



Air Force Test Center



Edwards Reunion 2019

Abbé Reuter
AFTC Systems Engineering Division Chief
25 April 2019

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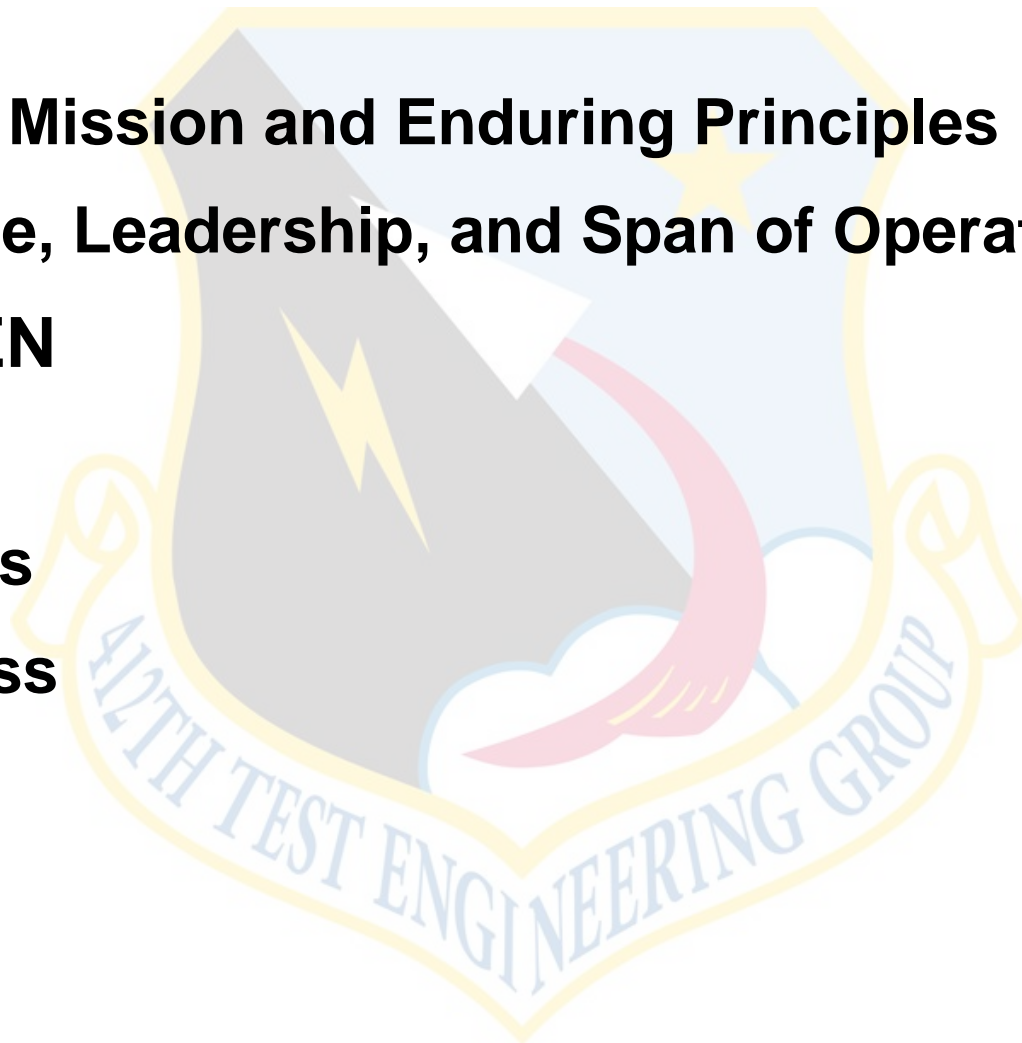
Integrity - Service - Excellence



Overview



- **AFTC**
 - Vision, Mission and Enduring Principles
 - Heritage, Leadership, and Span of Operations
- **412 TW/EN**
 - People
 - Projects
 - Progress





AFMC Priorities

Mission Areas



Continue to Strengthen AFMC's
Role in the Nuclear Enterprise



Advance Today's & Tomorrow's
Combat Capabilities through
Leading-Edge Technology



Acquire and Manage
War-Winning Capabilities
"Cradle-to-Grave"



Perform World-Class Test
and Evaluation



Sustain Air Force Capabilities
through World-Class Depot
Maintenance & Supply



Responsive Installation and
Mission Support to
Commanders, Airmen & Families



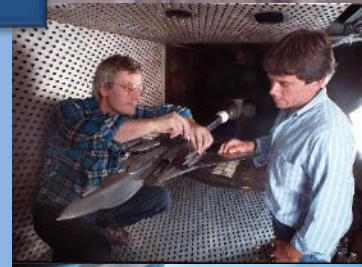
Our Mission and Our Vision



Develop, test, and evaluate Air, Space and Cyber systems to deliver war-winning capabilities



Warfighter's First Choice - Forging our Nation's Sword and Shield!





AFTC Enduring Principles

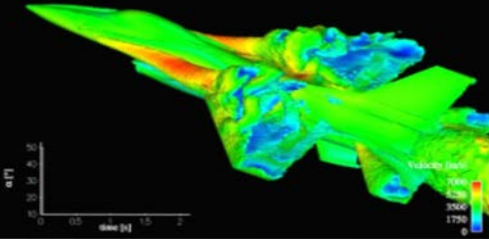


*Relentless Focus
on the Warfighter*

*World-Class Risk
Management*

*Customized
Teams & Products*

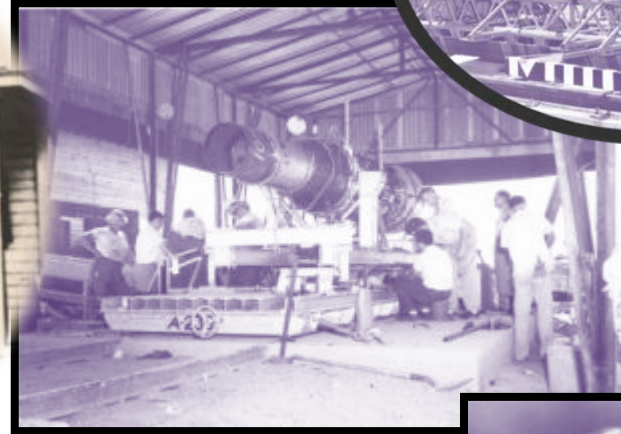
Pitching F-16 (DES SARC)
 Ω iso-surface



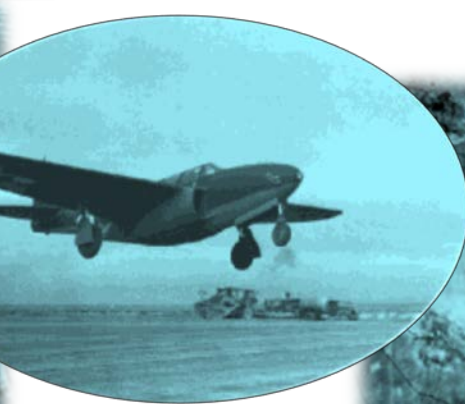
Our Heritage



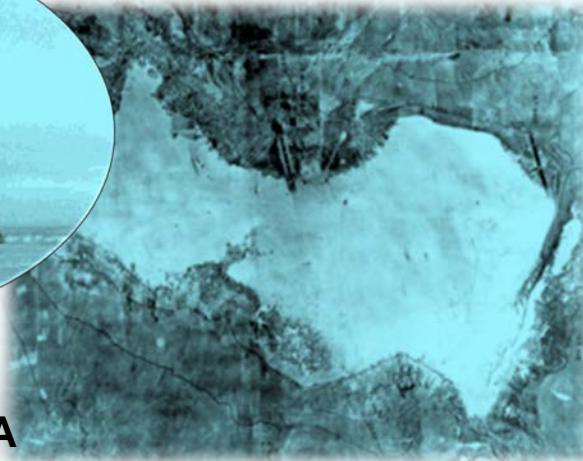
96 TW
Eglin AFB, FL



AEDC
Arnold AFB, TN

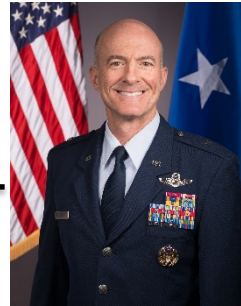


412 TW
Edwards AFB, CA





AFTC Leadership



Commander
Brig Gen Christopher Azzano



Executive Director
Mr. David Robertson



Director of Engineering and Technical Management
Mr. David Wheaton



Individual Mobilization Augmentee to AFTC/CC
Col Kevin Roethe



Vice Commander
Col Angela Suplisson



Command Chief
CMSgt Michael Ditore



Technical Advisor
Dr. Elisabetta Jerome



Technical Advisor
Dr. Thomas Fetterhoff



Technical Advisor
Dr. Joe Nichols



96 Test Wing Commander
Brig Gen Evan Dertien



412 Test Wing Commander
Brig Gen E. John Teichert



AEDC Commander
Col Scott Cain



Span of Operations



32 Locations Total
\$2.5B Annual Budget, BOS at 3 Major Installations
\$31B in DoD Facilities & Test Ranges
110 Aircraft (22 Different Variants)
200+ Ground Test Facilities
12 Test Cells unique to the world





Span of Operations



Arnold Engineering Development Complex (Arnold AFB)



Conduct developmental test and evaluation for the Nation through modeling, simulation, ground and flight test.

- Aerodynamics
- Altitude propulsion
- Hypersonic systems
- Space simulation
- Altitude rocket motors
- High-speed sled
- Navigation warfare
- Radar cross section





Span of Operations

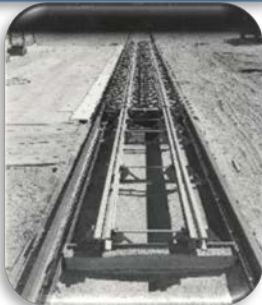


96th Test Wing (Eglin AFB)



Test & evaluate state-of-the-art weapons and provide superior installation support.

- Air-to-Air/Air-to-Ground
- Aircraft-Store Compatibility
- Weapon Effects
- Legacy Weapon Systems
- Strategic Test Capabilities
- Special Ops
- Command and Control
- Cyber Test/Resilience
- Range Management
- Installation Support





Span of Operations



412th Test Wing (Edwards AFB)



Leverage our location, weather, partnerships, and personnel to conduct independent, objective assessments on behalf of the USAF

- Flight Operations
- Engineering
- Electronic Warfare
- Test Management
- Maintenance
- Installation Support
- Emerging Technologies



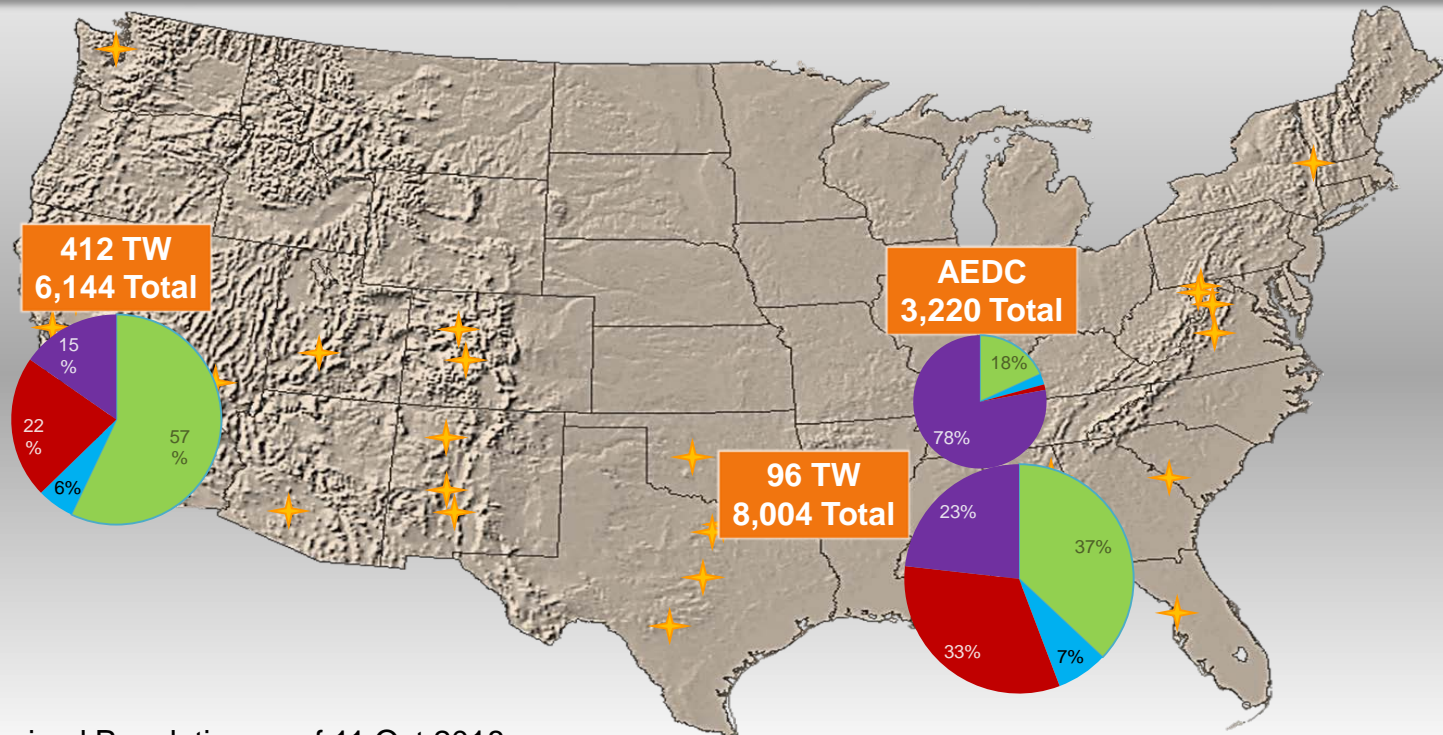


FY19 Authorized Workforce



AFTC

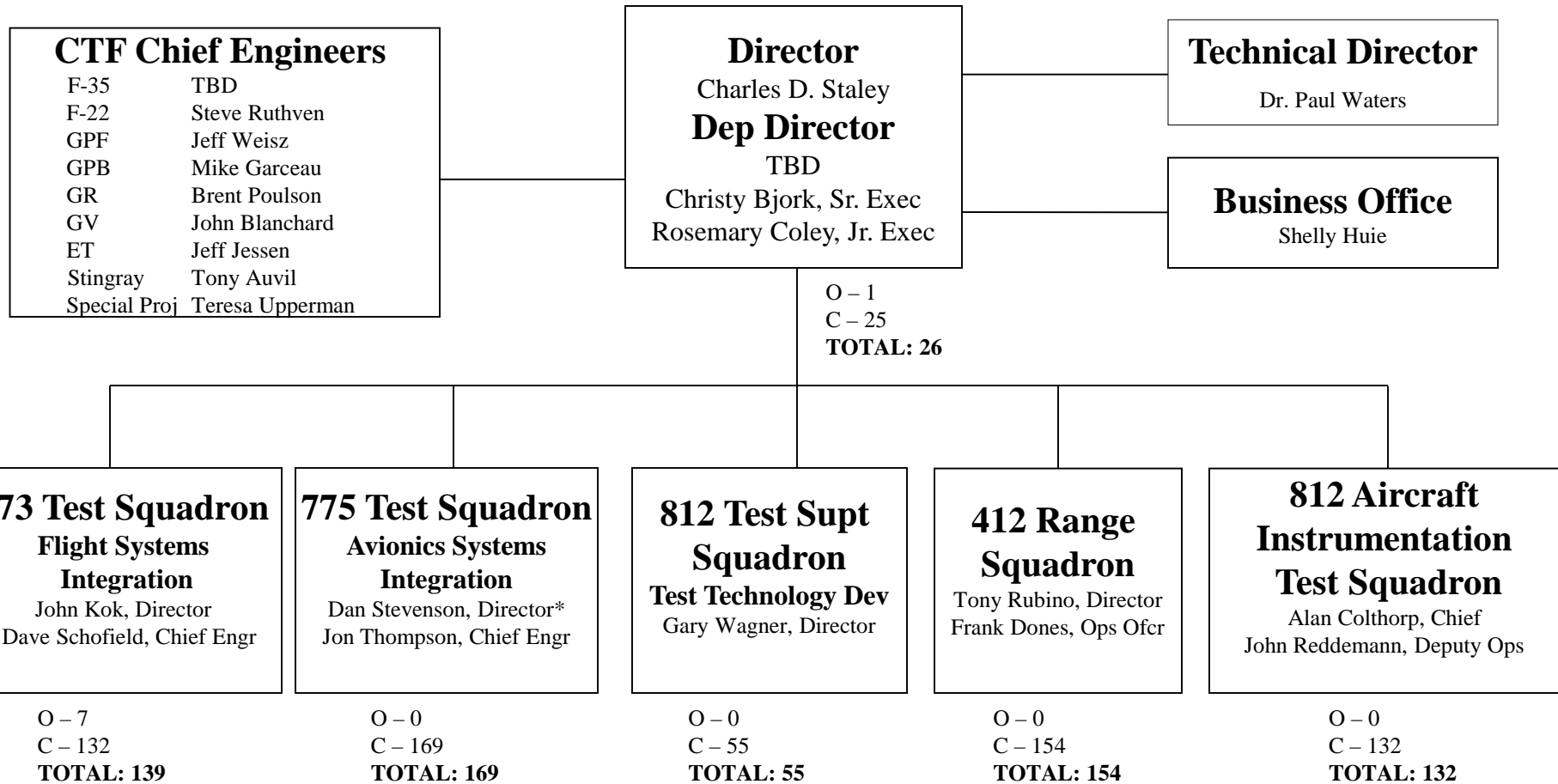
CATEGORY	HQ AFTC*	96 TW	412 TW	AEDC	TOTAL
Civilian	369	2,960	3,505	586	7,420
Officers	31	580	349	83	1,043
Enlisted	47	2,605	1,348	43	4,043
Contractors	7	1,859	942	2,508	5,316
Total Authorized	454	8,004	6,144	3,220	17,822





412 TW/EN People:

TENG Overview



Overall Manpower: Officers – 8, Civilians – 667, Contractors – 330:
Total – 1,005



412 TW/EN Projects:

Timely, Actionable, Operationally Relevant Reporting



21 Reports Delivered to Customers in CY19!



Projects: In the News



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Aerial refueling probe light evaluations flown with KC-135: Effort to clear Navy, USMC F-35 night refueling envelope

By Kenji Thuloweit, 412th Test Wing Public Affairs / Published March 29, 2019



KC-46 Pegasus connects with fifth-generation fighter

By Kenji Thuloweit, 412th Test Wing Public Affairs / Published February 14, 2019



Milestones at Edwards AFB



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F-35 countdown: Putting the strike in Joint Strike Fighter



14 AIM-120 AMRAAMs
2 AIM-9X Sidewinders

OR

2 AIM-120 AMRAAMs
2 AIM-9X Sidewinders
6 GBU-31 2,000-pound bombs

412TW-TR-19-19

F-35A AUTOMATIC GROUND COLLISION AVOIDANCE SYSTEM (AGCAS) TEST AND EVALUATION

KATIE M. PETICOLAS
Project Engineer

MARCEA M. ASCENCIO
Project Engineer

RAVEN J. LECLAIR
Lieutenant Colonel, USAF
Project Pilot

JONATHAN S. BEATON
Lieutenant Commander, USN
Project Pilot

MARCH 2019
FINAL REPORT

DISTRIBUTION D. Distribution authorized to Department of Defense and U.S. DoD Contractors only (Critical Technology), 12 February 2019. Other requests for this document shall be referred to F-35 Lightning II Joint Program Office, Arlington, VA 22202.

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412TH TEST WING
EDWARDS AIR FORCE BASE, CALIFORNIA
AIR FORCE MATERIEL COMMAND
UNITED STATES AIR FORCE





Projects: In the News



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**POPULAR
MECHANICS**

TECHNOLOGY CARS TOOLS DEFENSE STAY WARM!

SUBSCRIBE

The U.S. Air Force Just Launched 24 F-22 Raptor Fighters at Once

The “elephant walk” is a show of Air Force readiness to fight on short notice.





Projects: In the News



AFTC

POPULAR
MECHANICS

TECHNOLOGY

CARS

TOOLS

DEFENSE

STAY WARM!

SUBSCRIBE

The U.S. Air Force Just Launched 24 F-22 Raptor Fighters at Once

The “elephant walk” is a show of Air Force readiness to fight on short notice.



...Without these procedures we would not have been able to fly-off over 1/3 of the jets generated....I cannot begin to tell you how important it was for our entire team from OPS, MX, LRS, PA etc. to actually see 24 aircraft fly-off. The message sent launching all 24 aircraft was monumental.

I want to share this with you – so you can share w/ your team at Edwards who did much of the critical thinking, engineering and analysis through the FMRC process to enable it. It truly made a difference in our ability to generate combat air power!

*LtCol John “Krack” Kellner
3 OG/CD*



Projects: In the News



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1760 Internal Weapons Bay Upgrade
Paving the Way for
Long Range Stand-Off (LRSO)





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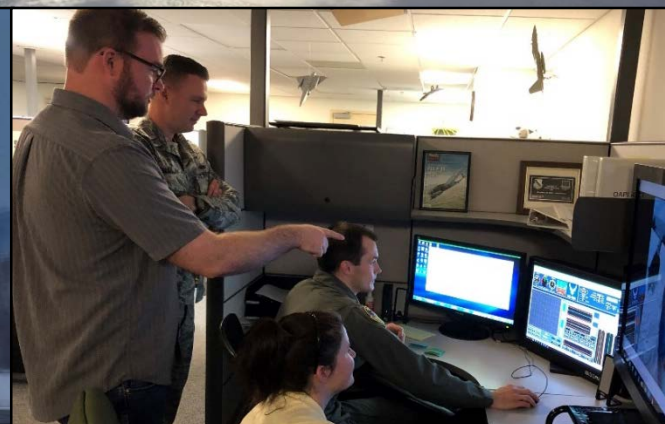
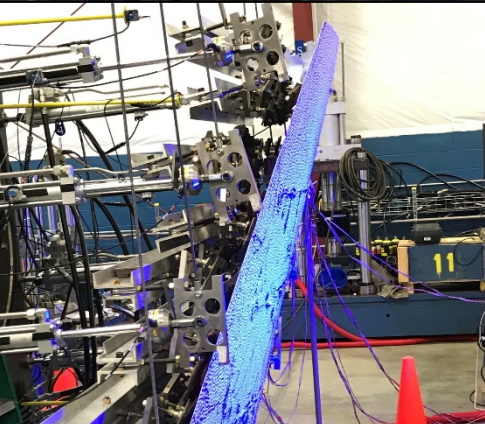
“We’ve partnered with the 412th Test Wing at Edwards Air Force Base, California, and specifically an organization called the Emerging Technologies Combined Test Force and we’re working with them beginning with small, fast-moving UAVs to test the current state of the art in AI and autonomy in those airplanes and the ability for them to autonomously team and collaborate in flight,” said Tran.



Progress: 773rd Test Squadron

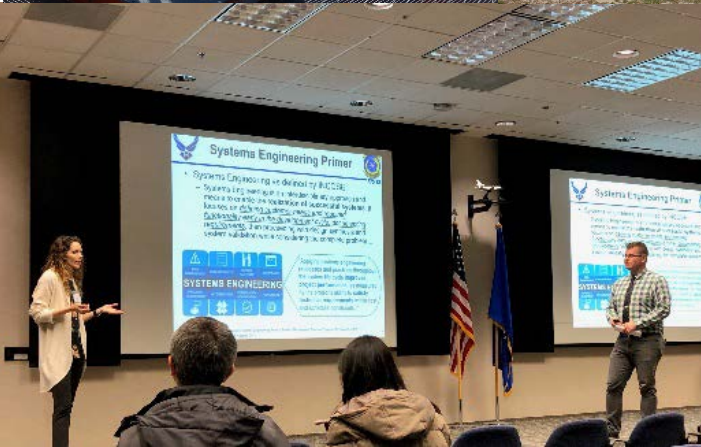


AETC





Progress: 775th Test Squadron





Progress:

812th Aircraft Instrumentation Test Squadron



SI Design, Engineering and Calibration (SIDECE) Laboratory

Building 1600

\$4.3M

13,000 sf

Complete ~May '19

Purpose:

Fabrication

R&D

Calibration

Engineering Support



The Space

SI Engineers design and test it here first!



Progress:

812 Test Support Squadron



AFTC

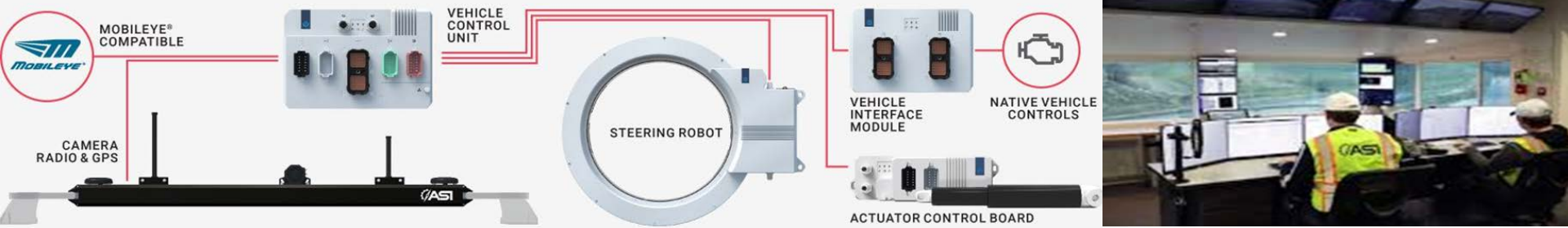




Progress: 412th Range Squadron



AFTC





Innovation:

National Defense Strategy



- **Read the classified version**
 - *The surest way to prevent war is to be prepared to win one.*
 - ***Cultivate workforce talent. Recruiting, developing, and retaining a high-quality military and civilian workforce is essential for warfighting success. Cultivating a lethal, agile force requires more than just new technologies and posture changes; it depends on the ability of our warfighters and the Department workforce to integrate new capabilities, adapt warfighting approaches, and change business practices to achieve mission success.***
 - *Department culture and process must change if we are to prevail in strategic competition. **The current bureaucratic approach, centered on exacting thoroughness and minimizing risk above all else, is proving to be increasingly unresponsive.***
 - *Current processes are not responsive to need; the Department is over-optimized for exceptional performance at the expense of providing timely decisions, policies, and capabilities to the warfighter....**We must not accept cumbersome approval chains, wasteful applications of resources in uncompetitive space, or overly risk-averse thinking that impedes change.***



How We Support the Warfighter



AFTC

KC-46



F-35



B-21 Standup



Light Attack Experiment



Hypersonic Investment



Joint Simulation Environment



Directed Energy



Cyberspace Test



Space Systems





Questions?



AFTC



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