

Joint Approach for Target Management for the Precision Strike of Time Sensitive Targets

Raytheon Network Centric Systems

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What is a “Target” ?

- ✍ The term “Target” is an overloaded word
- ✍ Joint Publication 1-02 defines a target as:
 1. *A geographical area, complex, or installation planned for capture or destruction by military forces.*
 2. *In intelligence usage, a country, area, installation, agency, or person against which intelligence operations are directed.*
 3. *An area designated and numbered for future firing.*
 4. *In gunfire support usage, an impact burst which hits the target.*



Definition variance inhibits the cooperative targeting process

Disjointed “Joint” Targeting

- ✍ Higher echelon Commanders typically see strategic and deep targets, but these typically do not include lower level tactical targets unless specifically pushed to them
- ✍ No single targeting repository exists to provide the commander with a complete battlespace-wide SA view of both strategic and tactical targets
- ✍ Increasing number of Joint operations forcing increasing need for a common understanding of Targets and the Targeting process
- ✍ Separate methodologies that are process-centric and service unique

Precision Requirements Compound the Problem Space







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Current / Historical View

Multiple Stovepiped Systems Procurement:

-  TBMCS (Theatre Battle Management Core System)
-  JTT (Joint Targeting Toolkit)
-  AFATDS (Advanced Field Artillery Tactical Data System)
-  ADOCS (Automated Deep Operations Coordination System)
-  GCCS (Global Command and Control System)
-  C2PC (Command and Control PC)

Different systems maintain target data in their own unique formats and unique identifier in accordance with varying methodologies

Sharing Target Data Requires the use of push interfaces:

-  Message formats (eg USMTF, JVMF)
-  Cursor on Target
-  Point to Point Interfaces

No “Common” Target Understanding

Future / Desired State

- ✍ Common and more complete targeting SA accessible across the battlespace via NCES/GIG

“...empowerment comes from enhanced information and decision support capabilities to maintain situational awareness and the ability to plan, execute, monitor, and assess joint and multinational campaigns and operations throughout the spectrum of conflict.”

--Net-Enabled Command Capability CDD

- ✍ Opportunity to pass targets between other independently developed software services migrated from Current Force systems

- ✍ Rich environment for:

- Cross service communication and understanding
- Reduced battlespace ambiguity
- Enhanced cross service target prosecution
- Enforcing commander's target proponentcy policies

- ✍ Central point to access additional target prosecution systems as they become available (lethal and non-lethal systems)

Other Attempts

Standard Messaging Formats

- JVMF
- USMTF
- OTH-GOLD

MIDB - Modernized Integrated DataBase

JCDB - Joint Common DataBase

CoT - Cursor on Target

C2IEDM / JC3IEDM - Command and Control Information Exchange Data Model / Joint Consultation Command and Control Information Exchange Data Model

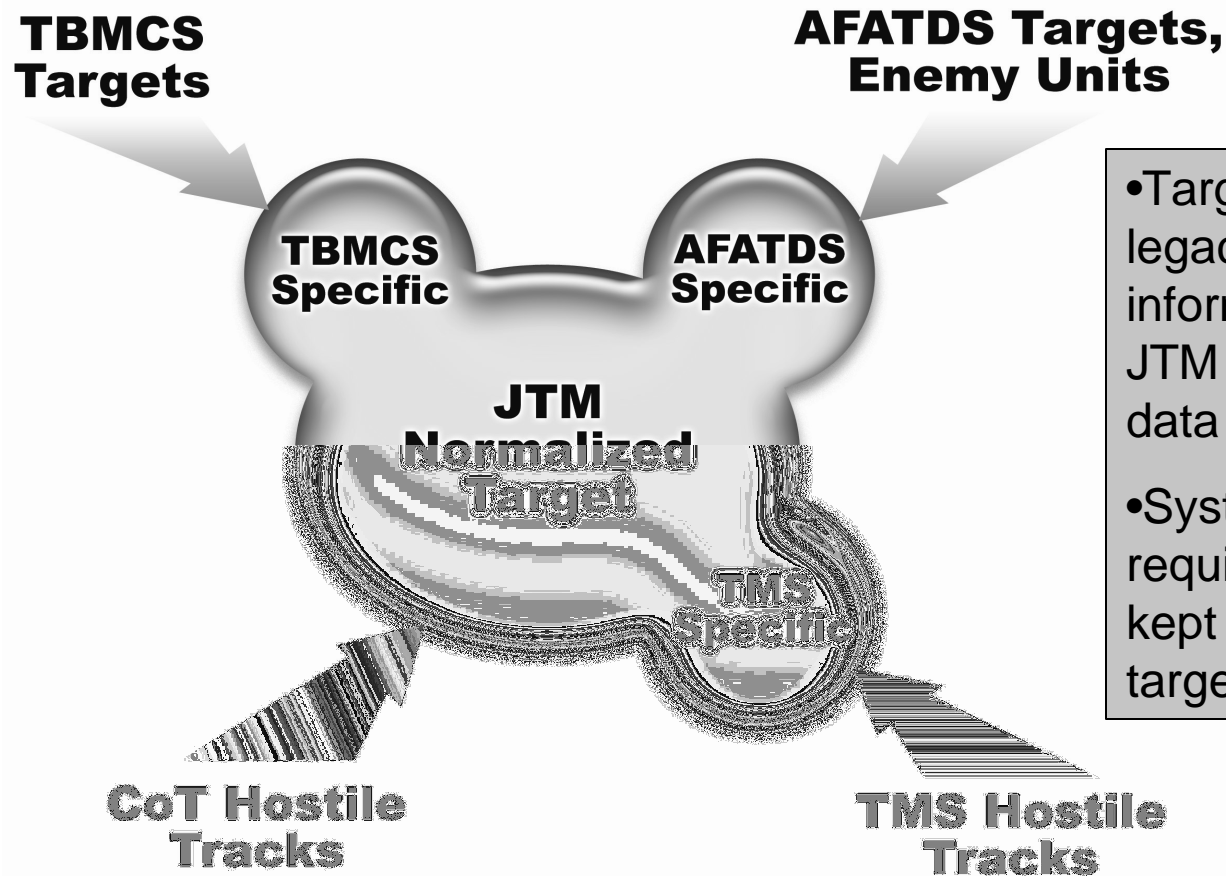
Either too generic or too specific

JTM – an overview

- ✍ Joint Target Manager (JTM) embraces cited NECC targeting capabilities.
 - Provides a centralized common target representation and repository.
 - Specialized external system data is maintained
 - Targeting Folders and “non-structured” data association assists with target development
 - Can contain targets, other target folders, or attachments
 - Target List Management
- ✍ JTM provides a Web Service Interface and portal access
- ✍ Data Distribution enabling enterprise-wide SA
- ✍ Visualization application via the C2PC / JCTW

NECC Pilot System from a “Go to War” Capability

Merged Target Data Schema



- Targets are harvested from legacy systems and the information is mapped to the JTM Normalized Target (JNT) data structure.
- System-specific information required for communications is kept along with the normalized target structure

Unique target identifiers are created for all JTM targets. Identifiers for all systems are also kept so that the user can easily refer to a target with the operator of another system. This also aids target correlation.

JTM Benefits

Information Sharing:

- Maintenance of Detailed External Source Data
- Target Data Distribution
- Web Service Interface for External Consumers
- Non-Structured Target Data Association and Aggregation
- Broader access to targeting information from tactical to strategic
- Single service providing targeting data across battlespace

Information Understanding:

- Normalized Target Data Model
- Non-Structured Target Data Association and Aggregation
- Broader access to targeting information from tactical to strategic
- Maintenance of Detailed External Source Data

Targeting Process Enhancement:

- Access to Effects Delivery Execution Functions
- Legacy Targeting System Integration
- Broader access to targeting information from tactical to strategic
- Single service providing targeting data across battlespace

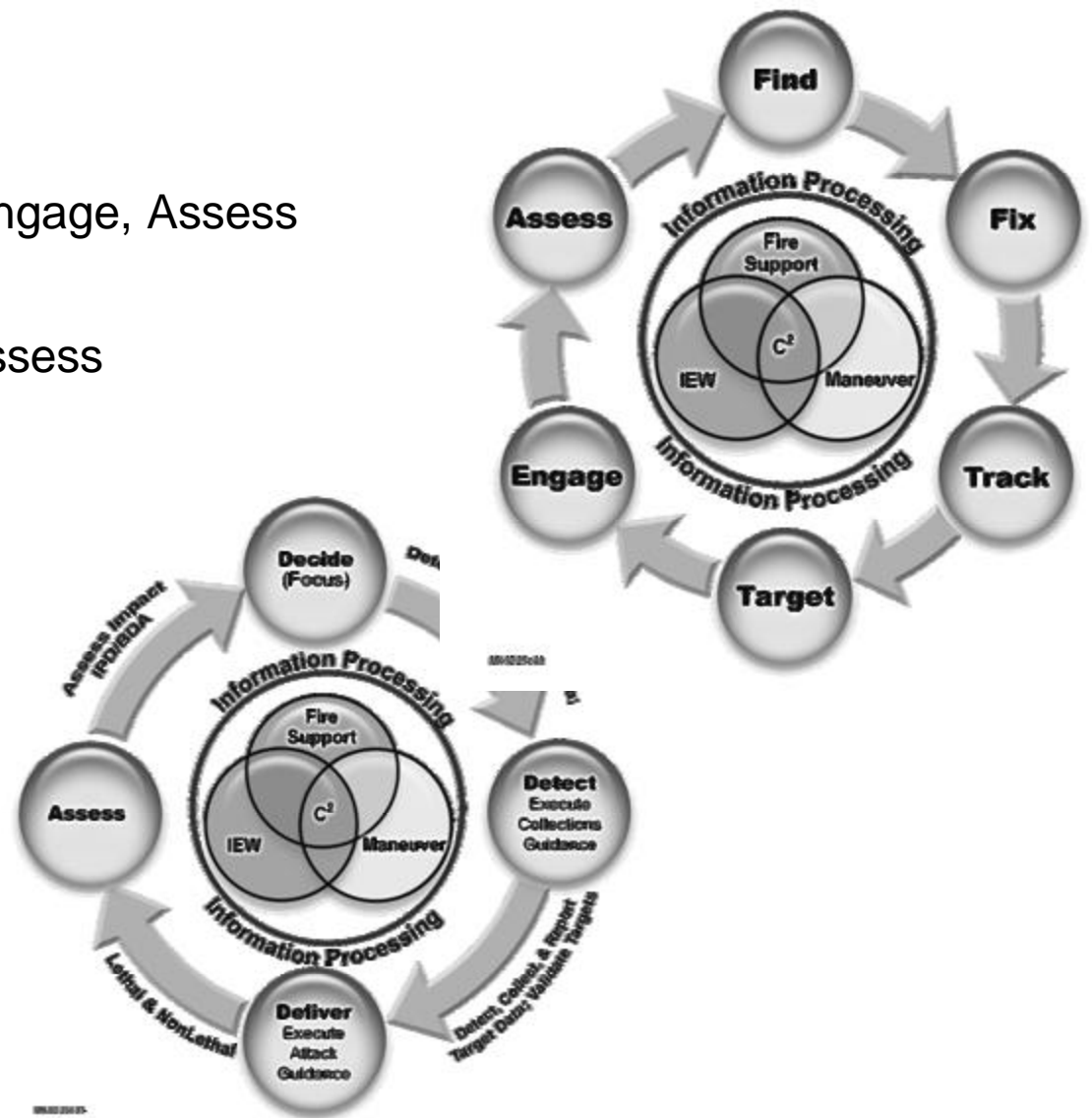
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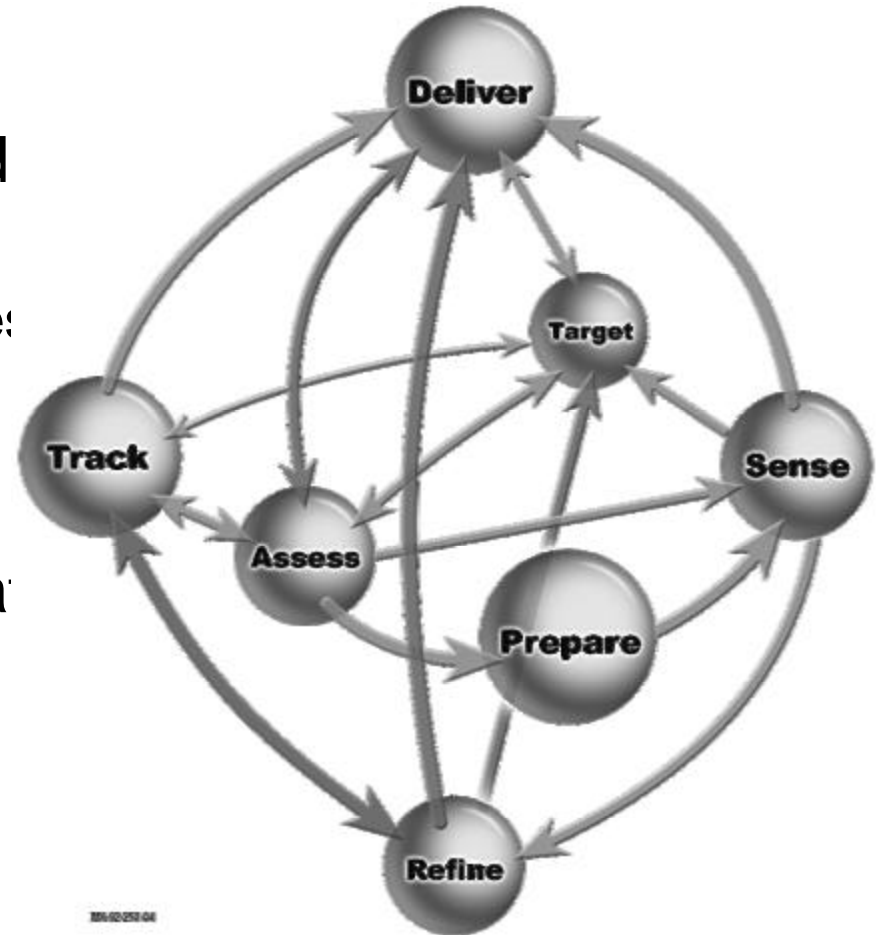
Targeting Processes

- ✍ Two methodologies
 - F2T2EA
 - ✍ Find, Fix, Track, Target, Engage, Assess
 - D3A
 - ✍ Decide, Detect, Deliver, Assess
- ✍ Both are:
 - *Serial*
 - *Process Oriented*
- ✍ *Neither are:*
 - *Net-centric*
 - *Capabilities Focused*



Net-Centric Targeting Model

- ✍ All nodes are created equal
- ✍ Supports current targeting thread
 - Capabilities focused
 - Takes advantage of netted capabilities
- ✍ Events can happen concurrently
- ✍ Bi-directional information flows
- ✍ Supports TST as well as deliberate planning
- ✍ Strategic and Tactical
- ✍ Incorporates D3A and F2T2EA methodologies



Targeting model, not methodology!

Future Work

- ✍ Embrace NCES infrastructure
 - Communications
 - Security/Information Assurance
 - Data Store
- ✍ Enrich semantic understanding of metadata attached to unstructured data
 - Enable searching and automatic retrieval
- ✍ Enhance coalition interoperability
- ✍ Increase legacy system interoperability in net-centric environment
 - Utilize available target mensuration services to streamline kill-chain
- ✍ Work with warfighter to develop/embrace net-centric operations, methodologies and doctrine
 - Utilize technology on hand

Evolving Capabilities for Evolving Needs

Summary

- ✍ Urgent Need for:
 - Common Target SA
 - Normalized Joint Targeting Data schema
 - Utilization of Non-structured Data
 - Incorporation of Intelligence Data
 - Bridging Intelligence and Effects community
- ✍ Initial work shows promise
 - Migration from CoT, JTLM, TSA
 - JTM Normalized Target Approach
 - Joint Services are all partners in development
 - SOA migration, demonstrating in NECC Pilots
- ✍ More Work is Needed
 - JC2 / NECC
 - NCES
 - Working with the services to redefine doctrine/TTPs

Working to be a force multiplier

Backup Slides

JTM Background

JRAE 05 (Joint Rapid Architecture Experiment)

- Shared targeting data between services
- JTLM (Joint Target List Management)
 - Common Target Schema
 - URI pointers back to source systems of record

TSA (Targeting Situational Awareness)

- Addressed the need for associating “non-structured” targeting data with targets
- Coalescing multiple target data sources

JTM (Joint Target Manager)

- Endorsed by all services (truly Joint)
- Merged JTLM and TSA capabilities
- Enhanced target folders and “non-structured” data
- Increased target data sources
- First attempt at target data normalization
 - Still maintains specialized target data from external data sources (TBMCS, AFATDS, etc.)

JTM Architecture

