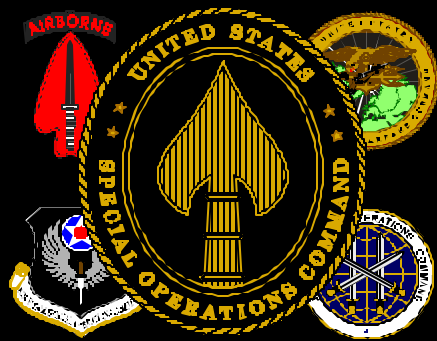




SOF Mission Preparation and Training Transformation



Purpose

To provide information on Special Operations Technology Baseline and the development of a proposed DoD Geospatial Intelligence Data Management (GIDM) architecture to support Modeling and Simulation Applications



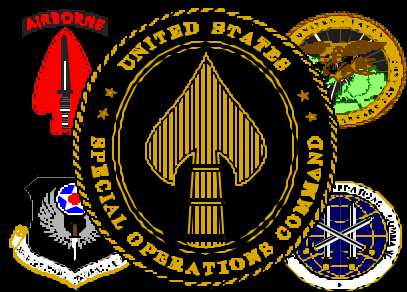
Agenda

- Discuss SOF vision for mission preparation and geospatial intelligence data management
- Describe where we have been in modeling & simulation and where we are going
- Discuss mission preparation interoperability issues:
 - Synthetic Environment
 - Common Threat / Friends
 - Distributed Network
 - Device Concurrency
- Proposed DoD GIDM architecture
- Discuss the strategic goals for training transformation
- Summary and points of contact



SOF Vision

- **USSOCOM/SOOP-PT Mission Preparation branch is critical for standardized technology application to Mission Operations and Training**
- **USSOCOM Joint Mission Preparation Facility (JMPPF) to serve as the command Live, Virtual and Constructive Hub with data links to other service and government/agency facilities**
- **Clearing house for technology development and standards operating on “skunk works” charter to meet special mission needs and ride technology wave**



Interoperability Factors

Synthetic Environment

Common Threat / Friends

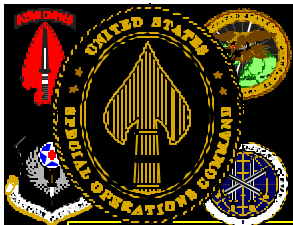
SOF DOMAIN

- 19th SOS
- 160th SOAR
- 58th TRSS
- NAVSPECWAR
- USASOC

Distributed Network

Device Concurrence

These are the basic tenants of Interoperability



STRS IG Comparisons

STRS Device	FY 92 - 00	FY 01 - 03	FY 04 - 07	Location
 MC-130E WST	ESIG 4000	C-Scene X	Vital 9	19 th SOS
 MC-130H WST	ESIG 4000	C-Scene X	Vital 9	19 th SOS
 AC-130U WST	SE-View/TS4830	SE-View/TS4830	Vital 9	19 th SOS
 AC-130U BMC	SE-2000 Plus	SE-2000 Plus	Vital 9	19 th SOS
 AC-130H CST	New Device	C-Scene X	Vital 9	19 th SOS
 MC-130P WST	C-Scene IV-a	C-Scene V	Vital 9	58 th TRSS
 MC-130H MRD	ESIG 4000	C-Scene X	Vital 9	58 th TRSS
 MH-53J WST	C-Scene V	C-Scene V	Vital 9	58 th TRSS
 MH-53M IDAS OFT	C-Scene V	C-Scene V	Vital 9	58 th TRSS
 AGSS	SE-2000	SE-2000	Vital 9	58 th TRSS
 VTRAT	OpenFlt	OpenFlt	Vital 9	19 th SOS 58 th TRSS
 CV-22	New Device	Vital 8-Plus	Vital 9	58 th TRSS
 MH 47E / 60K CMS	TS 4860	TS 4860	Medallion	160 th SOAR
 AMH-6 LASAR	New Device	TS 4860/Medallion	Medallion	160 th SOAR



SOF Database Generation Facility Support

What We Provide...

3-D Models
DFAD/VMAP



3-D Culture
Features
DFAD/VMAP



Imagery
CIB/DPPDB/NTM



Elevation DTED
and DEM



Earth Surface



COMPUSCENES
TOPSCENE
ESIG 4000
VITAL'S
Realtime Run
Databases

19 SOS

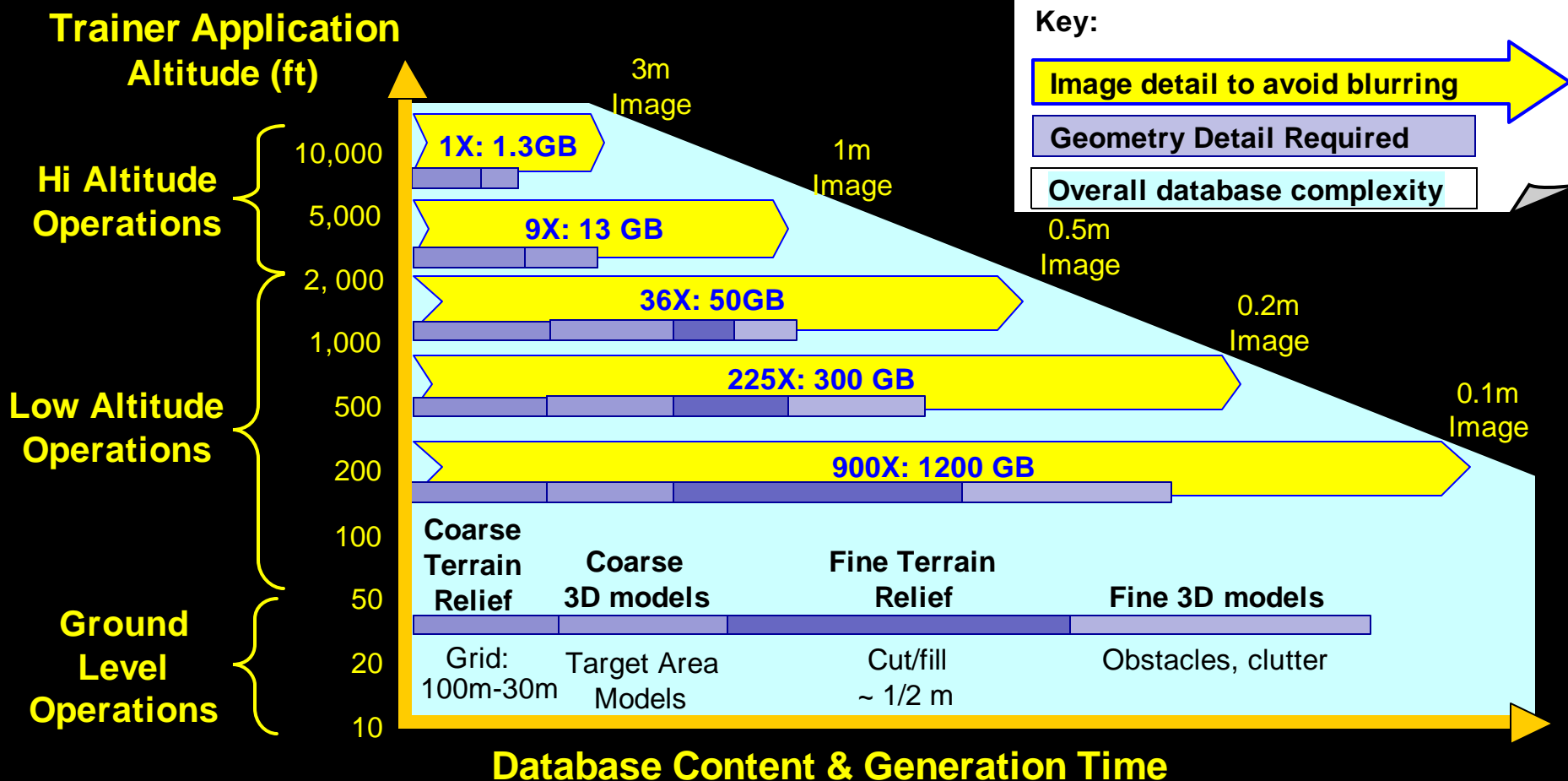
Special
FRY
Iraq
Afghanistan
Columbia
North Korea
SWUSA
SEUSA
MOUT

16th SOW
160th SOAR
720th STG
JSOC
7th SFG
75th R/R
NSWC
JRX
STOW-A

160th SOAR



Database Content Requirements for Different Altitudes

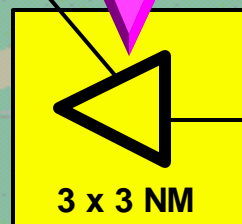




Database Resolution Requirements

(25/50) OBJECTIVE
.25 METER
RESOLUTION
IMAGERY
DTED III & FD III (All)

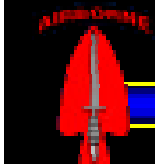
(25/50) OBJ PERIMETER & FSB/FARP
.5 METER RESOLUTION IMAGERY
DTED II & FD II (50')



Not to
Scale

20 x 20 NM

BACKGROUND
1 METER IMAGERY
DTED II & FD I (100')
(II Desert)
Country - 1,000 x 1,000 NM
Mission Area - 400 x 200 NM



160th Special Operations Aviation Regiment (Airborne)

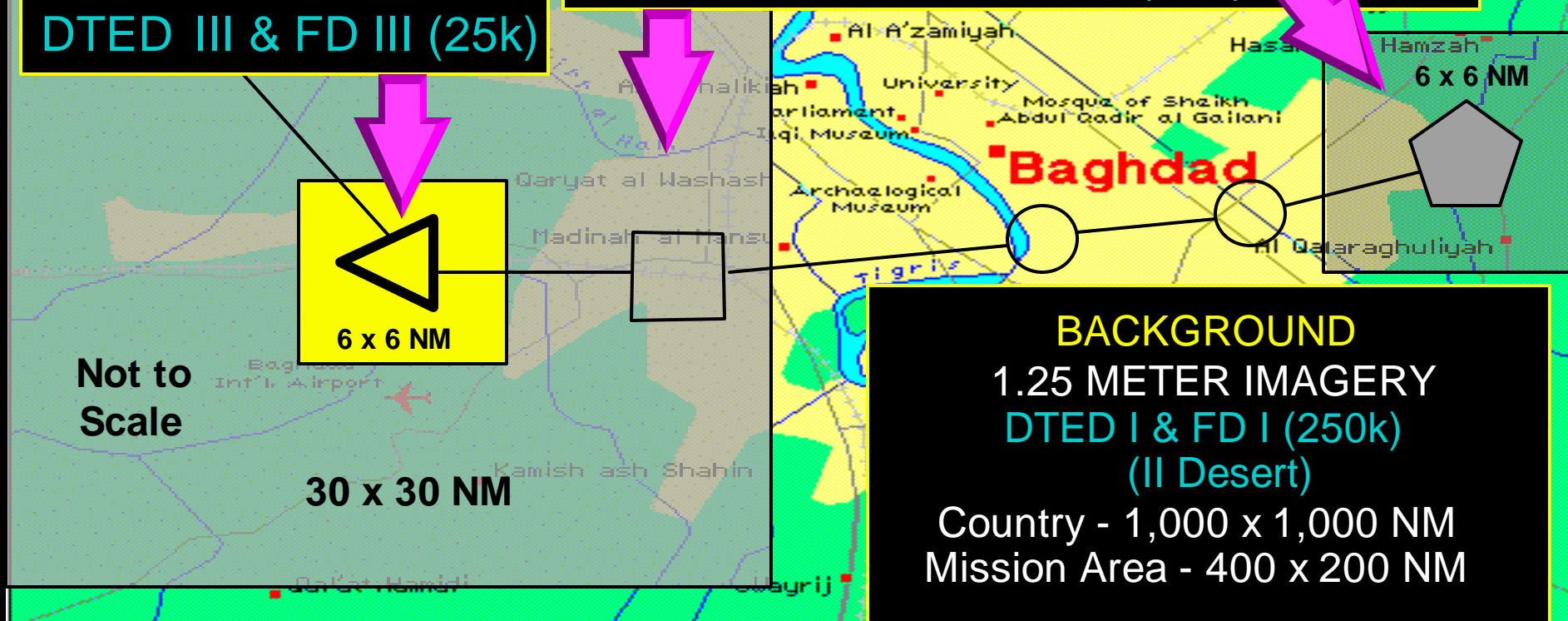




Database Resolution Requirements

(25/50) OBJECTIVE
.3125 METER
RESOLUTION
IMAGERY
DTED III & FD III (25k)

(25/50) OBJ PERIMETER & FSB/FARP
.6125 METER RESOLUTION IMAGERY
DTED II & FD II (50k)



CV-22 Database Resolution Requirements



Previous Database Workflow Process

Source Data:

3-D MODELS
CIB
NTM
DPPDB
DFAD
DTED

Tools/DBGS System:

LMTDS DBGS

Supervisor
ArcInfo
SOCET Set
Envision
Proprietary Software
Subsystem Compilers

Run Time Databases:

ESIG-4000

OTW, EO/IR

RADAR

ESIG-4000
Database Archive

3-D MODELS
CIB
NTM
DFAD
DTED

LMIS TARGET DBGS

Subsystem Compilers
Proprietary Software

SE/Plus

EO/IR

RADAR

ModSAF

STEALTH

3-D MODELS
CIB
NTM
DPPDB
MSI
DTED

LMMFC TOPSCENE DBGS

TASK MANAGER
Proprietary Software
MultiGen

TS 4000

OTW

TS 400

Mission Preview

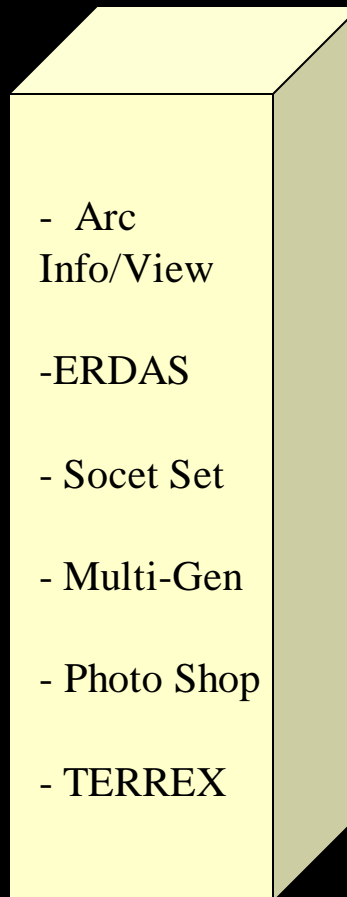


Open Architecture Database Interoperability Workflow Process

Input Source Data

- Elevation
 - DTED
 - DBDB
 - DEM
 - NED
- Imagery
 - NITF (CIB, DPPDB)
 - GeoTiff
 - Tiff
- Feature
 - DFAD
 - VPF (VMAP)
 - DLG
 - DVOF
 - Shape
- 3D Models
 - OpenFlight
 - 3D Studio Max
 - DXF
 - DGN

DBGF Processing



80% of DB effort

Common Interchange Enhanced Data Formats

- Elevation
 - DTED
 - DEM
- Imagery
 - NITF
 - GeoTiff
- Feature
 - Shape
- 3D Models
 - OpenFlight

IG

- Visual
- Radar
- FLIR
- LLTV
- Stealth
- SAF

(List is not all inclusive)



SOFPREP Archive Requirements

Category 1

Raw Initial Source Data

Terrain

Texture

2/3D Features

For

For use in databases to support Mission Planning, training, Preview, and Rehearsal Systems

Accident/Incident investigation

Category 2

Processed/Enhanced Source Data in an open architecture format

Enhanced Terrain Layer

Enhanced Texture Layer

Enhanced 2/3D Feature Layer

For

For exchange in open format to support Mission Planning, Training, Preview, and Rehearsal Systems

For database reuse/update to support Mission Planning, Training, Preview, and Rehearsal Systems

Category 3

Runtime Database

Proprietary Visual Runtime DB

Proprietary Sensor Runtime DB

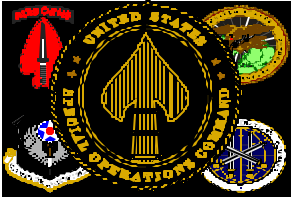
For

For exchange in runtime format to support Mission Planning, Training, Preview, and Rehearsal Systems

For database reuse/update to support Mission Planning, Training, Preview, and Rehearsal Systems

Accident/Incident investigation

USSOCOM ownership



SOFPREP Data Holdings

Estimated 54.58 TB's of Digital Data

REFERENCED AND INDEXED IN THE MIS

Media: 29,335

Products: 116,733

CD ROMs: 14,470

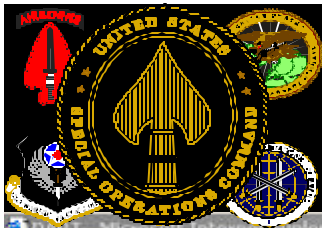
8mm Tapes: 10,735

Image Flats: 1,006

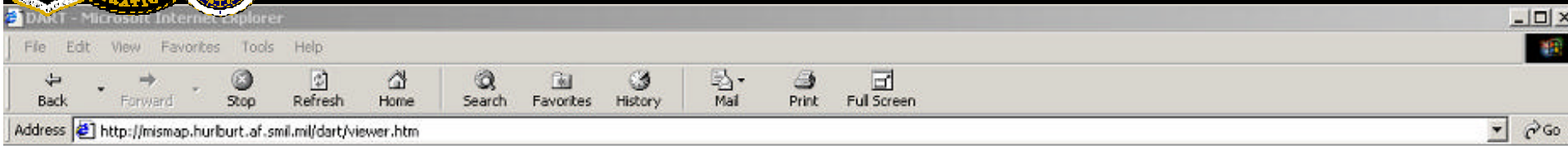
Last Month Total Entries: 1511

Total Entries for Year 2001: 4,647 2002: 4,612

2003: 6,618



SOFPREP Data Archive Research Tool (DART)



Data Archive and Research Tool

DART

SOFPREP home



Data Holdings

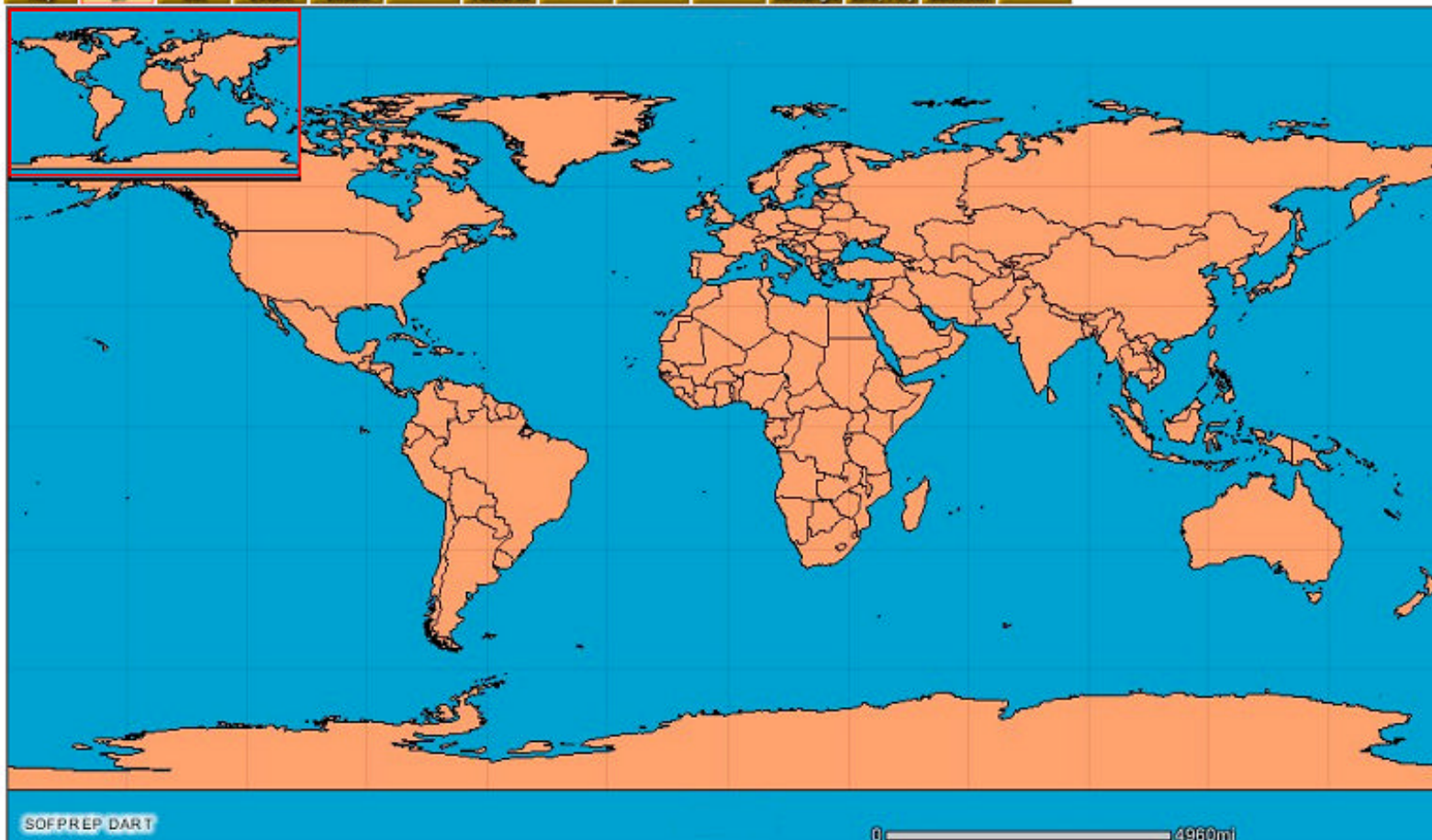
- Digital Maps and Charts
- Elevation Data
- Feature Data
- Imagery
- Databases
- Fly Thrus
- Modeling Data
- Grid Display Options
- Background Display Options

Other Data Resources

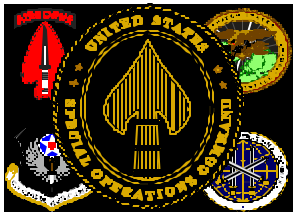
NIMA

[Fly TerraExplorer Products](#)

[Production Request Forms](#)



SOFPREP DART



DART Representation of DTED1 & SOF-DTED2

Data Archive and Research Tool

DART

SOPREP home

Overview Map Zoom In Zoom Out Full Extent Last Extent Pan ID Visible Features Query Find Buffer Select by Rectangle Select by Line/Poly Clear Selection Print

Refresh Map Reset Layers Layer Legend View/Edit Cart Checkout

Data Holdings

Digital Maps and Charts

Elevation Data

☐ DTED0

☒ DTED1

☐ SOFDTED1

☐ DTED2

☒ SOFDTED2

☐ SOFDTED3

☐ SOFDTED4

☐ SOFDTED5

Feature Data

Imagery

Databases

Fly Thrus

Modeling Data

Grid Display Options

Background Display Options

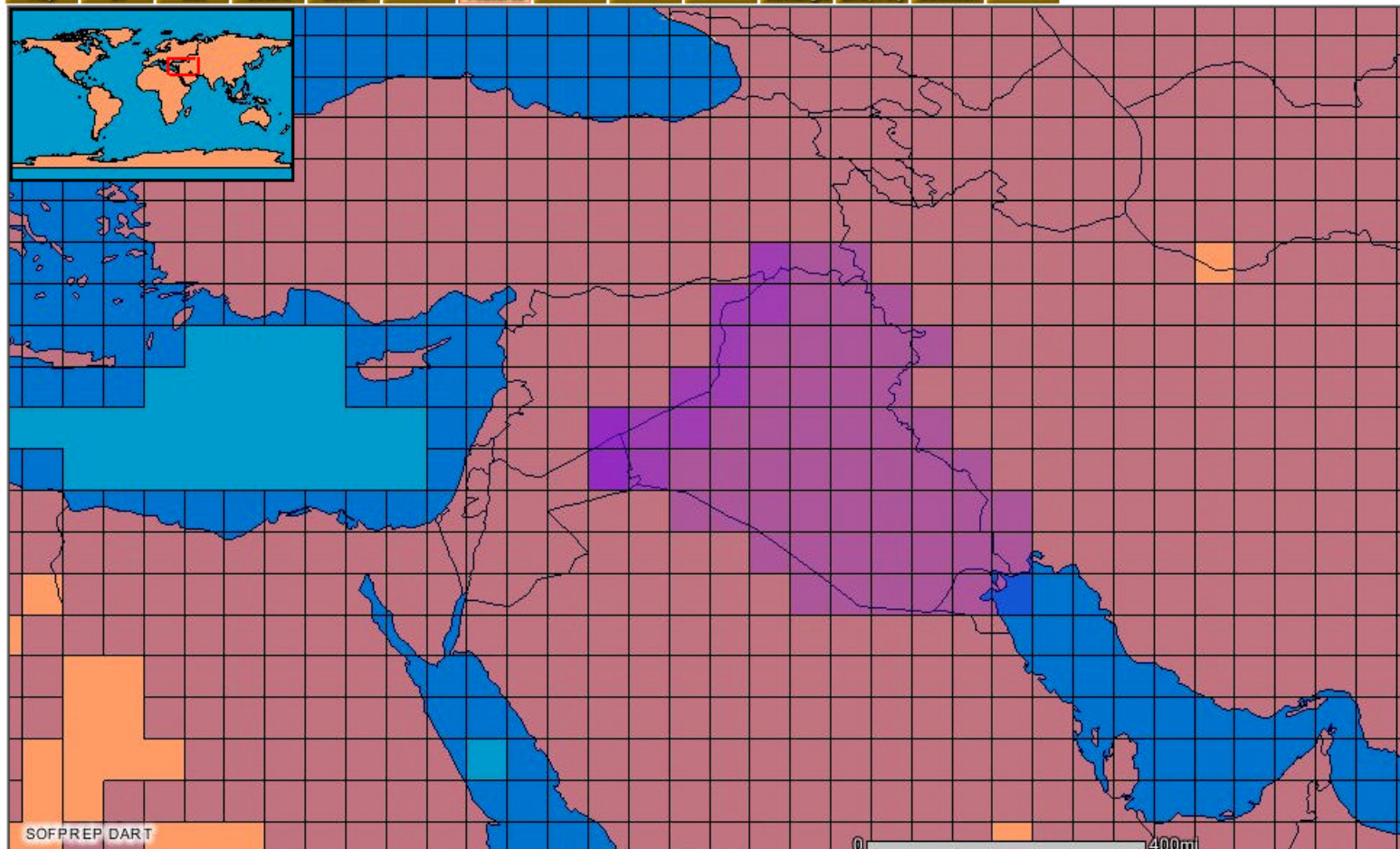
Other Data Resources

NIMA Go

Fly TerraExplorer Products

Production Request Forms

Update DART Account



Rec	Order This	PRODUCT_ID	MEDIA_ID	MEDIA_NAME	P_SUBTYPE	PROD_TYPE	SEC_CLASS	CAVEATS	SRC_AGENCY	INFO_DATE	DATA_FMT	DATUM	LOD	SW_LAT	SW_LONG	NW_LAT
1	<input type="checkbox"/>	231484	10303640	IRAQ 2 OF 3, Ed 3	SOF-DTED2	G	U	LIMITED DISTRIBUTION	NIMA	Thu, 1 May 1997 00:00:00	DTED	WGS84	Level 2	33-00-00N	043-00-00E	

Order Selected 'SOFDTED2' Items



DART Generic Model Archive

Models Search

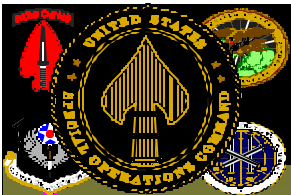
Parameters

Region: Western

Mode: Keywords

Criteria: apartment

Model Name	Group	Category		
1. al020_002_apartment5 Region: Western	Culture	AL-Miscellaneous Features		Enlarge Download
2. al020_003_apartment2 Region: Western	Culture	AL-Miscellaneous Features		Enlarge Download
3. al020_010_apartment7 Region: Western	Culture	AL-Miscellaneous Features		Enlarge Download
4. al020_011_apartment6 Region: Western	Culture	AL-Miscellaneous Features		Enlarge Download
5. al020_012_apartment4 Region: Western	Culture	AL-Miscellaneous Features		Enlarge Download
6. al020_014_apartment3 Region: Western	Culture	AL-Miscellaneous Features		Enlarge Download



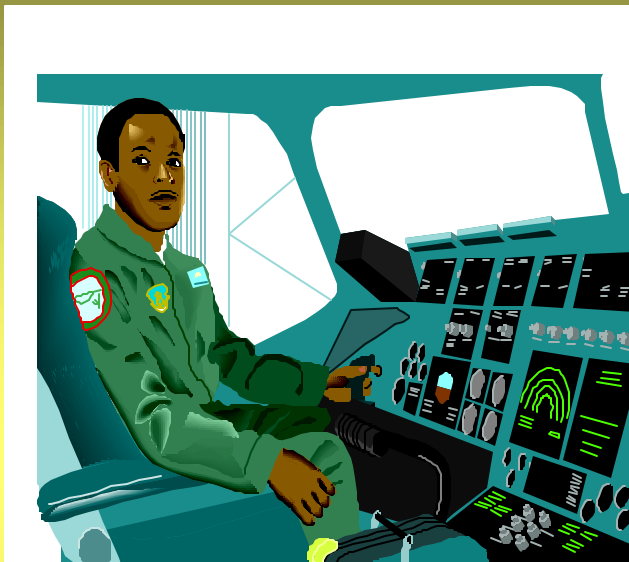
SOFASTARS Initiative

19 SOS-58 SOW-160th SOAR

19th SOS
58SOW
160SOAR
C2TIG

ELINT>RWR

A/C POSITION



EWO



DSO



T
I
B
S

T
R
A
P



AOR

DICE

DSICS

CDT

STU

STU



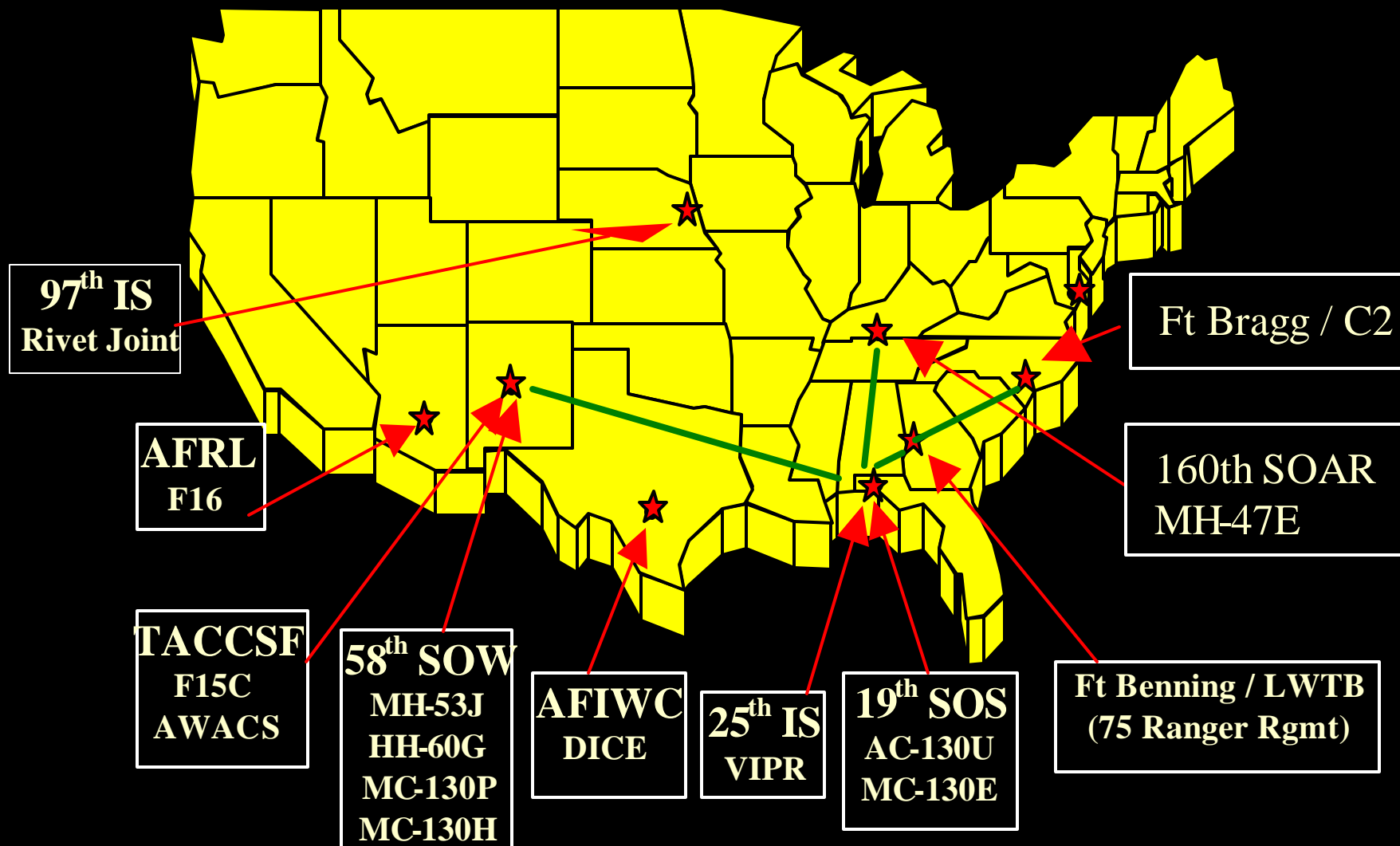
AIA

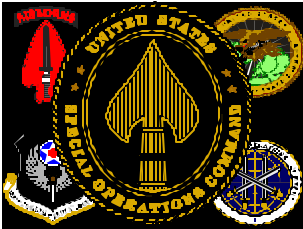


NRL

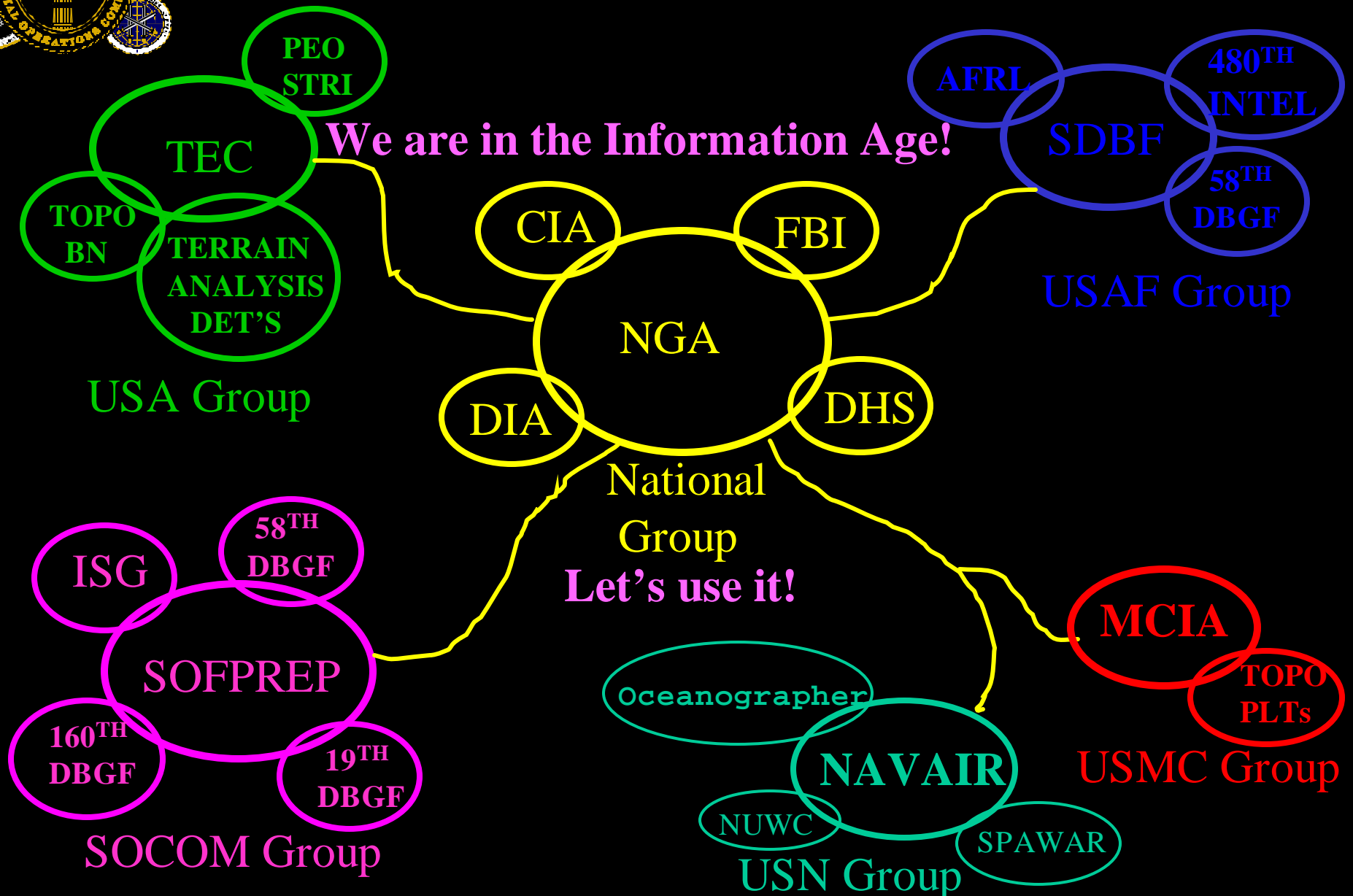


Distributed links

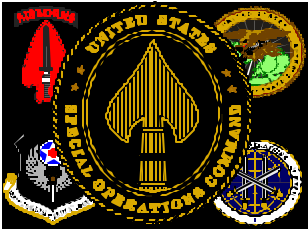




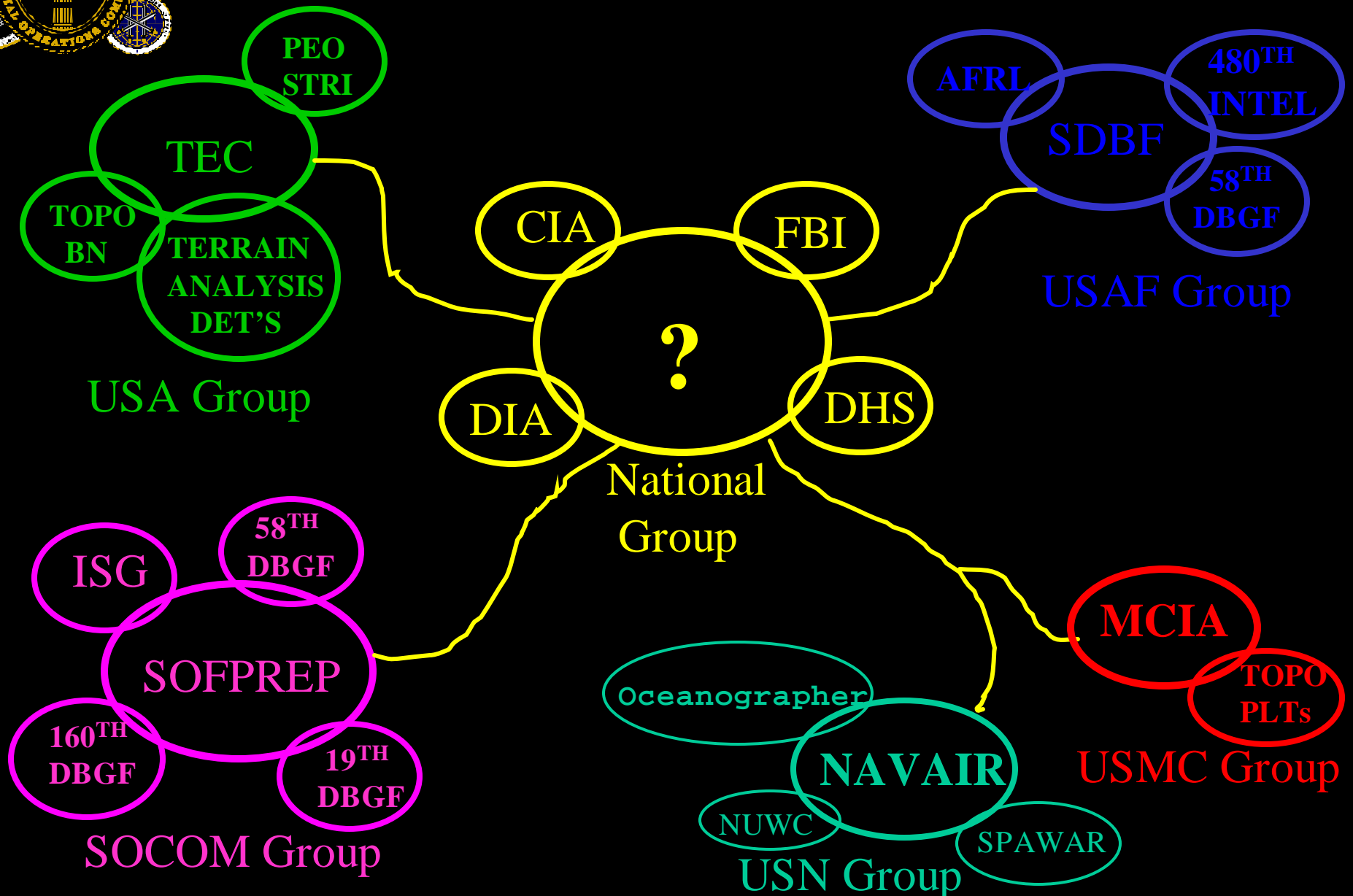
Proposed DoD GIDM Architecture



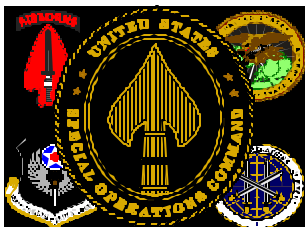
Geospatial Intelligence Data Management Network Groups



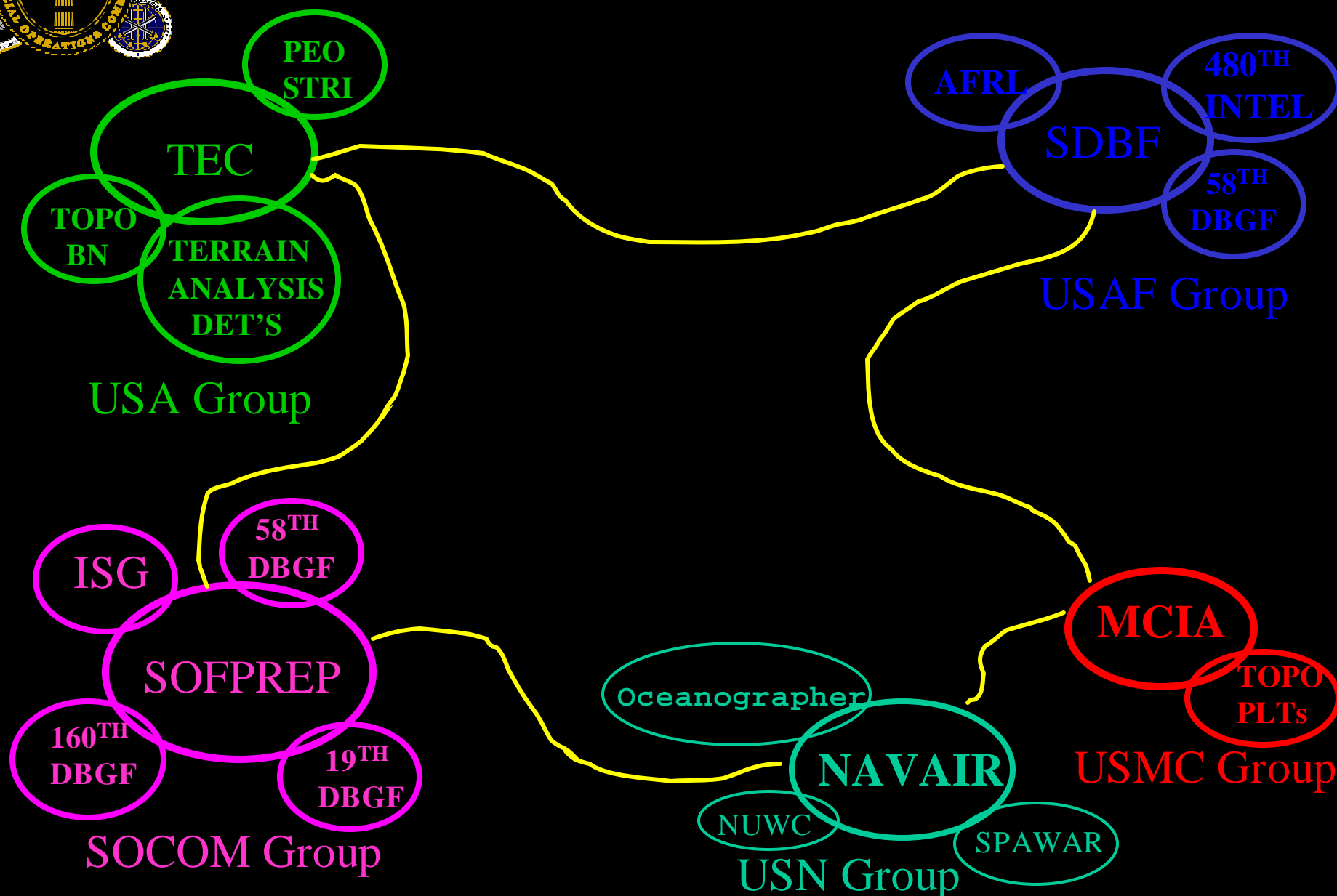
Proposed DoD GIDM Architecture



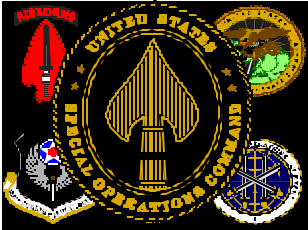
Geospatial Intelligence Data Management Network Groups



Proposed DoD GIDM Architecture

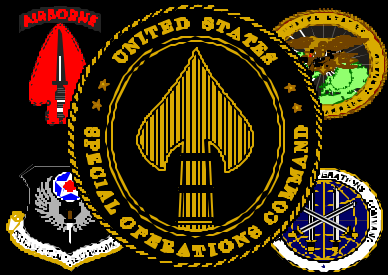


Geospatial Intelligence Data Management Network Groups



Strategic Goals for Training Transformation

- Revise acquisition and other supporting processes to identify interfaces between training systems and acquisition, logistics, personnel, military education, and command and control processes, and ensure that these processes and systems are integrated.



SOF T² POC Information

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QUIET PROFESSIONALS