Headquarters U.S. Air Force

Integrity - Service - Excellence

USAF GeoBase
Program Overview

HAF Geo Integration Office
HQ USAF/ILEXI
July 02

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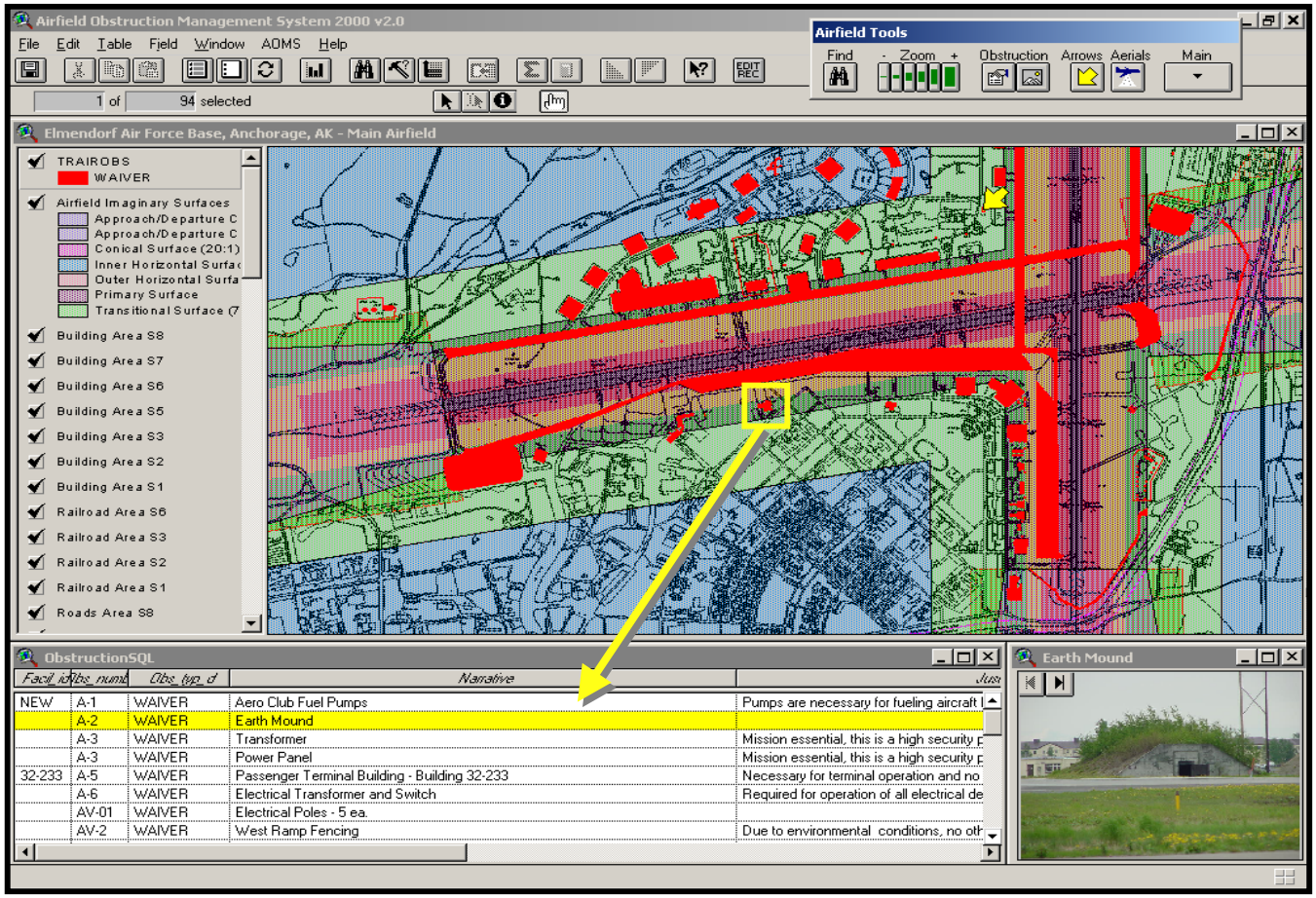
Geographic Information Systems (GIS)



A GIS Links Graphical Features (Entities) to Tabular Data (Attributes)

One Base, Multiple Maps

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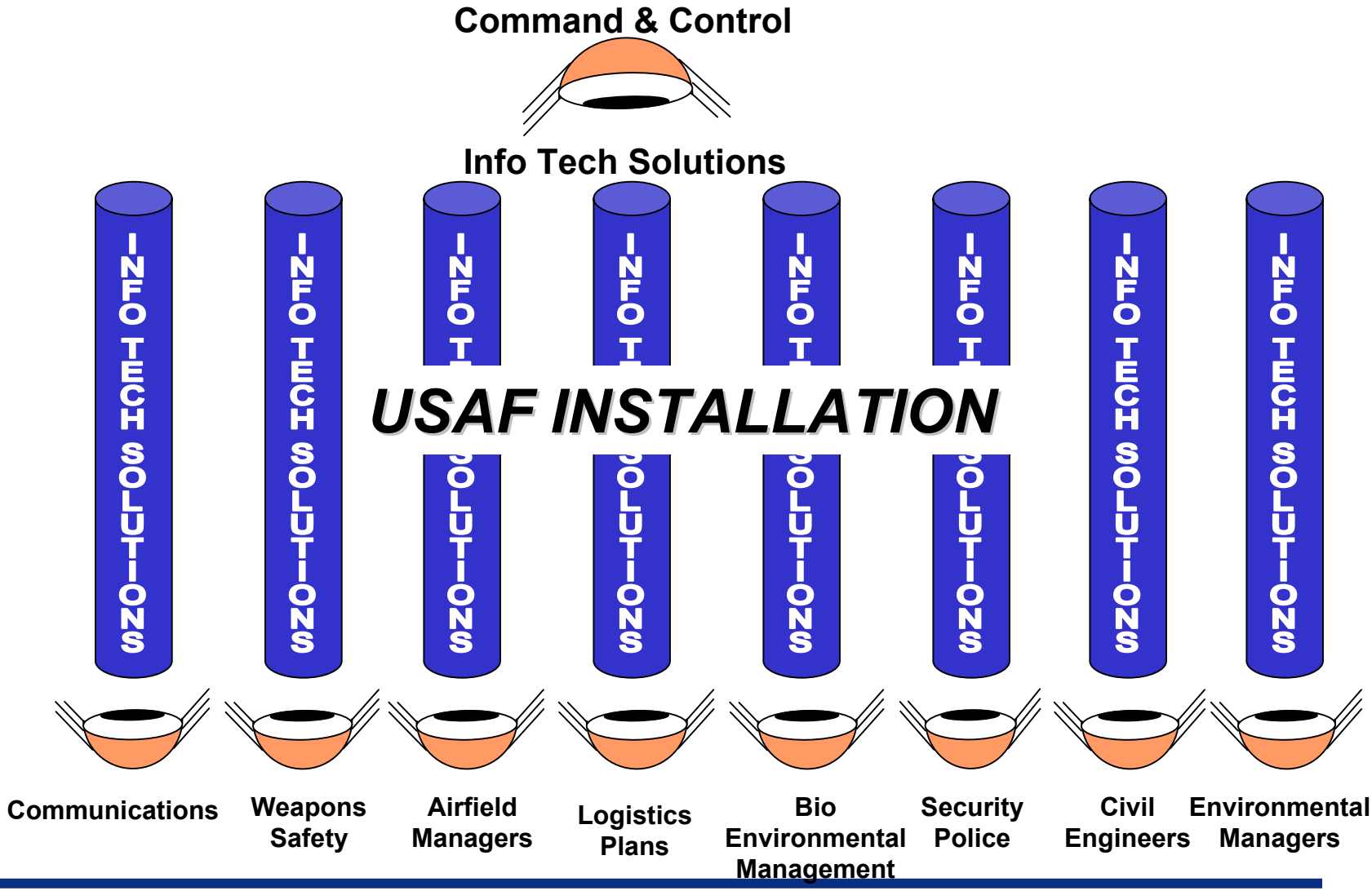

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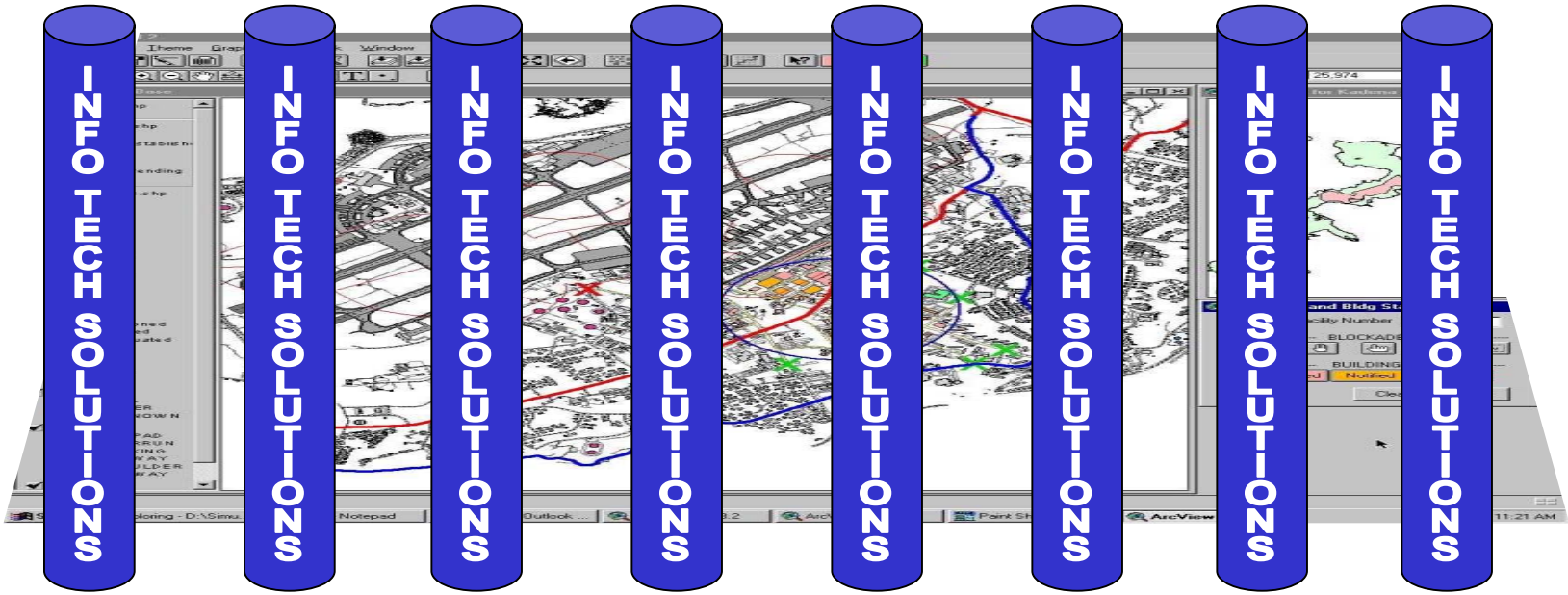
One Base, One Map

Command & Control

Info Tech Solutions



Communications | Weapons Safety | Airfield Managers | Logistics Plans | Bio Environmental Management | Security Police | Civil Engineers | Environmental Managers

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The USAF GeoBase

Vision

One Installation…One Map

Mission

Attain, maintain, and sustain one geospatial infostructure to address installation requirements

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Defining GeoBase

- **A Transformational Program**
  - Innovative Sharing of Geospatial Installation Knowledge Across the Combat Support Spectrum
- **An Information Superiority Tool**
  - One Installation Map Delivering Current Situational Awareness via the Network through Information Teaming
- **An Agile Combat Support Enabler**
  - Supports Basing Needs in Peace & War
  - Parallels Battlespace Intelligence
  - Mission Infusion is the Aim, ***Not*** IT Acquisition/Implementation

USAF Mission Impacts

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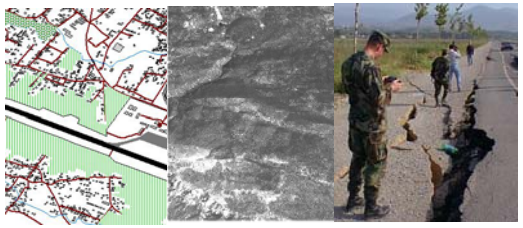
USAF GeoBase

Strategic GeoBase

Expeditionary GeoBase

GeoReach



Garrison GeoBase

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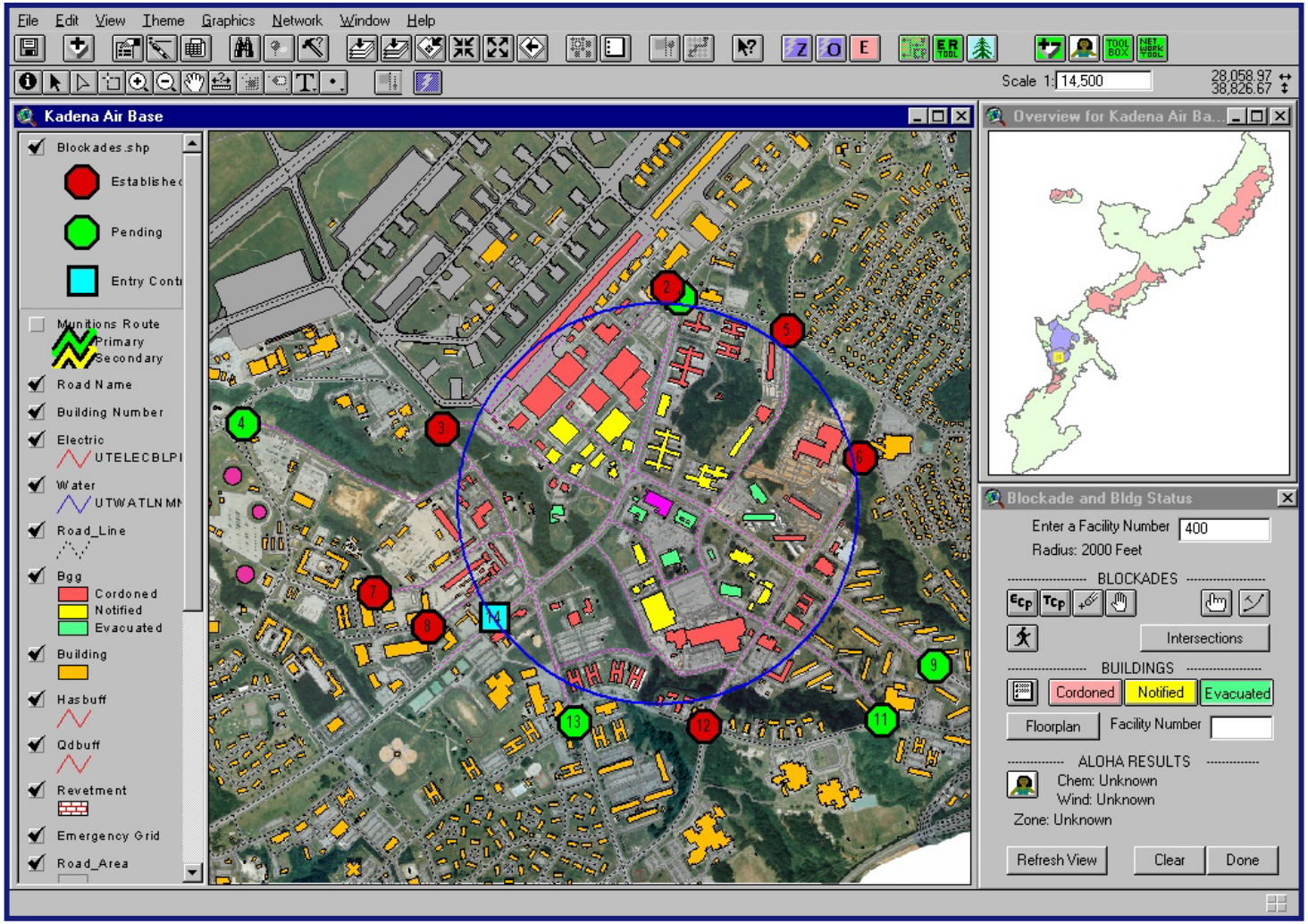
Garrison GeoBase: Capability Example



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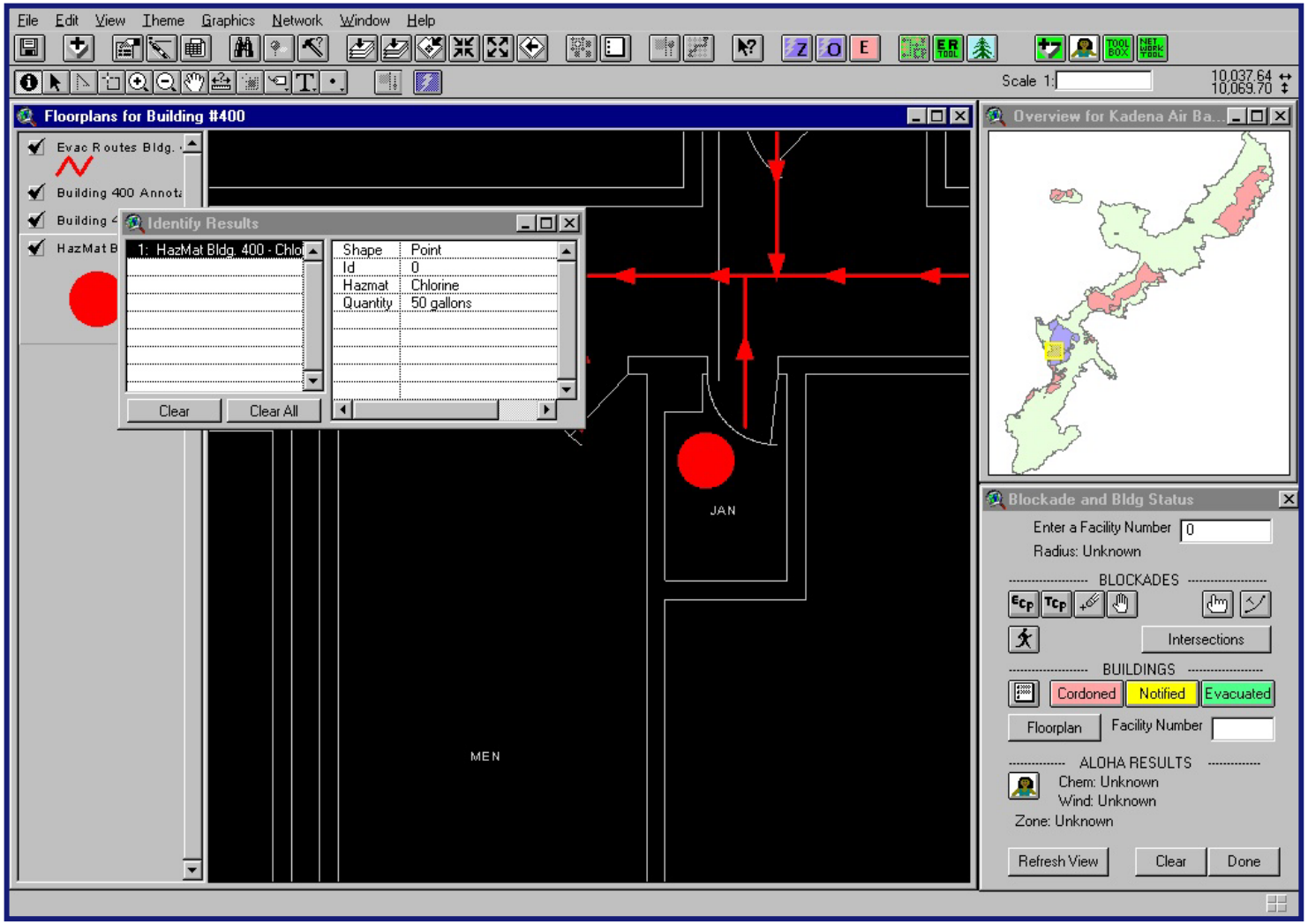
Garrison GeoBase



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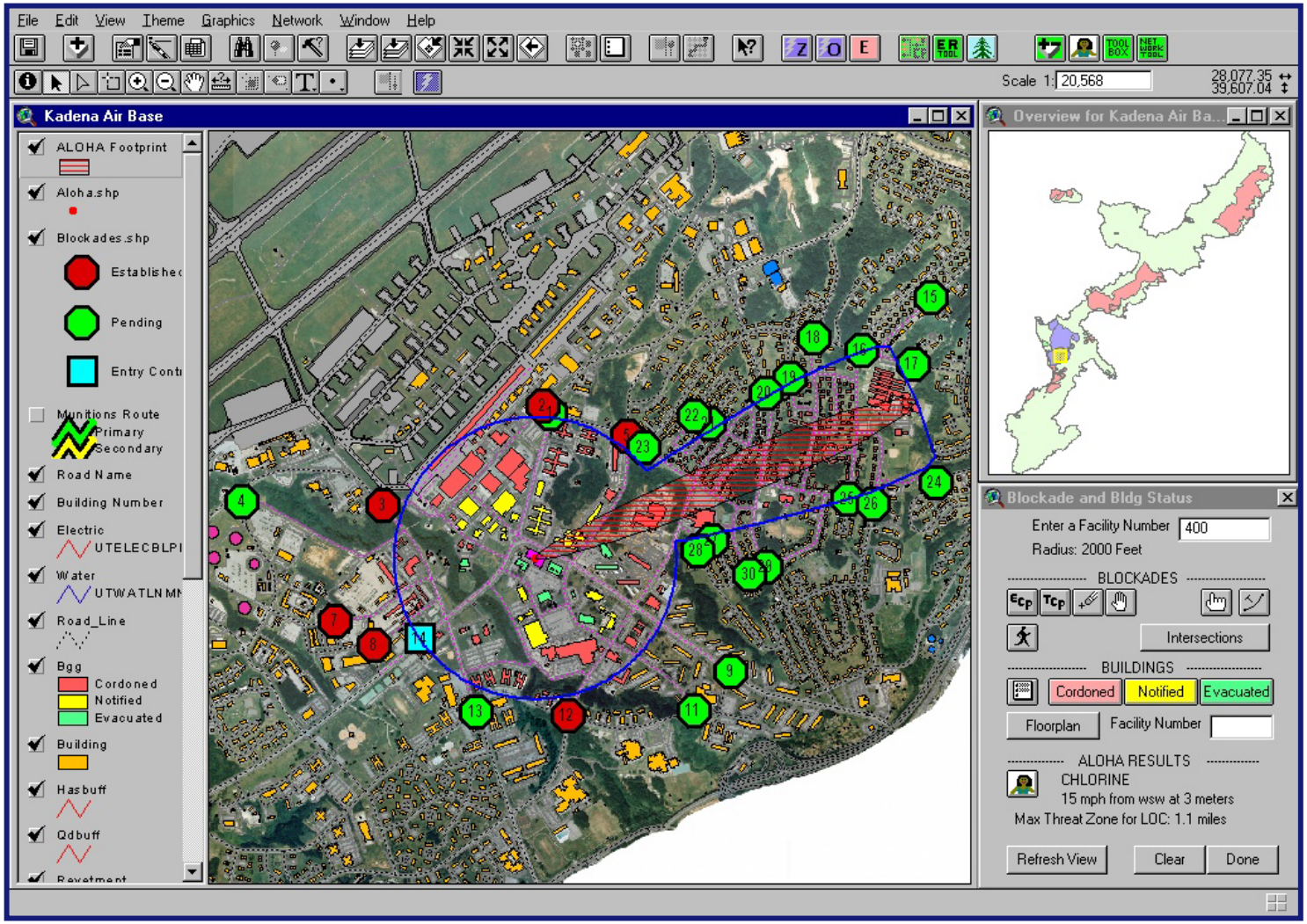
Garrison GeoBase



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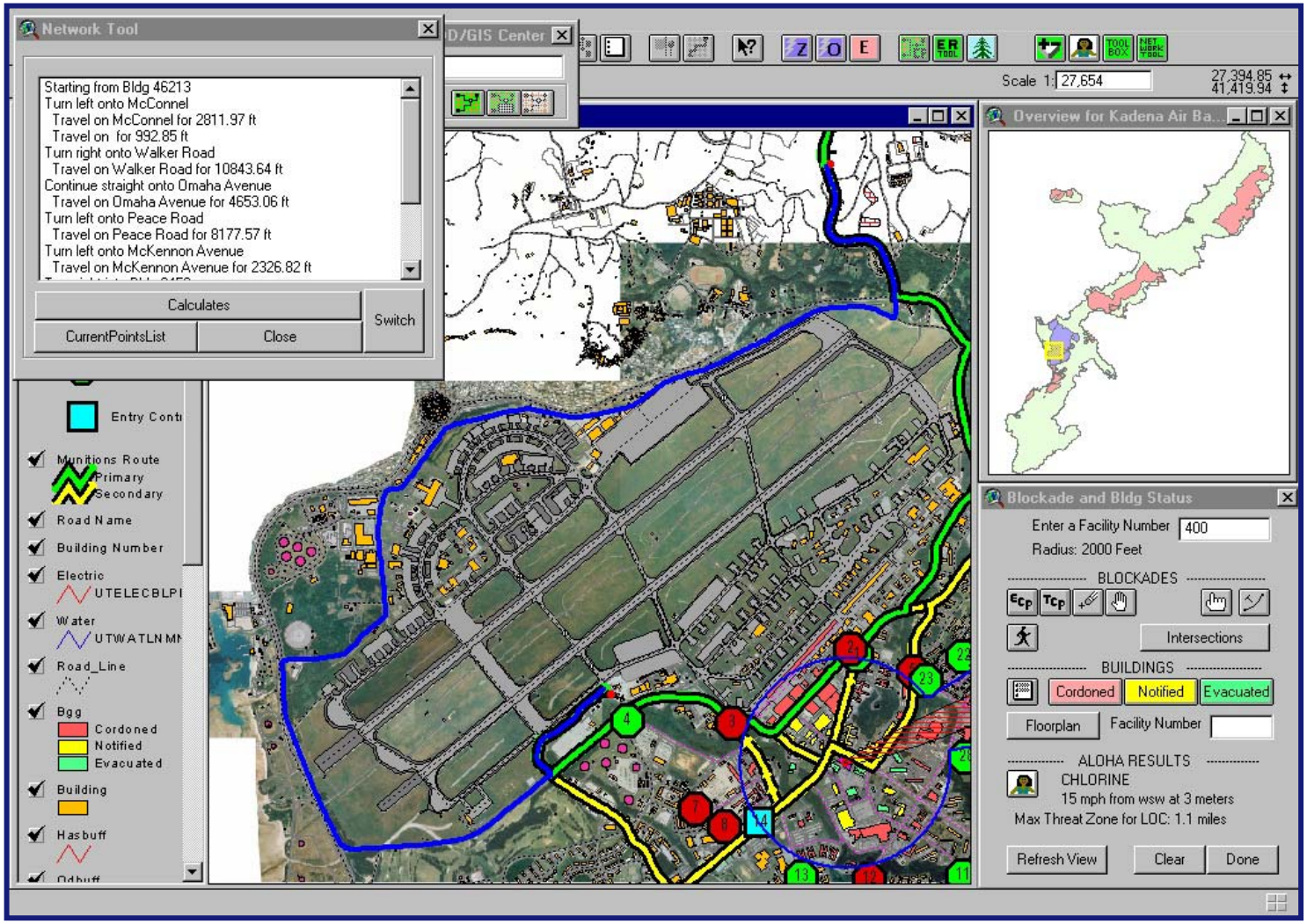
Garrison GeoBase



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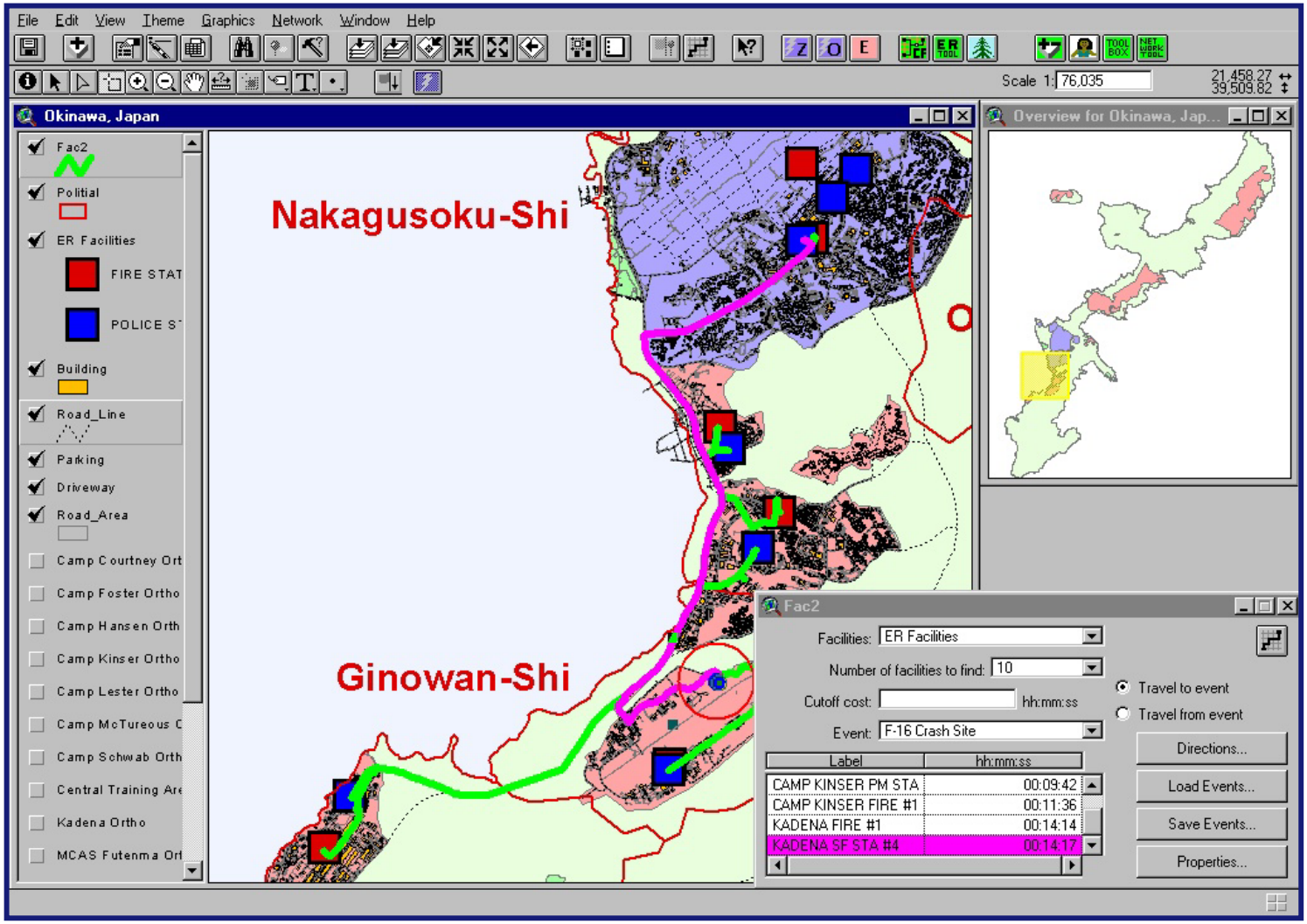
Garrison GeoBase



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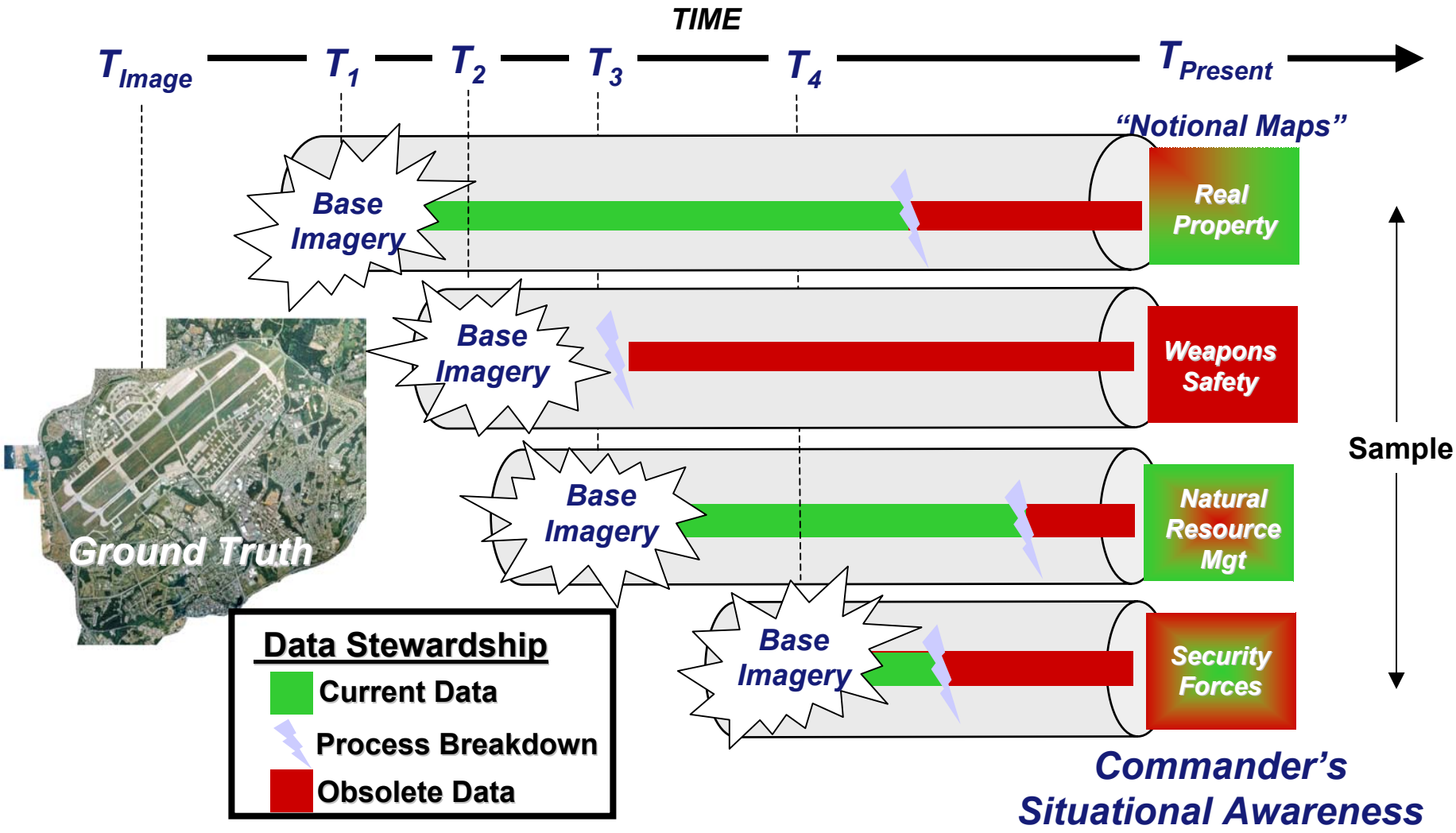
The Historical 'Black Hole'



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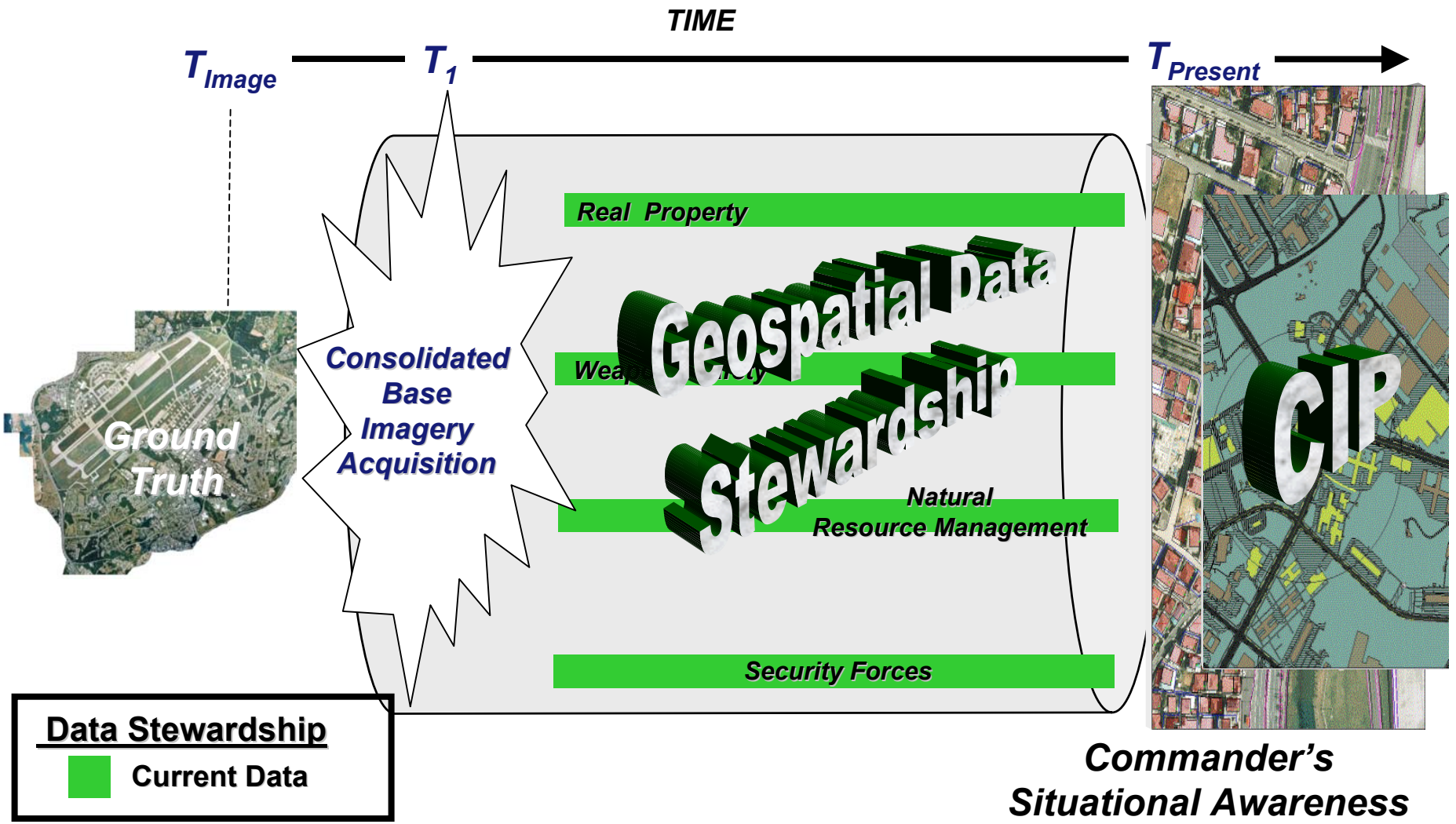
The USAF GeoBase Goal



Common Installation Picture (CIP)

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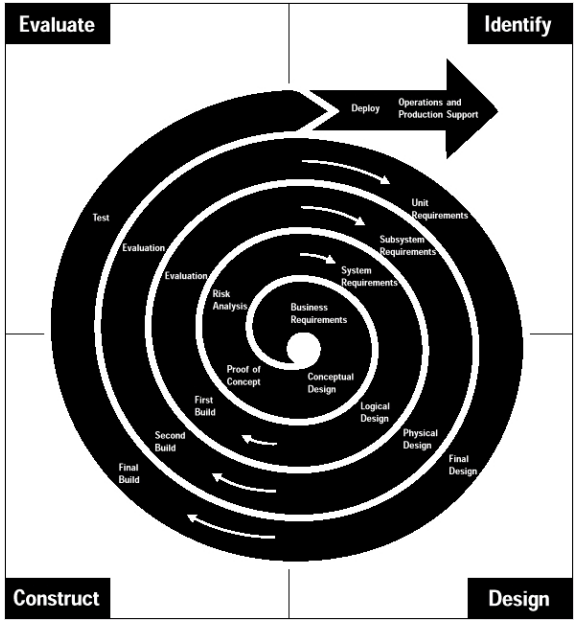
Garrison GeoBase IOC

- Garrison GeoBase IOC elements:
  - Strategic plan to guide investments
  - Dedicated sustainment staff (Geo Integration Office)
  - Key map layers in the IOC CIP
  - 1M resolution installation imagery
  - CIP served from the Base Network Control Center
  - Common map registration and ground control
  - Standard CIP data model (using the *SDSFIE*)
  - Metadata describing CIP data quality, lineage, process
  - GeoBase CIP viewer and ACES-RP interface



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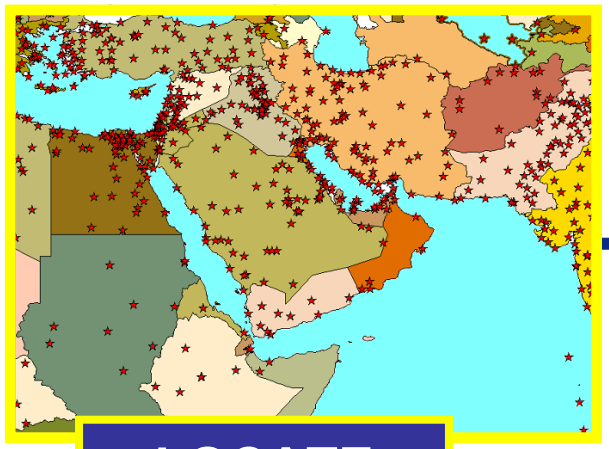
What is GeoReach?

- GeoReach is a *process* bridging Garrison GeoBase with Expeditionary GeoBase
- Web-accessible GeoReach Libraries maintained by Combat Air Forces (CAF)
- Enhances siting and initial bare base beddown planning during contingency operations
- Accessible on SIPRNet
- Used in support of OEF
- Used since 9/11 for "Go/No-Go" basing decisions



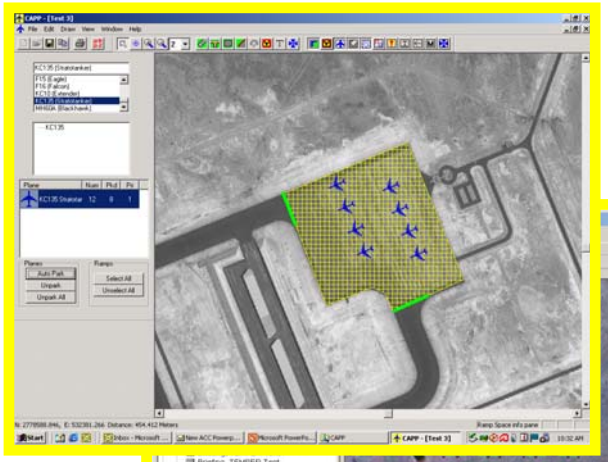
LOCATE

IMAGE

CONSTRUCT

GeoReach CONOPS

CIP IOC



VERIFY

ASSESS

ENABLE

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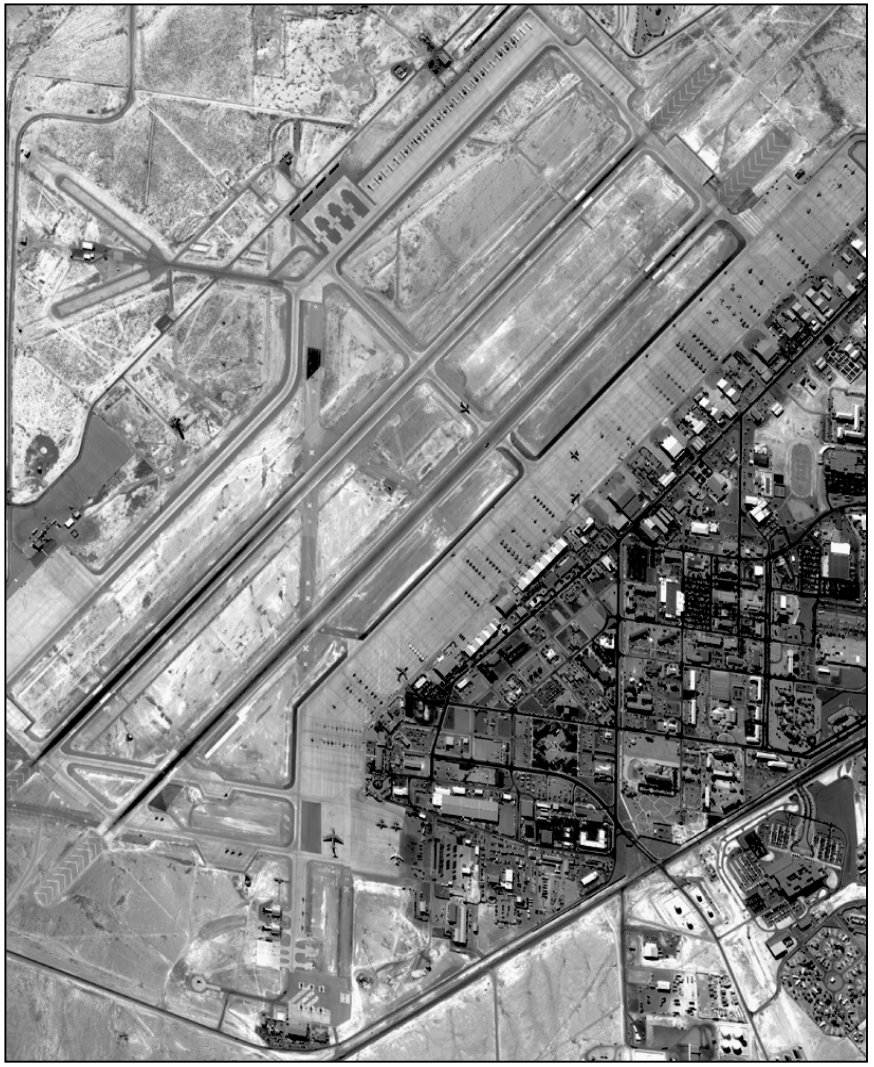
Strategic GeoBase

Addresses HAF/SAF Needs

Supplements **BRAC Analysis**
Visualize Installations/Ranges
Portray Encroachment
Depicts:

AICUZ	Legal Boundaries
APZ	100-yr Floodplain
Wetlands	T&E Species

Quantity Distance Arcs



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Comparative Resolutions

Source: Space Imaging, IKONOS

Garrison GeoBase

Installation + immediate environs
< 0.5m imagery
Local installation operations

Strategic GeoBase

Installation + surrounding region
1m imagery
Regional and strategic decision support

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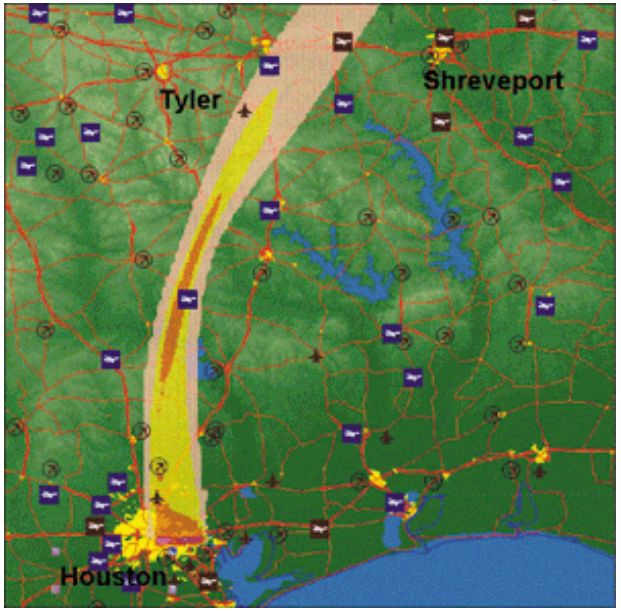
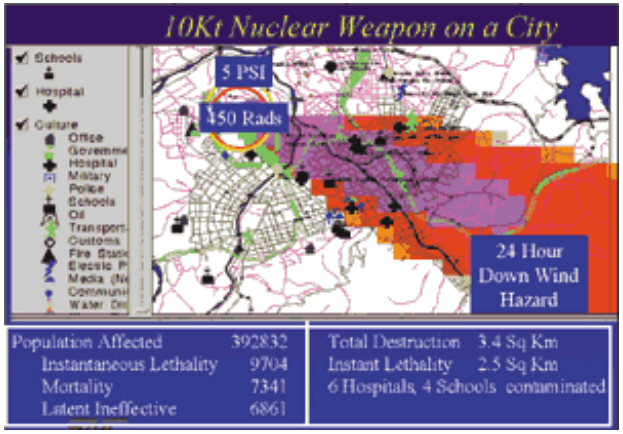
New Roles for GeoBase: Homeland Security

- Installation Geospatial Information and Services (IGI&S) doctrine
- OSD Critical Infrastructure Protection interest
- GeoBase briefs to NIMA-HLS and NIMA Director
- GeoBase course at NIMA Defense Mapping School
- USAF GeoBase teaming with JFCOM-HLS Division
- GeoBase support for AT/FP mission





Balancing the GeoBase Adoption Strategy

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Technology

C4ISR Architecture
Applications
Feature Data
Terrain Data

Sustainment

Planning & Programming
People, Process, & Training
Doctrine, Policy & Guidance
Communications & Outreach

Sustainment threads are critical to success

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GeoBase Standards

- Spatial data standards
- Federal metadata standards
- NIMA data formats
- DoD communication protocols
- Information assurance (security) standards
- *Not technical solutions ...*

CADD/GIS TECHNOLOGY CENTER
for facilities, infrastructure, and environment

NIMA

FGDC
Federal Geographic Data Committee

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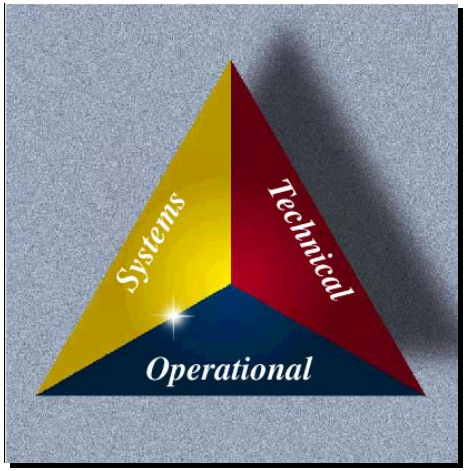
GeoBase Architectures

- DII – COE compliance to ensure interoperability
- Software architecture (COTS)
- C4ISR Architecture Guidance
  - Operational architecture
  - System architecture
  - Technical architecture
- Parternship with AF CIO
  - Architecture development assistance from ESC Chief Architects Office (CAO)
  - Initial C4ISR guidance Fall 02



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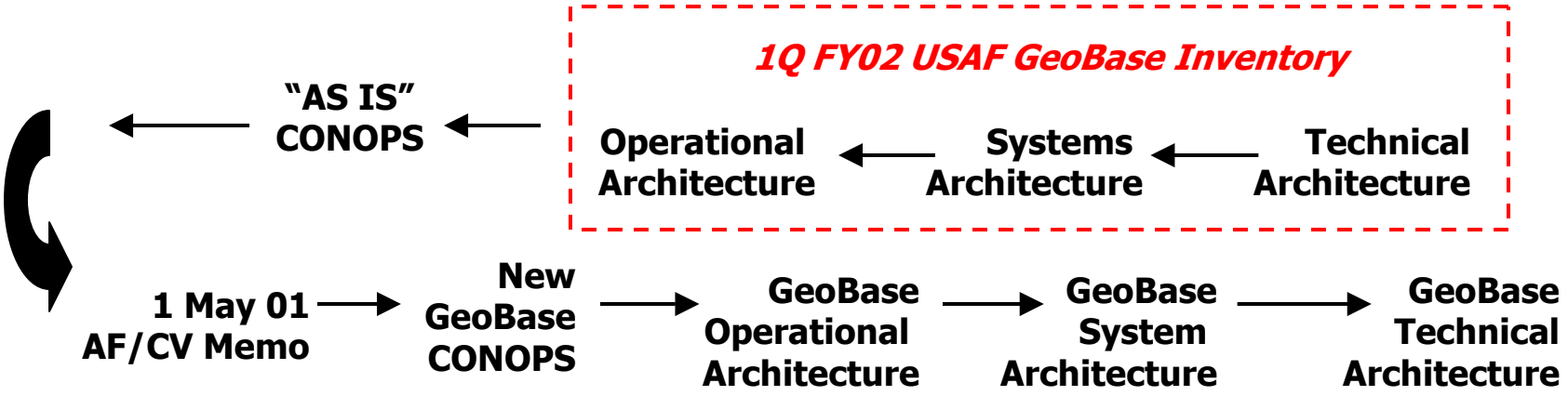
The GeoBase Planning Process

Traditional System Development

Operational Requirements Document → CONOPS → Operational Architecture → Systems Architecture → Technical Architecture

GeoBase IRM System Development



GeoBase Inventory

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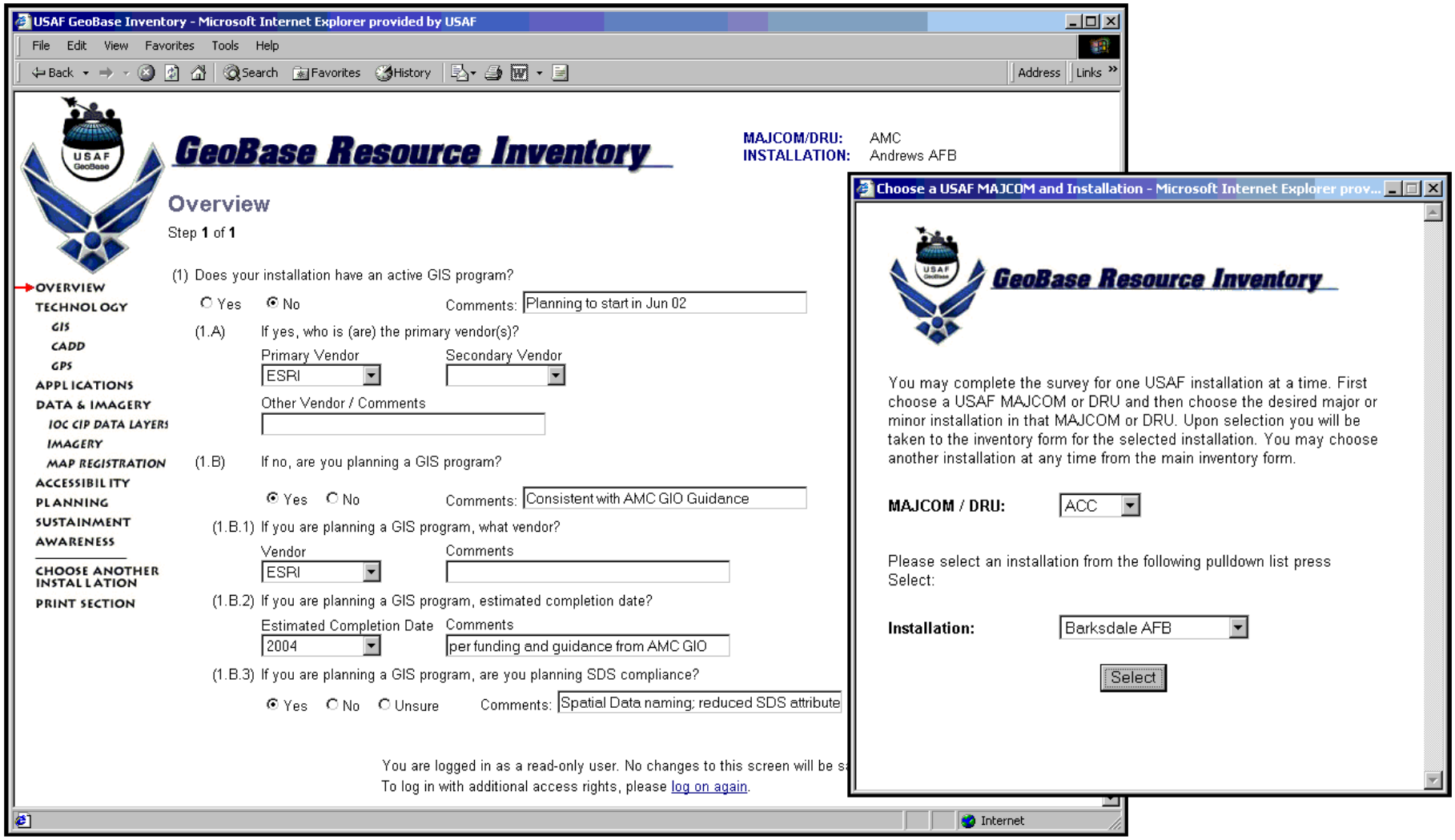

GeoBase Inventory Strategy

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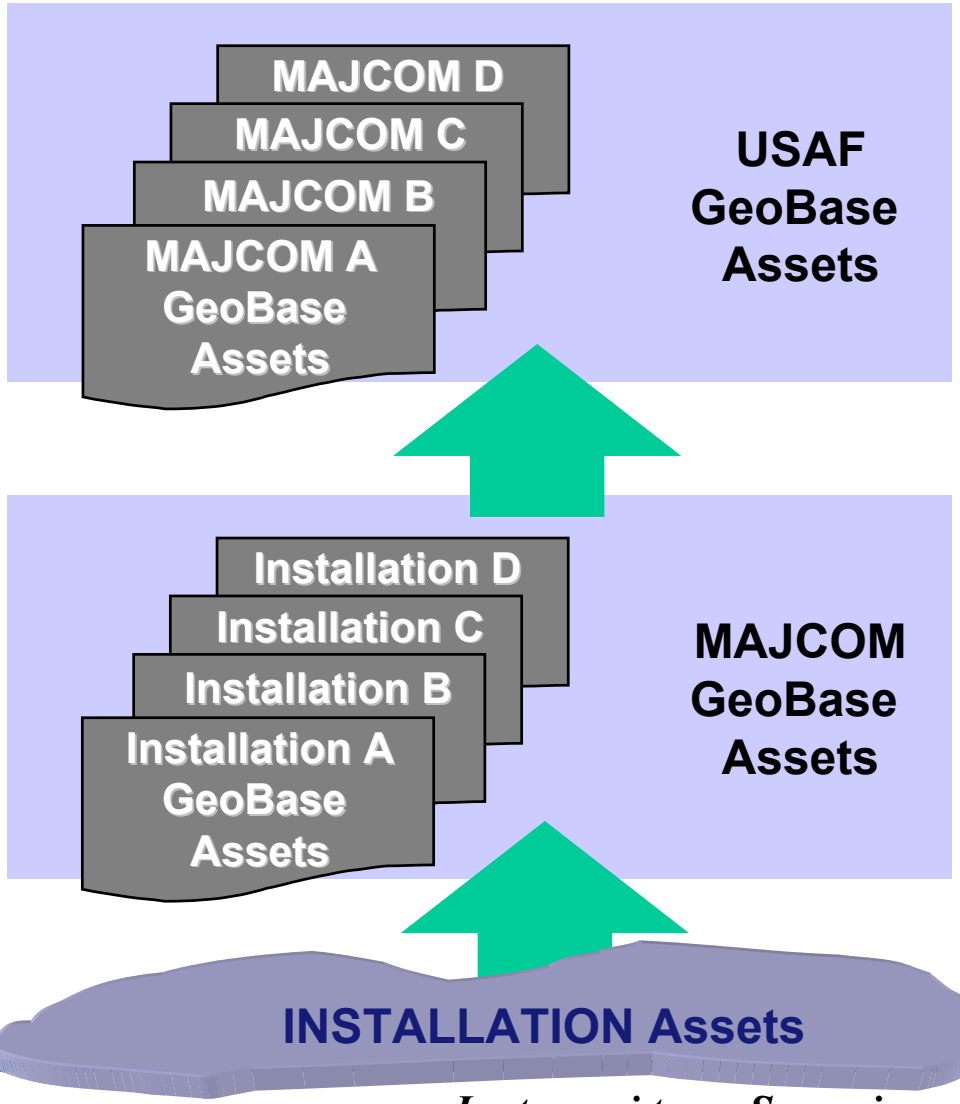

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Inventory Categories

- Overview
- Technology Investments
  - Existing software
  - Existing deployment configuration
- Custom Applications
  - Identifies tools USAF can leverage
- Data and Imagery
  - Completeness, currency, format
- Accessibility
- Planning and Sustainment
- Awareness

GeoBase Strategic Goals

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- Develop Core GeoBase Capabilities While Leveraging Legacy Investments
- Infuse the Mission with GeoBase Capabilities
- Sustain the GeoBase Program

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GeoBase Foundations

USAF organizations will:

1. **Recognize geospatial information resources as vital USAF mission assets warranting investment, management, and exploitation.**
2. **Acknowledge that cultural change issues such as user understanding, acceptance and stewardship are far more critical to successful use of geospatial information resources than the specific technology.**
3. **Employ a strategic planning process to guide the long-term development and mission impact assessment of organizational geospatial information resource investments.**
4. **Increase accountability, reduce investment risk, and better correlate mission needs with current technology and market conditions by pursuing long-term geospatial information resource aims through phased modular projects.**
5. **Ensure past, current, and future geospatial IRM investments are inventoried, managed and exploited in a shared forum to avoid wasteful redundancies.**
6. **Validate the appropriateness of existing sources of geospatial information prior to investing in new geospatial data collection efforts.**

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GeoBase Foundations *(cont.)*

USAF organizations will:

7. **Employ available data and quality assurance standards (e.g. TSSDS, FGDC) to maximize interoperability, minimize application development costs and protect the geospatial information resource investment.**
8. **Seek to provide all mission elements with controlled, ready access to a georeferenced common operational picture of the target mission space via established communication networks.**
9. **Assign geospatial information owners with the responsibilities for maintaining, protecting and stewarding their functional information assets.**
10. **Protect their geospatial information resources at a level commensurate with the risk and magnitude of harm that could result from disclosure, loss, misuse, alteration or destruction of the information.**
11. **Facilitate sharing their geospatial information resources to the maximum extent allowable both across and beyond the installation with other federal, state, municipal or international agencies.**
12. **Recognize the need to establish a skilled cadre of full-time personnel to develop, implement, and sustain long-term use of geospatial information resource investments to support the mission.**

HAF Geo Integration Office (HAF GIO)

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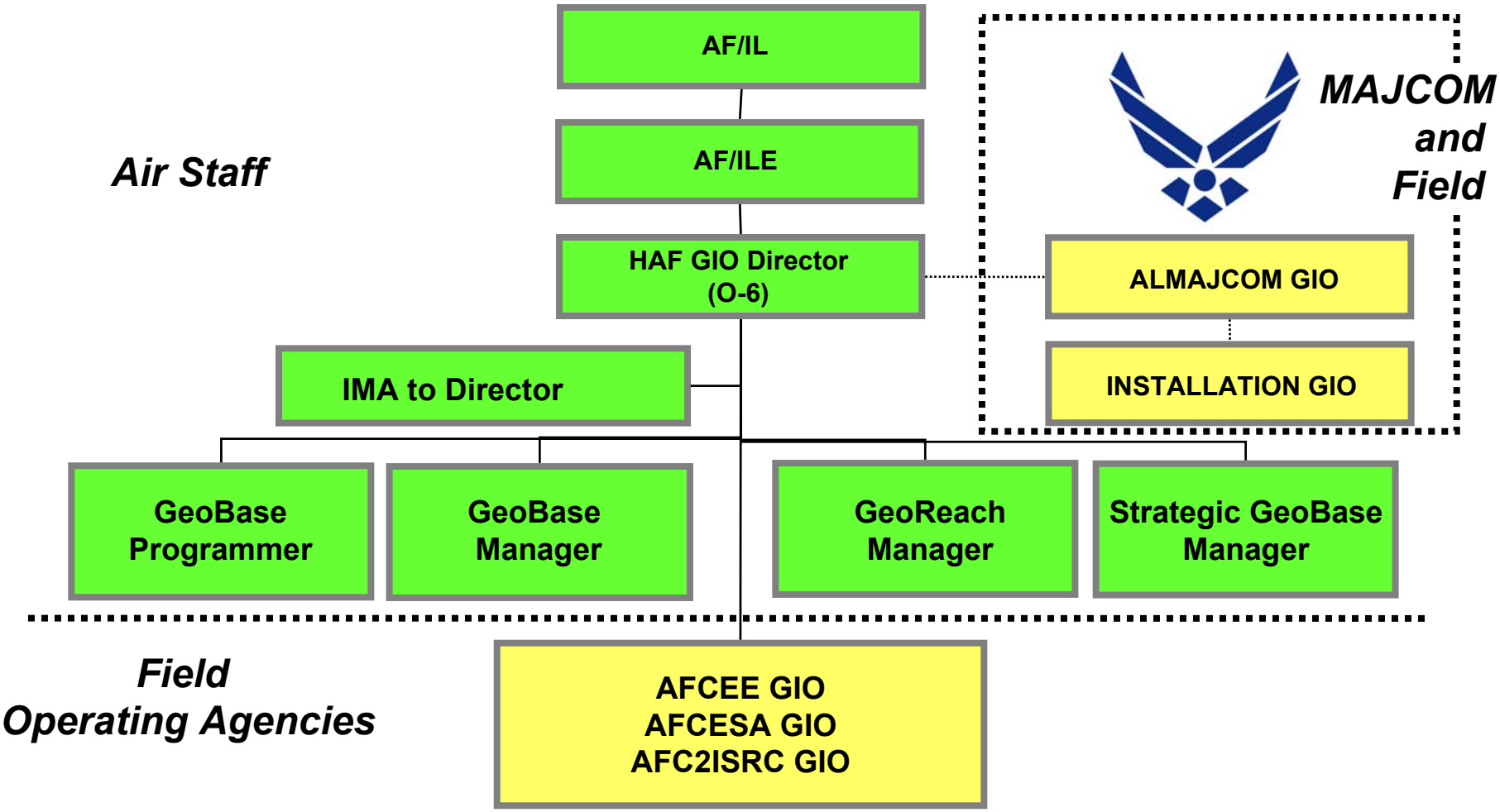

USAF GeoBase Jun-Dec 02 Capabilities

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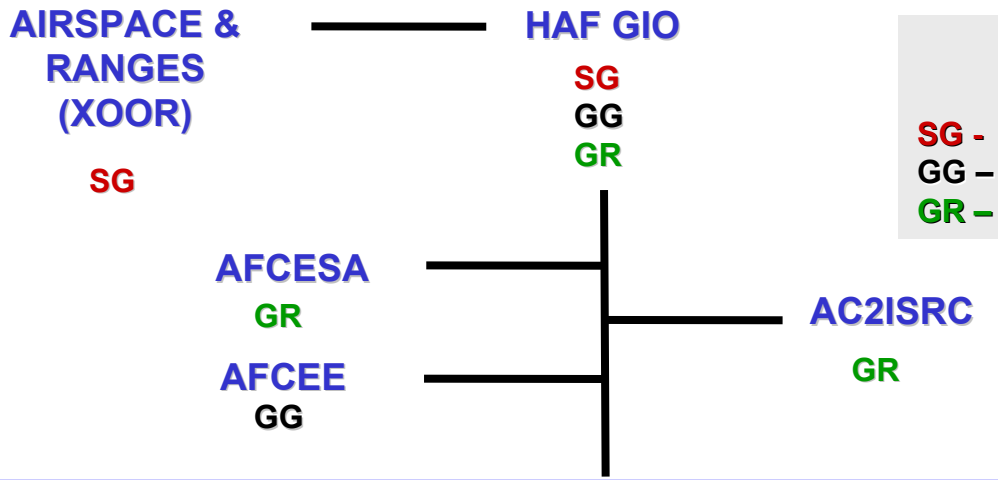
- **Funded Strategic GeoBase Manager Positions**



KEY

SG - Strategic GeoBase Integration
GG – Garrison GeoBase Integration
GR – GeoReach Integration

ACC GIO	PACAF GIO	USAFE GIO	AMC GIO	AFSOC GIO	AETC GIO	AFMC GIO	AFRC GIO	AFSPC GIO	ANG GIO	USAFA GIO	11thWG GIO
SG	SG		SG	SG	SG	SG	SG	SG	SG	SG	SG
GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
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An Evolving Agenda

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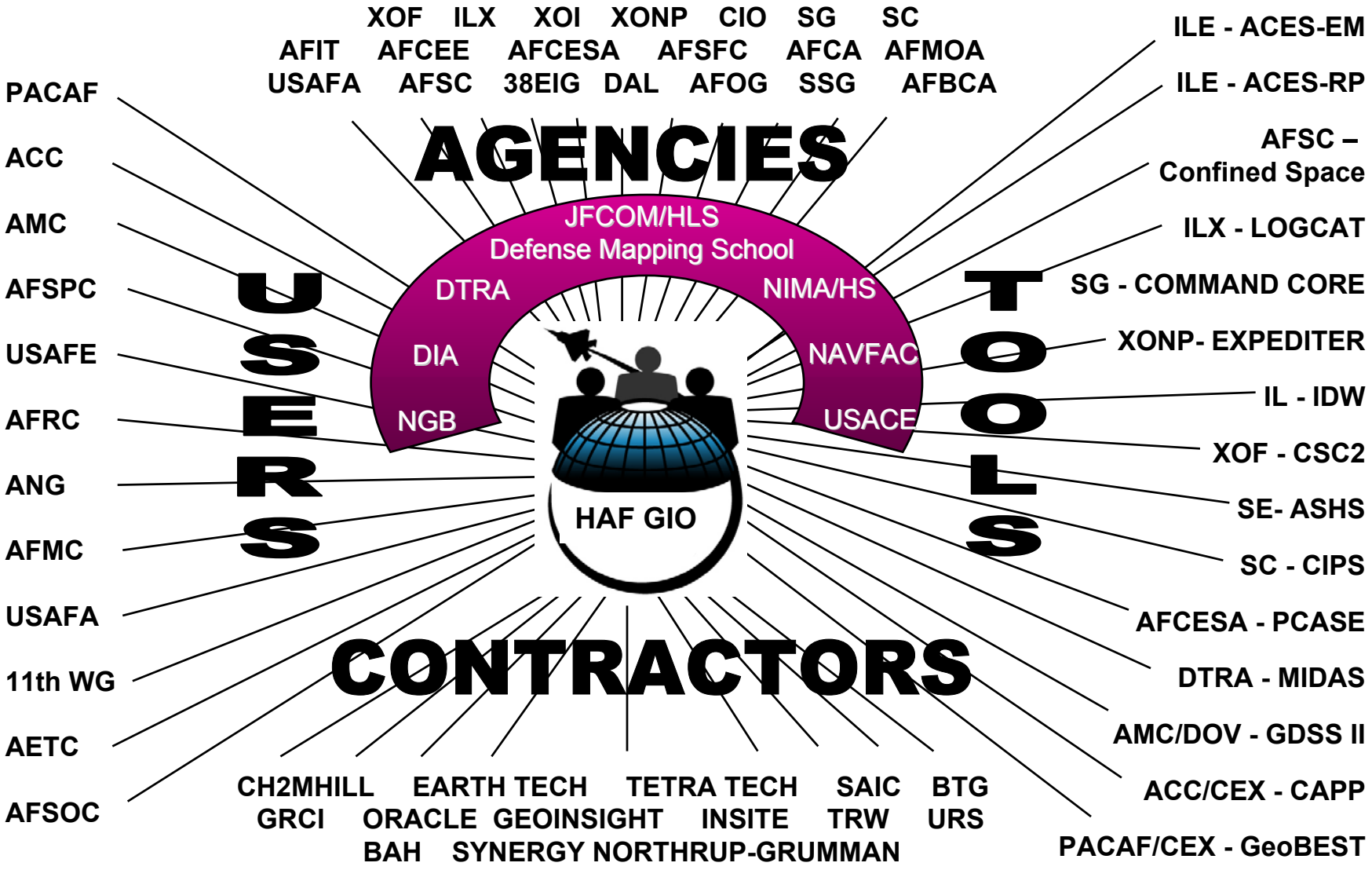

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