



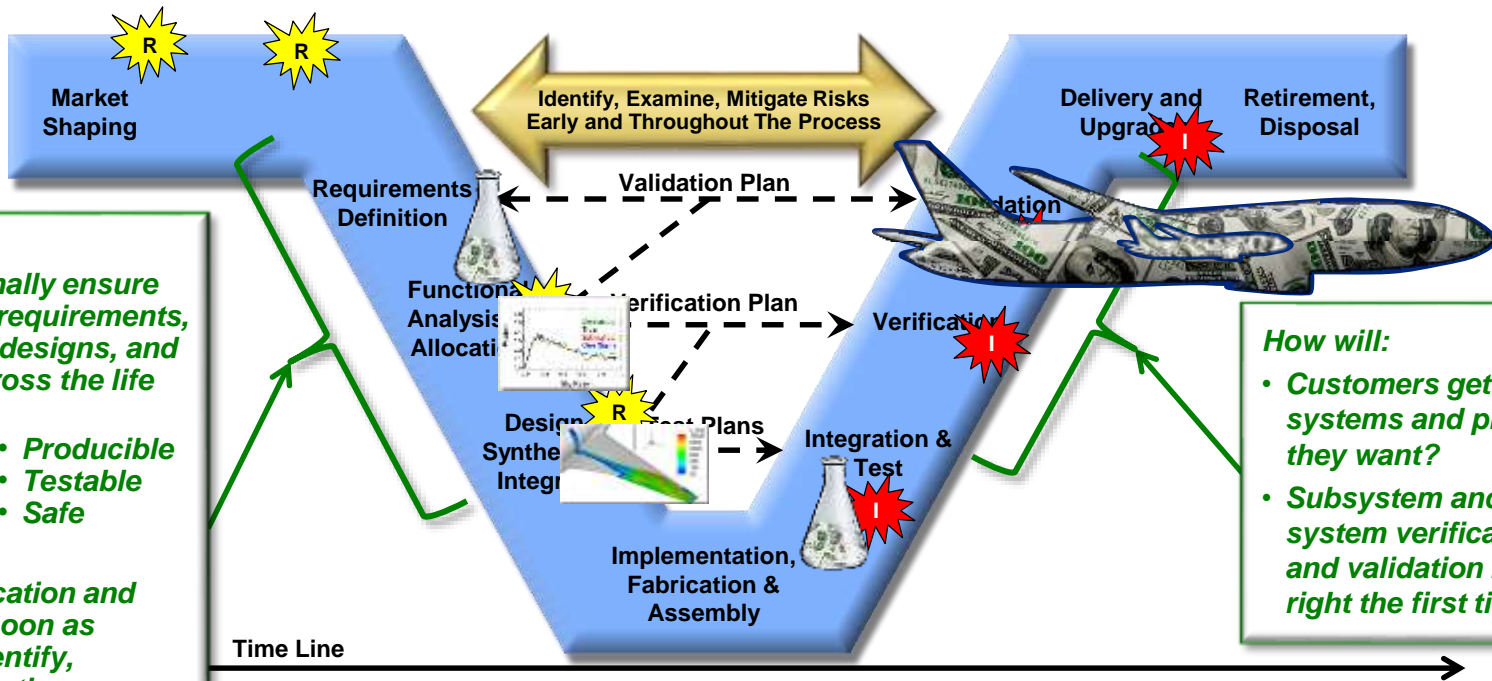
Engineering, Operations & Technology
Boeing Test & Evaluation

Testing for Capabilities: The Importance of Mission Accomplishment in T&E

DT Panel

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Hypothesis:

• Cross functionally ensure the concepts, requirements, architectures, designs, and operations across the life cycle are:

- Affordable
- Feasible
- Suitable
- Valid
- Producible
- Testable
- Safe

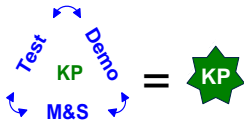
• Perform verification and validation as soon as possible to identify, mitigate, and retire program risks early

• Keep the Mission as the North star

How will:

- Customers get the systems and products they want?
- Subsystem and system verification and validation be done right the first time?

- Early T&E engagement in the development phase.
- The use of T&E as an early development tool.
- Early identification and inclusion of Operational Testers in an Integrated Test Team.
- It is not just “T&E” in the early phase but the commitment of a T&E person with the “integrator” mindset.
- Development Test as a System of Systems.
- Test-as-we-operate focus.



KP = Knowledge Point

= Issue Impacting Execution

= Risk

Shift Left While Focusing on the Mission

What's Important?

- **Early T&E engagement in the development phase.**
- **The use of T&E as a early development tool.**
- **Early inclusion of Operational Testers in an Integrated Test Team.**
- **It is not just “T&E” in the early phase but the commitment of a T&E person with the “integrator” mindset.**
- **Development Test as a System of Systems.**

Early Engagement – Test for Learning – Operational Testers

Test-as-We-Operate Focus – An Advantage?

- **An expectation during operational testing.**

- “Once a system has been demonstrated in an operationally relevant environment, it may enter the Production and Deployment phase.” – DOD
- “Address critical issues regarding a system's performance in combat-like environments when operated by field personnel.” – AFOTEC
- “Verify that systems are operationally effective and suitable for intended use.” – FAA

- **Advantageous during development test?**

- “The primary purpose of test and evaluation (T&E) is to support system development and acquisition by serving as a feedback mechanism in the iterative systems engineering process.” – Army
- “The fundamental purpose of test and evaluation is to provide knowledge to assist in managing the risks involved in developing, producing, operating, and sustaining systems and capabilities.” – OSD

A Test-As-We-Operate Focus is Key

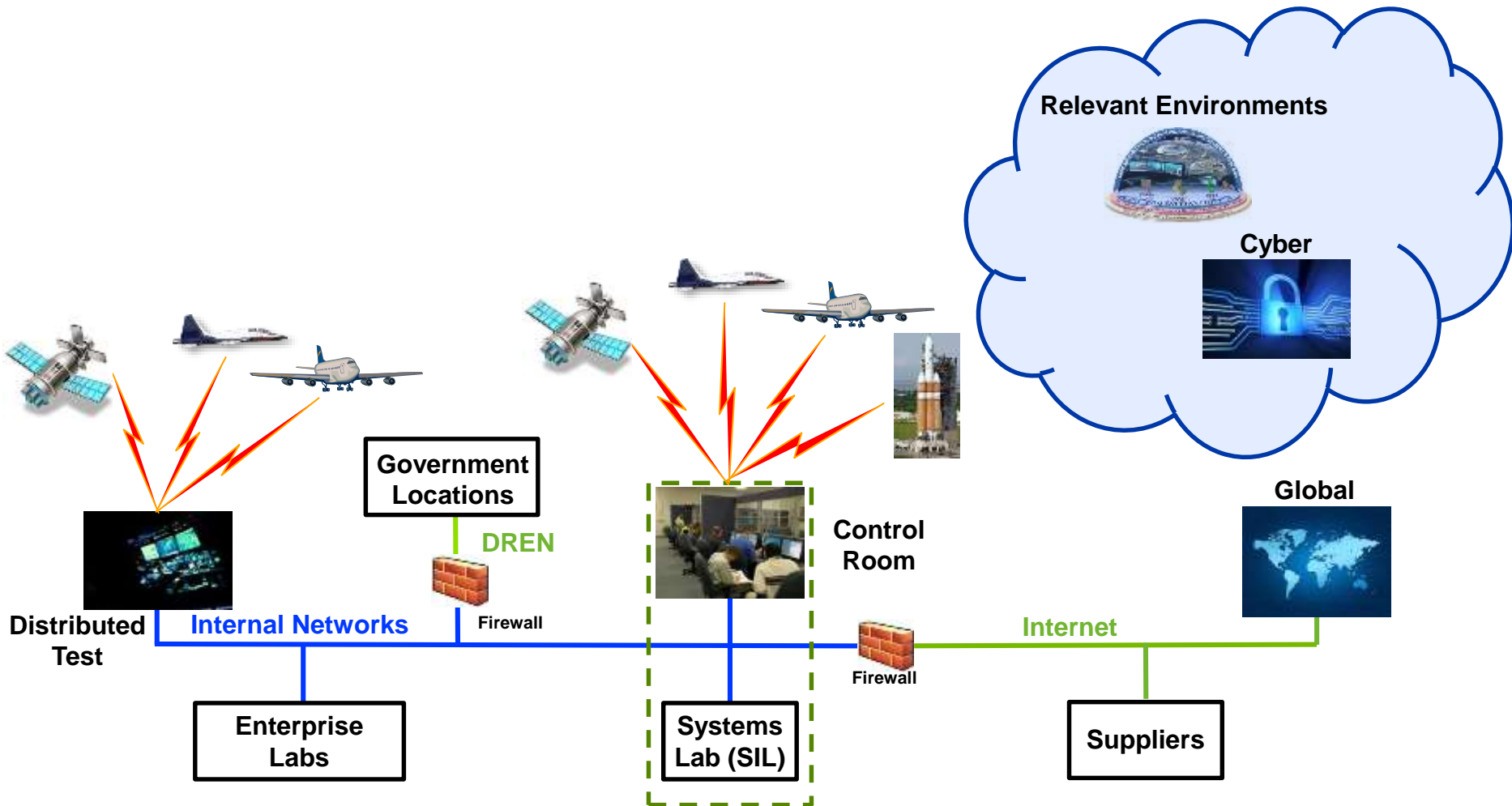
Test-as-We-Operate Focus – An Advantage?

- **Improve test as we operate (fight):**
 - Keep a mission-level focus across the product test life cycle.
 - Ensure the availability of critical assets across programs.
 - Create a relevant complex test environment.
 - Change the test culture to meet complexity of the SOS test.

A Test-As-We-Operate Focus is Advantageous

Distributed Test Concept

Supporting the Entire Product Test Life Cycle



DT as a System of Systems

Summary

- **Early T&E engagement in the development phase.**
- **The use of T&E as a early development tool.**
- **Early identification and inclusion of Operational Testers in an Integrated Test Team.**
- **It is not just “T&E” in the early phase but the commitment of a T&E person with the “integrator” mindset.**
- **Development Test as a System of Systems.**
- **Test-as-we-operate focus.**

Shift Left While Focusing on the Mission

