Making a Business Case for S1000D

The Truth About Return on Investment
Cost versus Value Drivers

• Cost Challenges
  – Time to create and update multiple publication variants
  – Multi-channel publishing requirements
  – Interoperability and data interchange in a global environment

• Value Drivers
  – Increased automation leads to reduced effort, cost, and time to market
  – New publishing channels (IETP) and parts ordering can generate new revenue
  – Improved quality and publications (especially IETP) support a higher price
  – Increased availability of systems would directly generate more revenue
Let’s have a look at a traditional industry problem:

INTEROPERABILITY
Enhanced Interoperability

Manufactures/Vendors

Freedom to choose COTS IT suppliers and consultants

Same SW Infrastructure
Same viewing tools
Competence sharing
Reuse of personnel

Defence Organization or Systems Integrator
ROI CASES

63% Productivity Gain  Production of IPC in XML

20% Productivity Gain  Production of Job Cards in iSpec2200

48% Cost Reduction  Production of Electronic Publications in S1000D

20%+ Productivity Gain  Production of Computer based Training in S1000D and SCORM
Decided to migrate to S1000D to increase efficiency and configuration control.

Introduced a strong focus on:
- Content creation rather than presentation
- Reuse of information units

We estimated a potential improvement of 30-50% for similar project in the future.
What we have achieved:
• Delivered 87 technical publications in S1000D format since week 14 in 2008 (2 weeks per technical publication)
• In addition, several of these publications have been updated
• Quality is much improved
• More effective – started later and finished as promised
• Efficiency – We do more... With the same personnel
  Revision cycle reduced from 3 months to 3 days

The average is based on project from 1999-2007.

Current existing workpackage is reduced (in hours) by 48%.
Maintenance Training Simulator MTS

20% + Cost reduction
Compared to traditional CBT
Value of 1% improved availability of systems

% Availability

Examples:

Windmill: 15,000 EUR / Year
Oil Servicing: 1,5 M EUR / Year
Nuclear Reactor: 5 M EUR / Year
Factors Impacting Availability

Consequences of dealing with paper and/or electronic documents

Consequences:
- Long time to find information
- High risk in using not updated information
- Long time to perform maintenance tasks
- Long time to purchase the right spare parts
- High management costs

Business impact - examples

LOW QUALITY AT HIGH COST
Value of 1% Improved Availability

Potential in the business – Operations Example

<table>
<thead>
<tr>
<th>MTBF</th>
<th>MWT</th>
<th>MTTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>circuit under control</td>
<td>Discovery</td>
<td>Report</td>
</tr>
<tr>
<td>Today</td>
<td>200 h</td>
<td>0.5 h</td>
</tr>
<tr>
<td>Tomorrow</td>
<td>200 h</td>
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</table>

1% availability in one average nuclear reactor worth: 50 000 000 SEK/year
1% availability in one average wind mill worth: 100 000 SEK/year

... by use of S1000D
End-to-end focus – Summarizing the Savings

LSA database

MIL-STD-1388-2B Baseline for TechPub

Transform LSAR to DM

Automatic creation of:
- DMRL
- Maint. Plan. DMs
- Procedural DMs
- Descriptive DMs

REPORT: Highlight Changes
Report Consequences
Which DM are affected
when LSAR data is change\d

Navigate/Browse LSAR tables.

Common Source Data Bases

Project Managers/Planners

Applicability Information

S1000D Transfer Packages

Page Formatter

IETP Builder

IPC Editor

API / Web services

SCORM E Learning Production Environment

Authors
Desktop clients
Web based clients

~20%

~45%

~60%

~20%

Partners
Contractors

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### Work force efficiency

<table>
<thead>
<tr>
<th></th>
<th>Persons</th>
<th>Hours/year</th>
<th>Percent</th>
<th>Hours</th>
<th>EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converting LSA Data to Data Modules</td>
<td>1</td>
<td>1 600</td>
<td>20 %</td>
<td>320</td>
<td>22 400</td>
</tr>
<tr>
<td>Authors of Data Modules</td>
<td>20</td>
<td>32 000</td>
<td>40 %</td>
<td>12 800</td>
<td>896 000</td>
</tr>
<tr>
<td>Authors of IPC</td>
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<td>60 %</td>
<td>1 920</td>
<td>134 400</td>
</tr>
<tr>
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<td>40 %</td>
<td>3 200</td>
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</tr>
<tr>
<td>Aircraft Mechanics</td>
<td>0</td>
<td>-</td>
<td>20 %</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>38</strong></td>
<td></td>
<td></td>
<td><strong>2 1440</strong></td>
<td><strong>1 500 800</strong></td>
</tr>
</tbody>
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Hourly rate: EUR 70

Hours per year 1 600

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<td>80 000</td>
<td>20 %</td>
<td>16 000</td>
<td>1 120 000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>88</strong></td>
<td></td>
<td></td>
<td><strong>37 440</strong></td>
<td><strong>2 620 800</strong></td>
</tr>
</tbody>
</table>
The ROI (in €)

Example 1 - Savings, Licenses, Services

<table>
<thead>
<tr>
<th>Items</th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>License</td>
<td>500 000</td>
<td>100 000</td>
<td>100 000</td>
<td>100 000</td>
</tr>
<tr>
<td>Maintenance</td>
<td>100 000</td>
<td>100 000</td>
<td>100 000</td>
<td>100 000</td>
</tr>
<tr>
<td>Services</td>
<td>20 000</td>
<td>20 000</td>
<td>20 000</td>
<td>20 000</td>
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| Total Cost  | 500 000| 120 000 | 100 000 | 100 000 |

| Savings     | -      | 300 160 | 750 400 | 1 500 800 |
| Total Saving| -      | 300 160 | 750 400 | 1 500 800 |

| Net Saving/year | -500 000 | 180 160 | 650 400 | 1 400 800 |
| Accumulated     | -500 000 | -319 840| 330 560 | 1 731 360 |

| Net Savings    | NPV     | 1 519 868| 1 245 306| 1 519 868 |
|                | Acc NPV |        |         |          |

Effect of savings: 20% year 1; 50% year 2; 100% year 3
Value of 1% improved availability of systems

Examples:
- Windmill: 15,000 EUR / Year
- Oil Servicing: 1.5 M EUR / Year
- Nuclear Reactor: 5 M EUR / Year

Value of Your Systems: ?? /$ per Year
Conclusions

• The examples in this presentation clearly prove the return on investments from using S1000D

• Consider legacy formats and the need for data conversion when you make your business case for S1000D

• An S1000D implementation may require investments in:
  – XML and S1000D training
  – S1000D Business Rule development
  – Technology
  – Data conversion

• It’s important to understand how productivity gains and cost reductions and increased availability directly impact your return on your investment
THANK YOU

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