

National PNT Architecture Implementation

FAA APNT Industry Day

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National PNT Architecture Background

- PNT Strategic Landscape is Changing
 - Missions & Applications
 - Greater need for PNT Services
 - Affects civil, military, and commercial communities
 - Technology
 - Rapid Change affecting PNT Services
 - PNT Services
 - More providers - increased competition and/or integration

- Strategic Vision Needed
 - Sustain and advance global PNT capabilities
 - Meet long term user needs affordably and effectively

PNT Capability Gaps



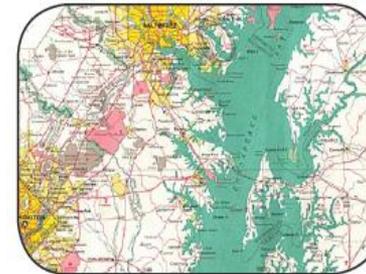
1. Physically Impeded Environments



4. Timely Notification of Misleading Information



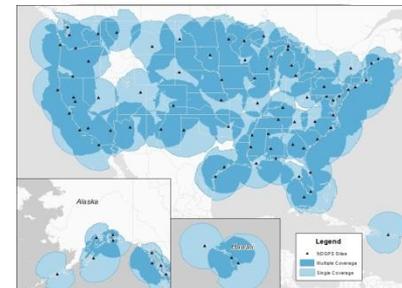
2. Electromagnetically Impeded Environments



5. Accurate Geospatial Information



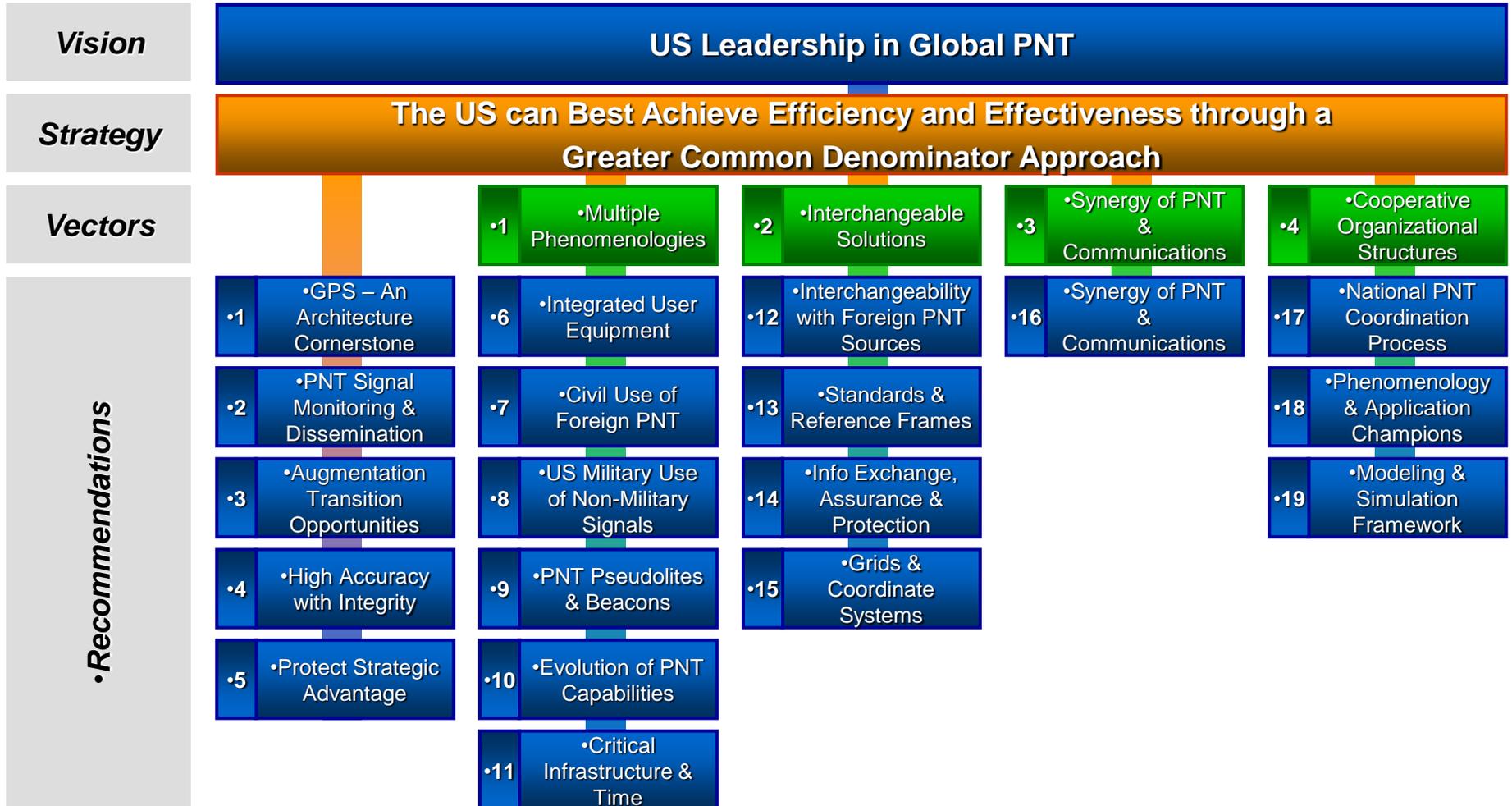
3. High Accuracy with Integrity



6. PNT Modeling and Simulation Capabilities

❖ **Promote efficiency and effectiveness**
- **Avoid duplication of activity**

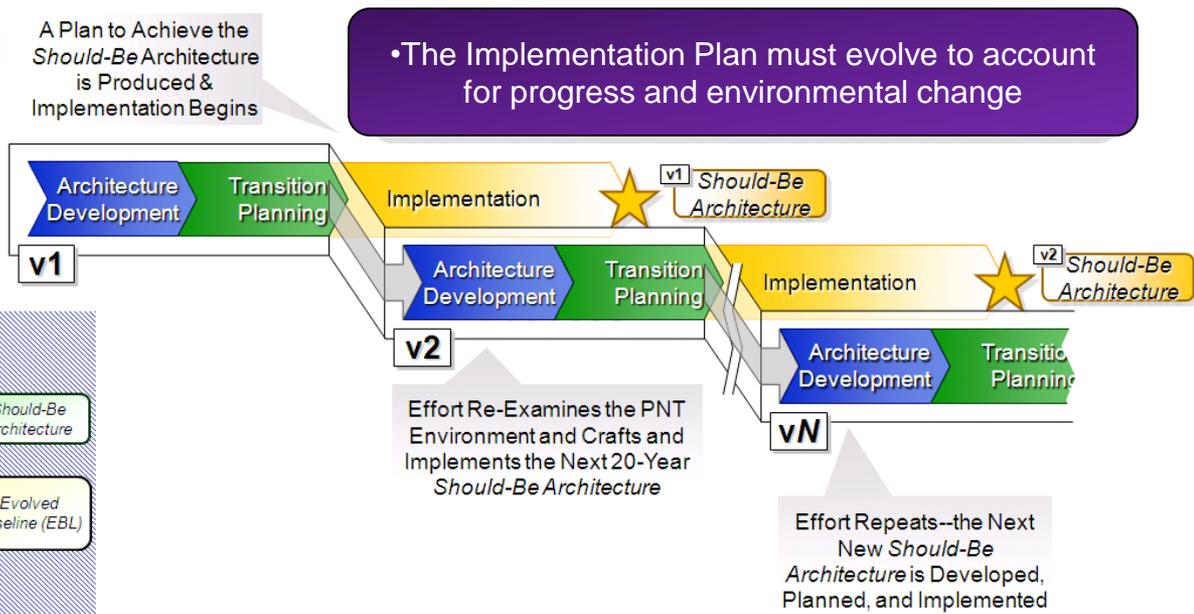
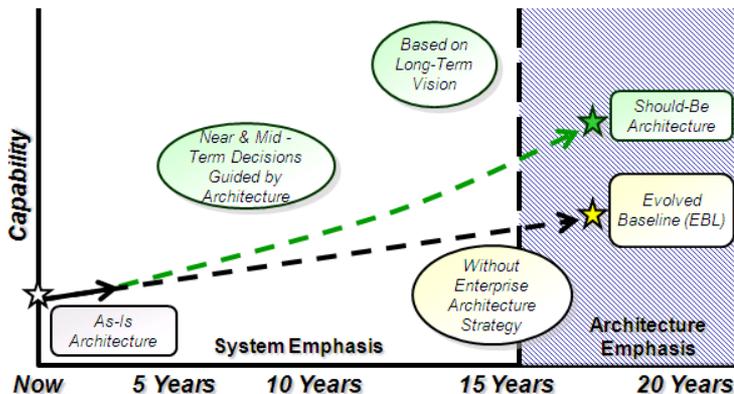
National PNT Architecture Recommendation Tree



National PNT Architecture Implementation Plan

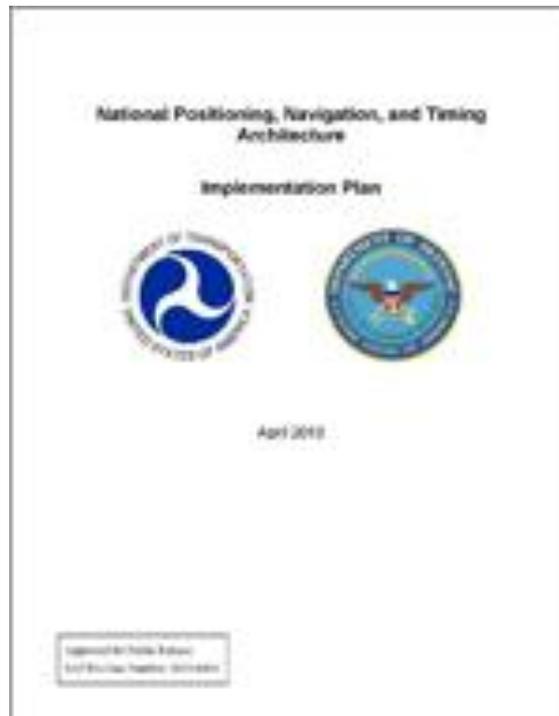
- 40+ tasks places the PNT community on a path to achieve the 2025 Should-Be Architecture
 - Eliminate capability gaps
 - Introduce efficiencies in acquisition and operations

- Tasks map to the National PNT Architecture strategy, vectors, and recommendations



National PNT Architecture Implementation Plan

- National Architecture Implementation Memorandum
 - Signed by Assistant Secretary of Defense for NII and Undersecretary of Transportation
 - Released July 28, 2010
 - Approves the Implementation Plan



National PNT Architecture Assessment

Near Term

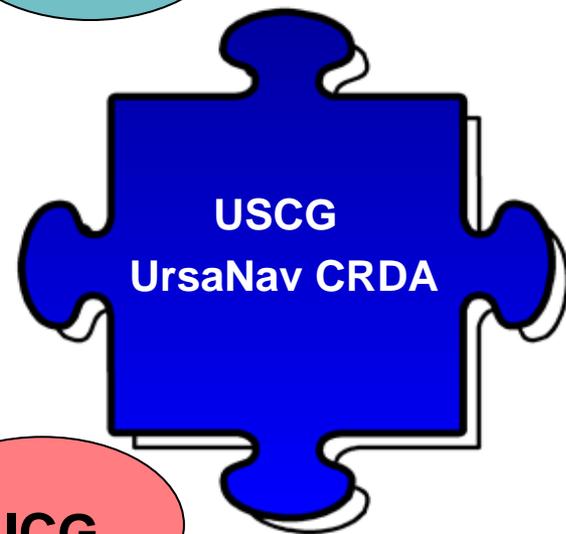
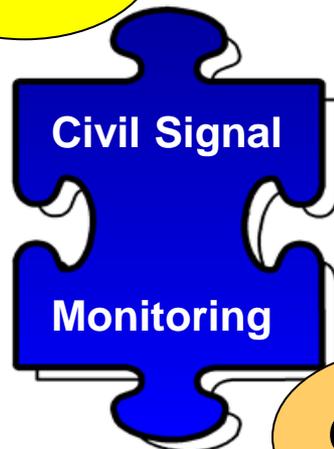
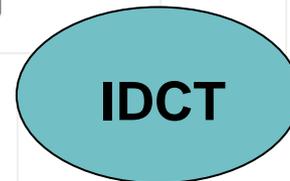
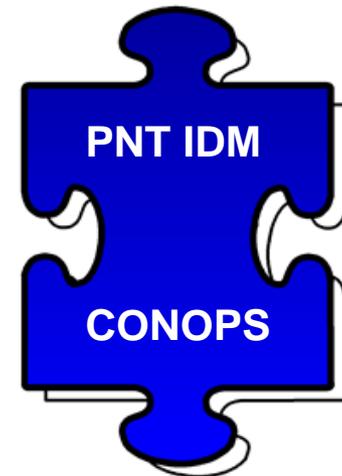
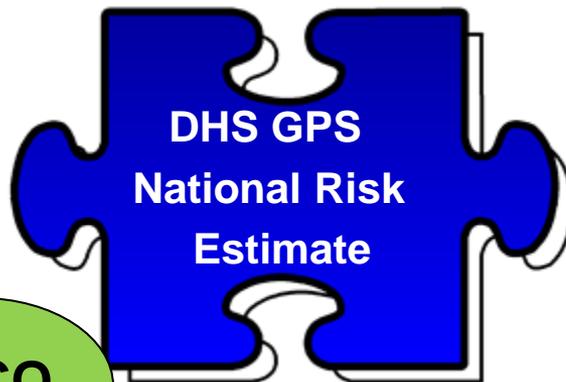
- Identify current and planned efforts across the interagency that support National PNT Architecture recommendations and Implementation Plan tasks
 - Examine areas that are being worked by industry and universities
- Map future planned activities against PNT Architecture Implementation Plan
- Iterative, near-term implementation plans will nudge us from the Evolved Baseline (EBL) to the “Should Be” curve

Longer Term

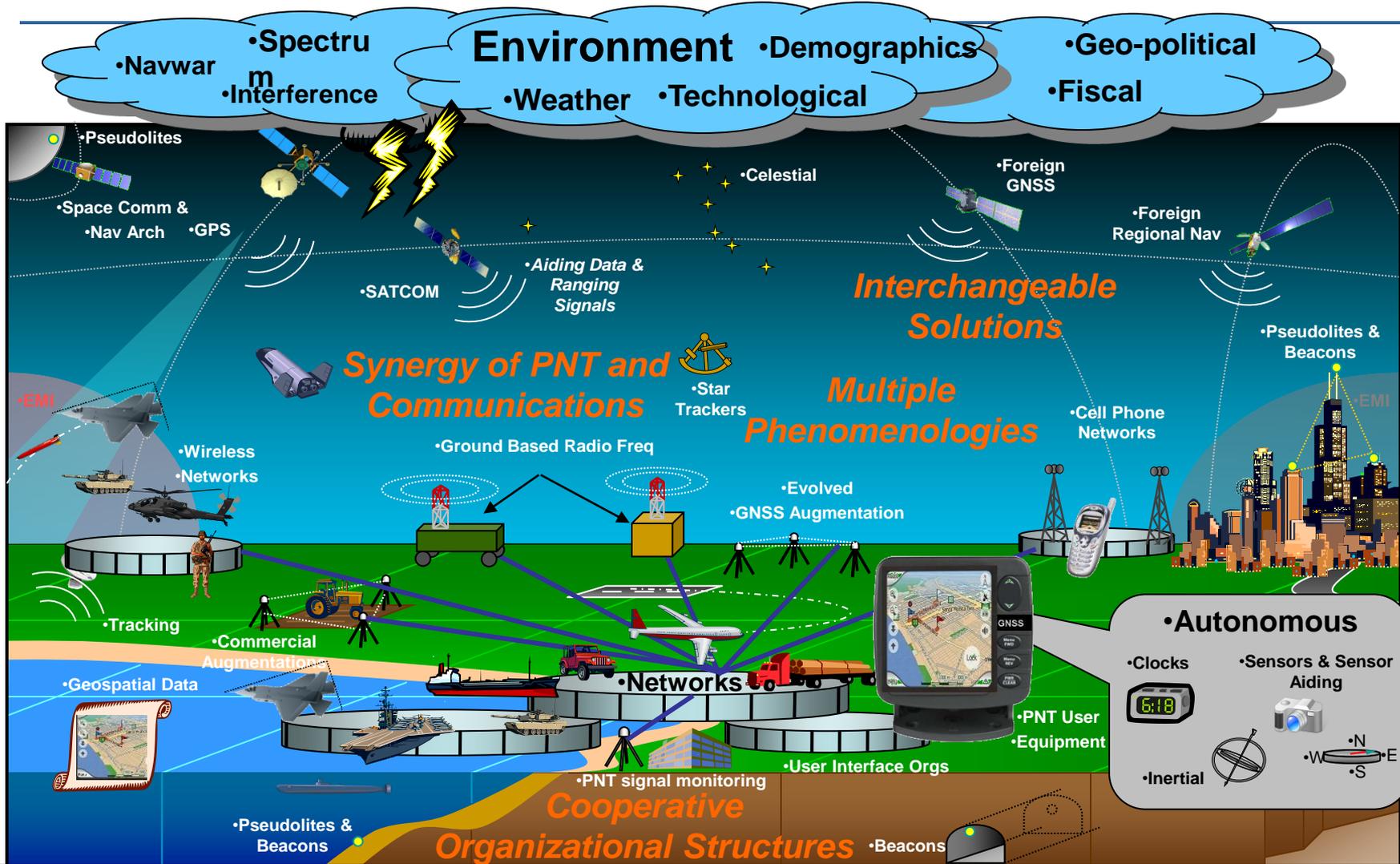
- Perform assessment of how well we are moving toward “Should Be” Architecture
- Perform gap analysis of tasks not being implemented



Examples of Ongoing PNT Initiatives: How Do They Fit Into the “Big Picture”?



National PNT Architecture Graphic (2025)



- ENABLERS & INFRASTRUCTURE**
- Standards
 - Reference Frames
 - Cryptography
 - Science & Technology
 - USNO
 - NIST
 - NGA
 - NGS
 - Star Catalogs
 - Launch
 - NSA
 - Industrial Base
 - Electro Optical Info.
 - Modeling
 - Mapping/Charting/Geodesy
 - Laser Ranging Network
 - Policies
 - Testing

Summary

- Demonstrating how individual projects/programs support the national vision for PNT and address capability gaps is a “win/win”
- Architecture provides framework to conduct assessment
 - Identify how programs address capability gaps and complement each other
 - Avoid duplication of effort
 - Highlight areas of need – are there capability gaps not being addressed or are there new ones we hadn’t considered?
- ❖ Request agencies leverage guidance from National PNT Architecture in future program plan development