

Digitally Transforming Aerospace & Defense

LOCKHEED MARTIN



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“Change is the law of life. And those who look only to the past or present are certain to miss the future.”

JOHN F. KENNEDY



Reshaping Industrial Operations



Advanced Design Synthesis



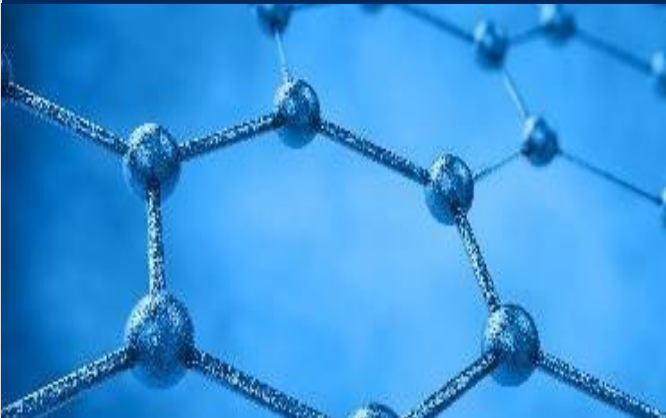
Cognitive Assistants



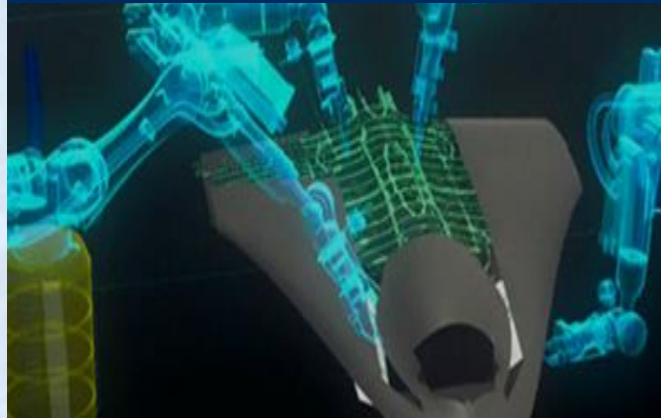
Human Augmentation



Designer Materials



Intelligent Machines



Transformative Computing





Machines evolving from tools to trusted human peers

Government on the Same Journey



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What is a Digital Twin?

“An integrated multiphysics, multiscale, probabilistic *simulation of an as-built system, enabled by Digital Thread,* that uses the best available models, sensor information, and input data to mirror and predict activities/performance over the life of its corresponding physical twin.”

(source: DAU Glossary of Defense Acquisition Acronyms and Terms)

A Digital Twin is NOT:

- a Digital Tool for Configuration Management
- a 3D Geometric Model of an As-Built System
- a Model-based Definition of an As-Built System


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Exploiting the Power of the Digital Thread: A Holographic Experience




Demonstrates the vision for how augmented / mixed reality devices will interact w/ the future Digital Thread ecosystem to improve Mx execution & data collection


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Integrity - Service - Excellence

USAF Digital Engineering Enterprise



Roger Jones, NH-04
SAF/AQRE
DoD DASD(SE) Forum
25 April 2017




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ARDEC ARMAMENTS


Armament Virtual Collaboratory Environment (AVCE) – integrated Model Based Engineering (IMBE)

Presented to:
SE Forum
Edward Bauer, Edward.w.bauer.civ@mail.mil
3/28/2017

UNPARALLELED COMMITMENT & SOLUTIONS

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA




Digital Engineering Overview

Mr. Rob Gold
DASD(SE) Director, Enterprise Engineering
DoD SE Forum
April 25, 2017

Distribution Statement A. Approved for public release. Distribution is unlimited.

NAVAL AIR SYSTEMS COMMAND



Systems Engineering Transformation

Presented by:
Dave Cohen
Director, Mission Engineering & Analysis Dept

NAVAR Public Release 2017-075. Distribution Statement A. Approved for public release. Distribution is unlimited.



A Call to Arms

- **We must transition to a structured, digital relationship, with haste**
 - The integrated digital models must be the unambiguous source of truth
 - Models, and their data and simulations, live forever
 - Provide the necessary context for future use
- **We must prepare for machines as human force-multipliers**
 - Structure the data
 - Develop the trust
- **OEMs and Government must find a way to experiment together**
 - Outside of the competition constraints
- **We must embrace multiple pipelines for skills**
 - Explore avenues beyond the 4-year degrees for acquiring new skills
 - Exploit technology for rapid skill development and training



**Strategy without tactics is the slowest route to victory.
Tactics without strategy is the noise before defeat.”
- Sun Tzu**



