

S1000D


ATA e-BUSINESS PROGRAM


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Making a Business Case for S1000D

The Truth About Return on Investment



S1000D User Forum 2012
June 18-21, 2012

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**

S1000D


ATA e-BUSINESS PROGRAM

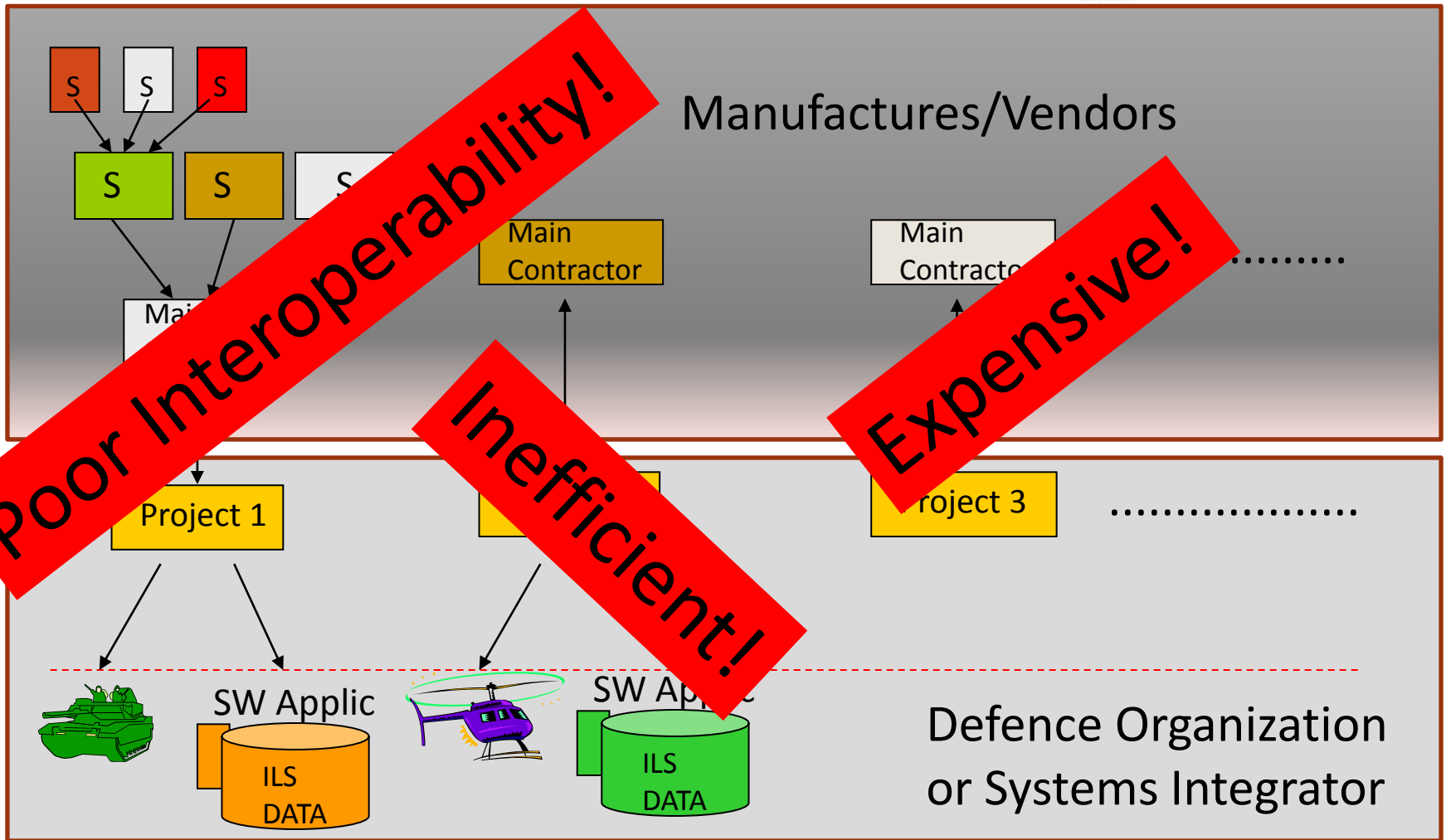

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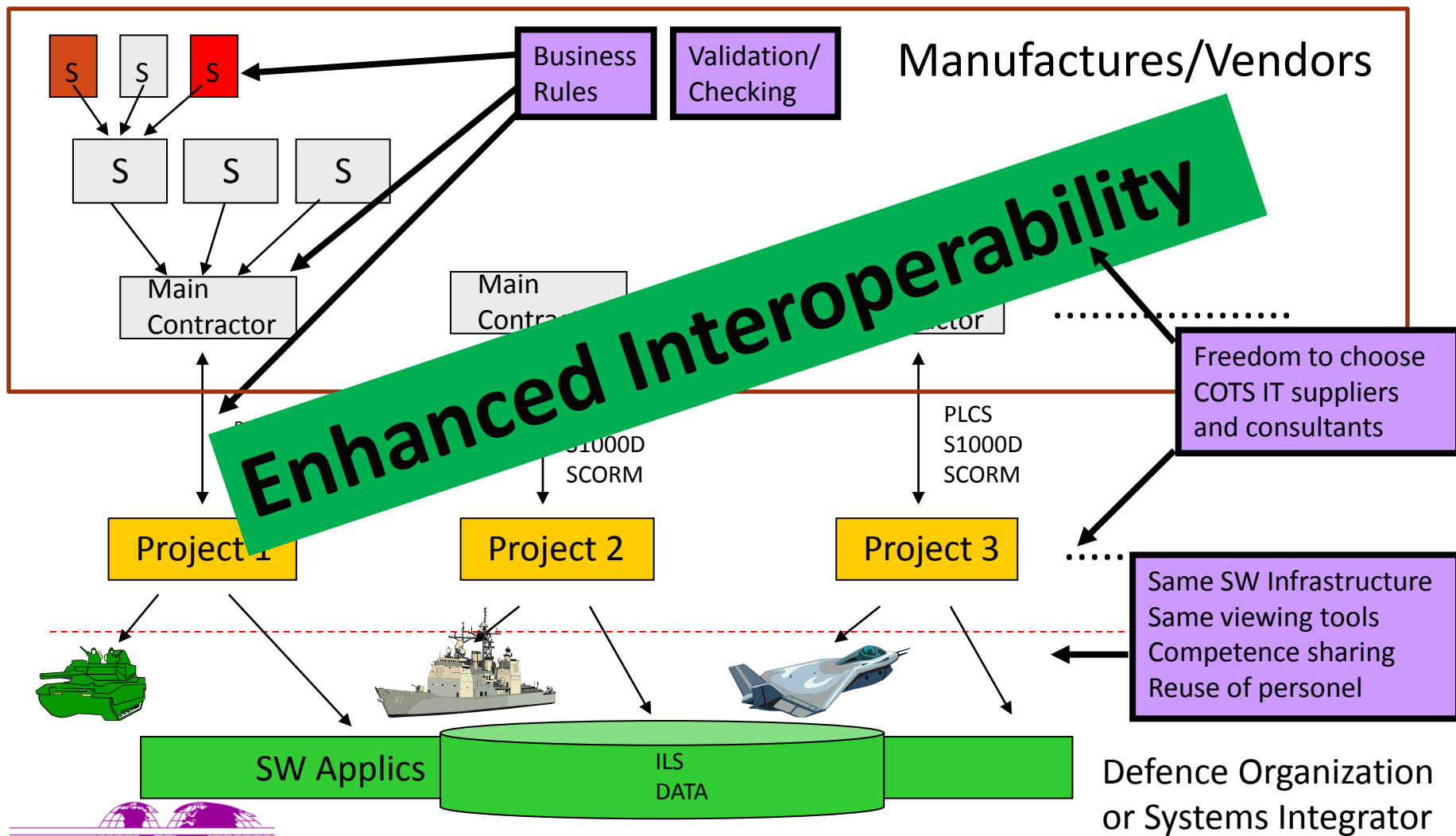
 ASD
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Let's have a look at a traditional industry
problem:

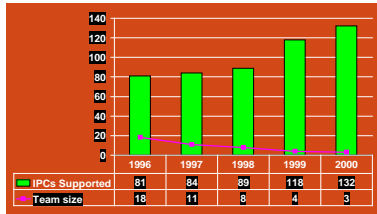
INTEROPERABILITY





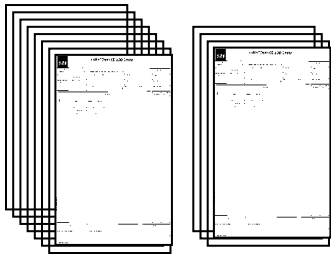


ROI CASES



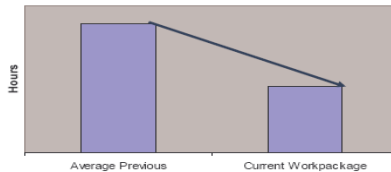
63%
Productivity Gain

Production of IPC in XML



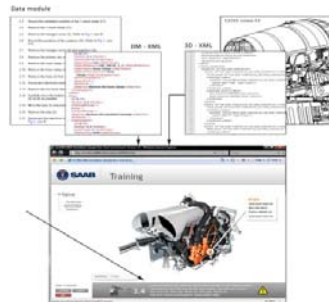
20%
Productivity Gain

Production of Job
Cards in iSpec2200



48% Cost Reduction

Production of Electronic
Publications in S1000D



20%+
Productivity Gain

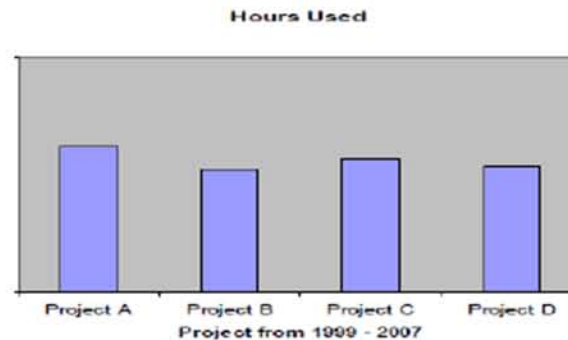
Production of
Computer based
Training in S1000D
and SCORM



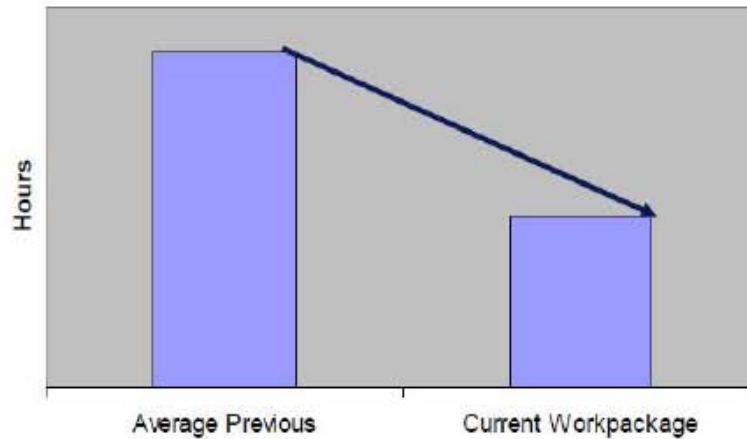
Decided to migrate to S1000D to increase efficiency and configuration control

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.



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**

Data module

```

2.3 Record the installation position of the Y-lead clamp (21).
2.4 Remove the Y-lead clamp (21).
2.5 Remove the hexagon screw (8). Refer to Fig. 1, view B.
2.6 Record the position of the washers (10). Refer to Fig. 1, view C-C.
2.7 Remove the hexagon screw (8) and washers (10).
2.8 Remove the primary valve (4).
2.9 Remove the hose clamp (1).
2.10 Remove the hose clamp (2).
2.11 Remove the hose (2) from the hose clamp (1).
2.12 Disconnect electrical wires (3).
2.13 Remove the two hose clamps (1).
2.14 Carefully remove the boiler (5) as far as possible.
2.15 Move the tube (6) rearward.
2.16 Remove the tube (6).
2.17 Document the electrical wiring (Fig. 2, view S).
  
```

DM - XML

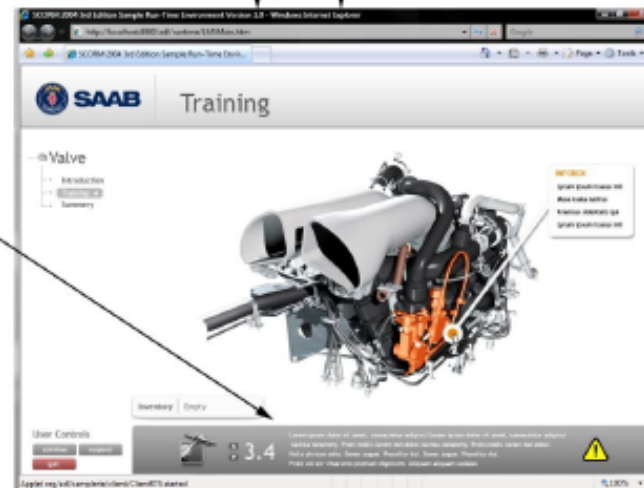
```

<TaskNumber>2.3</TaskNumber>
<TaskDescription>Record the installation position of the Y-lead clamp (21).</TaskDescription>
<Hotspot>Y-lead clamp (21)</Hotspot>
  
```

CATIA file

```

CATIA version 5.8
...
  
```

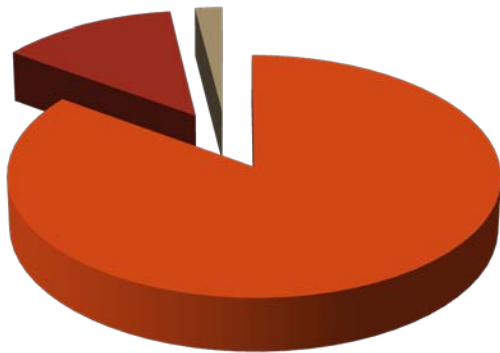


MTS generates automatic mapping between DM XML and 3D XML in terms of:

- Task number
- Task description
- Hotspot on 3D
- 3D logic

Value of 1% improved availability of systems

% Availability



- Available
- Unavailable
- Improvement

Examples:

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



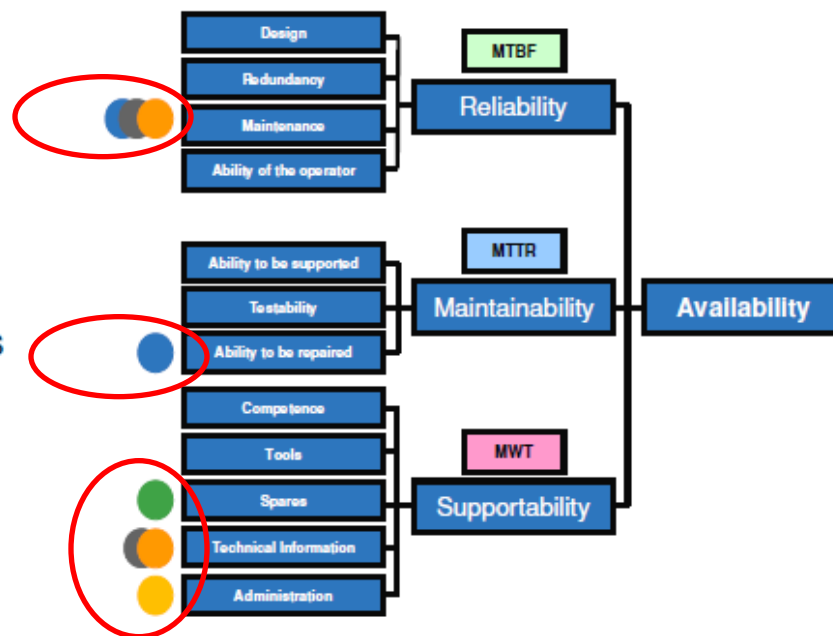
Factors Impacting Availability

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

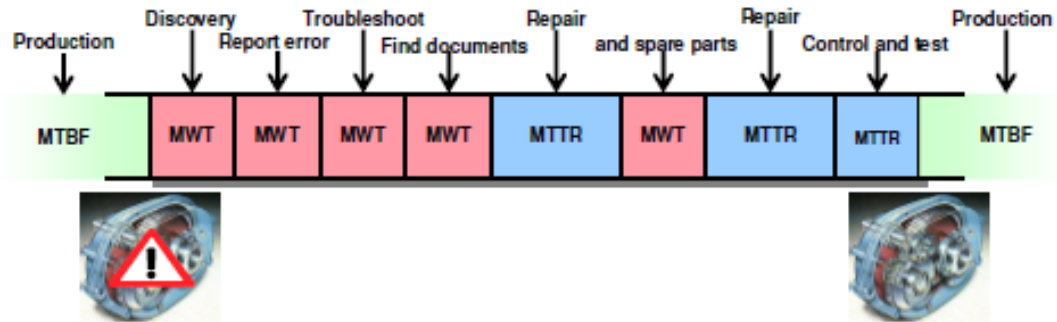
Business impact - examples



LOW QUALITY AT HIGH COST

Value of 1% Improved Availability

Potential in the business – Operations Example



Less failures

Quicker reaction and more accurate preparation

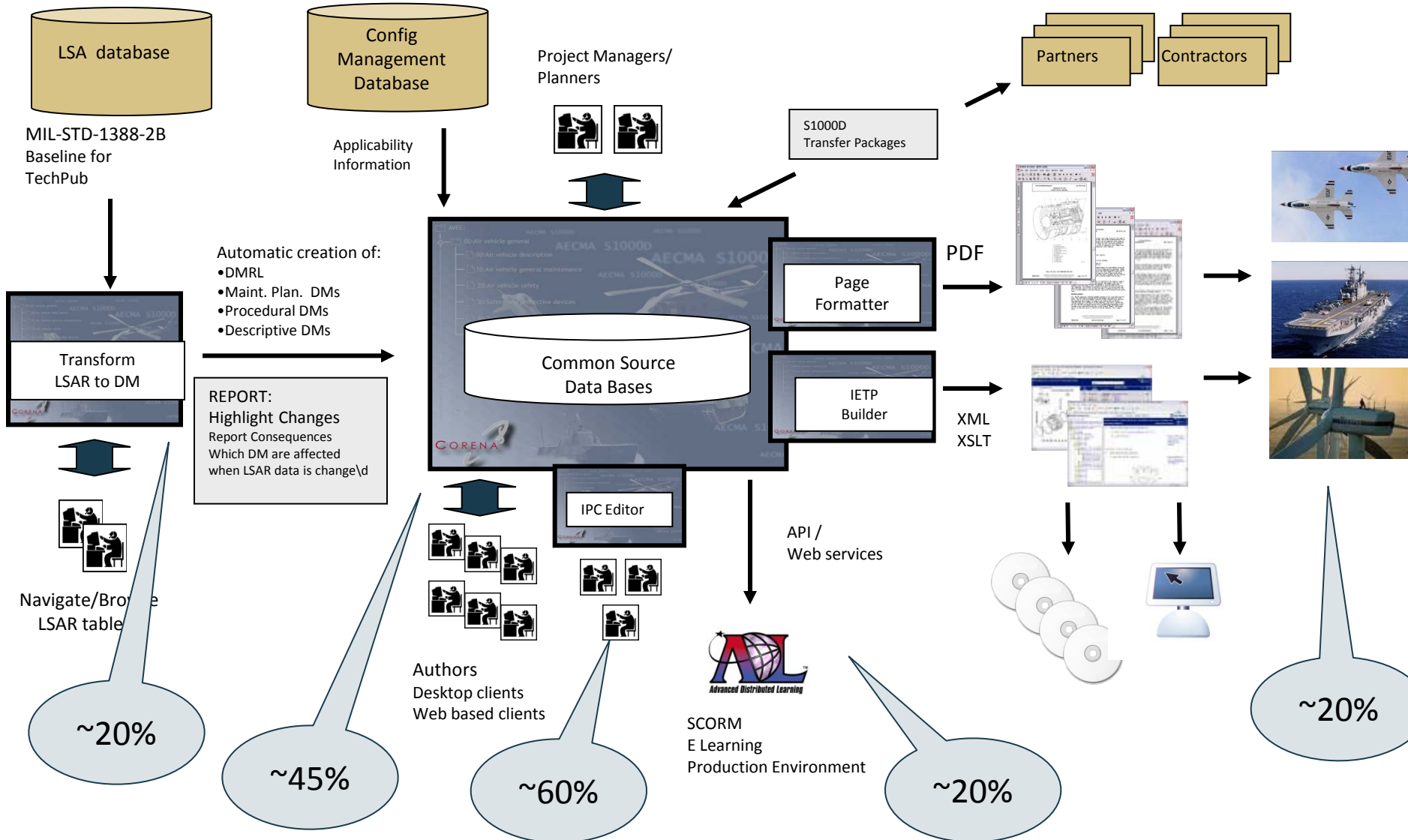
Quicker to repair

	MTBF	MWT					MTTR			Availability
	Requirements under control	Discovery	Report error	Troubleshoot	Find data/document	Find spare-parts	Rework wrong Instructions	Rework misunderstood Instructions	Control & test	$A = \frac{MTBF}{MTBF + MWT + MTTR}$
Today	200 h	0,5 h	0,5 h	1 h	8 h	4 h	2 h	2 h	4 h	90 %
Tomorrow	200 h	0,5 h	0,5 h	1 h	4 h	2 h	1 h	1 h	2 h	94 %

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



Work force efficiency			Savings	Savings	Saving
	Persons	Hours/year	Percent	Hours	EUR
Converting LSA Data to Data Modules	1	1 600	20 %	320	22 400
Authors of Data Modules	20	32 000	40 %	12 800	896 000
Authors of IPC	2	3 200	60 %	1 920	134 400
Authors of Job Cards	5	8 000	40 %	3 200	224 000
Authors of CBT / Simulation	10	16 000	20 %	3 200	224 000
Aircraft Mechanics	0	-	20 %	-	-
TOTAL	38		-	21 440	1 500 800

Hourly rate: EUR	70
Hours per year	1 600

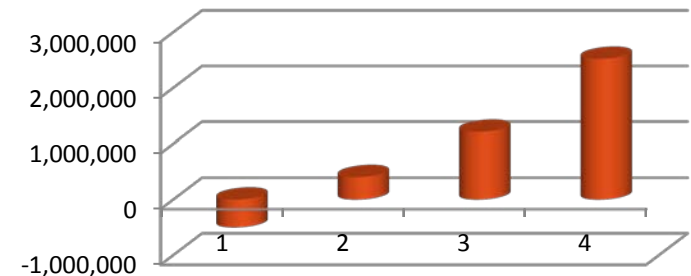
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Authors of Job Cards	5	8 000	40 %	3 200	224 000
Authors of CBT / Simulation	10	16 000	20 %	3 200	224 000
Aircraft Mechanics	50	80 000	20 %	16 000	1 120 000
TOTAL	88		-	37 440	2 620 800

The ROI (in €)

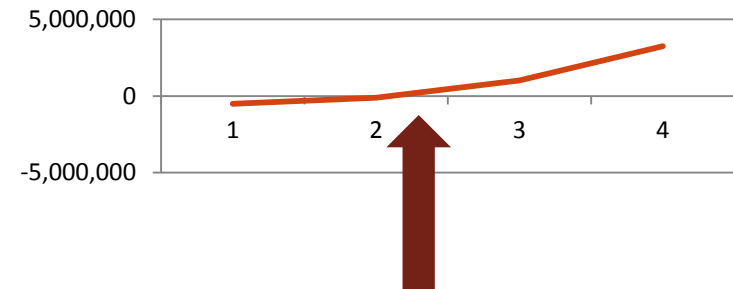
Example 1 - Savings, Licenses, Services

Items	Year 0	Year 1	Year 2	Year 3
License	500 000			
Maintenance		100 000	100 000	100 000
Services		20 000		
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 Net Savings	-500 000	-319 840	330 560	1 731 360
NPV	-500 000	173 231	601 331	1 245 306
Acc NPV	-500 000	-326 769	274 562	1 519 868
NPV	1 519 868			
IRR	86 %			
Interest rate	4 %			

Net Saving/year



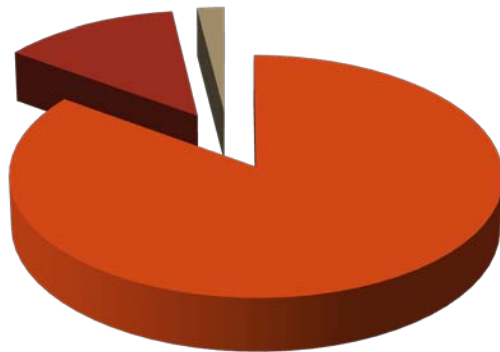
Acc NPV



Effect of savings: 20% year 1; 50% year 2; 100% year 3

Value of 1% improved availability of systems

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Examples:

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

Conclusions

- The examples in this presentation clearly proves 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



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THANK YOU

Jeff Deskins

Manager, Consulting Services &
CORENA Academy

Jeffrey.deskins@corena.com

