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Bringing Today's Military Technologies to our ECC Industries



Roy Brown

Business Manager,
Lockheed Martin Aeronautics



Brian Evans

Senior Vice President,
WorleyParsons

Overview of the Partners

Lockheed Martin

- Core Business Areas:
 - Aeronautics
 - Information Systems & Global Solutions
 - Missiles & Fire Control
 - Mission Systems & Training
 - Space Systems
- 112K employees
- \$45.6 B revenue 2014
- 70 countries worldwide

WorleyParsons

- Hydrocarbons, Infrastructure, and Minerals & Metals
- 34K employees
- \$7 B revenue



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Early Idea Screening & The Partnership

- Our first 12 months together
- Thorniest issues facing our industries
- Skunk Works involvement
- Compare strongest needs & existing capabilities
- First target areas:
 1. Asset Integrity
 2. Data management, modeling & visualization
 3. Remote logistics support



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Asset Integrity: Pipelines and Plants

Stalker Unmanned Aerial System (UAS)

Advantages from military service

- Portability, Ease of Launch, Endurance, Sensors
- Stalker Video
- Photo 1 – onboard discernment – pickup vs car vs Humvee

Technology Evolution & Market Demand: VTOL

- Video 2 VTOL



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Data Management, Modeling & Visualization

Creating an asset's "Point Cloud" from multiple sensors and types

"Rosetta" combines and interprets the data

Automated anomaly detection

Applying F-35 design and simulation tools

- Constructability considerations in the model

Human stress evaluation for turn-arounds or during construction

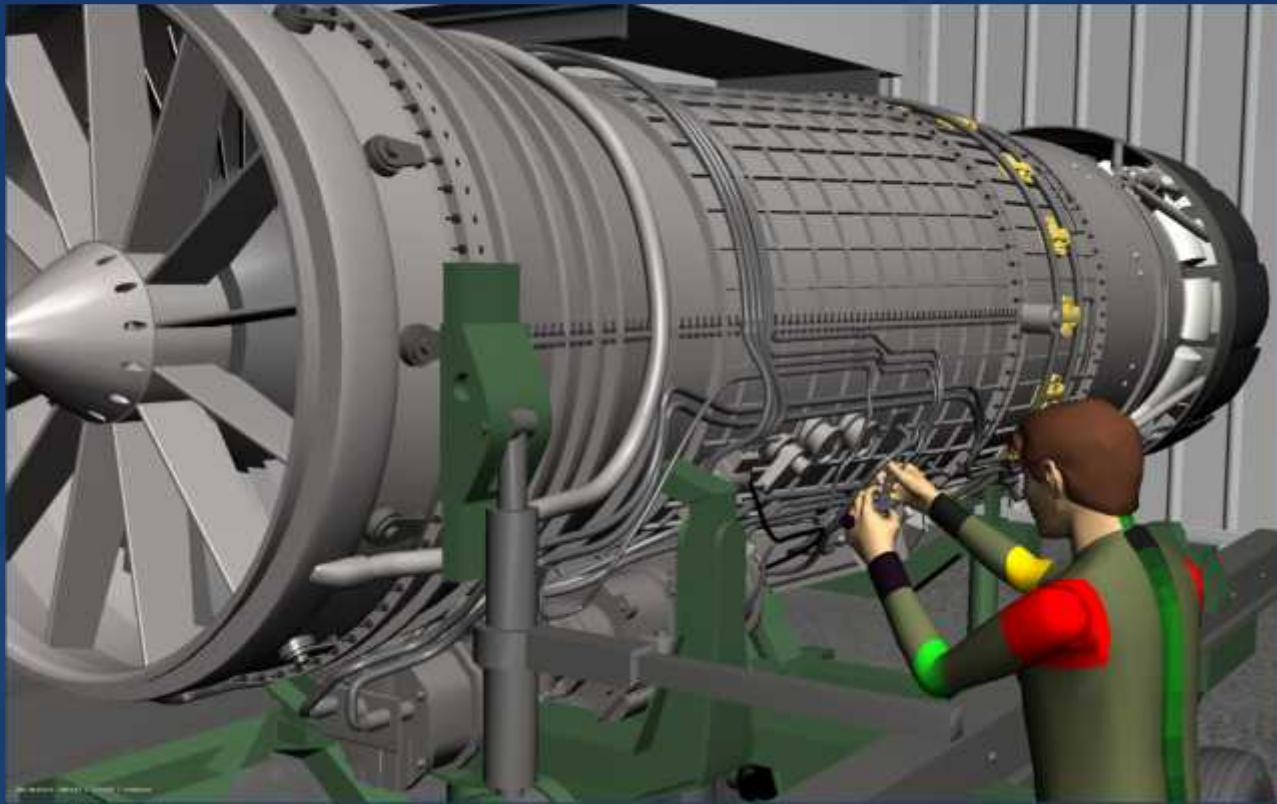
Visualization for erection sequencing & clearances



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Human Stresses Monitoring



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Insert the WP model of the water treatment facility and the use of modeling and visualization??



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Remote Logistics Support

Aerial Re-supply(ARES)

- DARPA program to be brought to commercial sector
 - Unmanned, autonomous delivery of 3000 lb payload
 - First flight for US Marines by yearend 2015
 - Joint Industry Program (JIP) by LM & WP launched to adapt to offshore & remote applications



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Insert ARES VIDEO or Photos



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Remote Logistics Support

Hybrid Airship

Prototype built and concept proven

20, 90 & 500 ton versions to be built

No runway needed; truly remote or offshore capable

- DARPA program to be brought to commercial sector
- Unmanned, autonomous delivery of 3000 lb payload



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First Flight for US Marines by year end 2015

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Hybrid standard video – how long is it? 2 mins max....



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Summary

What are YOUR greatest industry challenges?

Skunk Works may have or can develop the solution

New adaptations of existing military technologies is underway



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