

Headquarters U.S. Air Force

Integrity - Service - Excellence

National Security Space Policy & Architecture Symposium



Dr. Ron Sega
Under Secretary of the Air Force



NDIA Participation

- ***Merger of two organizations in 1997:***
 - ***American Defense Preparedness Association and the National Security Industrial Association***

- ***Important mission***
 - ***ADVOCATE: Cutting-edge technology and superior weapons, equipment, training, and support for the War-Fighter and First Responder***
 - ***PROMOTE: A vigorous, responsive, Government – Industry National Security Team***
 - ***PROVIDE: A legal and ethical forum for exchange of information between Industry and Government on National Security issues***

- ***Commitment to Space Partnerships Theme***
 - ***Reflects NDIA's quest for great efficiencies***

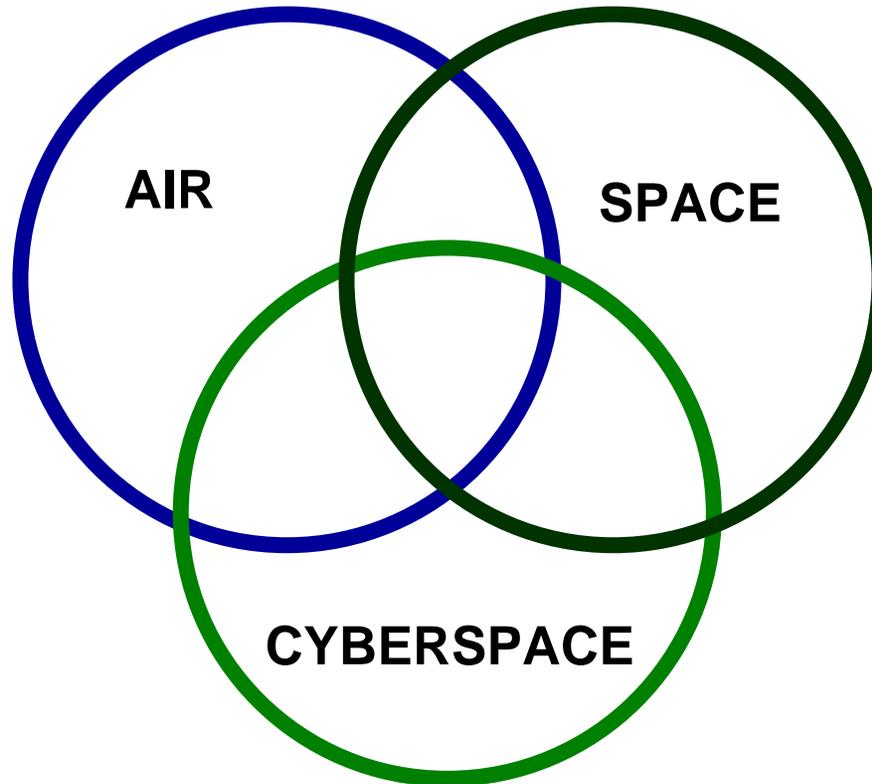


Heritage to Horizons

- **Hap Arnold:** “The first essential of the airpower necessary for our national security is preeminence in research.”
- **Bernard Schriever:** “It may be said that warfare has acquired a new phase - technological war. In the past, research and development were only preparation for the final and decisive testing of new systems in battle. Today the kind and quality of systems which a nation develops can decide the battle in advance and make the final conflict a mere formality - or can - bypass conflict altogether.”
- **Dwight Eisenhower:** “We should base our security upon military formations which make maximum use of science and technology in order to minimize numbers of men.”



Mission of the United States Air Force



The mission of the United States Air Force is to deliver sovereign options for the defense of the United States of America and its global interests -- to fly, fight, & win in Air, Space, and Cyberspace.



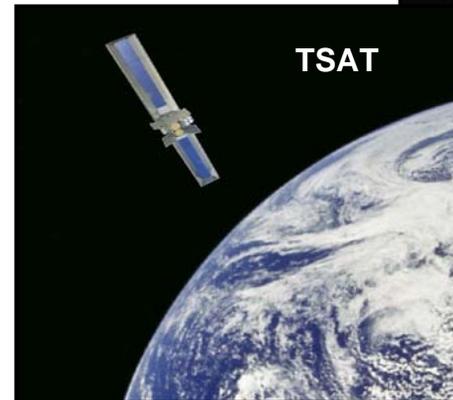
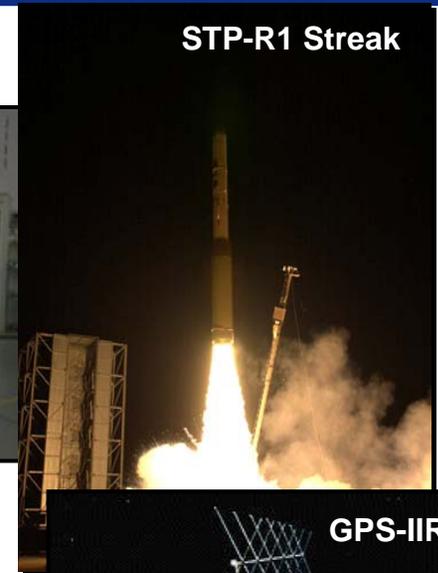
Back to Basics in Acquisition

- ***Four-stage process***

- ***System Production***
- ***Systems Development***
- ***Technology Development***
- ***Science & Technology***

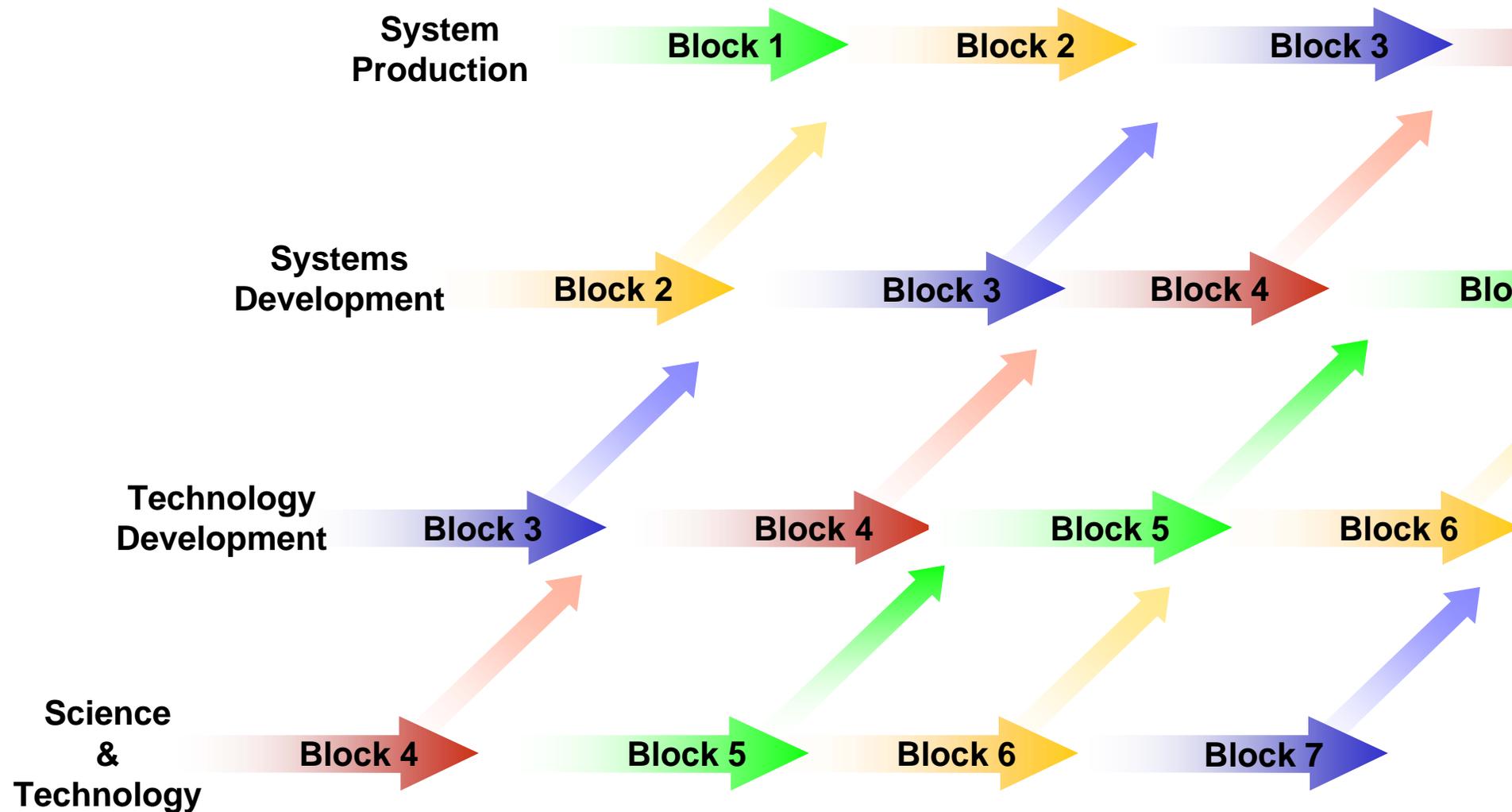
- ***Reapportion Risk***

- ***Lower risk in Production***
 - ***Use mature technology***
- ***Higher risk in S&T***



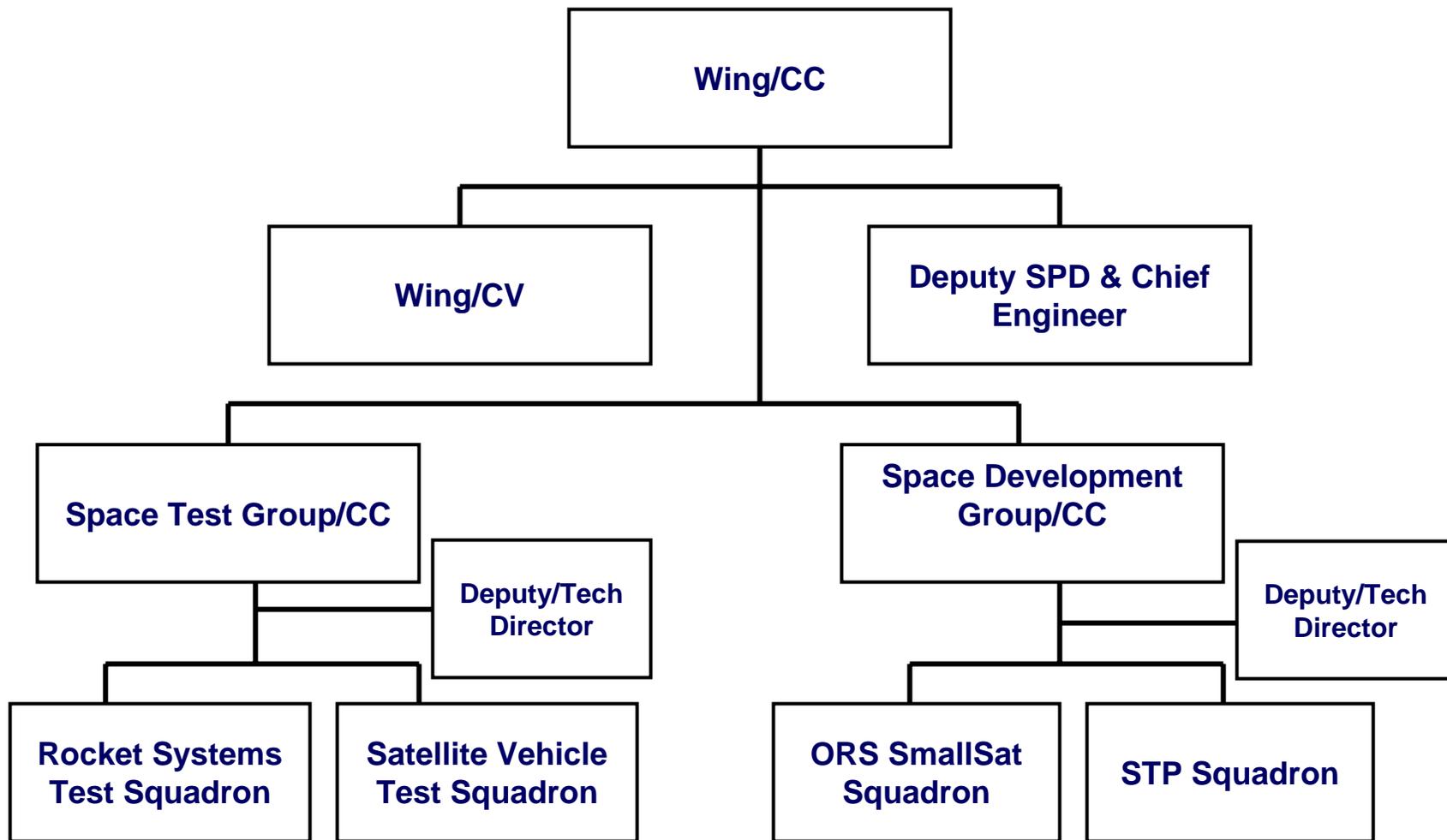


Acquisition Stages--Block Approach



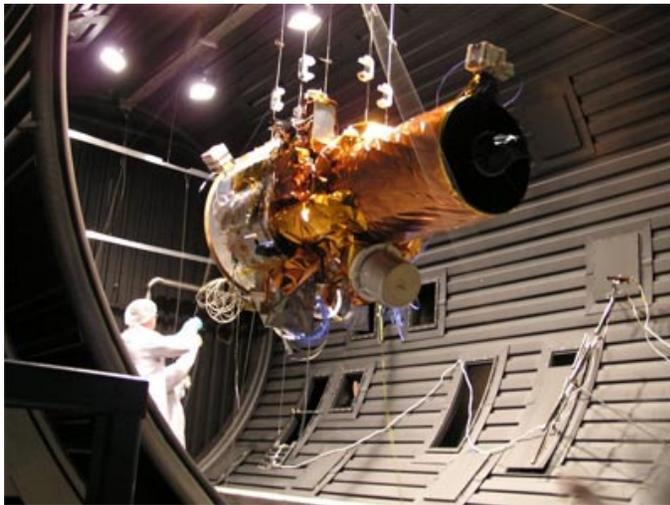


Space Development & Test Wing





Tactical Satellite (TacSat)-2 Experiment



**Successful Launch,
16 Dec 06, Orbital
Minotaur**



**Ground Terminal –
China Lake**

Capability:

- Field tasking/data downlink in same pass
- One meter tactical imagery
- Specific emitter ID & geolocation
- Dynamic retasking, cooperative with EP-3
- Autonomous tasking/checkout/on-orbit maintenance, on-board data processing
- Total mission cost w/ launch ~\$63M

Status:

- First of TACSAT series on-orbit
- 18 month development to launch cycle
- Utilized the Minotaur launch vehicle
- Launched from Wallops Island Facility 16 Dec 2006
- Successfully commanded spacecraft from China Lake ground station



Defense Meteorological Satellite Program Launch



F-17

***Launched 5 Nov 2006 on
a Delta 4***

Vandenberg AFB, CA

Polar Orbit

***Altitude of 450 Nautical
Miles***

***Primary Mission: To
provide visible and
infrared imagery of
clouds, day or night***



Heritage to Horizons



General Bernard Schriever:

"We must strive to be first in technological accomplishments if America is to continue its growth in security, maturity and peace. That is why and how we have come from Kitty Hawk to Aerospace."





AF Energy Strategy

Addressing Supply & Demand

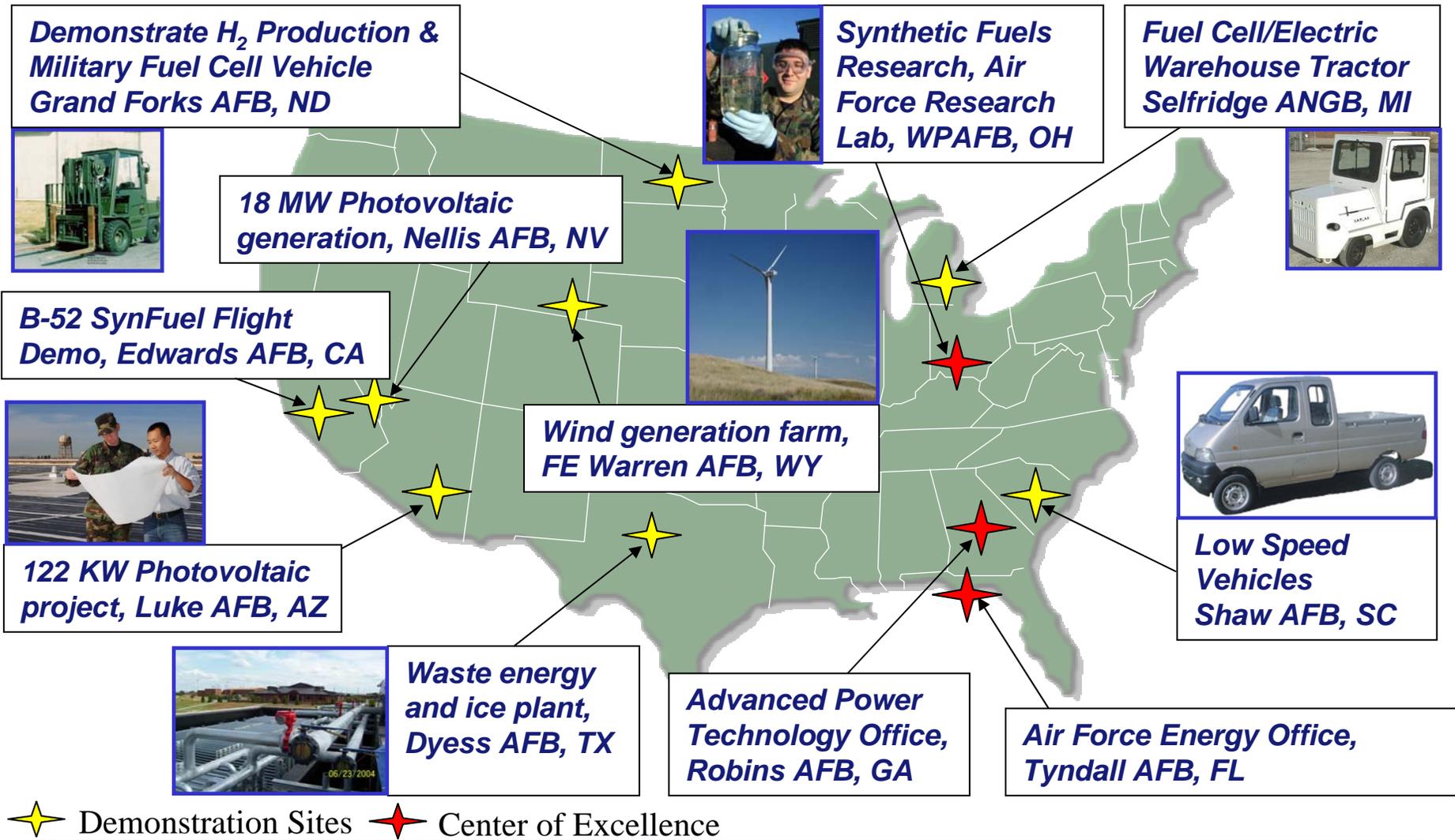
Make energy a consideration in all Air Force actions

- **Accelerate development and use of “Alternative” fuels**
 - **Synthetic Fuel for Aviation**
 - **Renewable Energy for Installations**
- **Enhancing energy efficiency--aviation and infrastructure**
- **Promote a culture where Airmen conserve energy**





Examples of AF Energy Initiatives in the United States

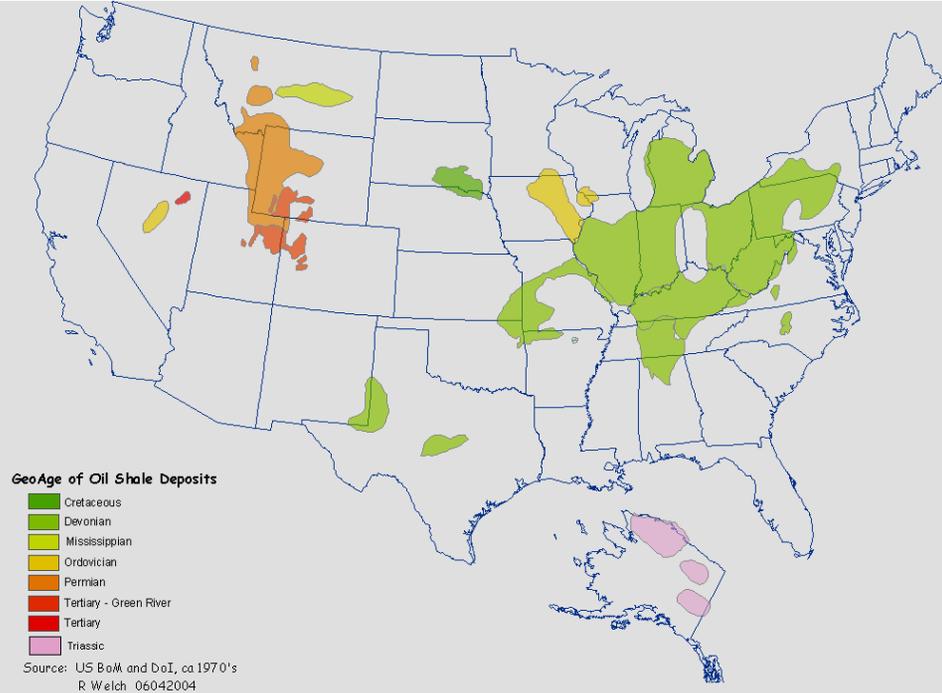
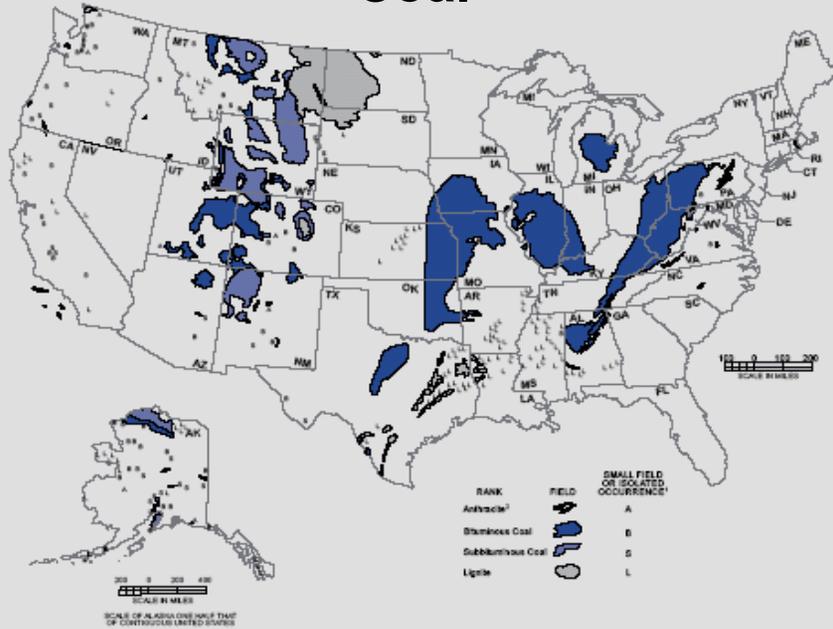




Potential US Energy Resources

Coal

Oil Shale



Sources: United States Geological Survey, *Coalfields of the United States, 1960-1961*; Texas Bureau of Economic Geology, *Lignite Resources in Texas, 1980*; Louisiana Geological Survey, *Near Surface Lignite in Louisiana, 1981*; Colorado Geological Survey, *Coal Resources and Development Map, 1981*; and Mississippi Bureau of Geology, 1963.

Source: US BoM and DoI, ca 1970's
R. Welch 06042004

Annual Domestic Consumption*

Domestic Reserves*

Oil: 7.5 billion
 Natural Gas: 3.8 billion
 Coal: .005 billion

Shale: 1400 billion barrels
 Coal: 800 billion barrels of FT
 Oil: 22.7 billion barrels

Total: 11.1 billion barrels equivalent

Total 2.2+ trillion barrels equivalent

* Source: DOE/Energy Information Administration, 2005



Space Program Managers' Meeting

■ **Potential Topics**

■ **Integration**

- **Comm Utility (Across Space, Cyber, etc.)**
- **ISR (Space, Air, etc.)**

■ **Back to Basics**

- **Increase Discipline (System Engineering, Specs / Standards, etc.)**
- **Reduce Acquisition Cycle Time (RFPs, Contracts, etc.)**
- **Establish Baseline—Deliver on Cost and Schedule**

■ **Workforce**

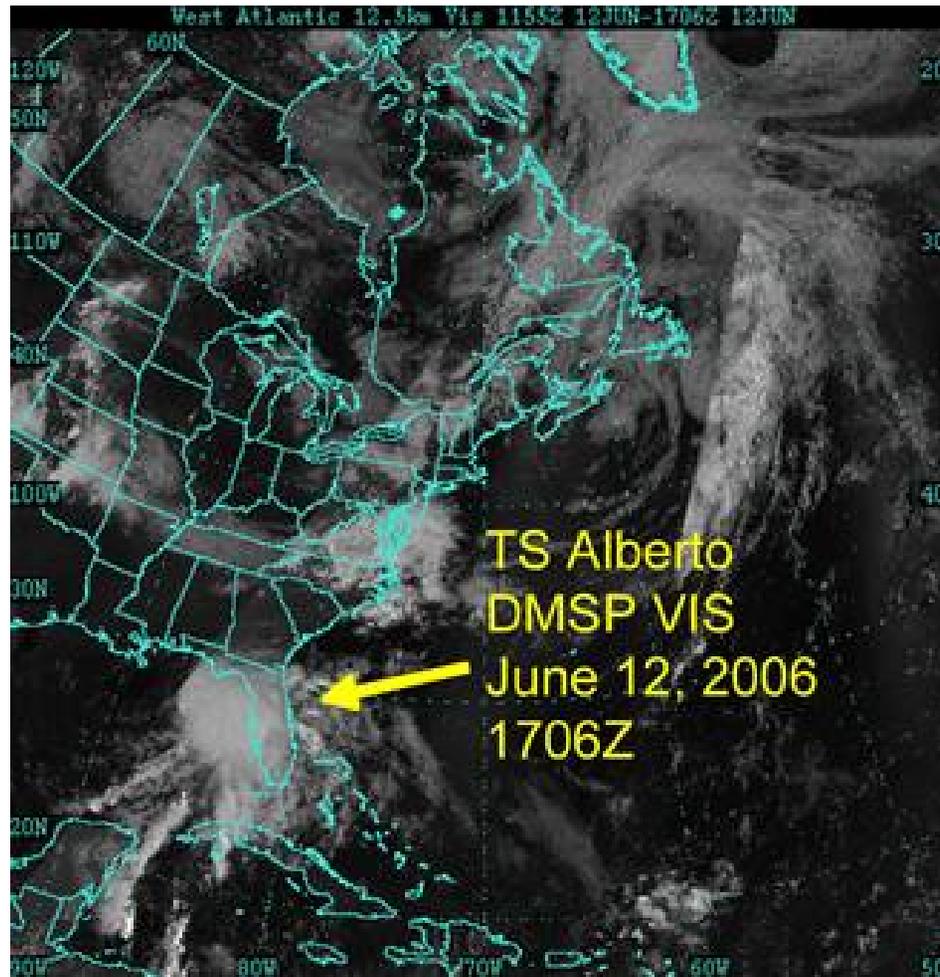
- **Skills needed (Today and into the 21st Century)**
- **Personnel Policies**

■ **Conference Outcomes**

- **Lessons Learned**
- **Challenges**
- **Actions**



Tropical Storm Alberto





DMSP

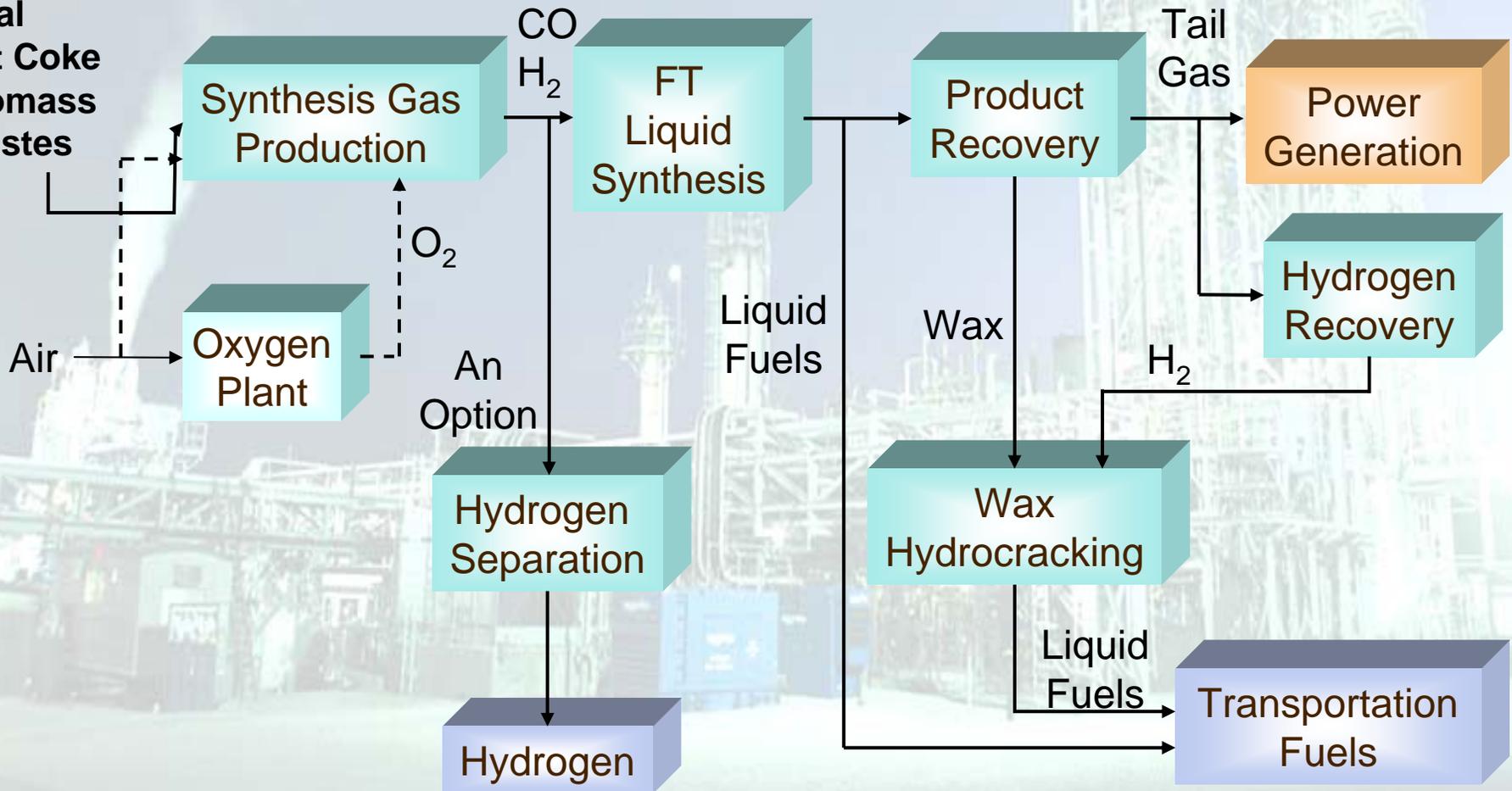


Integrity - Service - Excellence



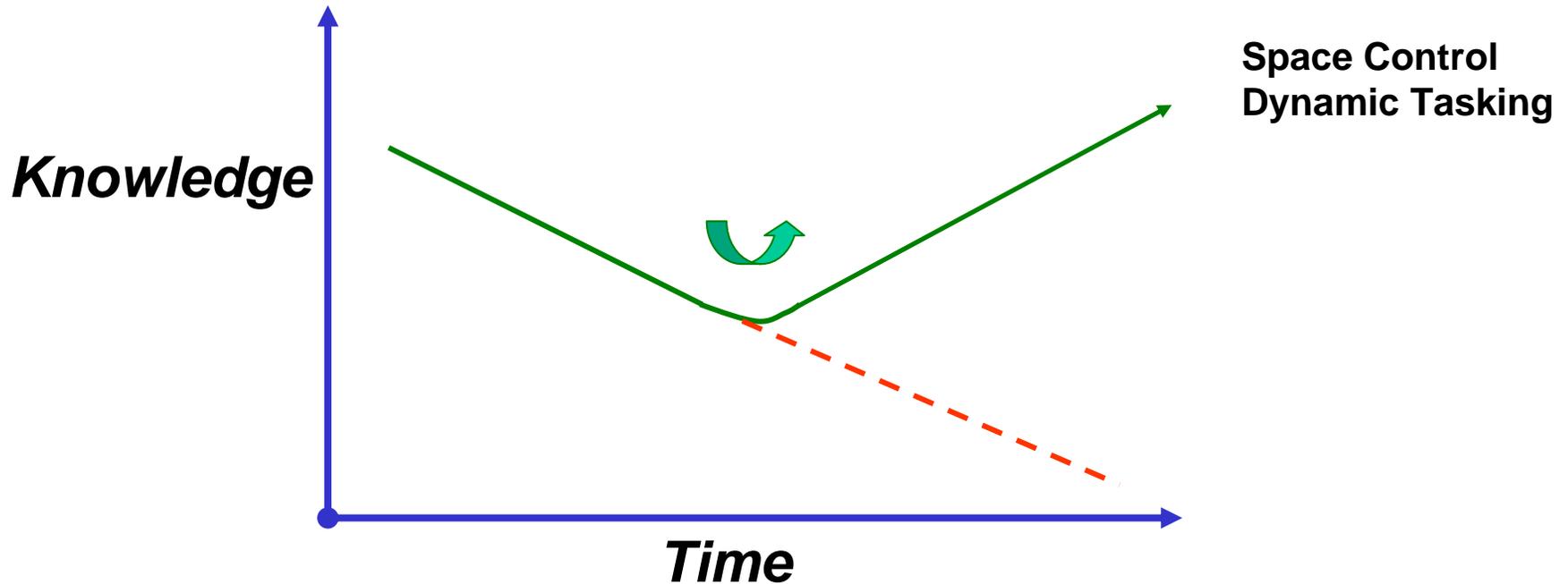
Fischer-Tropsch Process

Natural Gas
Oil Shale
Coal
Pet Coke
Biomass
Wastes





Space Operations in the 21st Century

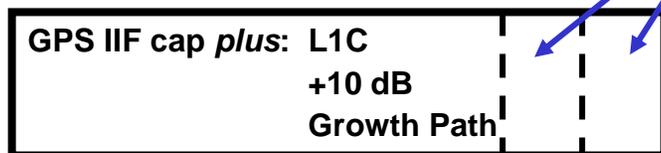


- Past: Qualitative reduction in required knowledge over time due to automation and deterministic-type decisions
- Future: Increased level of knowledge required--greater judgment and cognition



GPS III Approach

GPS IIIA



Demo Cross-Link

GPS IIIB



Demo Spot Beam

GPS IIIC



GPS III iCDD Addendum JROCM, signed 31 Oct 06