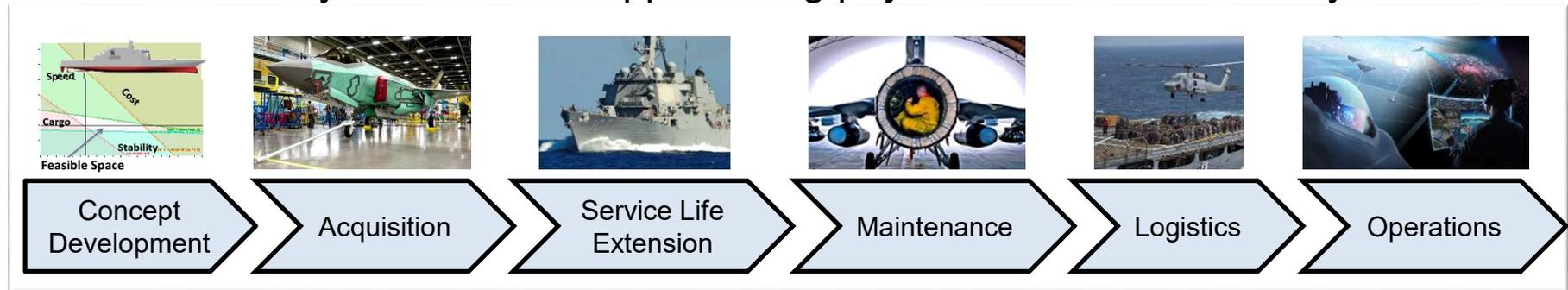


A Vision for Physics Informed Digital Engineering

BIG IDEA: Lifecycle Decision Support using physics informed data analytics.



APPROACH

Synthesize digital surrogates via physics-based virtual test and analysis. Fusion of sensor and maintenance/operational history data to make system specific surrogates.

PAYOFF

Actionable information, intuitively understood, at the speed of relevance.

- **What motivates this vision?**

- If my technology cannot deliver actionable engineering information in a timely way, my technology is not relevant.

- **Why is this vision a Grand Challenge?**

- Scope includes all air, land, and sea military systems.
- Physics coupling to predict (system performance, state, and signatures)
- Data access constrains realization of the vision
 - Legacy data flows
 - Intellectual Property
 - Classification

- **Reasons for hope**

- The DoD (and other Federal Agencies) continue to make large investments in development of relevant technologies (including the CREATE component of HPCMP).
- Vision is realized via development, deployment, and maintenance of SOFTWARE.

Software is Portable