IChart: A Tool For Visualizing and Managing Organizational and Force Structure Data

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Elements tagged with unique identifiers per DODD 8320.3
- Document hierarchies & command/support relationships (per the Service's Title 10 responsibilities)
- Force Structure is the central theme for integrating data
- Org Servers are the ADS for force structure authorizations per DODI 8260.03

Data Consumers
- PPBE
- BFT
- Force Employment
- Intelligence
- Personnel
- Initialization Data
- DoD HR
- DMDC
- Adaptive Planning
- C2 Systems
- Financial
- Analytic Agenda
- DRRS
- Readiness
- OUID Registry
- Installations
- Logistics
- Battle C2 Systems

GFM DI Org Server CONOPS

Electronically documents “Authorized” force structure data for integration across DoD

Feeder Systems
- eJMAPS
- TFSMS
- DRRS-N
- FMS
- GCSS-AF

Raw Data

ORG Servers “Shared Spaces”

Types of Data
- Billet
- Organization
- Command relationships

Net-Centric Enterprise Services
- Content Discovery Core Enterprise Service
- Metadata Registry
- NCES Service Registry

Visible

Web Services
- Publish/Subscribe
- IAW Net-Centric Data Strategy

Accessible

Authoritative

Force Structure Data

Understandable

GFM Information Exchange Schema
Objectives

• Create “slices” of real force structure to demonstrate basic GFM concepts

• Need tool to allow researchers to create, edit, and view force structure data
  – Use GOTS/Open Source
  – Support multiple platforms
  – Design with future applications in mind

• Workbench tool, not a prototype
  – Contains debugging options
  – Displays data normally hidden from user
Components

- Programming language: Java
- RDBMS: MySQL
- Connectivity: JDBC
- XML parser: Document Object Model (DOM)
- MIL-STD-2525B symbols: Graphical Situation Display (GSD – GOTS)
- Tree display algorithm: C program written by ARL for older project
## Rollup Details

### Organization: A Tank Company

<table>
<thead>
<tr>
<th>EwID</th>
<th>Qty</th>
<th>Name</th>
<th>OTE Name</th>
<th>Org Type Name</th>
<th>Category</th>
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</thead>
<tbody>
<tr>
<td>0 10000000000000175</td>
<td>1</td>
<td>A</td>
<td>Tank Company</td>
<td>Tank Co</td>
<td>UN</td>
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<tr>
<td>0 10000000000000176</td>
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<td>Co HQ</td>
<td>Company HQ</td>
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<td>UN</td>
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<td>UN</td>
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<tr>
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<td>HQ</td>
<td>Crew HQ Tank</td>
<td>HQ</td>
<td>CR</td>
</tr>
<tr>
<td>0 10000000000000179</td>
<td>1</td>
<td>CO</td>
<td>Commander</td>
<td>Co Cdr</td>
<td>BL</td>
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### Materiel Authorizations

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<tr>
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<th>Stock # Name</th>
<th>Stock #</th>
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</thead>
<tbody>
<tr>
<td>0 1000000000000040B</td>
<td>21</td>
<td>RIFLE 5.56 MILLIMETER: M4</td>
<td>NSN</td>
<td>R97234</td>
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<tr>
<td>0 10000000000000410</td>
<td>28</td>
<td>NIGHT VISION GOGGLE: A...</td>
<td>NSN</td>
<td>N05482</td>
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<tr>
<td>0 10000000000000413</td>
<td>4</td>
<td>RADIO SET: AN/VRC-92F(C)</td>
<td>NSN</td>
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<td>0 10000000000000414</td>
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<tr>
<td>0 10000000000000415</td>
<td>41</td>
<td>CAMOUFLAGE SCREEN SUP...</td>
<td>NSN</td>
<td>C89070</td>
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### Primary Person Types

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<tr>
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<th>Name</th>
<th>Skill Attr</th>
<th>Skill Attr Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 100001DE00000096A</td>
<td>10</td>
<td>JUDGE ADVOCATE...</td>
<td>ROOT OCCUPATION...</td>
<td>27B00 0-3</td>
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</table>

### Additional Skills

<table>
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<th>Skill Attr Code</th>
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<tbody>
<tr>
<td>0 100001DE00000059</td>
<td>10</td>
<td>COLONEL</td>
<td>RANK; USA; OFFI...</td>
<td>COL</td>
</tr>
<tr>
<td>0 100024D345133BA</td>
<td>10</td>
<td>NOT APPLICABLE</td>
<td>BLANK VALUE; US...</td>
<td>NA</td>
</tr>
<tr>
<td>0 10002470000001D</td>
<td>10</td>
<td>OFFICER LEVEL 4</td>
<td>GRADE; USDOD; ...</td>
<td>0-4</td>
</tr>
</tbody>
</table>
• GFM uses parameterized trees
  – Tree type
  – Date of interest
  – Classification level
• Includes historic and future data
Basic Node Operations

- **Display Menu**
  - Show Node
  - Show Link
  - Show Rollup
  - Expand
  - Collapse

- **Edit Menu**
  - Create Node
  - Edit Node
  - Assign Node
Typical Object Dialog

- **Obj Item ID**: 010000000000018E (72057594037928334)
- **Cat Code**: OR
- **Name**: 1st Platoon
- **GFM_Name**: 1st Platoon
- **Display Name**: 1
- **2525B Symbol**: 
- **Obj Type Estab**: 01000000000003FF (Tank Platoon)
- **Start Date/Time Group**: 1990-01-01 00:00:00.0
- **Terminal Date/Time Group**: 2999-12-01 00:00:00.0
- **Classification**: U
- **Owner/Producer**: USA
- **Dissemination**: 
- **ORG**: 
- **Cat Code**: UN
- **Short Name**: 1
- **Formal Abbrd Name**: 

**Close**
File Formats

• Read and write:
  – XML
  – SQL
  – Comma Separated Variables (CSV)

• Write:
  – Excel
  – User-defined CSV
Dynamic Data

• Load data as it is needed
  – Minimizes memory use
• Data may reside in other databases
  – Co-located database
  – External server
• Act as client to simulated server
  – Test client/server architecture
• DOM may validate XML file
  – “Well-formed” data
  – Validate against GFM schema
• Detect missing data
• Visual inspection of tree
• Counters displayed on nodes
• Rollups and summary data
• Save selected data elements in file
Future Enhancements

• User-requested features
• Demonstrate utility of GFM
  – Chain of Command
  – Rollups for logistics and future requirements
• Implement and test schema changes
• Refactor code for general use
  – Easier to maintain
  – Modify tree display for command and control
Summary

• IChart has met the goals of providing a tool to generate, edit, and display GFM organizational and force structure constructs (OFSC)

• Standard tool for briefings involving GFM data

• Developers using IChart to validate their data
Questions?