

Frequently Asked Questions

Below is a composite of many of the questions that were asked in the chat with answers during the 21 Sep 20 Digital Campaign Industry Day.

Dr. Roper

<u>Content</u>	<u>Answer/Response</u>
How does industry work towards MBSE and interoperability with the Government	The Air Force provides the government reference architecture that we will be using in the tech stack to industry partners. The Air Force needs authoritative truth that does not change as we move between different tech stacks for design. If I were in your shoes, the first and foremost investment that I would make is getting to one integrated digital engineering environment so that you can turn over to your teams when it's time for a new program and be able to trade things across the entire lifecycle bringing your full value proposition as the company to bear not just your value proposition in whatever model you happen to have available at that time.
How does SAF/AQ intend to train and incentivize the entire DAF acquisition workforce so everyone has the digital fluency to make this vision a reality?	The training is a responsibility of the Air Force organizations responsible for Organize, Train, and Equip, and it is AFMC responsibility to train the entire workforce. Getting people trained is the first and foremost responsibility because without a trained workforce you can't do the other technical aspects. We want to do this at scale and across all functionals.
How and when do you expect for the Air Force to be able to actually start getting its hands on the engineering and test data flowing from all the key sources within the supply chain and DIB so that it can adequately fuel the evolving AF digital enterprise?	It really will happen one new program by one new program. I think there will be some hope that aside from full systems that we will be able to do this on subsystems and not have to wait for the fully integrated system. I think there are two things that I'll be expecting every new from scratch program is that they adopt full digital threading unless there's some reason that we cannot do those steps. Our vision is to have a digital competition and the winner will be put on contracts, make the government tech stack available, provide automation, you move whatever you've done prior to award in, and off you go.

<p>With the digital acquisition approach being the future and having a design model that provides vehicle characteristics, how do companies maintain IP rights?</p>	<p>What I've seen in the just few programs that are radically digital is that it becomes crystal clear where the government needs to have government purpose or government ownership and where we can just turn it over to industry to put the best that you can bring in terms of IP. All we're really looking to do is ensure that we can continue modernizing systems if we need to.</p>
---	---

Campaign Priorities

<u>Content</u>	<u>Answer/Response</u>
<p>Is the AF Digital Campaign priority to be more affordable or is it to improve time to market?</p>	<p>The objective is to deliver capabilities at ever increasing speed and efficiency by designing, sustaining, and modernizing them in an integrated digital ecosystem.</p>
<p>What are the Top 5 digital principles within the AF Digital Campaign?</p>	<ol style="list-style-type: none"> 1. Maintain an enterprise perspective, 2. Develop a digital culture; 3. Leverage reference architecture and standards to keep weapon systems innovation friendly; 4. Learn quickly from digital pathfinders; 5. Build Agility to pivot quickly
<p>By leveraging Digital Engineering what efficiency gain is the Air Force looking for?</p>	<p>The Air Force is looking to improve time and efficiency in each acquisition phase, program agility, and cost.</p>
<p>How will the AF pilot/roll out the Digital Campaign?</p>	<p>We have identified a good number of pathfinder programs (over 10) across the Air Force who will lead the transformation. Our large enterprise requires broad guidance and policy coupled with a decentralized strategy to enable programs flexibility to deliver capable weapon systems.</p>
<p>How do you envision that programs of records start in a digital environment?</p>	<p>As with most answers in acquisition... "it depends." We want existing programs of records to look for digital opportunities and to "Think big, start small, scale fast." Some programs will be "born digital" or "digital natives" like GBSD; some will likely be "digital dinosaurs" and may not make sense to invest model based system engineering for everything that already exists; and some programs will be "digital hybrids," landing somewhere in between. Every program is unique, but opportunities include planned upgrades, modifications and modernization efforts. These are opportunities to go digital without the need to "digitize" the entire system and then over time to</p>

	parley those digital subsystems into other systems, and the benefits can grow from there.
What challenges do you foresee within the AF workforce to think and learn in a model based environment?	Although there are many challenges connected with our success to date and the inertia that got us here... central to embracing this approach is making sure that the workforce understands the benefits and the expectations.
How will Acquisition Programs be managed in a digital environment?	The goal for is to have an entire program managed in a digital environment. Digital Engineering is just the first step and other functional areas (Program Management, Contracting, Financial, Logistics) will need to adjust to the new modeling environments. Many of the same management practices will likely hold – cost, schedule, performance, risk – but the ability to link and track in near real time, and easy access to authoritative data coupled with modern visualization and analytic techniques will undoubtedly aid every program management practice get better and likely evolve to higher levels of performance and utility.

Contracts

<u>Content</u>	<u>Answer/Response</u>
How and when will the Digital Campaign start to influence contractual requirements and DoD acquisition in general?	As soon as practical -- It will happen program by program. The goal is for every new acquisition program to be fully digital and adopt digital thread. For modernization or upgrade programs the goal is for every program to pursue opportunities to go digital and to strategize an integrated model-based approach up front.
Will future CDRLs and design review requirements that are written into contracts with industry change?	Many products, processes and results of our current acquisition system, Contract Data Requirements Lists (CDRL), design reviews, Data Item Descriptions (DID), etc., will need to change to accommodate digital acquisitions. We've started reviewing these products, processes and results to determine changes needed.

<p>How do you get the contracts team on board with doing business digitally?</p>	<p>Training, learning, and pathfinding with specific programs will aid every functional area move toward the desired digital capability. The vision and goal is to perform "acquisition" via the models in a digital framework with a single source of truth that all functionals (Engineering, Program Management, Contracts, Financial Management, Logistics) can get the information and data they need to do their work. Training for the entire acquisition workforce will also be very important to help change mindsets and culture.</p>
--	---

Cost

<u>Content</u>	<u>Answer/Response</u>
<p>How will the AF incentivize industry transition of IT tools to support the vision in our contracts?</p>	<p>Much of industry recognizes the competitive advantage to leveraging digital capabilities and is thereby already incentivized. The government's incentive is to ask for what we will need to become a digital acquisition ecosystem. We've been working on developing the correct Request for Proposal (RFP) language to acquire systems digitally. In order to get the right RFP language, our AF program office teams will have to determine exactly what they want upfront. To help with that our team developed 23 features of a model-based acquisition to consider and appropriate RFP language for each feature selected. A well thought out RFP will let industry properly scope the cost of their proposal. Source Selection criteria can be derived from those 23 features to adequately evaluate each proposal based on technical, cost and other factors.</p>

Data Rights

<u>Content</u>	<u>Answer/Response</u>
What is the AF doing to implement/add data rights for digital engineering contracts?	The data rights/Intellectual Property (IP) approach is determined based on the needs of each particular program. The AF believes it will be easier to determine in a digital environment what data rights the AF should own and maintain.

Government Reference Architecture

<u>Content</u>	<u>Answer/Response</u>
How many Government Reference Architectures will be needed and how will contractors maintain access?	Most likely there will be multiple Government Reference Architectures (GRA). We are still working the exact mechanism to keep Industry apprised of the latest details of each GRA but probably through a secure website.
Where do you see the greatest challenge in putting in place the Government Reference Architectures?	There will be multiple GRAs that will be maintained over time. We believe we will need a validation and governance process before we put GRAs in a library. Most will be developed over time. Right now we are in the process of identifying and connecting existing and emerging GRAs. These efforts will all be challenging.

Integrated Digital Environment

<u>Content</u>	<u>Answer/Response</u>
How will AF integrate multiple digital environments?	As we move forward we will need industry help. Using the same standards, common APIs, other open interfaces, reference architectures, and mechanisms like software development kits will provide a foundation.
How do development teams have confidence that the models are correct and interconnected correctly?	Verification and validation of models is always a challenge and concern. The goal is for a team to develop the integrated digital environment with input from all stakeholders. We know that we will also need to utilize the real (physical world) data that we have collected for model validation.

<p>Is the goal of the Released/GFE Digital Framework to be flexible enough to adapt to any/every platform & subsystems?</p>	<p>The Digital Framework is slated to be flexible and agile enough to adapt to many open platform & subsystems. That said, we recognize there are still many proprietary systems that currently exist in the inventory so we will need to be flexible in decisions going forward versus a categorical statement for every program.</p>
---	--

Interoperability/Standardization

<u>Content</u>	<u>Answer/Response</u>
<p>How do you envision interoperability between applications in support of the digital thread?</p>	<p>Today, we understand the Integrated Digital Environments are not completely interoperable, and we have been working with Model Based System Engineering (SysML), Product Lifecycle Management (XMI/XML), Data Analysis (Meta Tagging) and Visualization (Simulation Open Standard Organization).</p>
<p>What steps are being taken to ensure joint programs leverage/use digital thread and other future digital engineering outcomes that the USAF is pursuing?</p>	<p>We have representation to/from the OSD Digital Engineering Communities in addition to having representatives from the Army, Navy, and Marines on the AF Digital Transformation Team. It is important to identify and work with the various services in developing architectures and standards.</p>
<p>Does the AF plan to have a qualification/certification guidance to manage their readiness/maturity?</p>	<p>As with design maturity there will be a need for model maturity. A critical element is model validation and verification for use. We are leveraging metrics based on INCOSE to help us measure and track our maturity toward digital capabilities and plan to share these metrics with industry in the coming weeks.</p>
<p>How do you plan to overcome the challenges of standardization?</p>	<p>Standardization is challenging but we are seeing a tremendous move toward more standards across the services. Contracting plays a critical role because these various standards (e.g. COARPS), reference architectures (e.g. R-EGI), APIs (e.g. OMS/UCI), data models (e.g. FACE), hardware profiles (e.g. SOSA) need to be in the RFP and PWS/SOW.</p>
<p>Will industry be able to help you influence the interface standards?</p>	<p>Yes - we will be working with industry on open standards. We know well that industry must be involved.</p>

Tools

<u>Content</u>	<u>Answer/Response</u>
How do plan to address the digital lifecycle of the data and tools used to define the digital twin? Most of the assets will have operational lives of more than 30 years.	We will start with linking digital data/artifacts together in some form of a digital thread. Better understanding the source of truth will allow us some agility to our data architecture. In the short term, we will capture the best data sources for future use and continue to build towards the Digital Twin.

Training

<u>Content</u>	<u>Answer/Response</u>
How is Defense Acquisition University (DAU) going to adapt to the Digital Campaign?	We are working closely with DAU to understand what is currently offered, as well as courses or credentials that may be needed. Our intent is to partner with DAU and other educational and industry organizations to provide needed training in the future -- these include AFIT as well as external academic institutions
What is the greatest challenge with creating a culture of innovation in process, people and technology?	Culture change is a slow process and cannot be accomplished in solitude--every line of effort on the Campaign has an important role to play in defining what digital transformation is and looks like, and communicating that out to the workforce in a way that makes sense. Training alone, tools alone, metrics alone--none of this is a magic bullet--that is why the comprehensive approach is vital to assisting the enterprise is understanding. The greatest challenge is helping a large AF enterprise change its culture to support this digital transformation. Luckily, we have a team in place to help walk through and plan out the change for our workforce.
How can the AF create a digital workforce that is digitally integrated?	No easy answers here... which is why we are taking an enterprise perspective and approach to this challenge. We are working on ensuring our Air and Space acquisition corps are well versed in digital transformation, while simultaneously working on infrastructure, tools, policy, and culture. The vision for this effort includes a digitally competent workforce with seamless integration and collaboration across the enterprise.

<p>How do you envision training the workforce?</p>	<p>We are looking into traditional training, micro credentials, certifications, just-in-time training (including self-paced things such as videos), badging (typically done online & self-paced), degrees, and more. We will look at many options for employees to get the development needed as we undergo this digital transformation. One deliverable will be a vetted list of training appropriate for acquisition professionals, so all employees can access the list and see what is available and suggested based on their position.</p>
--	---