

# **Defense & Regional Scale Issues Panel Discussion**

**Steven Johns, BAH**

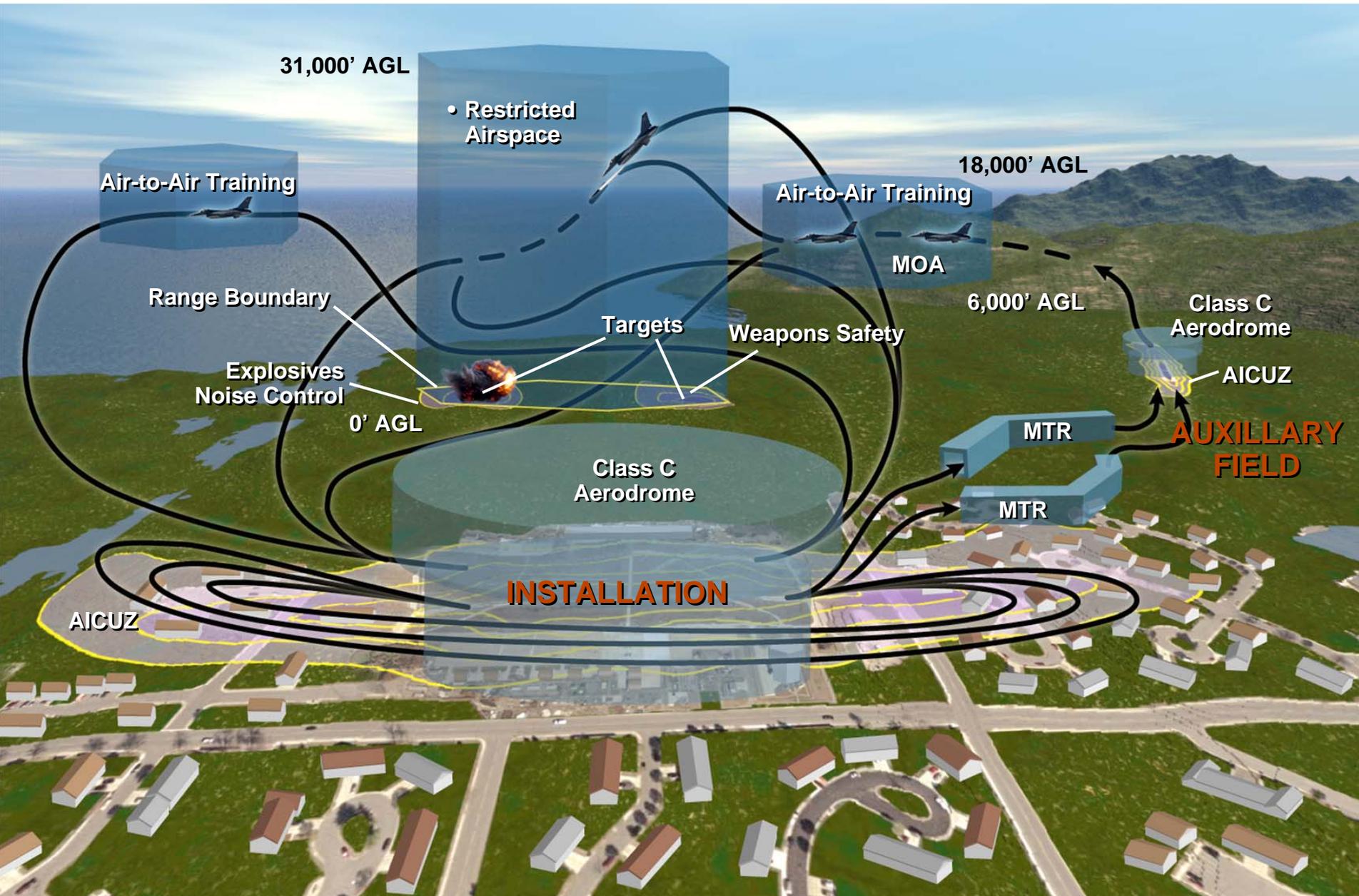
**April 12, 2006**

**Day 2 - Sharing Future Space Workshop  
Urbana, Illinois**

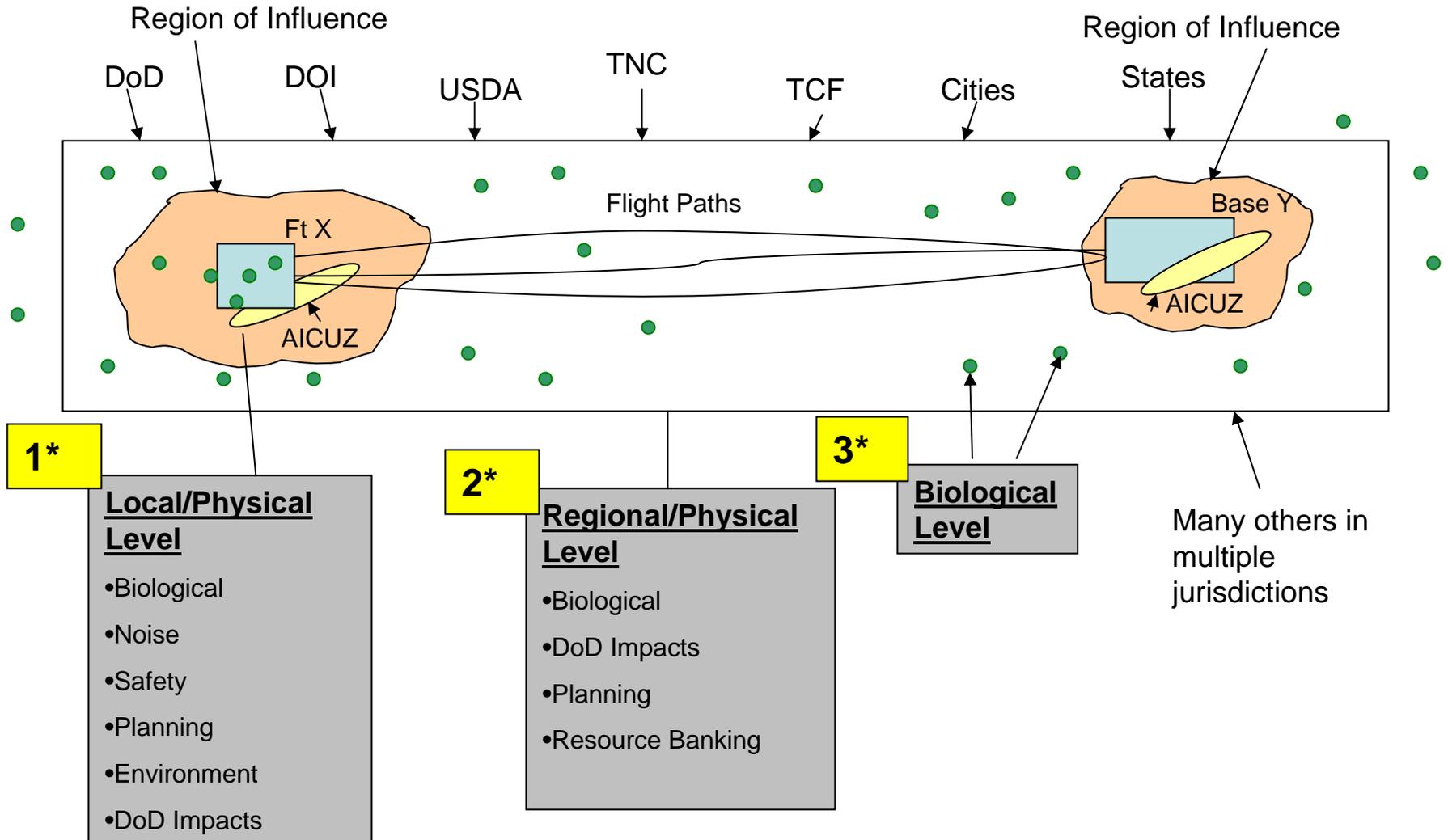
# Defense and Regional Scale Issues

- Thinking **regionally** about “space” assets
- Defining **requirements** for space to support current and future mission capability
- Identifying **common standards/measures** for encroachment quantification and reporting
- Integrating and sharing **information**
- Creating **community partnerships** for collaborative regional planning for sustainability

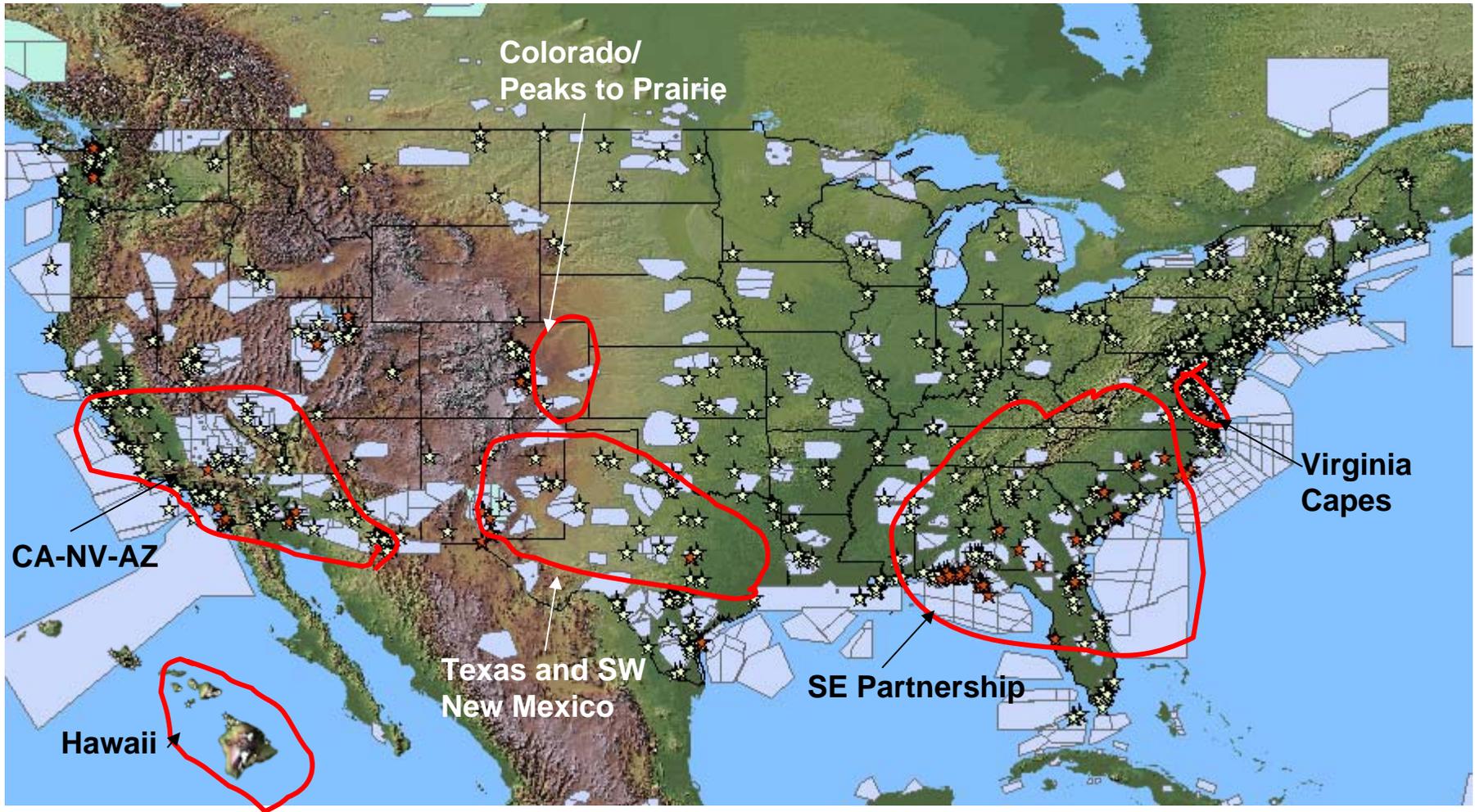
# Thinking Outside the Fence about Assets



# Notional Example of Regional Area for Linking of Information and Stakeholder Partnering



# Some Regional Areas for Collaborative Planning



Source: Homeland Security Infrastructure Program (HSIP) GOLD Dataset NAVTEQ Data 2003, NGA DAFIF Data June 2005

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# Defining Requirements: Situation Assessment

- No comprehensive picture of operator-driven requirements exists to establish “DoD Areas of Concern”
  - Focus has been on owned or DoD controlled lands, airspace and seaspace, and areas in the immediate vicinity of installations and ranges (e.g., AICUZ, JLUS)
  - Focus needs to be on areas (including both public and private lands) not in the immediate vicinity of any military lands as such, and not within the direct responsibility of any installation or any particular Service, the use or condition of which does or could adversely affect current or anticipated military operations. Such areas are sometimes referred to in this context as “white space”  
*(from B. Barnes White Paper on DoD Areas of Concern)*

# Defining Requirements: Situation Assessment (con't)

- Currently, DoD has a collection of very detailed planning systems and processes which include
  - Installation master plans, range plans
  - INRMPs, NEPA studies
  - Geospatial information systems, etc.
- These planning systems and processes do not provide a strategic statement of needs for current and anticipated future missions
- A statement of support infrastructure needs (e.g., a landspace, seaspaces, airspace, facilities, emission profile for the F-22) is not a standard output of the weapon system acquisition process

# QDR Decisions - Joint Maritime Capabilities

- Build a larger fleet that includes 11 Carrier Strike Groups, balance the need to transform and recapitalize the fleet, improve affordability and provide stability for the shipbuilding industry.
- Accelerate procurement of Littoral Combat Ships to provide power projection capabilities to littoral waters.
- Procure the first eight ships of the Maritime Pre-Position Force (Future).
- Provide the Navy riverine capability for river patrol, interdiction and tactical troop movement on inland waterways.
- Build partner capacity to improve global maritime security by reinvigorating the Navy Foreign Area Officer program and procuring Disaster Relief Command and Control fly-away communication support capabilities.
- Return to a steady-state production rate of two attack submarines per year not later than 2012 while achieving an average per-hull procurement cost objective of \$2.0 billion.

**Take Home Message: Future maritime mission requirements will require new training areas closer to land....who is planning for those areas?**

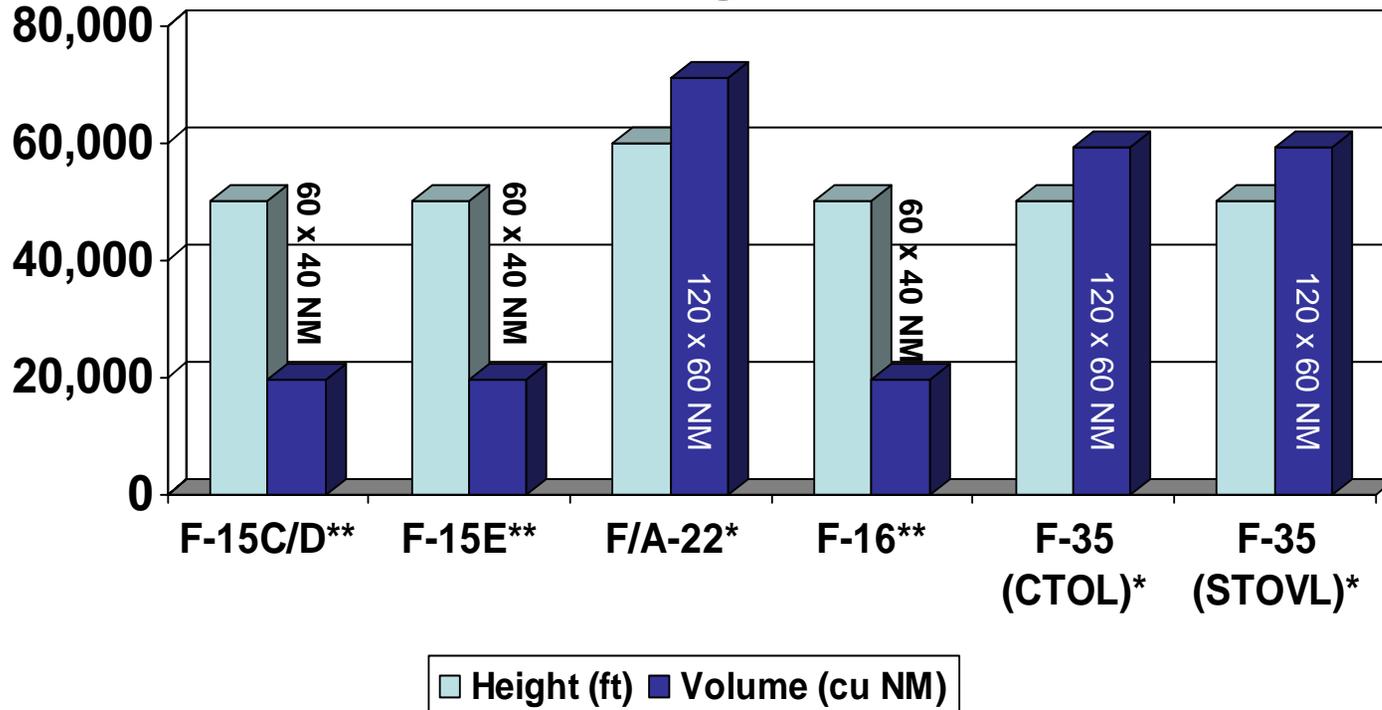
# QDR Decisions - Joint Air Capabilities

- Develop a new land-based, penetrating long-range strike capability to be fielded by 2018 while modernizing the current bomber force.
- Reduce the B-52 force to 56 aircraft and use savings to fully modernize B-52s, B-1s, and B-2s to support global strike operations.
- Restructure the Joint Unmanned Combat Air System (J-UCAS) program and develop an unmanned longer-range carrier based aircraft capable of being air-refueled.
- Nearly double UAV coverage capacity by accelerating the acquisition of Predator UAVS and Global Hawk.
- Restructure the F-22A program and extend production through FY 2010 with a multi-year acquisition contract, to ensure the Department does not have a gap in 5<sup>th</sup> generation stealth capabilities.
- Organize the Air Force around 86 combat wings, while reducing Air Force end strength by approximately 40,000 full-time equivalent personnel with balanced cuts across the Total Force.

**Take home message: Future airborne weapons will require larger training airspace/ranges....yet we are losing airspace to encroachment.**

# Airspace Requirements Example

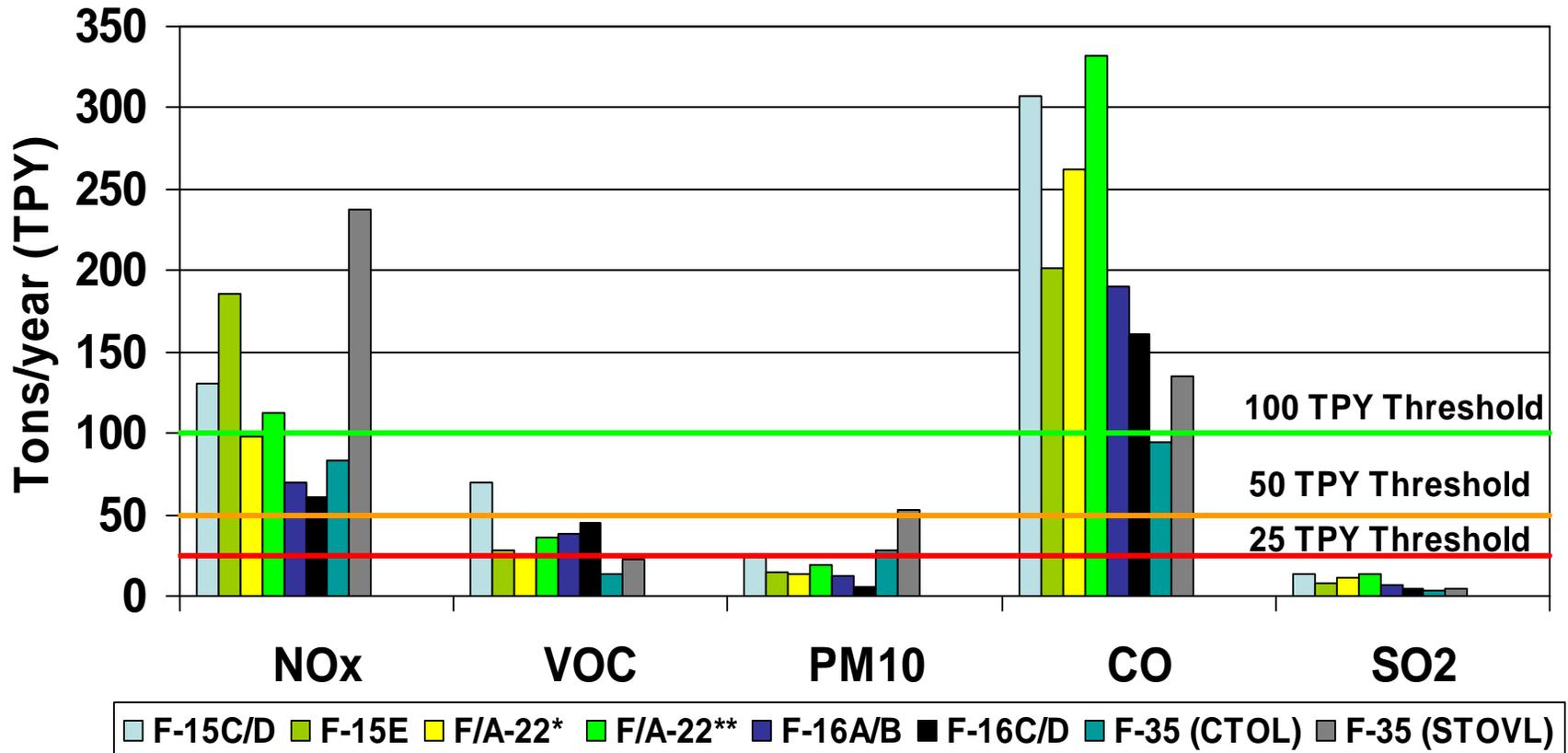
Minimum Special Use Airspace Required  
Single Airframe



	F-15C/D**	F-15E**	F/A-22*	F-16**	F-35 (CTOL)*	F-35 (STOVL)*
Height (ft)	50,000	50,000	60,000	50,000	50,000	50,000
Volume (cu NM)	19,750	19,750	71,098	19,750	59,249	59,249

SOURCE: \*ACC Mission Support Plan, FY2005  
\*\*ACC Airspace Master Plan, 1995

# Air Emissions



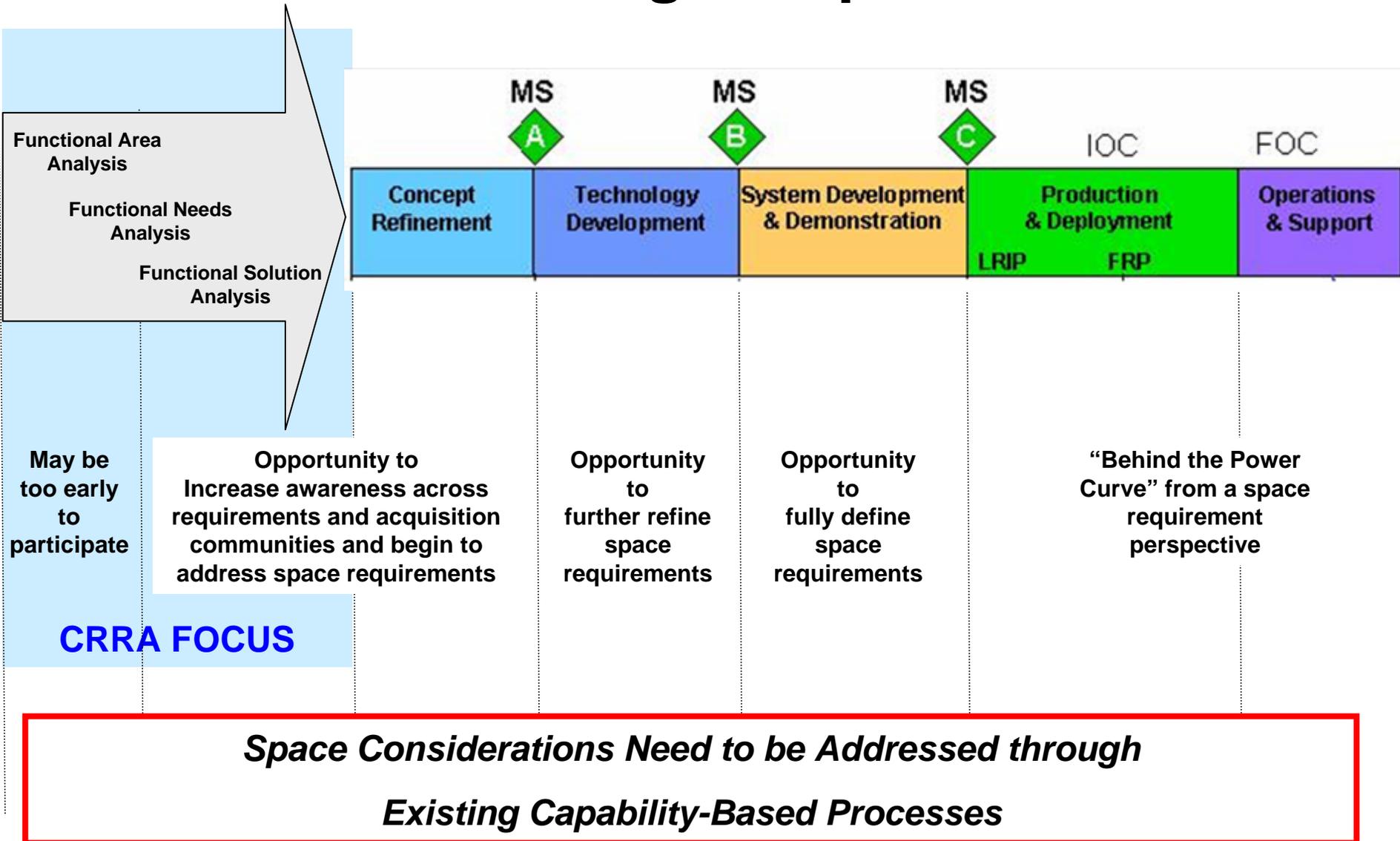
Data represents total air emissions from aircraft, associated aerospace ground equipment and commuter traffic for 24 PAA Squadron.

\* - F/A-22 UTE rate of 14.

\*\* - F/A-22 UTE rate of 20, FY06 Goal.

SOURCE: USAF Air Conformity Applicability Model (ACAM).

# Life Cycle Framework from a Planning Perspective



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# “Space Measures” to Support Operational Requirements

Airspace	Air Shed Emissions	Frequency Spectrum	Seaspace	Surface Land	Water Supply	Water Discharge
Compatible Volume	Total Stationary Air Shed Emissions	Regional Congestion	Time Access Available	Maneuver Area Capability & Throughput	Constrained Month System Capacity v. Usage	Wastewater System Capacity v. Discharge Volume
Time Volume Denied			Time Opportunity by Mission Type	Range Capability	System Capacity v. Demand	Overflow Frequency
Use Hours	Most Restrictive Stationary Emissions Unit		Area Denied for Specific Exercises	Encroachment	Aquifer Capacity v. Sustainability	
Distance	Total Mobile Source Emissions			Return to Training Inventory	Months Restricted	
Minimum Size Dimension			Time/Area Denied for Specific Exercises	Training Impacts	Unconstrained Months	Receiving Body Water Quality
				Physical Supply v. Usage		

# Measure Commonalities

<b>Asset</b>	<b>Comparison</b>
<b>Airspace</b>	<ul style="list-style-type: none"><li>• Navy, USMC, and Air Force used same measures</li><li>• Army used slightly different measures</li></ul>
<b>Air Shed Emissions</b>	<ul style="list-style-type: none"><li>• Same for All Components</li></ul>
<b>Frequency Spectrum</b>	<ul style="list-style-type: none"><li>• Same for All Components</li></ul>
<b>Seaspace</b>	<ul style="list-style-type: none"><li>• Measures not tested (lack data)</li></ul>
<b>Surface Land</b>	<ul style="list-style-type: none"><li>• Army and USMC used similar measures</li><li>• Navy and Air Force used similar measures</li></ul>
<b>Water Supply</b>	<ul style="list-style-type: none"><li>• Same for All Components</li></ul>
<b>Water Discharge</b>	<ul style="list-style-type: none"><li>• Same for All Components</li></ul>

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# Baseline Tool Example

- Consolidates information from multiple sources/plans and does so from a users point of view
- Serves as a database of planning documents and supporting information for marketing the asset in this case
- Enabled by simple user interface
- 8 week project