Introduction to the NATO Codification System

ABSTRACT

During the IQIS 2010 symposium, the NATO Codification System (NCS) reported on initiatives to introduce ISO 8000 to improve the levels of data received in support of NATO Codification and ISO 22745 to reduce the manual handling errors and processing time when creating a Total Item Record for the NCS.

With the tools now in place within several NATO Codification Bureaus to deliver in accordance with these ISO Standards only one barrier remains, the gap between the Ontology Defence Supply Chains use for the in service support of equipment and the Ontology the commercial supply community bases their control of design, build and sales of equipment.

This presentation will focus on the efforts to bridge that gap using a Master Data Ontology Management system with the NCS working in close partnership with several large OEMs who’s prime business is delivering for Defense.

BIOGRAPHY

Ian Smith
Chairman
NCS Transformation Steering Group

Mr Smith is the project manager for the Source Supplied Codification work and newly appointed Chairman of the NCS Transformation Steering Group. Ian has been a key participant in the project to implement the ISO Standards both in the UK and across the wider AC 135 community.
The DNA of Modern Logistics - NATO Codification

Source Supplied Codification Project
Phase 1 – Proof of concept – 1995 - 2005
Phase 3 – testing the IT – 2007 - 2010
Phase 4 – Testing the eOTD – 2011 -

Landauer’s principle (1961)

In English
If the information is complete it should be easy to identify an item from that information.
If information is incomplete, the difference between the level of information existing and the actual item it describes, proportionately reduces the probability of identifying the item which reduces the value of having that information………………………
…………………………………………and that can lead to all sorts of problems!!!!!!!!!!
The measuring stick

**Type 1:** All the mandatory elements of the Federal Item Identification Guide for the item in question have been met. The item is considered to be **FULLY DESCRIBED**.

**Type 4:** At least ONE of the mandatory elements of the Federal Item Identification Guide for the item in question have not been completed. The item is considered to be **PARTIALLY DESCRIBED**.

**Type 2:** NO mandatory or optional elements of the Federal Item Identification Guide for the item in question have been answered. Only the manufacturers part number exists. The item has **NO technical description**.

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**Traditional Versus Supplier Sourced Codification**

The first SSC III task was sent to one of our contractors with a special instruction to complete the task in accordance with ISO 8000 Pt 110 and use ISO 22745 transactions for the 30 item task.

*The contractor missed the special instruction, which normally we would have been really unhappy with!*

Every cloud has a silver lining though and this let us put together some comparison stats: The traditional codification was achieved using the technical drawing which was only provided to allow item naming for the 22745 task.

<table>
<thead>
<tr>
<th>Type</th>
<th>Type 1</th>
<th>Type 4</th>
<th>Type 2</th>
<th>Avg PVP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Codification</td>
<td>0</td>
<td>27</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Supplier Sourced Codification</td>
<td>20</td>
<td>10</td>
<td>0</td>
<td>12</td>
</tr>
</tbody>
</table>
**ISO 8000 Pt 110 WORKS!**

Property value Pairs from traditional and SSC iii codification methods

**Item references**

<table>
<thead>
<tr>
<th>DATA Collected From</th>
<th>Total Items</th>
<th>Type 1</th>
<th>Type 4</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISIS Total Live Items</td>
<td>2,618,151</td>
<td>459,178 (17%)</td>
<td>1,699,549 (65%)</td>
<td>459,424 (18%)</td>
</tr>
<tr>
<td><em>Sentry</em></td>
<td>351</td>
<td>35 (10%)</td>
<td>270 (77%)</td>
<td>46 (13%)</td>
</tr>
<tr>
<td><em>Protected Mobility Group</em></td>
<td>4669</td>
<td>675 (14%)</td>
<td>3032 (65%)</td>
<td>962 (21%)</td>
</tr>
<tr>
<td><em>Typhoon</em></td>
<td>199</td>
<td>32 (16%)</td>
<td>142 (72%)</td>
<td>25 (12%)</td>
</tr>
<tr>
<td><em>Jackal</em></td>
<td>377</td>
<td>161 (42%)</td>
<td>210 (57%)</td>
<td>7 (1%)</td>
</tr>
<tr>
<td>Terrier SSC III</td>
<td>398</td>
<td>191 (49%)</td>
<td>207 (51%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td><em>Terrier SSC III excluding screen outs</em></td>
<td>260</td>
<td>151 (58%)</td>
<td>109 (42%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>
Everything we do with the SSC project re-affirms that ISO 8000 Pt 110 adds tremendous value to the codification process!

Standard statement for inclusion as both an NCB Contract Clause and Codification Requirement statement in any standards which have NATO Codification as part of their delivery.

Supply of Source Data in support of NATO Codification

The contractor, sub-contractor or supplier shall supply identification and characteristic data in accordance with ISO 8000-110:2009 on any of the selected items covered in this contract.

Following a codification request, the Home NCB shall present a list of the required properties in accordance with the US Federal Item identification Guides.

The ISO 8000 Pt 110 process DOES NOT require any IT capability, it can be carried out as a paper exercise if online services are not present.

The latest evidence in support of ISO 8000 Pt 110

ISO 8000 NSN 1 – Type 1

AGAV – sonar 2054 inboard replacement
CXCY – LM146c/TWS4H4347 Ethernet Shipboard Cable
Conductor Quantity – 8
Conductor Form – AY
Material – 990019001
Cross Sectional Shape Style – 6
Connector ID – JTRJ456F-16NXLSB
Connector Manufacturer – 0BW78
Overall Length - Varying
### Existing NSN 2 – Type 4
- AGAV: sonar 2054 inboard replacement
- CXCY: LM146c/TWS4H4351 Cable Shipboard Ethernet

### ISO 8000 NSN 2 – Type 1
- AGAV: sonar 2054 inboard replacement
- CXCY: LM146c/TWS4H4347 Ethernet Shipboard Cable
  - Conductor Quantity: 8
  - Conductor Form: AY
  - Material: 990019001
  - Cross Sectional Shape Style: 6
  - Connector ID: JTRJ456F-16NXLSB
  - Connector Manufacturer: U7739
  - Overall length: varying
  - Features: Double Sheathed.

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### The latest evidence in support of ISO 8000 Pt 110

**The Cables**
- **Both NSNs** upgraded from **Type 4** partially described to **Type 1** Fully Described
  - **100% success**
- **NSN 1** increased from 2 Property value pairs to 9 property Value Pairs
- **NSN 2** Increased from 2 Property Value Pairs to 10 Property Value pairs
  - **350% improvement**

**The data quality**
- These NSN were created as separate NSNs because the part numbers are different but no reason for the difference was know by the UK MoD and therefore the in service users of the kit.
- The extra property value pair on NSN 2 shows the same fit form and function, but with increased operating tolerance.

AC 135 SSC IV Project Ontology Management via the eOTD

SSC IV Progress So Far – Positives

BAES UK Surface Ship Support.
This project to build the biggest aircraft carriers the UK has ever owned is in production as we speak.

The Information Management Team will introduce an ISO 22745 interface with the data warehouse specifically to meet the codification requirements.

The same interface will be used on all future platforms if successful.
<table>
<thead>
<tr>
<th>Property 1 – Material</th>
<th>Value 1 Stainless Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property 2 – Style</td>
<td>3 way L ported</td>
</tr>
<tr>
<td>Property 3 – Operation Method</td>
<td>Value 3 – Hand Turned</td>
</tr>
</tbody>
</table>

BAES Part Classification – 40,000,000

Class – Valve

ISO 22745 OTD 0161-1#01-248615#1

ISO 22745 OTD 0161-1#01-056789#1

ISO 22745 OTD 0161-1#01-254780#1

ISO 22745 OTD 0161-1#154278#1

ISO 22745 OTD 0161-1#012475#1

ISO 22745 OTD 0161-1#245780#1

ISO 22745 OTD 0161-1#01-021587#1

ISO 22745 OTD 0161-1#01-021587#1

ISO 22745 OTD 0161-1#245780#1

ISO 22745 OTD 0161-1#012475#1

ISO 22745 OTD 0161-1#245780#1

Property 3 – Operation Method – Value 3 – Hand Turned

ISO 22745 OTD 0161-1#012475#1

ISO 22745 OTD 0161-1#245780#1

ISO 22745 OTD 0161-1#012475#1
SSC Phase III Objective – TRULY Automated Codification

PHASE III

NCB

eOTD-q-xml
(data requirements statement)
ISO 22745-30

Supplier

Sub-Tier
eOTD-r-xml

Sub

eOTD-r-xml
(data exchange)
ISO 22745-40

eOTD-q-xml
(query)
ISO 22745-35