Quality Work Group Status
Plenary May 6, 2015
Core Team – Active Participants

• Frank Heinrich, iBaseT
• Scott Nieman, Land O’Lakes
• Bob Phare, Command Alkon
• Frank Riddick, NIST
• Mike Rowell, Oracle / OAGi Staff
• Evan Wallace, NIST
• GUEST: Lakshmi Alapakam, Infor
• David Connelly, OAGi Staff
Approach we are taking

- Review of Infor Nouns
- Create OAGIS 10.1 XSDs / WSDLs
- Review of Use Cases / Requirement
- Create Excel Spreadsheets for Mike
- Create UML Models
## Review / Comparison of Infor Nouns

<table>
<thead>
<tr>
<th>Proposed Infor Nouns</th>
<th>Existing OAGi Nouns</th>
<th>Anticipated Action</th>
<th>X12/ AgXML Equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>QualityTestMaster</td>
<td>ItemMaster</td>
<td>Should be able to map Military Std 883, including sequence of test procedures, test conditions within a given method</td>
<td>841 Product Specification</td>
</tr>
<tr>
<td>QualitySpecification</td>
<td>ItemMaster</td>
<td>X12 combined the test master and specification into one specification</td>
<td>841 Product Specification /</td>
</tr>
<tr>
<td>InspectionOrder</td>
<td>InspectDelivery</td>
<td>The existing OAGi noun appears too constrained to incoming inspection of materials. We also need in-process and finished goods inspection.</td>
<td></td>
</tr>
<tr>
<td>QualityTestResults</td>
<td></td>
<td>Can the Infor contribution hold granular, raw measurement data for MANOVA (multi-dimensional arrays)</td>
<td>863 Report of Test Results /</td>
</tr>
<tr>
<td></td>
<td>ItemCertificateOfAnalysis</td>
<td>Enhance if necessary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BatchCertificateOfAnalysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DefectiveMaterialNotice</td>
<td>ItemNonconformance</td>
<td>Review Infor submission for gaps, add to ItemNonconformance</td>
<td>842 Nonconformance Report /</td>
</tr>
<tr>
<td>CorrectiveActionPlan</td>
<td></td>
<td>Adopt as-is</td>
<td></td>
</tr>
</tbody>
</table>

Need AgXML documents; grain use case
Review of Nouns

- Found inter-relationships between nouns, and parts of nouns (InspectionOrder <-> QualityTestResults)
- Determined that some complexTypes can be shared (TestMaster)
- ‘Things’ sometimes overridden, sometimes referenced
- Documentation and naming of elements inconsistent due to multiple teams developing nouns
- It was hard to understand many use cases, without prior knowledge (two teleconferences with Lakshmi)
  - Assuming Infor nouns are more general purpose
  - Larger XSDs as a result; a bit daunting to review
Review of Use Cases

• Tried to elicit as much as we could from Infor
• Focus on use cases available to us (Ag-focus)
  – Soil Sample Test (Sure-Tech labs)
  – Chemical / Plant Tissue Sample Test (Sure-Tech labs)
  – Dairy Customer testing (R-Tech labs)
  – In-process/ Finished Goods (Land O’Lakes Dairy)
  – eCoA process (GMI)
  – Ingredient Qualification (GMI)
• Reviewed Noun Lifecycle (in-process)
Review of Standards (Use Cases)

- Agency Standards
  - MIL-STD-883 (test methods)
  - ASTM
  - MIL-STD-105 (sampling plan)
  - ASQC Z.1 (attributes testing) – pass/fail
  - ASQC Z.4 (variables testing) – measurements

- Most simply reference these standards, adapting intent to their equipment capabilities/company needs

- FSMA may be requiring documented test procedures/test conditions in PLM/ LIMS (TBD)
Use Case Analysis

• Need to focus on current needs; start small
• Some documents were confidential
• Inspection Orders from Customers differed significantly from that of in-process manufacturing
• Sampling Plan would derive samples to be pulled based on batch history
• Sampling Plan rules may trigger additional tests to increase statistical confidence
• ‘Quality’ term should be dropped from the Nouns
• Sampling Plan was recognized a new Noun
• In some cases sampling is at item class level (natural cheese) and sometimes at ItemMaster (part number)
Lifecycle of information for tests

Sampling Plan

Conditions

Testing Requests

Item Test Specification

Inspection Order

Test Request

Inspection Order Task

Item

Test Result

Test Request Sample

Sample Test Line

Sample

Sub-Sample

Customer

Element

Data

Association

Leads to

Actual substance

1..*

1

1

1

1

0..1

0..1

1

1

1

1

1

1
Frank’s Diagram
Clarification of Item/ ItemMaster/ ItemInstance

• ItemType => ItemMaster (SKU, GTIN)
• Item => ItemInstance (lot, serial number)
  – Ralph/Boeing;
• ItemGroup => collection of product type vs. instances??? QualityGroup (Infor term)
• ItemCategory –many-to-many to ItemMaster
Current List of Nouns

1. Master Data
   - TestMaster
   - (Item)TestSpecification
   - SamplingPlan

2. Transactional
   - InspectionOrder
   - TestResults
   - CorrectiveActionPlan

3. Existing
   - ItemNonconformance
   - BatchCertificateOfAnalysis
   - ItemCertificateOfAnalysis

4. Open Items
   - DefectiveMaterialNotice; is the ItemNonconformance
ISA-95/ B2MML

- V0600 offers new capabilities of interest for PLM master data
Spreadsheets to Mike

- Oracle XSDFlattener utility produces acceptable output (indented, hierarchical)
- With UML diagrams, should be sufficient to move to 10.1 XSDs
- Need to map Dairy to QualityTestMaster and QualitySpecification to pick key elements