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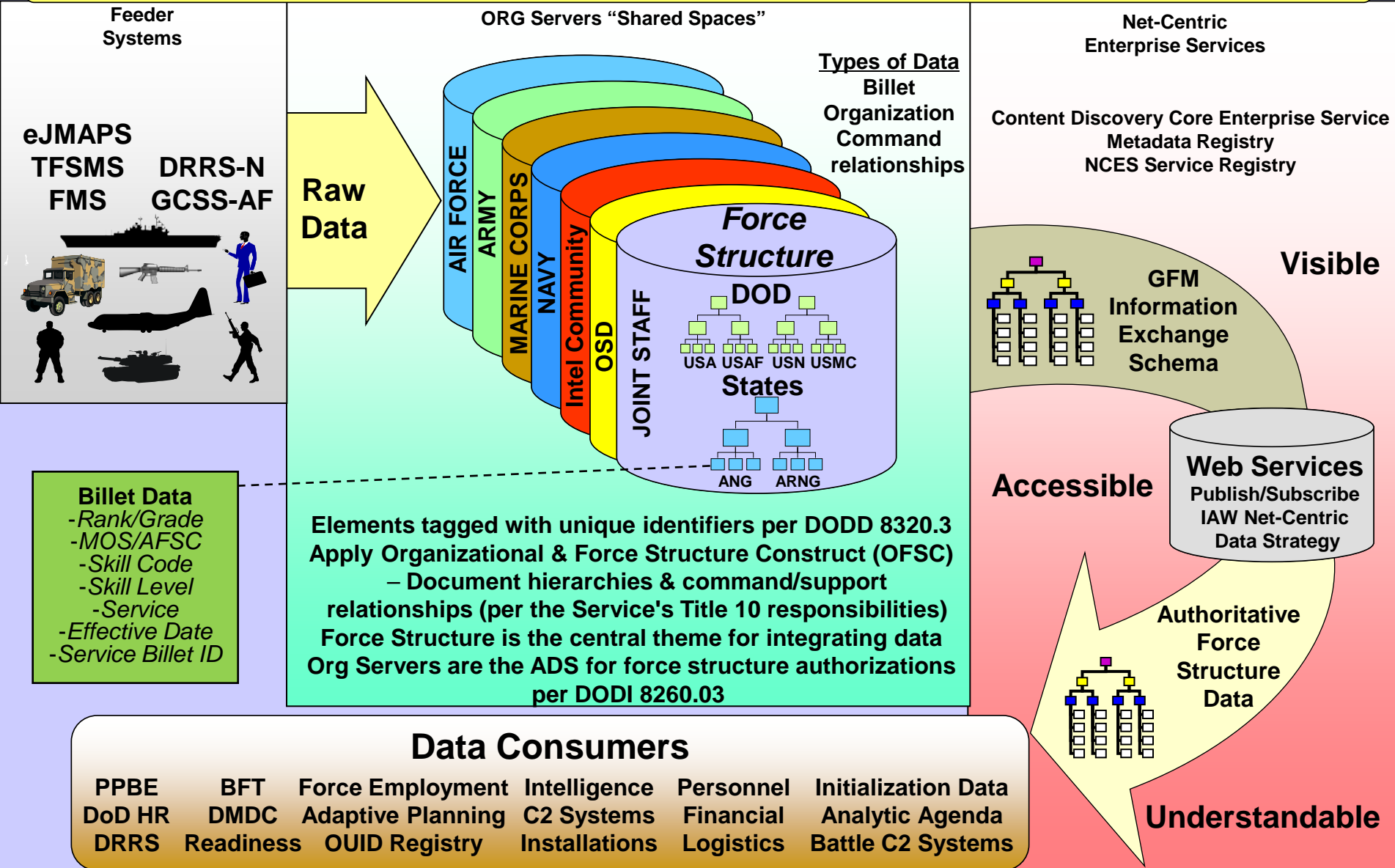
IChart: A Tool For Visualizing and Managing Organizational and Force Structure Data

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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"

AIR FORCE
ARMY
MARINE CORPS
NAVY
Intel Community
OSD
JOINT STAFF

Types of Data
Billet
Organization
Command relationships

Force Structure

DOD

USA   USAF   USN   USMC

States

ANG   ARNG

Net-Centric Enterprise Services

Content Discovery Core Enterprise Service
Metadata Registry
NCES Service Registry

Visible

GFM Information Exchange Schema

Accessible

Web Services
Publish/Subscribe
IAW Net-Centric
Data Strategy

Authoritative Force Structure Data

Understandable

Billet Data
-*Rank/Grade*
-*MOS/AFSC*
-*Skill Code*
-*Skill Level*
-*Service*
-*Effective Date*
-*Service Billet ID*

Elements tagged with unique identifiers per DODD 8320.3
Apply Organizational & Force Structure Construct (OFSC)
– 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

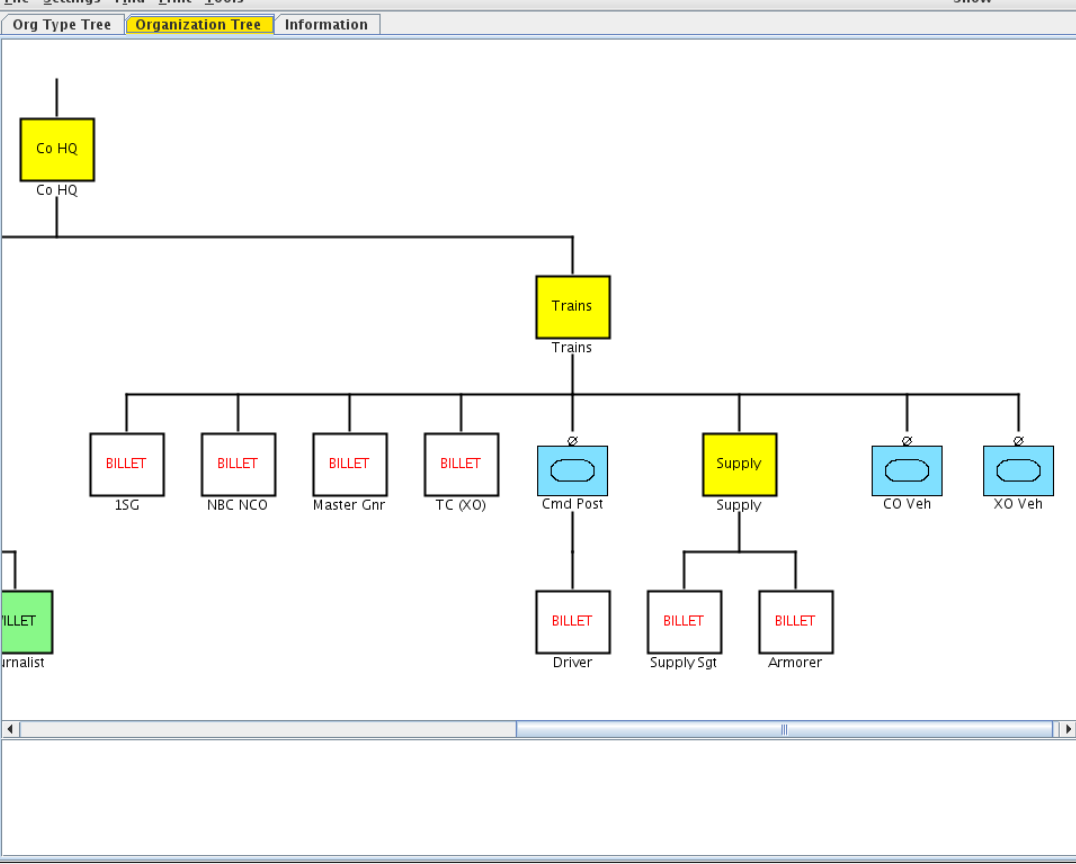|					
PPBE	BFT	Force Employment	Intelligence	Personnel	Initialization Data
DoD HR	DMDC	Adaptive Planning	C2 Systems	Financial	Analytic Agenda
DRRS	Readiness	OUID Registry	Installations	Logistics	Battle C2 Systems

- 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

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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

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IChart Display

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Rollup Details

Rollup

Organization: A Tank Company

	EwID	Qty	Name	OTE Name	Org Type Name	Category
o	0100000000000175	1	A	Tank Company	Tank Co	UN
o	0100000000000176	1	Co HQ	Company HQ	Co HQ	UN
o	0100000000000177	1	HQ	HQ Tank Section	HQ	UN
o	0100000000000178	1	HQ	Crew HQ Tank	HQ	CR
o	0100000000000179	1	CO	Commander	Co Cdr	BL

Materiel Authorizations

	EwID	Qty	Name	Stock # Name	Stock #
o	010000000000040B	21	RIFLE 5 56 MILLIMETER: M4	NSN	R97234
o	0100000000000410	28	NIGHT VISION GOGGLE: A...	NSN	N05482
o	0100000000000413	4	RADIO SET: AN/VRC-92F(C)	NSN	R45543
o	0100000000000414	10	BORESIGHTING EQUIPMEN...	NSN	B90494
o	0100000000000415	41	CAMOUFLAGE SCREEN SUP...	NSN	C89070

Primary Person Types

	EwID	Qty	Name	Skill Attr	Skill Attr Code
o	010001DE0000096A	10	JUDGE ADVOC...	ROOT OCCUPATION...	27B00 O-3

Additional Skills

	EwID	Qty	Name	Skill Attr	Skill Attr Code
o	010001DE00000059	10	COLONEL	RANK; USA; OFFI...	COL
o	0100024D345133BA	10	NOT APPLICABLE	BLANK VALUE; US...	NA
o	010002470000001D	10	OFFICER LEVEL 4	GRADE; USDOD; ...	O-4

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- GFM uses parameterized trees
  - Tree type
  - Date of interest
  - Classification level
- Includes historic and future data

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- **Display Menu**
  - Show Node
  - Show Link
  - Show Rollup
  - Expand
  - Collapse
- **Edit Menu**
  - Create Node
  - Edit Node
  - Assign Node

Show	▶
Expand	▶
Collapse	
Make Top	
Show Top	
Show Parent	
Save Bookmark	
Help	

Create	▶
Copy	
Clone	
Edit	▶
Assign	▶
Assign Role	▶
De-assign	
Remove	
Help	

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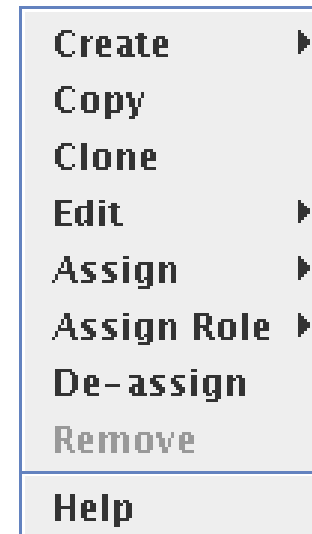
Org: 1st Platoon

| Org: 1st Platoon | Aliases (4) | Superior | Subordinates (2) | Is Led By | OrgType | 2525B Symbol |

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

- Read and write:
  - XML
  - SQL
  - Comma Separated Variables (CSV)
- Write:
  - Excel
  - User-defined CSV

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- 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

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- 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

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- 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

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- 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

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Questions?