UDEF Executive Overview

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UDEF Value and Use

- UDEF Improves Data Clarity
  - The use of UDEF encourages a solution (system, application, etc.) to have more precise data definitions that enable greater clarity for everyone that interacts with the solution.
    - This is notably true for semantic web based solutions that depend so heavily on semantic clarity and precision.

- UDEF Simplifies Information Exchange
  - The use of UDEF reduces the number of integration points and therefore simplifies the task of implementing information exchange
    - As the scope of UDEF-enabled solutions grows, so too do the benefits of effective information sharing, i.e. in achieving Boundaryless Information Flow.
UDEF – A Global View

Vendors with Canonical Models

Run Time
Transformation Engines

Interfaces to Back-Office Systems

Design Time
- Data Dictionary
- Mapping Matrices
- Std XML Schema

Interface Developers

Data Modelers And Apps Developers

Software Vendors with UDEF ID APIs

UDEF-Indexed Metadata Registry/Repository

UDEF-IT, LLC
Enabling Global Interoperability

Internet

Domain Specific UDEF Registries

Internet

Global UDEF Registry
Open Group

UDEF Extensions

Gov

Energy

Aero

Web Public
Universal Data Element Framework

**UDEF Conforms to the Naming Convention of ISO/IEC 11179-5**

**Object Class List**
- Entity
- Document
- Enterprise
- Place
- Program
- Product
- Process
- Person
- Asset
- Law-Rule
- Environment
- Condition
- Liability
- Animal
- Plant
- Substance
- Event

**ISO/IEC 11179-5 Naming Convention**

- **Data Element Concept Name**
  - **Object Class Term**
    - 0...n qualifiers +
    - 1 or more required
    - Object Class
  - **Property Term**
    - 0...n qualifiers +
    - 1 required Property

**Example UDEF-Based Data Element Concept Names:**
- Document Abstract Text
- Enterprise Name
- Product Price Amount
- Product Scheduled Delivery Date
- Engineering Design Process Cost Amount
- Employee Person Family Name

* Based on Tables 8-1 and 8-3 in ISO 15000-5

**UDEF Names follow the rules of English –**
**Qualifiers precede the word they modify**
Creating the UDEF ID

Patient Person_Family Name  has UDEF ID = au.5_11.10

UDEF Recent Activities

- Five UDEF Extensions – v1.22, 1.23, 1.24, 1.25, 1.3
  - Support for global non-profit UDEF Requirements
  - V1.3 Provides Foundation for Distributed UDEF Registries
  - For each new version
    - The UDEF Interested Parties had opportunity to review and comment.
    - The UDEF Members voted
    - The Open Group Board approved

- The QLM Project Officially Adopted the UDEF – May 2011
  - UDEF Names and IDs integral to QLM System Object Model

- The FACE Consortium Adoption of UDEF
  - Like Dewey Decimal System for Software Artifacts Library Registry
  - Possible use within the FACE Data Model

- Interoperability is essential for Boundaryless Information Flow™
  - UDEF is a Key Enabler for global interoperability
1. Identify the applicable UDEF property word that characterizes the dominant attribute (property) of the data element concept. For this example = Amount

2. Identify the dominant UDEF object word that the dominant property (selected in Step 1) is describing. For this example = Product

3. By reviewing the UDEF tree for the selected property identified in Step 1, identify applicable qualifiers that are necessary to unambiguously describe the property word term. For this example = Total Price Amount

4. By reviewing the UDEF tree for the selected object identified in Step 2, identify applicable qualifiers that are necessary to unambiguously describe the object word term. For this example = Ordered Product

5. Concatenate the object term and the property term to create a UDEF naming convention compliant name where it is recognized that the name may seem artificially long. For this example = Ordered Product_Total Price Amount

6. Derive a structured ID based on the UDEF taxonomy that carries the UDEF inherited indexing scheme. For this example

<OrderedProductTotalPriceAmount UDEFID="z.9_6.2.1"/>
Data to Information in Six Steps

<table>
<thead>
<tr>
<th>UDEF ID</th>
<th>Object Type or Role</th>
<th>Object Class</th>
<th>Property Type</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>z.9_6.2.1</td>
<td>Ordered</td>
<td>Product</td>
<td>Total Price</td>
<td>Amount</td>
</tr>
</tbody>
</table>

Result – UDEF Naming Improves Data Clarity and Data Quality
Use the UDEF Coding Sheet to Collect Data Element Concepts

<table>
<thead>
<tr>
<th>UDEF ID</th>
<th>UDEF Object Qualifier</th>
<th>UDEF Object</th>
<th>UDEF Property Qualifier</th>
<th>UDEF Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>d.t.2_8</td>
<td>Purchase Order</td>
<td>Document</td>
<td></td>
<td>Identifier</td>
</tr>
<tr>
<td>d.t.2_6</td>
<td>Purchase Order</td>
<td>Document</td>
<td></td>
<td>Date</td>
</tr>
<tr>
<td>d.t.2_33.4</td>
<td>Purchase Order</td>
<td>Document</td>
<td>Type</td>
<td>Code</td>
</tr>
<tr>
<td>z.9_8</td>
<td>Ordered</td>
<td>Product</td>
<td></td>
<td>Identifier</td>
</tr>
<tr>
<td>z.9_13.11</td>
<td>Ordered</td>
<td>Product</td>
<td>Ordered</td>
<td>Quantity</td>
</tr>
<tr>
<td>z.9_1.2.1</td>
<td>Ordered</td>
<td>Product</td>
<td>Unit Price</td>
<td>Amount</td>
</tr>
<tr>
<td>z.9_6.2.1</td>
<td>Ordered</td>
<td>Product</td>
<td>Total Price</td>
<td>Amount</td>
</tr>
</tbody>
</table>
Create the Gap Analysis XML Input File

Source System Data

<?xml version="1.0" encoding="UTF-8" ?>
<PO>
  <Hdr>
    <Num GUID="d.t.2_8">1234</Num>
    <Dt GUID="d.t.2_6">2009-04-15</Dt>
    <Type GUID="d.t.2_33.4">Open</Type>
    <Ttl GUID="d.t.2_15.1">6000</Ttl>
  </Hdr>
  <Item>
    <Num GUID="z.9_8">XY12B</Num>
    <Quan GUID="z.9_13.11">200</Quan>
    <UoM GUID="z.9_18.4">Each</UoM>
    <UnPr GUID="z.9_1.2.1">10.25</UnPr>
    <TtlPr GUID="z.9_6.2.1">2050</TtlPr>
  </Item>
</PO>
Map Both Systems to the UDEF

Source System File

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<PO>
  <Hdr>
    <Num GUID="d.t.2_8">1234</Num>
    <Dt GUID="d.t.2_6">2009-04-15</Dt>
    <Type GUID="d.t.2_33.4">Open</Type>
    <Ttl GUID="d.t.2_15.1">6000</Ttl>
  </Hdr>
  <Item>
    <Num GUID="z.9_8">XY12B</Num>
    <Quan GUID="z.9_13.11">200</Quan>
    <UoM GUID="z.9_18.4">Each</UoM>
    <UnPr GUID="z.9_1.2.1">10.25</UnPr>
    <TtlPr GUID="z.9_6.2.1">2050</TtlPr>
  </Item>
</PO>
```

Target System File

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<Purch>
  <HD>
    <ID GUID="d.t.2_8">1234</ID>
    <Dte GUID="d.t.2_6">2009-04-15</Dte>
    <Prior GUID="d.t.2_31.4">High</Prior>
    <Type GUID="d.t.2_33.4">Open</Type>
    <OrdTot GUID="d.t.2_15.1">6000</OrdTot>
  </HD>
  <Prd>
    <ID GUID="z.9_8">XY12B</ID>
    <Qty GUID="z.9_13.11">200</Qty>
    <UoM GUID="z.9_18.4">Each</UoM>
    <UnitPr GUID="z.9_1.2.1">10.25</UnitPr>
    <TotPr GUID="z.9_6.2.1">2050</TotPr>
  </Prd>
</Purch>
```
Example Gap Analysis Results

http://www.udef-it.com/

Source to Target Gap Analysis Comparison

<table>
<thead>
<tr>
<th>Gap Analysis</th>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDEF ID</td>
<td>UDEF Definition</td>
<td>File1 Element</td>
</tr>
<tr>
<td>1.1</td>
<td>Purchase.Order Document Identifier</td>
<td>Num</td>
</tr>
<tr>
<td>1.2.6</td>
<td>Purchase.Order Document Date</td>
<td>Dt</td>
</tr>
<tr>
<td>1.2.33.4</td>
<td>Purchase.Order Document Type Code</td>
<td>Type</td>
</tr>
<tr>
<td>1.2.15.1</td>
<td>Purchase.Order Document Value Amount</td>
<td>Ttl</td>
</tr>
<tr>
<td>9.8</td>
<td>Ordered.Product Identifier</td>
<td>Num</td>
</tr>
<tr>
<td>10.13.11</td>
<td>Ordered.Product Ordered.Quantity</td>
<td>Quan</td>
</tr>
<tr>
<td>10.18.4</td>
<td>Ordered.Product Measurement-Unit.Code</td>
<td>UoM</td>
</tr>
<tr>
<td>10.1.2.1</td>
<td>Ordered.Product Unit.Price.Amount</td>
<td>UnPr</td>
</tr>
<tr>
<td>10.9.6.1</td>
<td>Ordered.Product Total.Price.Amount</td>
<td>Ttd</td>
</tr>
<tr>
<td>1.2.31.4</td>
<td>Purchase.Order Document Priority Code</td>
<td>Prior</td>
</tr>
</tbody>
</table>

Focus Data Integration Mapping Effort on the Gaps

The UDEF ID Enables Data Integration
Additional Information about the UDEF

• The UDEF Online
  http://www.opengroup.org/udeffinfo/

• Multi-lingual UDEF (English, French and Dutch)
  http://www.opengroup.org/udeffinfo/htm/fr_defsf.htm
  http://www.opengroup.org/udeffinfo/htm/nl_defsf.htm

• Frequently Asked Questions
  http://www.opengroup.org/udeffinfo/faq.htm

• A Cartoon Illustration of a UDEF Solution
  https://udef-it.com/Solution_Speaks.html
Contact Information

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Enabling Global Interoperability

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