Installation Geospatial Information and Services (IGI&S)
New Developments and Hot Topics

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## Overall Agenda

<table>
<thead>
<tr>
<th>Times (Approx.)</th>
<th>Component &amp; Subjects</th>
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</thead>
<tbody>
<tr>
<td>1330-1420</td>
<td>DISDI Update, including some emerging challenges (e.g. CUI, CATCODEs)</td>
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<tr>
<td>1420-1445</td>
<td>Army brief: Update on Army Installation Atlas</td>
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<tr>
<td>1445-1510</td>
<td>USMC brief: BIM/GIS integration, Adapting SDSFIE for warfighting</td>
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<tr>
<td>1510-1535</td>
<td>Air Force brief: GeoBase evolution, Logistics GI&amp;S</td>
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<tr>
<td>1535-1600</td>
<td>Navy GeoReadiness brief</td>
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DISDI Update Topics

• DISDI Update
  – IGI&S Use for High Priority National Defense Missions
  – Recent Successes
  – Five Year Plan Review
  – Quality Update
  – Metadata
  – Authoritative Data Source Guidance

• Hot Topics
  – Sensitivity of IGI&S Data and Maps (Controlled Unclassified Information (CUI))
  – Thinking Beyond SDSFIE-V 4.0

• Questions
How does IGI&S support DoD readiness and national security priorities?

“Everyone is entitled to their own opinion, but not to their own facts.”

“Amateurs discuss tactics. Professionals discuss logistics.”
OSD Level Requirements for IGI&S

• Current Requirements
  – Business mission planning, Impact analysis of current events
  – Financial Improvement and Audit Readiness (FIAR)
  – Audit Response (addressing findings using IGI&S)
  – GEOINT Visualization Services (GVS) and Map of the World (high side data sources)
  – Mass Warning and Notification
  – WebEOC, etc. (common operating picture)
  – Expanded encroachment management capacity (an ASD(S) priority)
  – DoD personnel data improvements (Defense Manpower Data Center)
  – Open Skies Treaty Compliance

• Emerging Requirements
  – Explosives Safety Siting (ESS) – web-based system
  – Mission Assurance Risk Management System (MARMS)
  – Global Force Management Data Initiative (GFM DI)
  – Cybersecurity (location tagging)
  – Improve Real Property data quality (an ASD(S) priority)
  – Committee on Foreign Investment in the United States
Recent Successes

DISDI Program

- Four successful CIP data calls (FY15-18)
- Regular public releases of installation location data (Military Installations, Ranges, and Training Areas)
- Regular updates of DoD Airspace data (processed from raw data)
- Maps and data produced for SECDEF, DEPSECDEF, COCOMs, Joint Staff, NGA

IGI&S Governance Group

- SDSFIE Governance Plan mandated Jun 2014, currently R3
- SDSFIE-V 4.0 mandated Feb 2017
  - Army, USACE, WHS implementing (v 4.0.2)
  - Navy, Air Force, Marines are modeling
- SDSFIE-Q completed Jan 2017
  - Rev 1 completed Sep 2018
- SDSFIE-R completed May 2017
- SDSFIE-M v 1.0.2 completed Aug 2014
  - SDSFIE-M 2.0 in development
  - ArcGIS Metadata tools in development
As of: 16-Jan-2019

A = Adaptation Submission
B = Develop Data Migration Plan
C = Data Migration

SDSFIE: SDSFIE Online in GovCloud [Oct-2018]

ASD(S): SDSFIE-Q Mandated [Mar-2020]
DISDI Portal: Secure Cloud IOC [Dec-2019]

SDSFIE-V: 4.0 Fully Implemented (goal) [Jan-2021]
DISDI Portal: WebESS to DISDI Portal [Jul-2020]

CIP: DCS and RBJs
DEVELOPMENT ALL OTHER DCS's
## FY17-FY18 CIP Quality Trends

<table>
<thead>
<tr>
<th>Component</th>
<th>% Duplicate Features</th>
<th>% Features Outside Site Boundaries (Using Component Site/Installation Data)</th>
<th>% Features with Invalid or Null RPSUID</th>
<th>% Features with Invalid or Null RPUID (excludes RP placeholders)</th>
<th>% Features with Invalid Geometry</th>
</tr>
</thead>
<tbody>
<tr>
<td>USAF/ANG</td>
<td>5.14%</td>
<td>0.00%</td>
<td>2.77%</td>
<td>33.93%</td>
<td>0.15%</td>
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<tr>
<td>USA/ARNG</td>
<td>7.95%</td>
<td>0.01%</td>
<td>5.06%</td>
<td>43.14%</td>
<td>0.08%</td>
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<tr>
<td>USMC</td>
<td>0.35%</td>
<td>3.75%</td>
<td>35.20%</td>
<td>51.33%</td>
<td>0.10%</td>
</tr>
<tr>
<td>USN</td>
<td>0.25%</td>
<td>13.80%</td>
<td>0.43%</td>
<td>21.78%</td>
<td>0.07%</td>
</tr>
<tr>
<td>WHS</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.78%</td>
<td>0.62%</td>
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- **Significant Quality improvement in FY18:**
  - Major improvement in real property attribute population
    - USA: RPSUID attribution improved from 66.75% error to 5.06% error
    - USA, USAF, USMC and USN: Double digit improvement in RPUID attribution
    - Overall, better consistency with real property placeholder values
  - USA: “Features outside sites” errors improved from 81.39% error to 0.01% error

- **Nagging data quality issues**
  - Conformance with SDSFIE
  - Incomplete and inconsistent attribution
Update: SDSFIE Quality Standard

- Data Content Specification (DCS) Group 1 and 2: Approved
- DCS Group 3: Approved (IGG Vote 13 Mar 2019)
- DCS Group 4: Approved (IGG Vote 12 Jun 2019)
- DCS Group 5: In WG Review
- DCS Group 6: Not yet started
Good metadata is an essential element for trusted, authoritative IG&S.

Creating metadata is not as easy as it should be!
Update: SDSFIE Metadata Standard

- Development funded and underway…
- Aligns with ArcGIS Metadata format 2.0
- An ISO 19115-3 Editor for Desktop will be a by-product
Authoritative Data Source (ADS): The Geospatial Library for Each Installation

- Brings all trusted IGI&S data together in one place (per installation)
- Contents of the library are curated
- Contents of the library are cataloged
- The Librarian is the ADS Manager
  - A gatekeeper for contents
  - Performs curation
  - Maintains catalog
- Just as libraries contain English language materials, so too is SDSFIE the language for IGI&S ADSs

**Content Curation** is the act of discovering, gathering, and presenting digital content that surrounds specific subject matter.
Implementation Guidance for IGI&S ADS

Main document, plus three key sub-parts:

1. List of Designated ADS content (Appendix B)
2. Maturity Model (Appendix C)
3. Reference Architecture (Annex A)

Appendix B: IGI&S ADS Designated Content

Appendix C: IGI&S ADS Maturity Model
Challenge: Sensitivity of IGI&S Data and Maps

- Increasing precision of IGI&S data has increased its sensitivity in this high threat environment
  - Raw, highly detailed IGI&S data poses greatest sensitivity and risk
  - Releasing large GIS datasets (aggregating multiple installations or large geographic regions) also poses higher security risks

- Some sensitive IGI&S data is shared for official uses, but protected
  - US Census Bureau for decennial census
  - Homeland security community for emergency response

- Basic IGI&S data (only) and installation maps publicly released after security review

- DISDI is now drafting a security classification guide (SCG) for IGI&S
  - ASD(S) is an original classification authority
  - NGA is providing assistance
• The movement to change the management of “controlled unclassified information” has been underway since 7 MAY 2008

• President Obama issued Executive Order 13556 "Controlled Unclassified Information“ on 4 NOV 2010

• Information Security Oversight Office (ISOO) at National Archives and Records Administration (NARA) published proposed rule 32 CFR Part 2002

• 32 CFR Part 2002 became effective 14 NOV 2016

• DoD has drafted a replacement for DoD Manual 5200.01, volume 4: DoD Information Security Program: Controlled Unclassified Information (CUI), February 24, 2012 titled DoD Instruction 5200.FG, Controlled Unclassified Information (CUI), issuance date TBD

• The DoDI essentially follows the CUI guidance from NARA
SDSFIE-V “Severity of Change”

Severity of Change

Re-engineering: Lump and Normalize

Adjustment From 3.0 Revolution

Major Changes Since 4.0

SMS RPCS NAS

Evolutionary

Revolutionary

SDSFIE Release

2.6.1 3.0 3.1 4.0 5.0 6.0

4.0.1 4.0.2 4.0.3 4.0.4
Thinking Strategically - Beyond SDSFIE-V 4.0

• The IGG has already approved a number of Major and Minor model changes… but their impact is **minimal**

• Army and USACE HQ Adaptations already include applicable Major and Minor changes

• Components generally favor adopting a “continuous” implementation approach
  – 4.0.x Adaptations could be 5.0 compliant even before 5.0 is mandated

• SDSFIE-V 5.0 will be an **evolutionary** change

• SDSFIE-V 6.0 should, on balance, be evolutionary also
  – Sustainment Management System alignment
  – Real Property Classification System (CATCODE) updates
  – NSG Application Schema alignment

*SDSFIE-V 5.0 and 6.0 are not as scary as you might think*
“To provide authoritative, cost-effective defense installation geospatial information and services for fact-based decision making across the DoD spectrum of operations.”

“In god we trust, all others must bring data”
- W. Edwards Deming