



# Use Case – Saab Aerotech AB

Implementation of a S1000D Technical Publication Management System (TPMS) in reality



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# Presentation of the speakers

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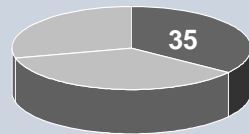
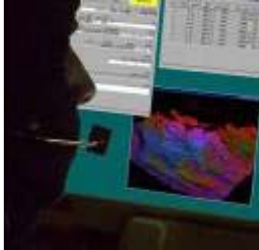
➤ Birgitta Thell      Sigma Solutions AB



# Background

Three segments – 17 business units

Defence and security solutions

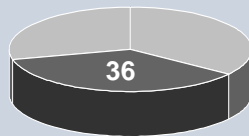


Percent of sales 2006

Saab Systems  
**Saab Aerotech**  
Combitech

Saab Grintek  
Saab Communication  
Saab Surveillance Systems

Systems and products

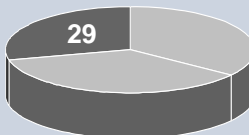


Percent of sales 2006

Saab Bofors Dynamics  
Saab Space  
**Saab Avitronics**  
Saab Barracuda

Saab Underwater Systems  
Saab Training Systems  
Saab Microwave Systems

Aeronautics




Percent of sales 2006

**Saab Aerosystems**  
**Saab Aerostructures**  
Gripen International

Saab Aircraft Leasing

# Background: Gripen Publications - requirements

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- Simplified English
  - ASD S1000D 2.0
  - Authority requirements **high**
  - Paper, PDF and SGML delivery
  - Multi customer environment (4 right now)
  - Customer furnished data should be incorporated
  - Approx. 3500 data modules or 30 000 pages *per customer*

# Background: Technical Publications

## Supported products military, today

➤ SK60	Training A/C, Sweden	Paper
➤ 105OE	Training A/C, Austria	Paper
➤ 39 Gripen	A/B SE	Pub94 (FMV)
➤ 39 Gripen	C/D SE, CZ, HU	S1000D 2.0 (FMV)
➤ 39 Gripen	C/D ZA	S1000D 2.0
➤ 39 Enabling Product	SE, CZ, HU and ZA	"S1000D" 2.0
➤ Tactical Man.	NHI	"Word"
➤ Syst. NH90		"Word"

*Blue = S1000D System*

# Background: Technical Publications


## Supported products commercial, today

➤ Saab 340 A/B	Commercial operators		ATA 100, rev 20
➤ Saab 340	Search & Rescue	Japan	ATA 100, rev 20
➤ Saab 340 AEW		Sweden	ATA 100, rev 20
➤ Saab 2000	Commercial operators		ATA 100, rev 28
➤ Saab 2000 AEW		Pakistan	ATA 100, rev 28
➤ Saab 2000	Flight Inspection	Japan	ATA 100, rev 28
➤ Airbus A340	Saab Aerostructures		ATA 2100
➤ Boeing 787	Saab Aerostructures		"ATA 2100"
➤ Airbus A400M	Saab Aerostructures Saab Avionics		S1000D 2.3 S1000D 2.3
➤ Transponder	Transpondertech		ATA 100
➤ Boeing 737	Medivac	SAS	ATA 100

*Blue = S1000D system*


*Green = ATA system*

# Introduction

- Saab is part of S1000D development through Carl-Johan Wilén.
  - In 2004 we started to use S1000D in version 2.0 for the Gripen system.
  - We use the Life\*S1000D COTS product from the supplier Corena
  - The implementation projects have been managed by Sigma on behalf of Saab.
  - From the start 2004, we have moved from a singel-customer relation into a multi-customer export environment.
  - We have to take into account the customers maintenance systems when creating Tech. Pub.
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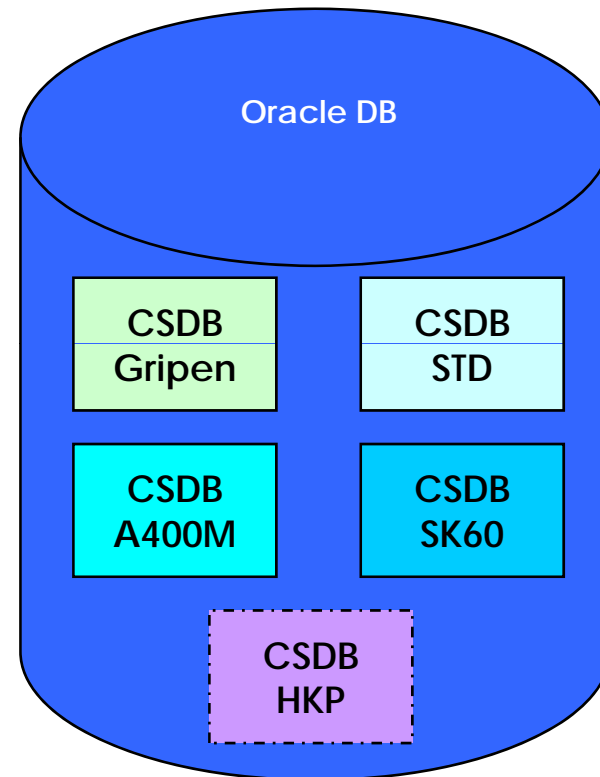
# Experiences

We found challenges in several areas. 4 of those areas will be presented today:

- ▶ Configuration of CSDB
  - ▶ Multicustomer handling
  - ▶ TPMS scope and integrations
  - ▶ Legacy data
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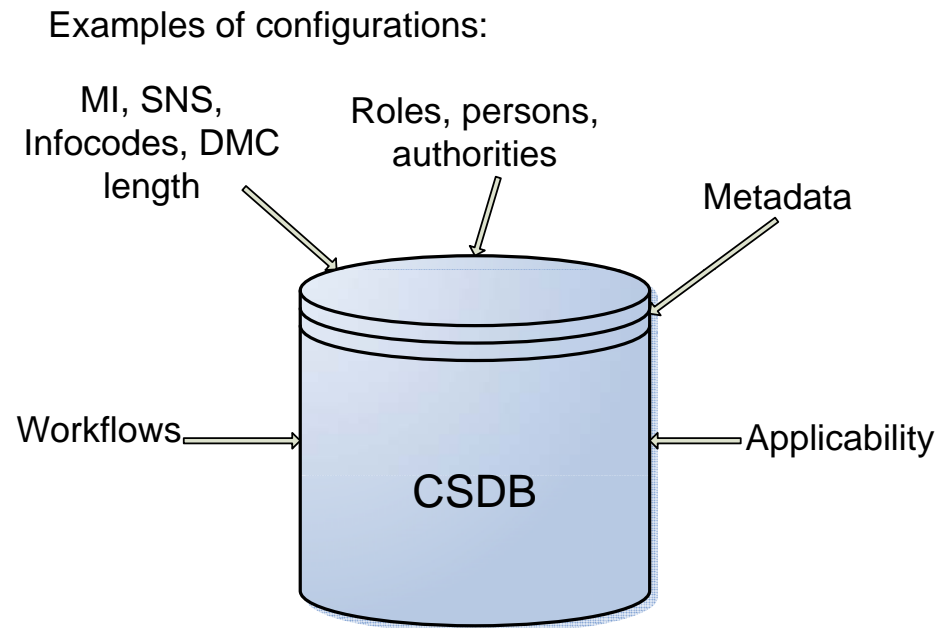
# CSDBs: From one product to many

- Started with one product/project (Gripen)
- Configuration was done in accordance with Gripens requirements
- New products were introduced in the same TPMS
- Gripens configuration could not be adopted to all other products
- Different CSDBs were created



# CSDBs: Different configuration levels

- Business Rules are essential (GPS)
- Overall configuration
- Product/project specific configuration
- Customer specific configuration (for instance QA)



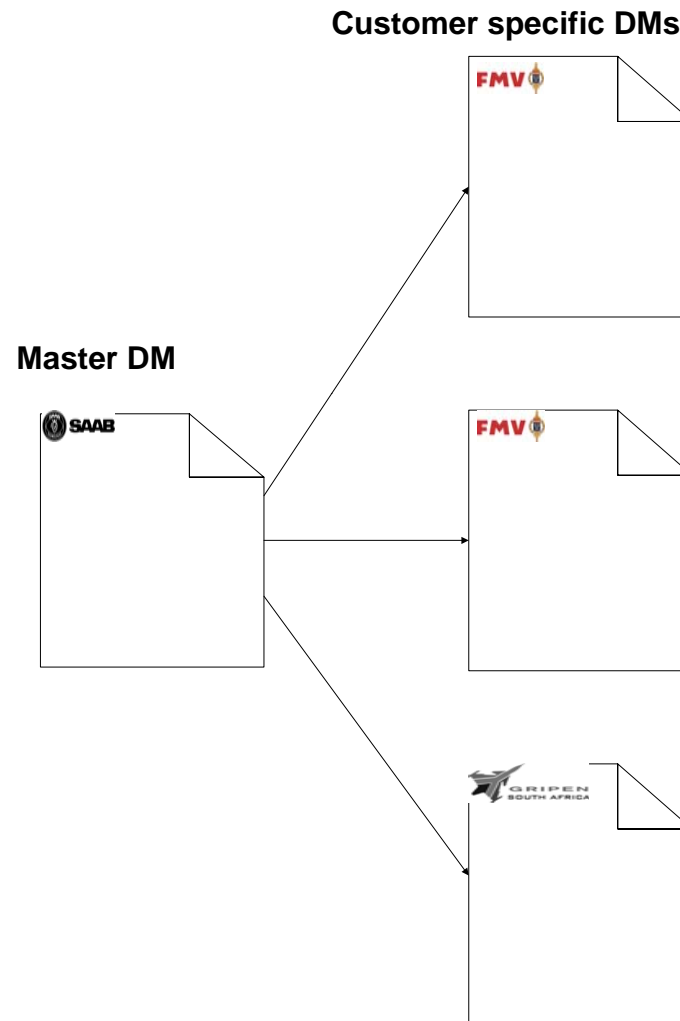
# CSDBs: Lessons learned



- ▶ You must decide the Business Rules BEFORE configuration
- ▶ You must have knowledge and experience of configuration internally (bridge business -> configuration)
- ▶ You need a very flexible system where a lot of things are configurable via a GUI.

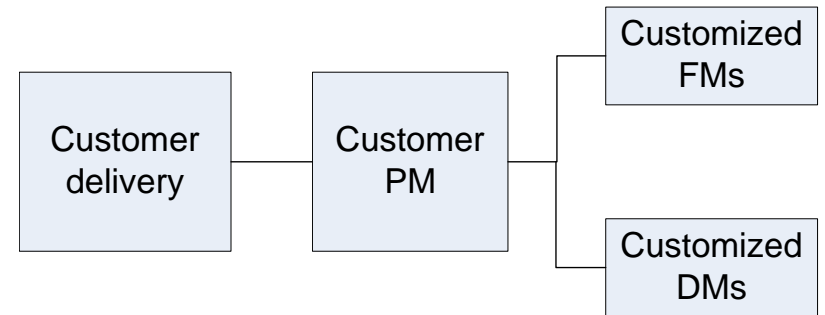
# Multi-customer: Introducing master data module

- Master DM with general applic
- Inline applic for customers, serialno, softprogs etc.
- Customization according to applicability =>
  - Customized SGML (metadata, tools, equipment, partno, reftp, change marks)
  - Customized Layout (logo, revbars etc.)



# Multi-customer: Filtering and customization

- Delivery of PMs with customized data modules and front matters
- The content in the publication package (the scope/LOAP) is different per customer
- Filtering of customized DMs for all applicability:

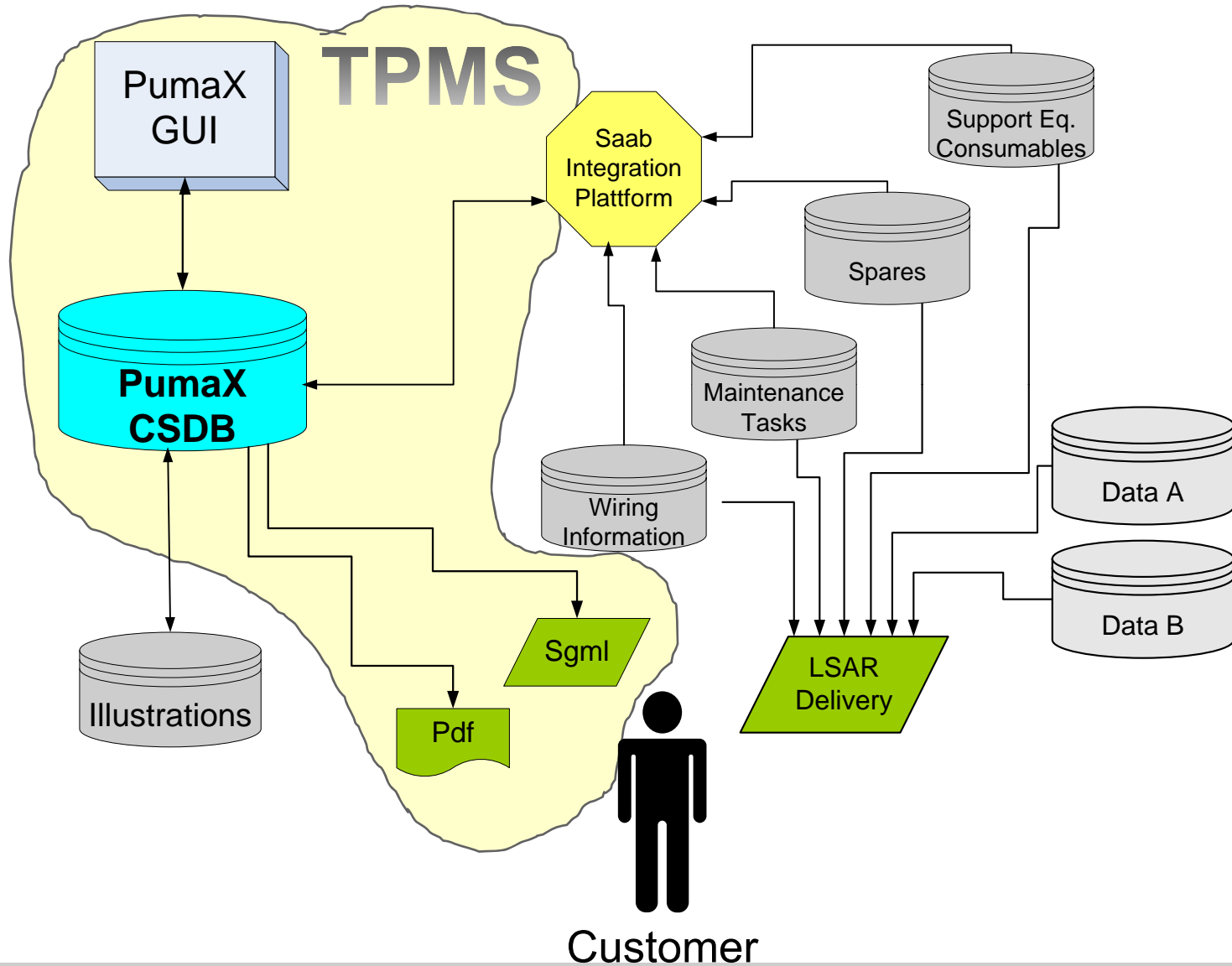


# Multi-customer: Lessons learned



- Reuse is essential
- The author must change the way of working:
  - from customer specific DMs to master DMs
  - setting general and customer specific metadata
- The focus need to be switched from "authoring is the big issue" to planning and overview, "think first, do later".
- Approval of publications and quality control of deliveries are important

# TPMS scope – Integrations

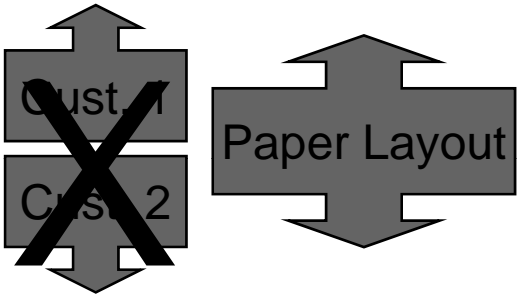
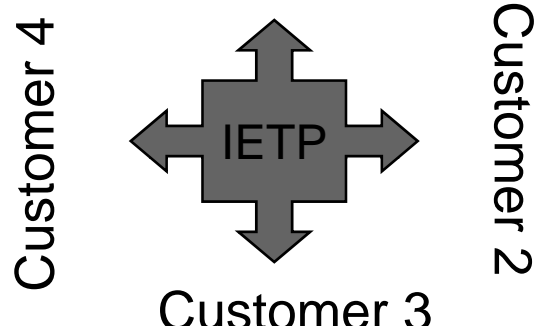


# TPMS Scope: Lessons learned



- ▶ An integration platform is a success from an IT-perspective.
- ▶ Integration to other system gives a lot of opportunities (for quality, saving cost and time) but also increase the complexity of the system.
- ▶ To be able to produce Tech. Pubs, the S1000D system is not enough. Integrations to other system are necessary to get the full chain of information flow.
- ▶ The information from Tech. Pubs must be the same as the LSAR drop - the output must show the same configuration/time stamp.

# Legacy data compare to new customer

	Contract	First Output	Coming requests of output
<b>First customer</b>	Standard A -> "S1000D 2.0"	Paper, pdf 	
<b>Second customer</b>	S1000D 2.0	Paper, SGML	
<b>Third customer</b>	S1000D 4.0?	XML, paper, pdf	IETP

*Master-concept*



# Legacy data: Lessons learned



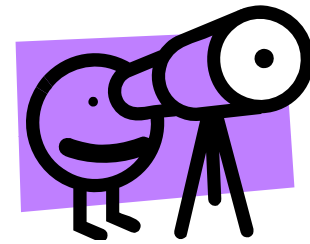
- Even if the contract says S1000D, the user at the end maybe “don’t want it”!
- The Master concept is a challenge when:
  - Existing customer → Existing layouts + New customer → New layout
  - Used S1000D version contra new version - for the same product
- Output requests have big impacts on future development.
- A new customer can increase the publication scope, compared to the existing customers.

# Conclusions

- Development never stops!
- Business rules must exist before configuration and production
- Reuse is essential – use Master concept!
- Integrations to other systems are necessary
- The system solution gets complex – test, test, test



Look for new opportunities and  
don't get stuck in old ways of  
thinking!



*Thank you for listening!*  
*Questions?*

