

***XA LCID***

***30 Jun 2021***

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# ***Agenda***

- ┆ **XA History**
- ┆ **Capability Development**
- ┆ **What we Value**
- ┆ **Summary**



# ***XA History***

- ┆ **Traces back to 1914: Army Signal Corps Plane Design Office**
- ┆ **Role rises and falls over time – tracks to DAF interest in Capability Development**
  - ┆ **Also bounces between Engineering, Laboratory, and Acquisition oversight**
- ┆ **What has not changed: Core responsibility to perform Capability Development related activities for aircraft programs**



# Historical Studies

Start	Finish	XR/XZ Studies	Acquisition POR
1955	1958	TFX	F-111
1959	1960	SOR-182	C-141
1960	1962	CX-HLS	C-5
1961	1965	AMSA	B-1
1962	1963	DSM/SRAM	AGM-69 (SRAM)
1964	1965	FX	F-15
1965	1966	SOR-184	AFM-65 (Maverick)
1966	1967	AX	A-10
1967	1968	SCAD	AGM-86
1969	1972	LWF	F-16
1976	1981	TEAL DAWN	AFM-129 (ACM)
1977	1979	NGT	T-46 ← EDSA – C-23
1979	1979	CX	C-17
1980	1986	ATF	F/A-22 ← ATF – F-22
1985	1998	JSF	F-35
2003	2008	Tanker	KC-46A ← LCA/LAA – A-29/C-26
2003	2008	Next Generation Bomber (NGB)	B-21 ← E-4B Recap - NEAT
2008	2010	Air Superiority Target	QF-16
2005	2008	CSAR-X ← LRSO	HH-47 ← CVLSP – MH-139
2009	2011	T-X Trade Studies	T-X ← T-X AoA – T-7
2011	2017	F-X/NGAD Studies	NGAD* ← CC DCR – EC-37B

\*Pre-POR





# *Historical Perspective*

└ **Have Blue → F-117**

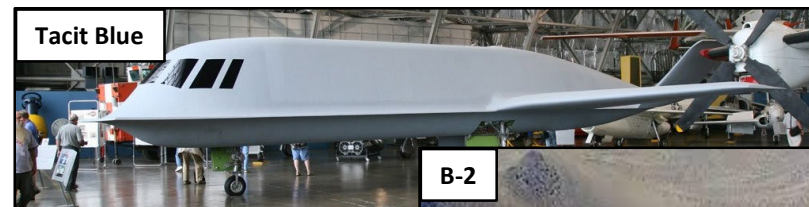
└ **Radar reflection theory**

└ **Radar vs aeronautical design**

└ **Tacit Blue → B-2**

└ **LO technology**

└ **Fly by wire**



Multiple examples of early capability development successfully spun into programs of record in short timelines

Today's challenge isn't aircraft development but integration of technology across the Joint force in a time-relevant span

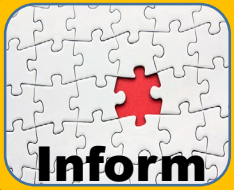


# ***XA in One Chart***

## ***“The Crucible Where Technologies Turn Into Solutions”***



- Multi domain acquisition expertise across disciplines
- Address PEO needs with analysis & quick turn solutions
- Bridge gap between S&T, Users, Acquirers & Industry

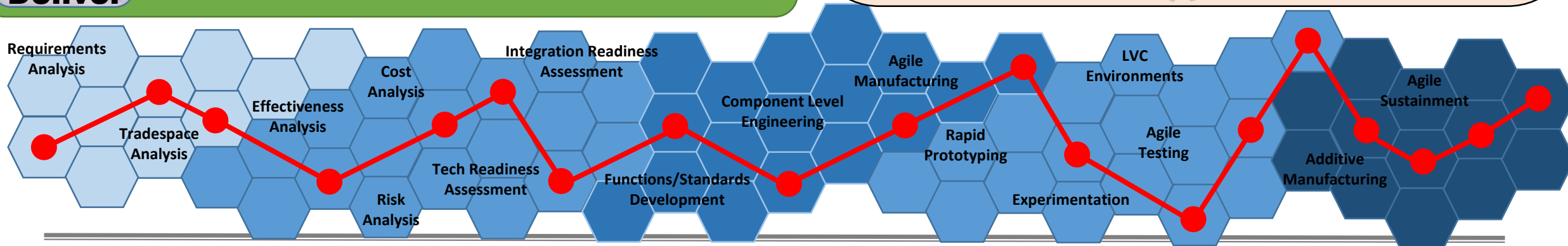
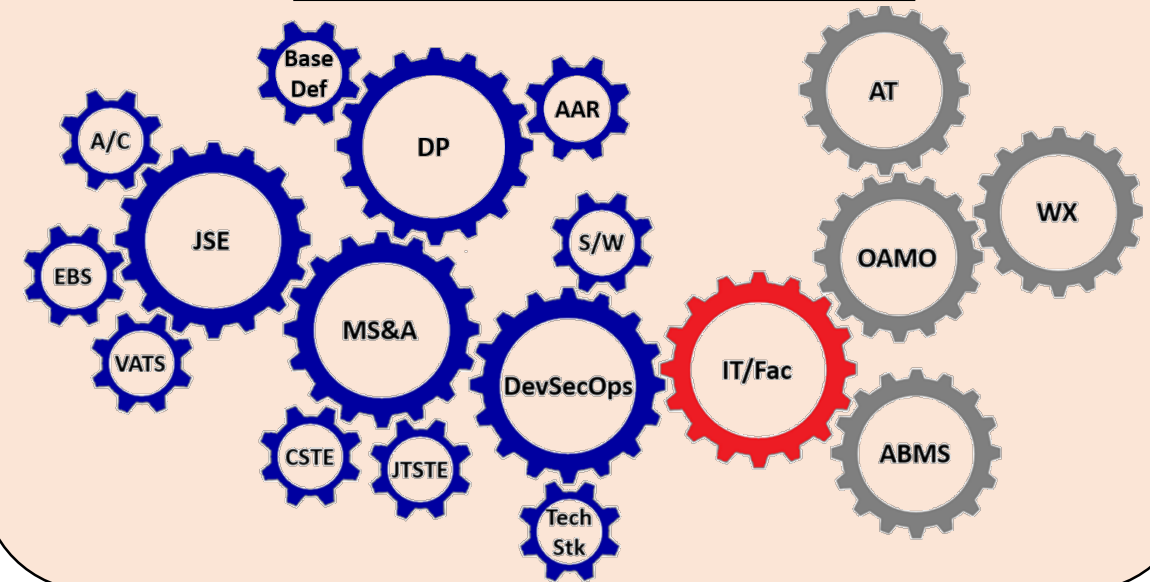


- Chief Architect – ID acquisition gaps, plans, solutions
- Chief Technology Office – Assess emerging technology
- Cross cutting analysis, assessment, and integration



- Capability development using parallel development
- Share lessons learned, how-to and expertise – teach!
- Most valuable partner for early systems acquisition

### Multiple Interconnected Efforts



CSTe - Common Synthetic Training Environment  
JSE - Joint Simulation Environment  
DP - Development Planning

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OAMO - Open Architecture Management Office  
AT - Anti-Tamper Executive Agent  
ABMS - Advanced Battle Management System

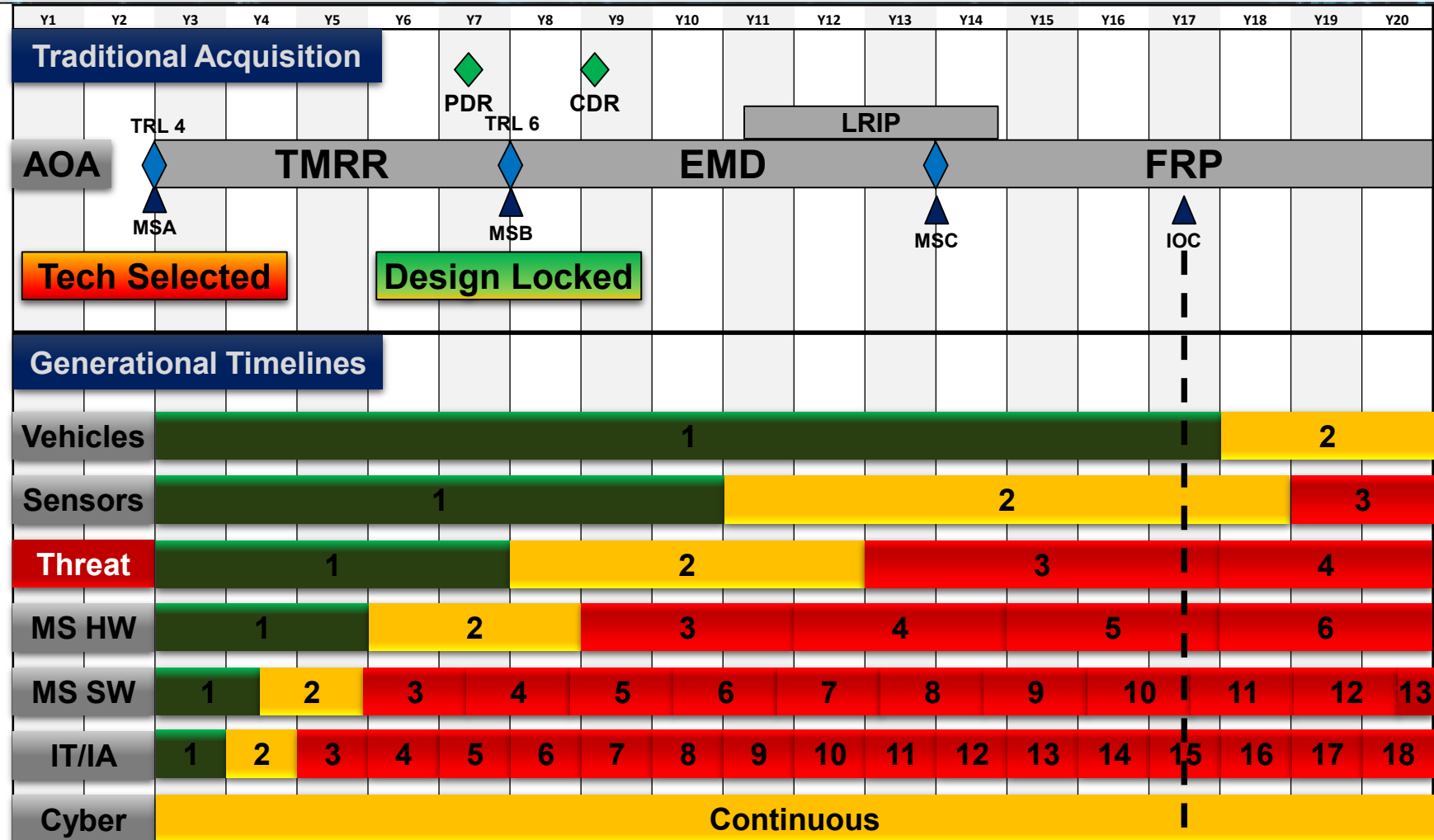


# ***What We Value***

- ┆ **Own the technical baseline & be an informed buyer**
  - ┆ **Knowledge parity with industry**
  - ┆ **Active participant during integration**
  - ┆ **Capture actual costs**
- ┆ **Rapidly and repeatedly field capability ahead of the threat**
  - ┆ **Outpace an agile and evolving threat**
  - ┆ **Deliver tactically and technically relevant capability through time**
  - ┆ **Leverage technology and innovation across service and agency**
  - ┆ **Flexible on ramps for maturing technology and COTS incorporation**
- ┆ **Exploit technology cycles**
  - ┆ **Align acquisition strategy**
  - ┆ **Leverage industrial base**
- ┆ **Digital trinity**
  - ┆ **Open systems architecture**
  - ┆ **Digital engineering**
  - ┆ **DevSecOps**



# Technology Cycle Challenge



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# CD Spectrum

## Building the future requires a spectrum of development

Envisioning  
the unknown

Exploring  
Application

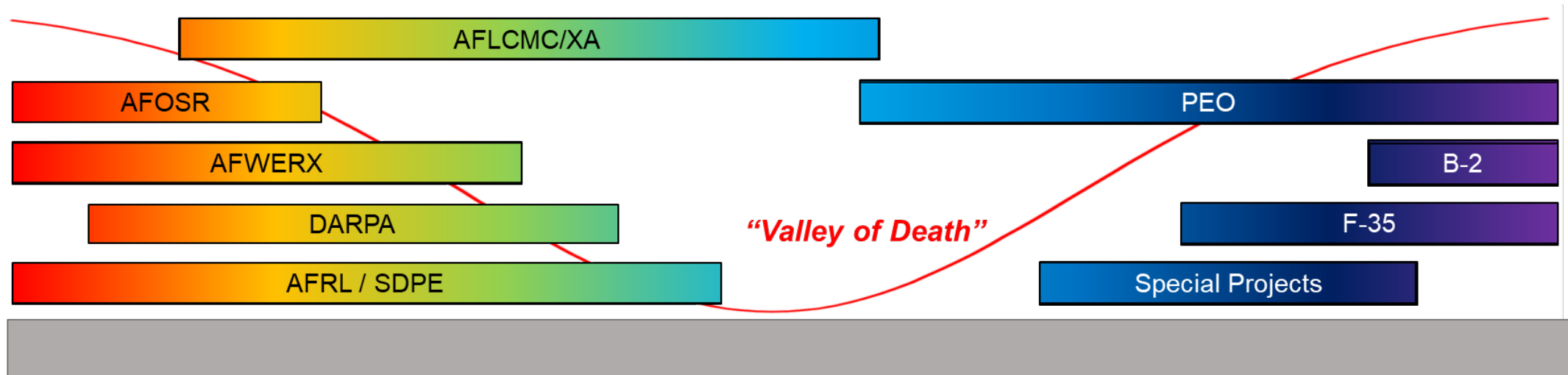
System  
Definition

Operations &  
Modernization

**No single organization spans the entire spectrum**

Independent of existing  
Missions & PEOs

Tightly Coupled to  
Missions & PEOs

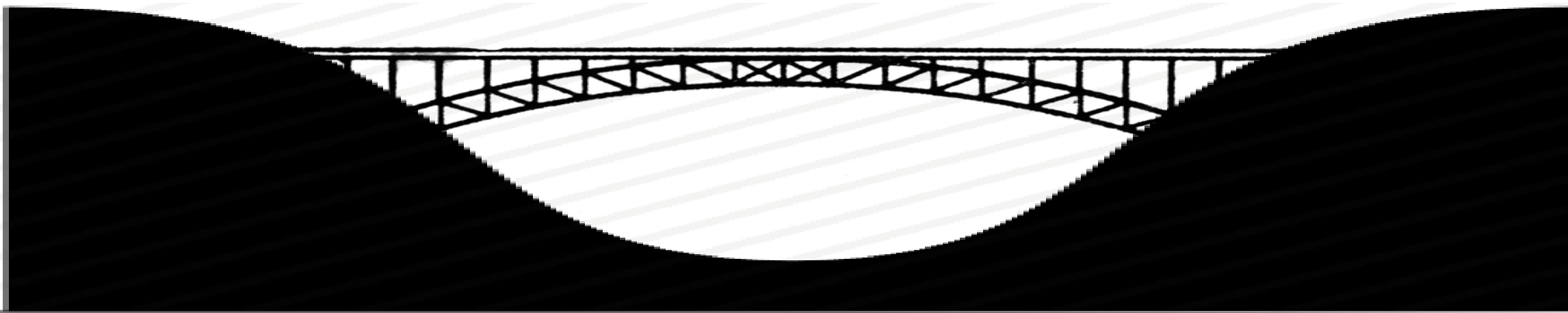


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# ***XA, The Bridge***

- **AFRL**
- **DoD S&T orgs**
- **User interest**
- **Technology Push**
- **Industry**
- **Kill/Live chain understanding, analytical baseline, CONOPS/TTPs**
- **Acquisition Strategy development**
- **Start the digital thread**
- **OSS&E alignment for PEO**
- **Proven tech in intended application**
- **In the POM**
- **PoR/PEO Assigned**
- **Contracting Strategy**
- **Manpower**
- **OSS&E**



**TTP - Tactics, Techniques, and Procedures**  
**OSS&E - Operational Safety, Suitability, and Effectiveness**

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# **The Crucible Where Technologies Turn Into Solutions**

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