Headquarters U.S. Air Force

Integrity - Service - Excellence

Innovation Track

U.S. AIR FORCE

Mr. Konieczny
SAF/CIO CTO
25 Aug 18

U.S. AIR FORCE

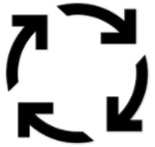
What is Innovation?

*The process of making changes in something established, especially by introducing **new methods**, **ideas**, or **products**.*

Enabled By

TOOLS

Acquiring and/or developing new software, systems, and technologies



PROCESS CHANGES

Establishing new IT governance procedures

EDUCATION

Developing new training / certifications programs

POLICY CHANGES

Aligning and adjusting Air Force policies (IDFP, AFIs, AFMANs) as needed

U.S. AIR FORCE

Evolutionary vs Disruptive

User perspective

- **Evolutionary** based on personal experiences
- **Disruptive** to current process – don't change what currently works

Provider perspective

- "Burning Platform" – a force for change
- Manpower and training changes
- Policy and Instruction change process duration
- Funding (FYDP) profile
- Support infrastructure

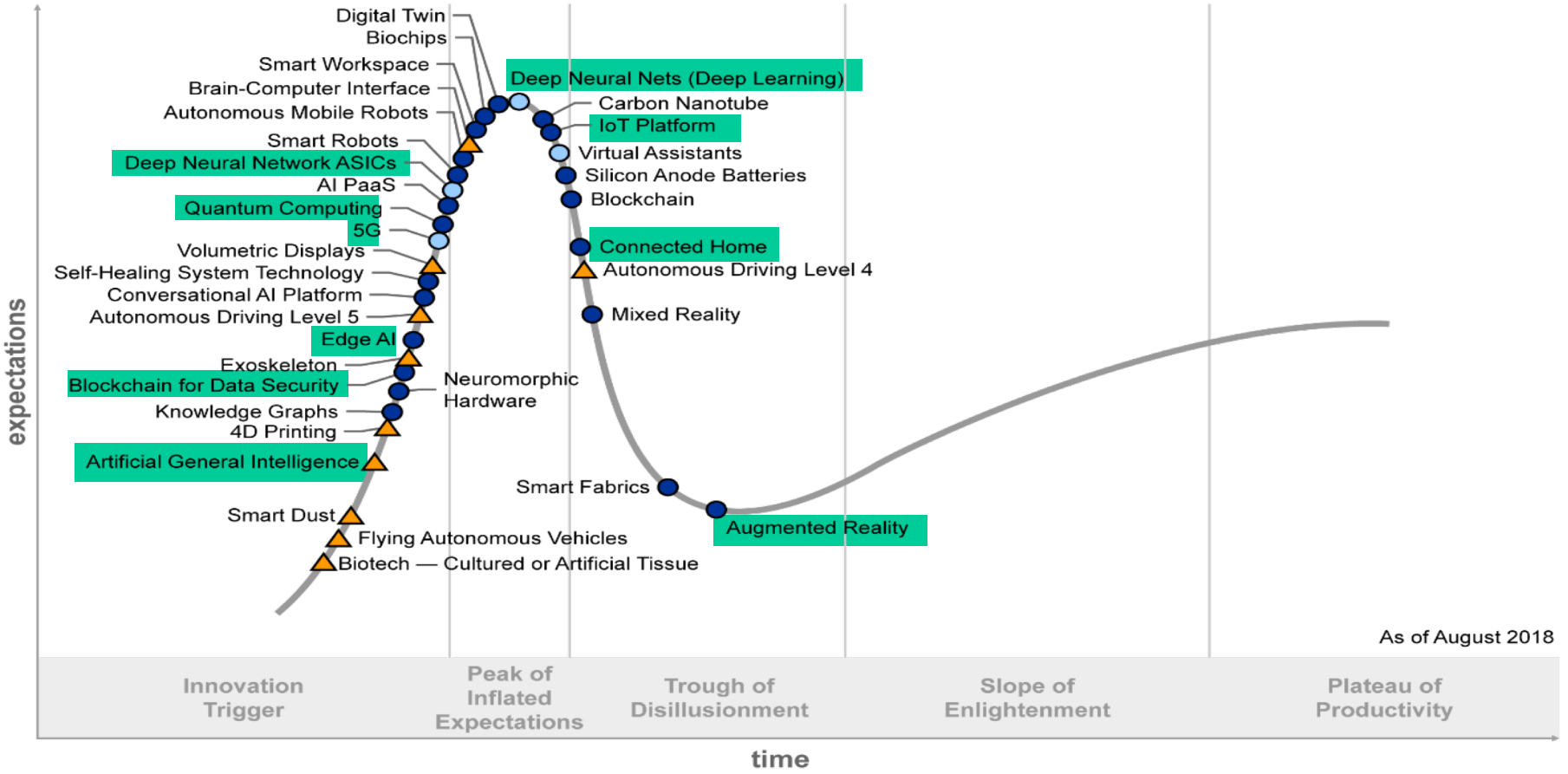
U.S. AIR FORCE

Using Commercial Innovation

- Information age shift from hardware (industrial) dependency to software dependency
  - Commodity processors
  - Small capital investment
  - Location independent
  - Skilled personnel base
- Consumer is prime customer; Government is secondary
  - Largest potential payoff
  - Speed to market is essential
- Government way ahead
  - Utilize innovative consumer products; tailor to specific government needs or adopt consumer process
  - Conform to standard market drivers – open standards/source
  - Embrace change as necessary
- Establish liaison offices at US innovation centers
    - DIUx in Silicon Valley, Boston and Austin
    - In-Q-Tel
    - Venture capital investment firms
- Maintain vendor information in CTO web site with associated presentations and contacts – proprietary briefings are available on request

U.S. AIR FORCE

Emerging Technologies

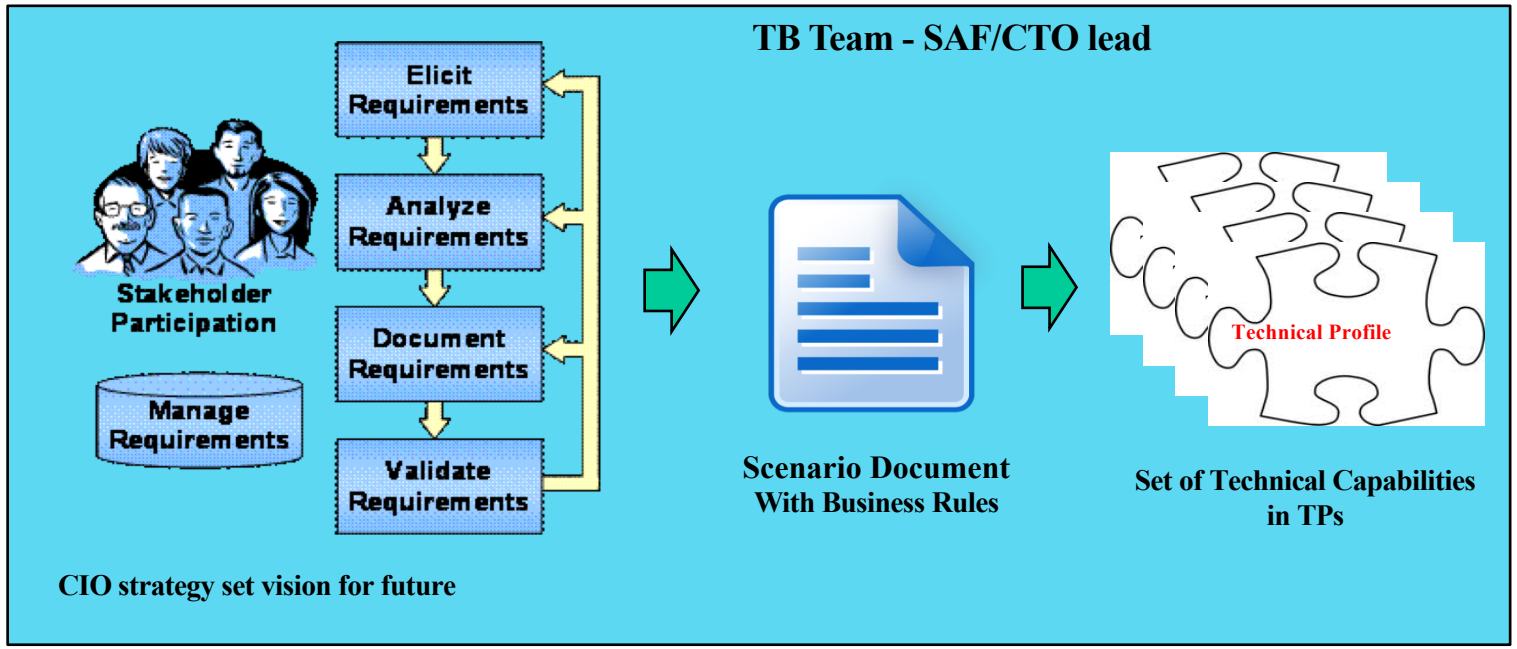


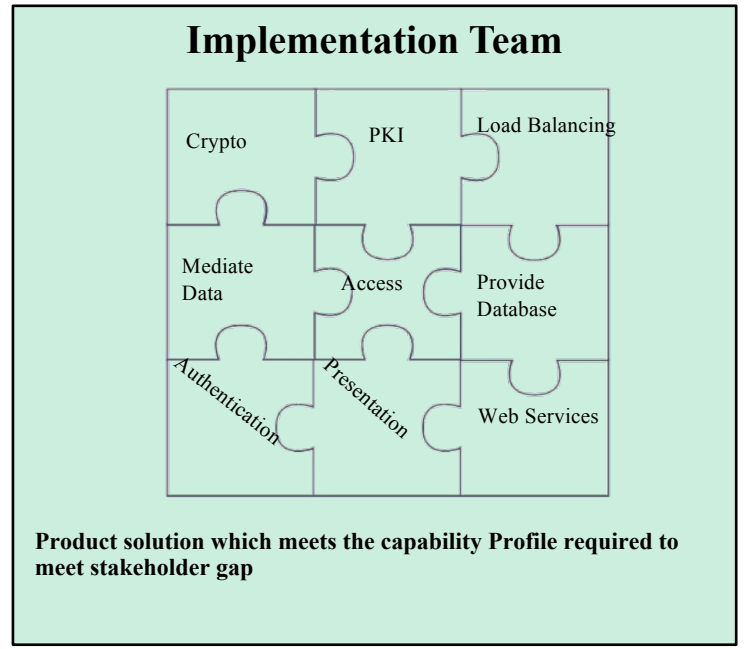
Source: Gartner (August 2018)

Target Baseline to Implementation Process

Accommodates Strategy from the top and innovation from the edge

U.S. AIR FORCE





Research/System Engineering EXAMPLE:

App owner: "I need to give my stakeholders faster access to my systems."
Use-case: "How can access authorization be automated?"

Access Management (authorization)Scenario: Requirements and Business rules on how personnel attributes are used to make authorization decisions.

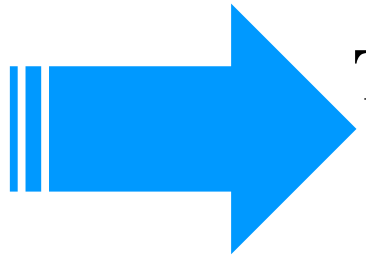
Foundational Tech Profiles built/modified: Crypto services, Control Access, Provide PKI Services, Authentication, etc.

New Capability Profile: List of requirements to fulfill the authorization scenario; requirements are both far-reaching tech and tailored from the foundational TPs

U.S. AIR FORCE

Involving Stakeholders

- Target Baseline Scenario Interchange Meetings
  - Functional use cases that describe current functional gaps
- Mobile Enterprise Service Panel
  - Network, device management, Internet of Things, Platform IT
- USAF Cyber Innovation Forum
  - Design thinking, education, initiative selection and assessment
- USAF CTO Forum
  - Identification and discussion of IT challenges across the USAF
- USAF Data Panel
  - Data usage across the USAF
- DoD Fora
  - Enterprise Services and Data Panel
  - Cybersecurity Engineering Review Board
  - Enterprise Architecture and Services Board
  - Information Protection & Management Steering Coordinating Group



Target Baseline Scenario Use Cases

U.S. AIR FORCE

Example

From Gaps to Scenarios to R&D/SE Pilots

Use Cases

SCENARIO: Access Management

"**How do I specify, manage and automatically enforce access policies** that are able to cover assets and resources from the full sensitivity spectrum"

Formalize Future Technical Capabilities

CAPABILITY PROFILE: Provide Access Control

1a. Each web service shall have access control requirements included in the Enterprise Access Store

4a. Each web service shall be responsible for enforcing both access and privilege for its own ACLS and stores using a secure info exchange standards (e.g., SAML)

Identify Relevant IEMA Portfolio(s)

PROTECT

Support Market Research for Technical Capabilities

TECHNOLOGY VENDORS

Vendor A	**Vendor B**	**Vendor C**	**Other Vendors**
Provides attribute based access controls for applications/documents	Provides attribute based access controls for applications/docs	Provides access based on external authoritative sources	

Research/Engineer Pilots

PILOT: Enterprise Level Security

JIE Capability for dynamic attribute based access control for applications/content

Support Implementation Process

U.S. AIR FORCE

Innovation Exploration Areas

- Artificial Intelligence
  - SAF/CIO A6 coordination and linkage to the Joint Artificial Intelligence Center (JAIC)
  - Develop an inventory of tools/techniques
  - Support AI technology infusion
  - Research use of AI to support missions (e.g., auto classification of document for disposition coding and access control)
  - For more info…
- Quantum
  - Discussions with main quantum computer vendors regarding training, computer availability/use, internships
  - Coordinating a coalition of educators, R&D scientists/engineers and mission operators to determine lines of effort to begin the quantum journey
  - For more info…

U.S. AIR FORCE

Questions

- POC: Mr. Frank Konieczny
- Email: AFITC2018.AFCTO@gmail.com
- COMM Phone: 571-256-2524 / 260-2524