneously



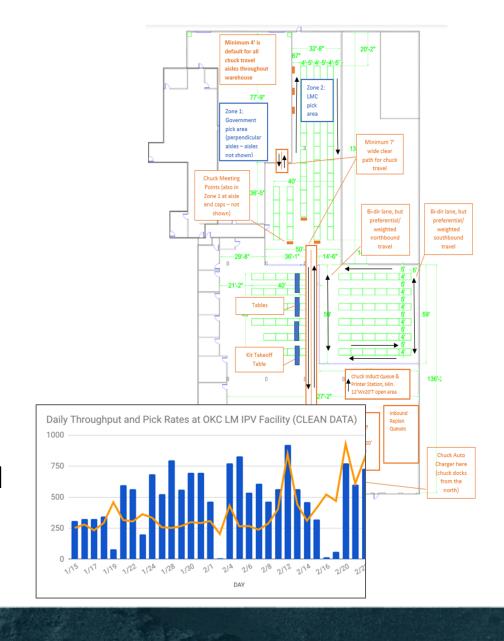
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Program Outcomes

- 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.







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







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