Enhancing our Competitive Edge: T&E to Meet the Pace of Need

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I was privileged to join you in 2012

What I said then…. 

- Testing at the Speed of Need is essential 
- “Myth-busting” test programs are possible, with the right actions 
- We know the secrets to success, but don’t always implement them properly 

All seem completely relevant today…..just accentuated even more!
I’ve learned more since then, leading BT&E

- The “shadow” of product design decisions is, indeed, long – T&E needs to engage to get the decisions right

- T&E must bring a robust “toolkit” to early-engagement system trades
  - “Know-how” is not sufficient

- Digital technologies are a powerful means of “shifting left”, but adoption may be more difficult then you’d think

Whatever my emphasis was before…..multiply it by 5 to 10!
Industrial Manufacturing Sectors, Particularly Automotive, Continue To Provide A Model

- Design modularity/reuse

- Simulation to reduce physical tests\(^1,2\)

- Design for Producibility\(^3\)

- End-to-end verification (integrated product life cycle management)\(^4\)

Ref. 1 Wired 4.09.15; Jordan Golson
Ref 2 Automotive News 6.30.16; Stephanie Hernandez McGavin
Ref 3 [http://corporate.ford.com/innovation](http://corporate.ford.com/innovation)
Ref 4 BPIR.com 7.30.14
DARPA Is Continuing To Invest To Advance And Transition This Model To Other Industries

- Established the DMDII to extend the Adaptive Vehicle Make (AVM) portfolio into defense and commercial industry
- National resource for U.S. industrial base to increase U.S. competitiveness by accelerating innovation in digital manufacturing
- Focused on developing novel model-based design methodologies, virtual manufacturing tools and sensor- and robotics-based manufacturing networks
- Crossroad of government, industry and academia
- $12M in grants awarded in May 2016

Digital Manufacturing and Design Innovation Institute

Boeing Is Applying Several Elements Of This Model

- Immersive simulation and design environment
- Digital virtualization of test and product equipment
- Integrated V&V planning

*Investment Required To Meet The Pace Of Need*
Call to Action 2016

2012

- We know the secrets to success
- Actions to overcome barriers are more in our control than we take credit for
- We make the difference in the outcome

2016

- Foundational “secrets” endure; toolkit is rapidly advancing
- Accelerating adoption and pace of change a priority
- Still true – T&E must help lead the change

It’s up to us