Using International Standards to drive the Federal Data Quality Process

The MIT Information Quality Industry Symposium, 2007
Aims and Objectives

- NATO AC/135 and DLA undertook the partnership with ECCMA and the involvement with ISO for the following reasons:
  - To automate the codification process
  - To improve the quality and availability of data
  - To help align the NATO Codification System with international standards
  - To increase cooperation with industry
The ECCMA Open Technical Dictionary (eOTD) is an ISO 22745 compliant open technical dictionary of cataloging concepts used to create unambiguous language independent encoded descriptions of:

1. Individuals
2. Organizations
3. Locations
4. Goods and services

The ECCMA Open Technical Dictionary (eOTD) is based on the NATO Codification System (NCS) with a more modern database architecture oriented toward the commercial world.
Military/Commercial Bridge

“There is and always has been a philosophical gulf between the application of cataloging for military purposes and ... for commercial. ...commercial practices are not precise enough to support cost-effective military inventory management and military cataloging is far too detailed and costly for commercial purposes ...ECCMA offers a way to bridge the gulf”

Mr. Alan Williams
Asst Dept Minister
Canadian Dept of National Defence
- Public domain concept identifiers
- Free identifier resolution to underlying terminology (web services)
- Hyperlink to source standards
- Multilingual
- Multiple terms, definitions and images linked to single concept identifier
Across the supply chains

ERP masters:
vendor/customer/material/service

Manufacturing/production
CAD/CAM/CAE/PDM

Facilities/raw materials

Human Resources

Data life cycle management: from design through disposal

Common metadata mapping across applications!
156 National standard organization member (one per country)
(AFNOR, ANSI, BSI, CNIS, DIN, Standards Australia…….)

Central Secretariat in Geneva, Switzerland

150 staff (editors and marketing)

192 Technical Committees

3,000 Technical Bodies

50,000 Domain Experts

ISO TC 184 Industrial automation systems and integration
ISO TC 184/SC 4 Industrial Data
ISO 10303 (STEP)
ISO 15926 (Oil & Gas)
ISO 13584 (PLIB)

ISO 29002

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ISO 22745 (Open technical dictionaries and their application to master data)

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ISO 8000-100 Master Data Quality

ISO 22745 & ISO 8000-100 are NATO & DoD funded projects
Representing the US position on industrial data quality to the international community
Supplier and Manufactures recognize that:

Data integration is one of the keys to a long term relationship.

The ability to provide their customers with quality data is a significant differentiating factor.
Supplier and Manufactures are:

- Publishing the specifications of their products, capabilities and services on their web sites.
- Looking to increase their visibility and understand that the best way to do this is to improve the quality of their data.
- Looking for a Standard that they can use to promote the quality of their data.
Before

- lack of clarity on data requirements
- disparate data format
- disparate data content
- disparate metadata
- potentially subjective human judgment
- operate as an additional process

Transformation Through Standardization

After

- application process able data requirement statements
- consistently mapped metadata
- standard characteristic data exchange format
Automated Data Gathering

S1 System integrator
S2 Manufacturer
S3 Supplier
S4 Wholesaler
S5 Company that does manual internet research
S6 Company that does automated internet research
S7 Company that sells parts data
S_n... Company that provides data services
Benefits to NATO and DoD

- Faster access to better industrial data
- Automated request for characteristic data
- Automated response from industry

- Faster National Stock Number (NSN) assignment
- More complete records
- Better search resolution
- Fewer duplicates
- Reduced acquisition lead time
- Lower design and life cycle costs
- Increased supportability
- Increased safety of systems and equipment
The eOTD is a foundation for design collaboration and industry standards.

ISO 22745 and the eOTD are the foundational enablers for the breakthrough our industry needs in the next generation of direct, accurate, and effective collaboration across the supply chain at meaningful and granular levels of data exchange never before imagined.

Alton Sanders
Senior Manager,
IDS Engineering Standards Control Function
PW Knowledge and Reuse Management (KARMA)
How Expensive Can Bad Quality Data Be?

In this case $125,000,000

The price of a Mars Climate Orbiter

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YOUR POINTING AT IT WON'T HELP - THE COMPUTER RECORDS SHOWS NONE IN STOCK.