“Traceability”

- How we gain value from Unique Identification of Items in Concert with NATO Codification?
Historical Methods of Identification

- Logistics — NSN, Manufacturer and Part Number
- Property Management — Tail Number, Hull Number, Asset Tag (usually for local tracking)
- Manufacturing — Part Number, Serial Number that creates uniqueness within that manufactured item
- Maintenance — Manufacturer, Part Number
- Tracking (regulatory and security) — Mixed
- Acquisition — Contract and Line Item Numbers and Quantity
- Finance — Fund Cite and Requisition Documents
NATO – Asset Identification

NATO Stock Number (NSN) level
*Item of Supply*

Part Number level
*Item of Production*

Unique Identification level
*Item of Usage*

<table>
<thead>
<tr>
<th>Vendor A</th>
<th>Vendor B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number 1</td>
<td>Part Number 2</td>
</tr>
</tbody>
</table>

- NSN
- UID A1
- UID A2
- UID A3
- UID A4
- UID B1
- UID B2
- UID B3
- UID B4
What is NATO Unique Identification (UID) of Items?

ECC 200 Data Matrix Symbol

Machine Readable

MFR 0CVA5
PN 4L0014-163B
SN SA10197

Open Standard *

– Air Transport Association
– GS1
– International Standards Organization
– VIN; ESN

* ISO endorsed Oct 2006;
NATO first ratified STANAG 2290, Dec 2007

Data formatted using ISO 15434 (Data Identifier Example)

Format Code

Data Identifiers

Enterprise Identifier

Original Part Number

Serial Number

Unique Item Identifier (UII) is a globally unique number for a single instance of an item beyond just the manufacturer

UII = D0CVA54L0014-163BSA10197
Focus Areas for Traceability?

• Anti-Counterfeiting (A/C)
  – Recent emphasis on counterfeit problems in press & government
  – US Federal A/C Report and Possible Executive Order (Fall 2011)
  – Proposal for NATO Standard or Guide addressing “Counterfeit Risk Reduction” (i.e., similar to AUIDP-1 “UID of Items”)

• Through Life Traceability
  – Expected to be included in US Federal A/C report
  – Proposed addition to Allied Administrative Publication (AAP-48) “NATO System Life Cycle Stages and Processes”
    • NSN/Part/Lot Traceability
    • Unique Item Level Traceability using UID of Items

• Shareable Operational Resources (Follow-on Workshop)
  – Enhance Existing NAMSA Capabilities for “connecting” Codification and UID of Items data
  – Implement web-based tool to share items and services in bi-lateral & multinational operations including humanitarian missions through Shareable Operational Resources Tool (SORT)
Anti-Counterfeiting Foundational Principle: “Identify Counterfeit Risk & Manage It”

- Risk Management is Part of Program and Item Management
- Counterfeiting Is One Of Many Program Risks
# Tailoring Traceability Based on Risk at the Item Level by Program

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Near Certainty ~90%</th>
<th>Highly Likely ~70%</th>
<th>Likely ~50%</th>
<th>Low Likelihood ~30%</th>
<th>Not Likely ~10%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Audit/Review</strong></td>
<td>Process Audit/Review</td>
<td>Verification Testing</td>
<td>Authorized Supplier</td>
<td>Verification Testing</td>
<td>Certificate of Authenticity</td>
</tr>
<tr>
<td><strong>Auditable</strong></td>
<td>Auditable Part History</td>
<td>Authorized Supplier</td>
<td>Authorized Supplier</td>
<td>Certificate of Authenticity</td>
<td>Certificate of Authenticity</td>
</tr>
<tr>
<td><strong>Legally</strong></td>
<td>Legally Authorized Source</td>
<td>Legally Authorized Source</td>
<td>Legally Authorized Source</td>
<td>Verification Testing</td>
<td>Legally Authorized Source</td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td>Legally Authorized Source</td>
<td>Legally Authorized Source</td>
<td>Legally Authorized Source</td>
<td>Verification Testing</td>
<td>Legally Authorized Source</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impact of Non-Mitigated Counterfeit Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negligible</td>
</tr>
</tbody>
</table>

### Risk Categories:
- **High**
- **Medium**
- **Low**

As the risk of Counterfeiting increases along with the consequence – more rigorous countermeasures must be taken throughout the supply chain.

Based on the Program/Item Management designation of “Susceptibility to Counterfeiting” – additional traceability measures will be required of contractors and their suppliers as shown in this diagram.
Through Life Traceability

• Marking of the item needs to be globally unique, however the physical mark is **not** the guarantee the item is not a counterfeit
  • If the counterfeiter can counterfeit the item why not the mark?
• Identification of the item and/or item packaging, is the first step to connecting to the traceability data.
• This identification becomes the key to discovery:
  • NSN – frequency of failures at NSN Level
  • MFR/PN/SN – subset of overall population of NSNs particularly impacted
  • UII - conditions around specific instances of the enable more exhaustive discovery (e.g., instances used in a certain environment or stored improperly)
• Data on all aspects of items is essential to analysis
  • Formal vs. Informal reporting of deficiencies or failures
  • Internal Supply Chain vs. External Supply Chain
  • Civil vs. Criminal actions
  • Lifecycle history (e.g., maintenance, operations, storage, procurement)
Contact Info

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Shareable Operational Resources Tool (SORT)

Facilitating Multinational Logistics by Exposing Shareable Resources Among Nations

Rob Leibrandt, Chairman AC 327 WG5
OUSD(AT&L)/DPAP/PDI
10 November 2011
Shareable Operational Resources Tool (SORT)  
- How we got here

- Desire to demonstrate the value of a combination of NATO Codification, UID of Items and Common Data Exchange supporting a specific operational instance
- Recognized some tools exist (e.g., NATO Logistics Stock Exchange, bi or multi-lateral agreements) to exchange supplies at the NSN level among signatory nations and hope to leverage those relationships
- Desire expose resource visibility to Non-Governmental Organizations (NGOs) and Contractors with contract support relationships
- Initial capability exposed available resources via web-based application for in-theater use to support “Coalition Logistics Interoperability”
  - US Funded; Collaboration with US Marine Corps, NATO Maintenance and Supply Agency, National reps to AC/327 WG 5
    - Hosted at NAMSA
    - Near-term operational test to support current needs in Iraq and Afghanistan under Multinational Task Force MNA TF
- Received NATO Approval of SORT as a Tier 1 MNA TF project - Oct 2011
Current Capability

- NAMSA hosted instance
  - “Offering” Nations identify and transmit standard data of sharable assets including the NSN, RIC, UII (with UII items individual lifecycle data is available), part #, etc.
  - Central site exposes sharable assets and related data within a theater of operation among coalition members,
  - “Needing” Nation requests to purchase or borrow an item by NSN (quantity) or by individual item (UII)
  - Account balance sheets track credit/debit for a period of time or length of an operation.
Concept View - Shareable Asset Visibility Service

- **Country A Items & Services**
  - Digital file from Country A National Property System
  - Items/Services coded as shareable, via bi-lateral agreement, between Country A & C

- **Country B Items & Services**
  - Country B UID Registry
  - Direct Interface from Country D UID Registry or Property System

- **Country C Items**
  - Country C UID Registry (hosted at NAMSA)

- **Country D Items**

**Export Data Products**

- Shareable Asset Balance Sheet (credits and debits)
  - Shareable Asset Registry or Situational Registry (e.g., Shared Coalition Environment)

**Codification**
- (e.g., NATO NMCRL)
Main Functions

- Load Shareable Resources
  - Upload to web site or file transfer
- View Resources
  - View Available Resources: browse and select items
  - Shopping Basket: Requestor confirms selected items or delete pending requests
- Validate Request: Offering country approves or rejects pending requests.
- Execute Requests: Goods Issue by offering country, Goods Receipt by requesting country
- Reports
  - Debit/Credit balance sheet; General overview
Access to the tool – Log on

URL: https://clitest.namsa.nato.int

Strong authentication:
- MS*ISA server: Login + password (1st level)
- ePortal: Entrust card (2nd level)
Main Login Screen

Coalition Logistics Interoperability › Home

Shareable Items Menu

Testing Mode Login
- test_bel

View Assets
- View Available Assets

Load Shareable Assets
- Upload Shareable Assets

Reports
- What is my credit/debit balance sheet
- Request General Overview

Administration
- View Load Status
- Download xml structure (an .xsd or .xsl) and sample .xml
- Country Code Standard
- Condition Codes and their meaning
- Failure Codes and their meaning
- Sign out
- Help
Shareable Assets:
View Available Assets that meet Search Criteria

Coalition Logistics Interoperability › ShareableItemsList

Recently Modified
ShareableItemsRequest View
ShareableItemsBalance Detail
ShareableItemsBalance
ShareableItemsChange
ShareableItemsRequest

Recycle Bin
All Site Content

Criteria
NSN
CAGE
UII
Operation

Nomenclature
vehide

Clear Search Print Back Export CSV

230 record(s) found • page 1/10

<table>
<thead>
<tr>
<th>Basket NSN</th>
<th>NOMENCLATURE</th>
<th>PART NUMBER</th>
<th>RIC SERIAL #</th>
<th>UII</th>
<th>USE</th>
<th>COG</th>
</tr>
</thead>
<tbody>
<tr>
<td>2355015393634</td>
<td>LIGHT ARMORED VEHICLE 03002A0088</td>
<td>531341</td>
<td>D5616110665117-011LAV-0875-K07</td>
<td>Purchase USA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2355015393634</td>
<td>LIGHT ARMORED VEHICLE 03002A0088</td>
<td>LAV-0822-E07</td>
<td>D5616110665116-011LAV-0822-E07</td>
<td>Purchase USA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- The Nomenclature filter is set to "vehide".
- Two records are highlighted, showing the same NSN and Nomenclature, but different RIC Serial numbers.

- Records are ordered by Nomenclature and PART NUMBER.
**Shareable Assets: Item Detail Screen**

**Shareable Items Detail**

<table>
<thead>
<tr>
<th>NSN: 2355015393634</th>
<th>UII: D5616110666116-011LAV-0822-E07</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUI Type: UID2</td>
<td></td>
</tr>
<tr>
<td>POC Email: <a href="mailto:bspoden@namsa.nato.int">bspoden@namsa.nato.int</a></td>
<td>POC Name: RUDEN SERNA</td>
</tr>
<tr>
<td>Usage Qty: 916 KILOMETERS</td>
<td>POC Org: NO0164</td>
</tr>
<tr>
<td>System Identifier: 123</td>
<td>POC Phone: 760-725-9922</td>
</tr>
<tr>
<td>Asset Revision: A2</td>
<td>Manufacture Date:</td>
</tr>
<tr>
<td>Offering Price: 0.00</td>
<td>Country: USA</td>
</tr>
<tr>
<td></td>
<td>Operation:</td>
</tr>
</tbody>
</table>

**Mission Operational Failure History**

<table>
<thead>
<tr>
<th>FailureDate</th>
<th>RepairedBy</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-05-2010</td>
<td>NSWC CRAN</td>
</tr>
</tbody>
</table>

**Modifications**

<table>
<thead>
<tr>
<th>ModifDate</th>
<th>ModifDate</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-01-1995</td>
<td>CONVERSION OF MACHINE GUN 7.62MM M240E1 TO M240G CONFIGURATION USED ON L</td>
</tr>
<tr>
<td>25-02-2000</td>
<td>INSTALLATION OF AMMUNITION RACK BRACKET RETROFIT ON LIGHT ARMORED VEHICLE</td>
</tr>
<tr>
<td>13-04-2005</td>
<td>INSTALLATION OF THE M-30 LIGHT SOURCE CLAMP LOOP ON THE LIGHT ARMORED VEHICLE</td>
</tr>
</tbody>
</table>

**Description**

SUPPLEMENTARY FEATURES LAV-LA2

<table>
<thead>
<tr>
<th>Cage (substitutable items)</th>
<th>Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>01365</td>
<td>03002A0088</td>
</tr>
</tbody>
</table>

**Nomenclature**

<table>
<thead>
<tr>
<th>Hazardous</th>
<th>Weight</th>
<th>Unit</th>
<th>Volum</th>
<th>Unit</th>
<th>Price</th>
<th>Currency</th>
<th>Unit Cancelled</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIGHT ARMORED VEHICLE</td>
<td>A2296</td>
<td>LBR</td>
<td>1406311</td>
<td>CFT</td>
<td>1883020.00</td>
<td>USD</td>
<td>EA</td>
</tr>
</tbody>
</table>

**Buttons**

- Add to basket
- Print
- Back
Shareable Asset Database: Shopping basket concept
Shareable Asset Database:
Validate Requests
Shareable Asset Database: Indicate transfer and receipt of Items
Shareable Asset Database: Balance Sheet View

**Reporting currency**: USD

**Exchange rate of 05/04/2011**

<table>
<thead>
<tr>
<th>Clear NSN</th>
<th>UII</th>
<th>SERIAL #</th>
<th>Request Qty</th>
<th>Unit</th>
<th>FinalPrice</th>
<th>Currency</th>
<th>Offering Country</th>
<th>Requesting Country</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>1005015078747</td>
<td>1UKA9120091014-0678</td>
<td>20091014-0678</td>
<td>1.000</td>
<td>EA</td>
<td>4487.99</td>
<td>USD</td>
<td>USA</td>
<td>Closed</td>
</tr>
<tr>
<td>X</td>
<td>5820014923628</td>
<td>95103047</td>
<td>1.000</td>
<td>EA</td>
<td>19247.00</td>
<td>USD</td>
<td>USA</td>
<td>ITA</td>
<td>Closed</td>
</tr>
</tbody>
</table>

Export CSV  | Print | Back

---

[Image of a computer screen showing a detailed view of the Shareable Asset Database with a table of shareable items, including columns for Clear NSN, UII, SERIAL #, Request Qty, Unit, FinalPrice, Currency, Offering Country, Requesting Country, and Status.]
Agreed Enhancements 2012

• Inclusion of NGOs, Contractor resource exposure
• Incorporation of available Services (e.g. transport, vehicle maintenance, construction)
• Accommodation for bilateral and multi-lateral agreements and thresholds (e.g., credit limit)
• Exposure of unfulfilled need
• Option for Human entry of offer or need
• Develop electronic (system-to-system) request, confirm, and closure messages
• Use for operation/exercise planning of theater resources with pre-planned lead nation option
• Define content and export electronic records to external systems for processing (e.g., property systems, financial systems, etc.)
Interoperable Data to Populate SORT

Phase 1 = XML of key data elements
Phase 2 = Item Identification DEX

- International ISO 10303 AP 239 Product Life Cycle Support standard (NATO STANAG 4661)
- Item ID DEX defined to contain Codification and UID of Items data
- Accommodates UII item definition and UII item with usage “offer” messages
Seeking efficiencies for NATO through a multinational approach

"Smart Defence"

NATO ACT-led Task Force

To promote and synchronize ideas for multinational cooperation in capability development

To make specific recommendations for multinational pragmatic initiatives, agreed upon with nations

"While looking for new solutions, innovative solutions [and] multinational approaches, [we are] making sure that we ... make the best possible use of every dollar, every pound, every euro that our governments spend on defense."  General Abrial  16 March 2011
Multinational Task Force (MNA TF)

Working Group focus areas:

- WG1 – Capability Initiatives and Organisation of Forces
- WG2 – Acquisition
- WG3 – Operations and Maintenance
- WG4 – Preparation of Forces
- WG5 – Innovative Solutions
Multinational Task Force (MNA TF)

- Defence Ministerial level mission to identify and execute multinational projects – managed by NATO Allied Command Transformation
- Projects must:
  - Be Pragmatic, Realistic, Feasible
  - Benefit Alliance operations
  - Meet priority shortfalls
- Timeline:
  - Approx 3 months fielded initial operational instances of current capability in IRAQ
  - 3-6 months operational instances in Afghanistan
  - 6-9 months initial test of 2012 operational enhancements
  - 9-12 months operation test of 2012 operational enhancements
- US lead with UK and Canada participating.
- Seeking “offering” and “needing” nations for initial operational instances and fully participating nations