Worldwide Implementation of (Multi) CAD Service: CAD@TURCK

TURCK
Industrial Automation

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Course of Presentation

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- Introduction of Hans TURCK GmbH & Co. KG
- Description of initial situation
- Supplier selection
- Course of project
- Status: today

Hans TURCK GmbH & Co. KG

TURCK
Industrial Automation

- **Family-owned company with more than 2,800 employees**
- **Subsidiaries in 27 countries**
  + 60 international representatives
- **Total revenue 2010: 350 million EUR**
- **Over 15,000 products in the areas of sensor technology, field bus technology, connection and interface technology, as well as radio frequency identification for manufacturing and process automation.**
  - High temperature RFID complete system BL ident
  - uprox®+ factor 1 sensors
  - Highly compact and modular field bus and remote I/O systems

Initial Situation

- Realization in 2006:
  - **“The number of requests for products of Hans Turck GmbH & Co. KG as CAD data is growing. In most cases we have to admit that we cannot supply this data.”**

Dear Mr. Smith:

Do you have the file of **BL20 Catalog in AutoCAD** files?
If you do have one, please email me a copy of it. Thank you so much and have a nice day.

Best regards,
Shireen Wei

Dear customer,

I am currently working on getting the desired data for you.

Based on your request for **CAD data** we have three formats at Sensors. Concerning the profibus modules I can only offer you a DXF format.

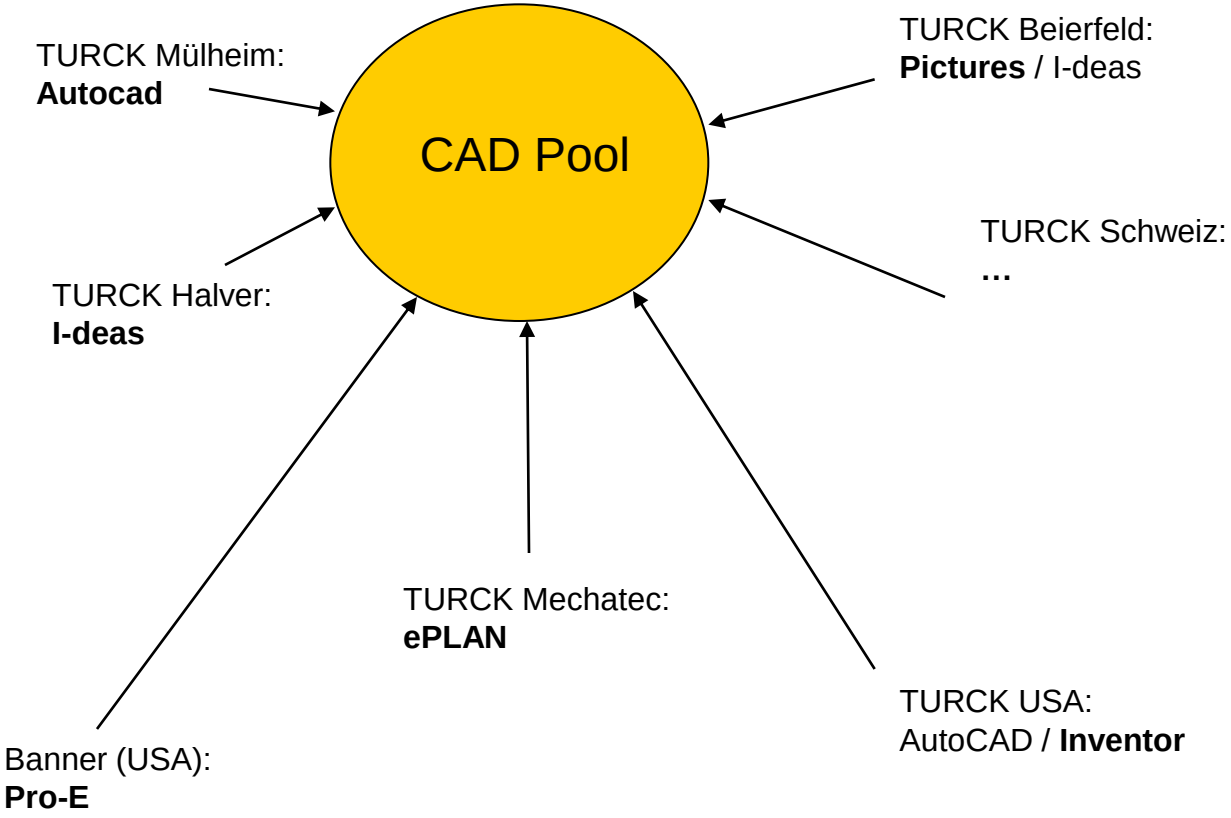
I have attached have three pattern files as an example.
I would like to make **DXF files** available to you. Please let me know whether the data is useful to you.
Best regards,
TURCK Field Service

Initial Situation

- E-mail requests of our customers are being forwarded to a TURCK development site. The CAD data is then sent to the customers without being previously checked.
  - **Risk of an erroneous data supply**
  - **& the danger of delivering too much information**

Initial Situation

- **A coordination of the CAD data of all development sites is hindered due to the use of too many different CAD systems.**

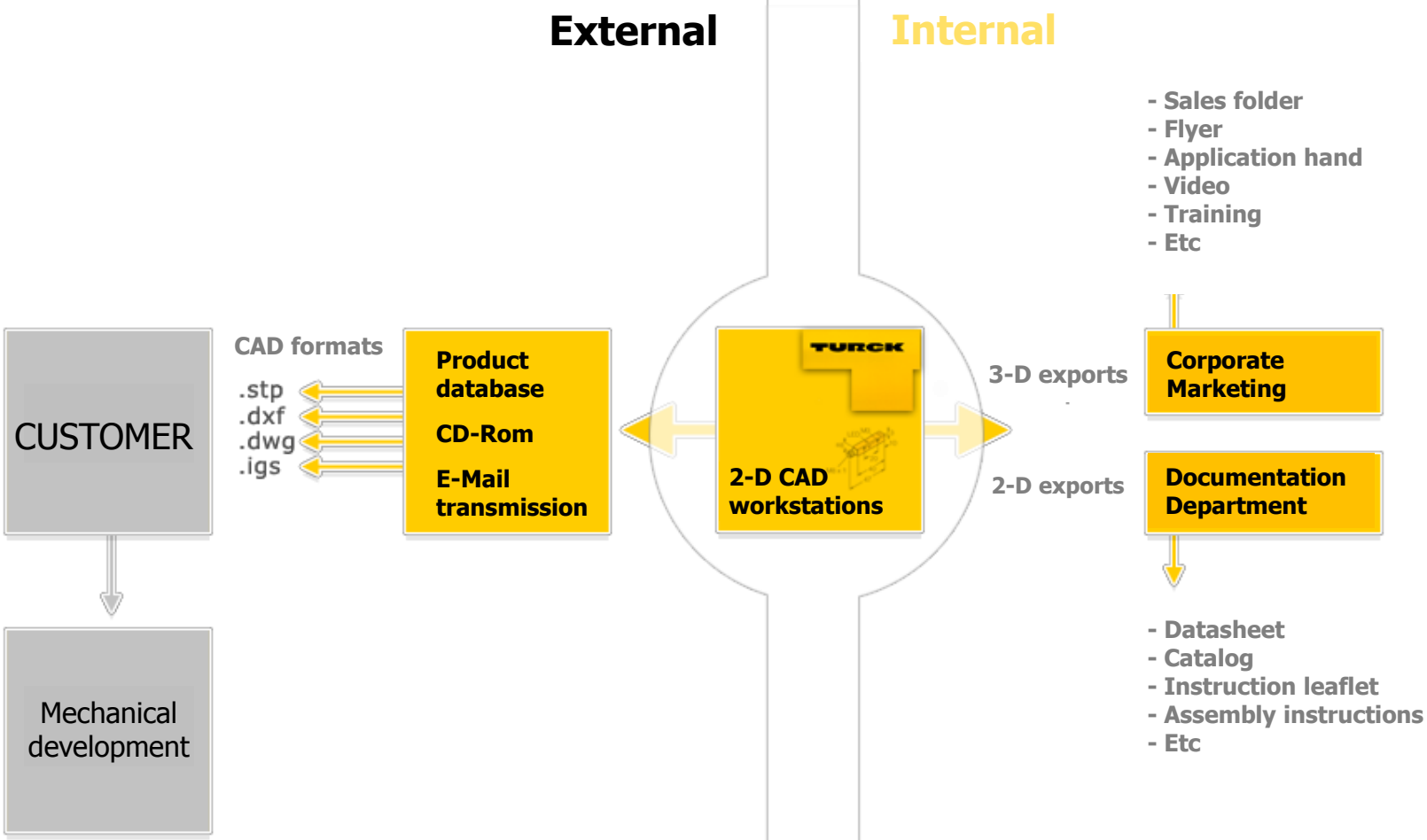


Initial Situation

- **Result from first survey:**

  Concept #1 – Qualification & preparation of existing CAD data within the TURCK Group with internal resources.

Concept #1: CAD using Internal Resources



Concept #1: CAD using Internal Resources

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- Select a CAD system

36	LogoCAD Triga	970,00 €	DXF 2D/3D	DWG		SAT	IGES	STEP	STL	CATIA v4	Pro/E													
37	**IronCAD incl-Inovate**	3.795,00 €	DXF 2D/3D	DWG	ACIS	SAT	IGES	STEP	STL				3DS	VRML		EPS	BMP							
38																								
39	**Inventor Export**	4.750,00 €	DXF 2D/3D	DWG		SAT	IGES	STEP	STL								BMP							
40	**Inventor Import**		DXF 2D/3D	DWG		SAT	IGES	STEP	STL															
41																								
42	**HiCAD Export**	ca. 5000	DXF 2D	DWG			IGES	STEP	STL	CATIA v4	Pro/E			VRML										
43	**HiCAD Import**		DXF 2D				IGES	STEP	STL	CATIA v4	Pro/E													
44																								
45	Cadkey/Key Creator EX	ca. 6000	DXF 2D/3D	DWG		SAT	IGES	STEP	STL	CATIA v4													CGM	
46	IMPORT		DXF 2D/3D	DWG		SAT	IGES	STEP	STL	CATIA v4	Pro/E	.ipt												
47																								
48	MegaCAD	3.490,00 €	DXF 2D/3D	DWG			IGES		STL															
49	Solid Edge	14.950,00 €																						
50	TurboCAD	599,00 €		DWG									3DS											
51																								
52	**Inovate Export**	**1.495,00 €**	DXF 2D/3D			SAT	IGES	STEP	STL	CATIA v5	Pro/E		3DS			EPS	BMP	JPG	PNG	GIF	PCX	RAW		
53	**Inovate Import**		DXF 2D/3D			SAT	IGES	STEP	STL	CATIA v5	Pro/E		3DS									RAW		
54																								
55	CADCEUS	9.280,00 €	DXF 2D/3D				IGES	STEP		CATIA v4	Pro/E			VRML										
56	Canvas	380,00 €	DXF 2D	DWG		SAT	IGES								Ai	EPS						RAW	CGM	
57																								
58	**Alibre Design Export**	1.590,00 €				SAT	IGES	STEP	STL								BMP			GIF				
59	**Alibre Design Import**		DXF 2D/3D	DWG		SAT	IGES	STEP									BMP		PNG	GIF				
60																								
61	IsoDraw CADprocess	3.785,00 €	DXF 2D/3D	DWG			IGES	STEP		CATIA v4	Pro/E			VRML										

Estimation: CAD with Internal Means

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Pros

- Cheap solution

- TURCK service features are enhanced / completed

- Only one “product cover” goes to customers. Technical details remain internal.

- Internal CAD know-how

Cons

- Transformation is time consuming and labor intensive

- Restricted number of data formats

- Barely (any) native data formats

- No integration of CAD workstations of customers / design engineers.

- No classification of CAD data
  (for example: BMEcat)

- Customers must sort their data into their PDM systems themselves in all cases

- Up to now, no CAD know-how at TURCK Mülheim location

Estimation: CAD with Internal Means

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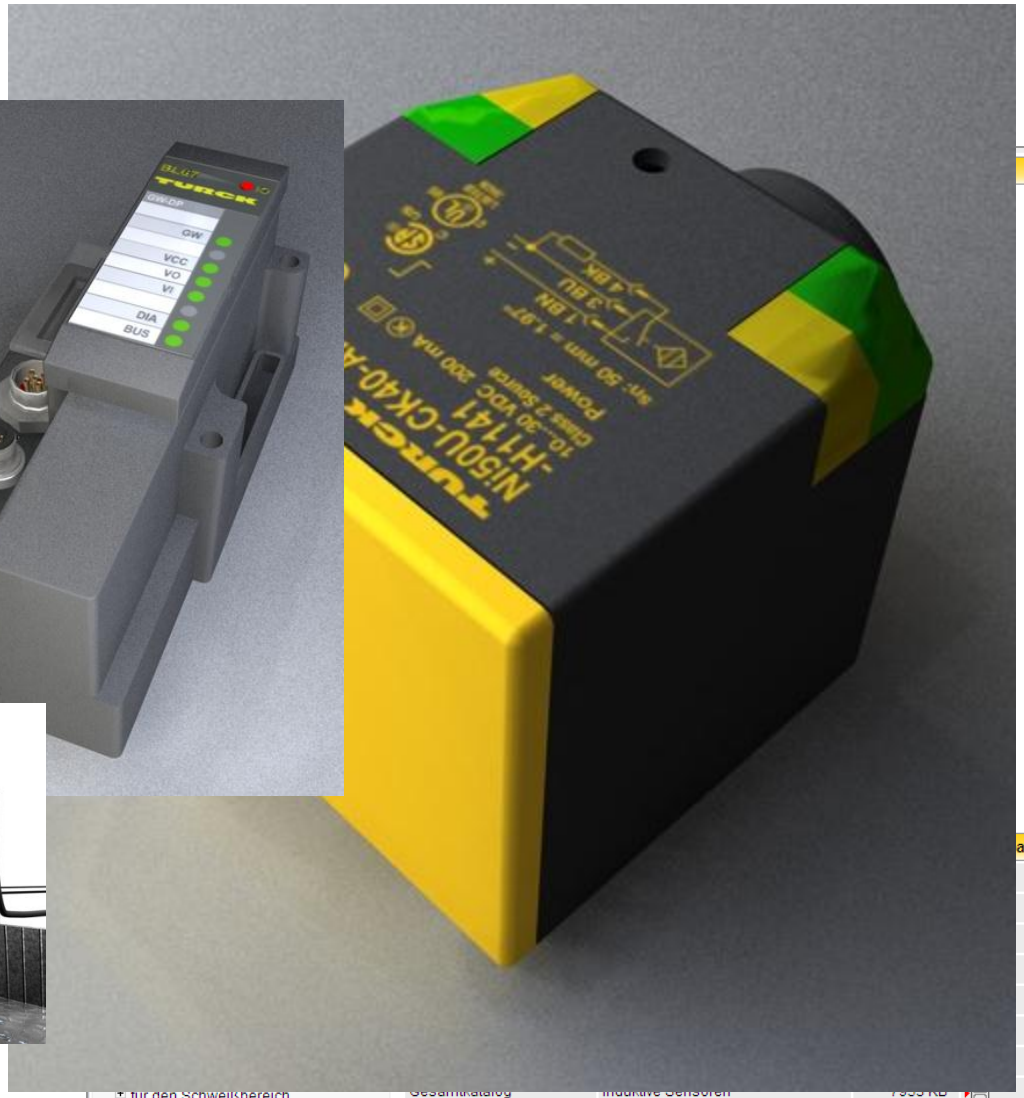
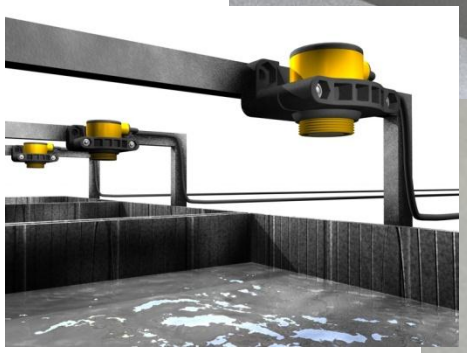
- **Project runtime too long**
- **Solution has too little potential**
  (Benchmark, customer loyalty, service scope, strategic element, etc.)
- **Resources insufficient for project success**
  (Data creation: yes, build-up of CAD know-how: no)

Requirements for a CAD Solution

- Aims:
  - **Use o & in the Intern**





Requirements for a CAD Solution

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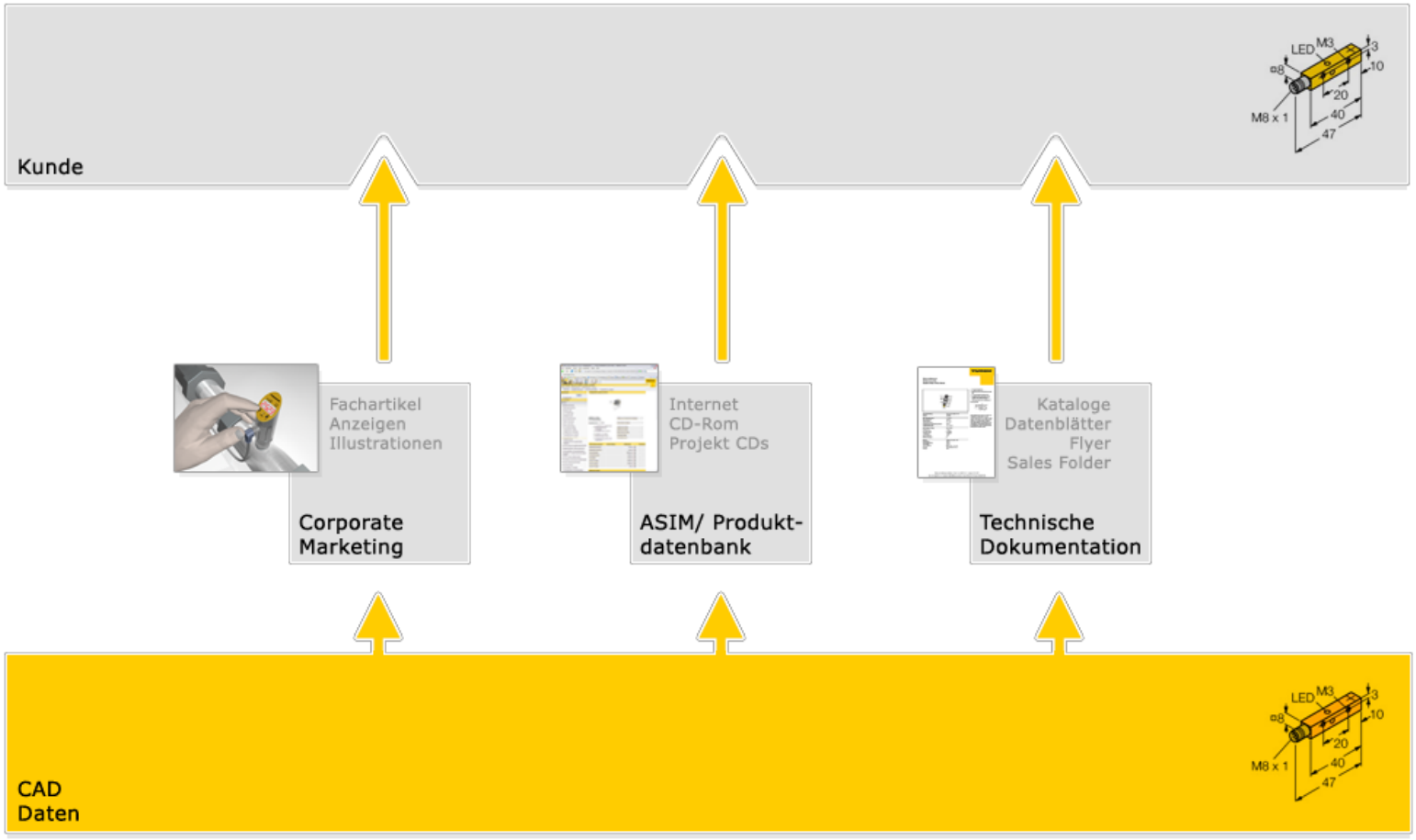

Requirements for a CAD Solution

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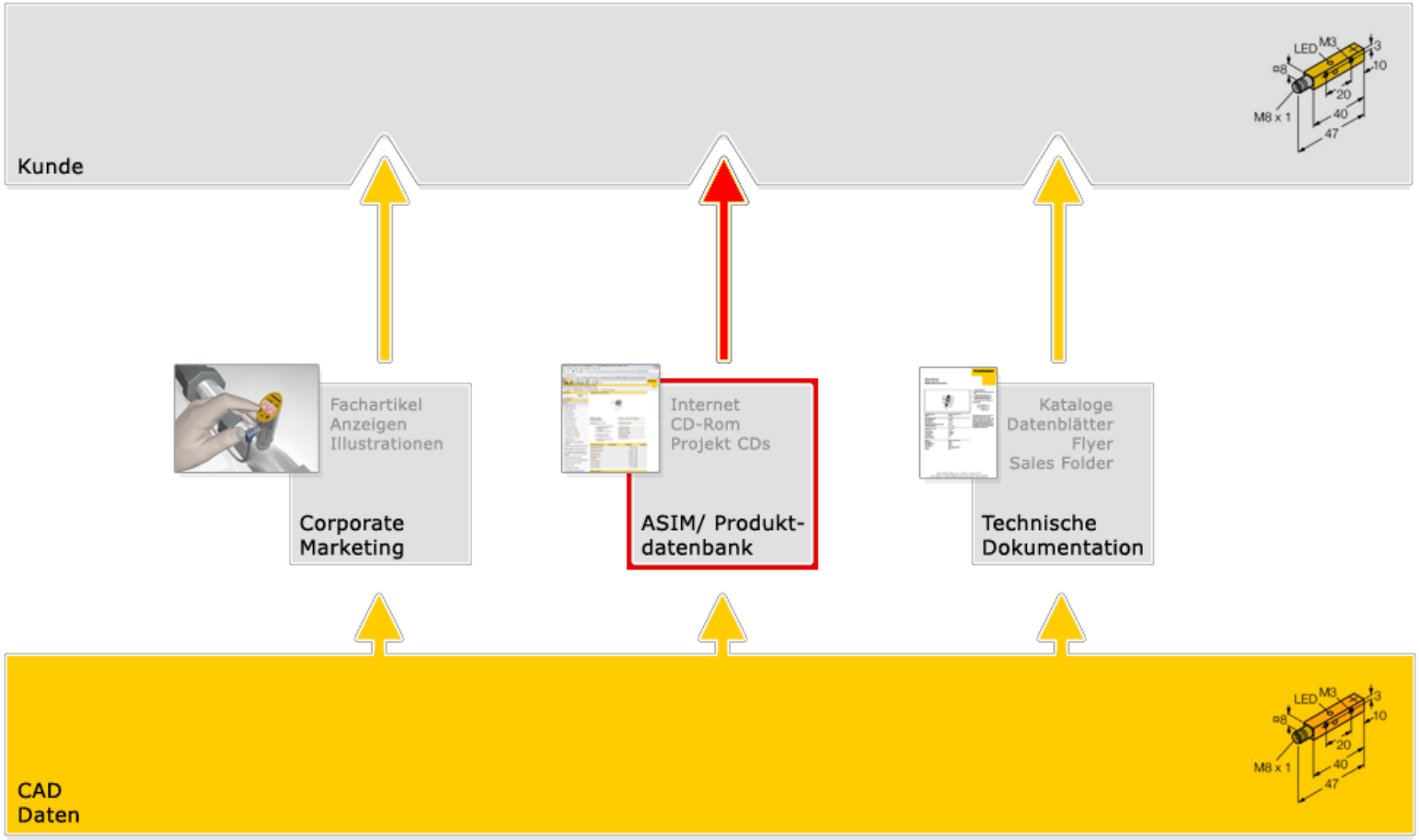
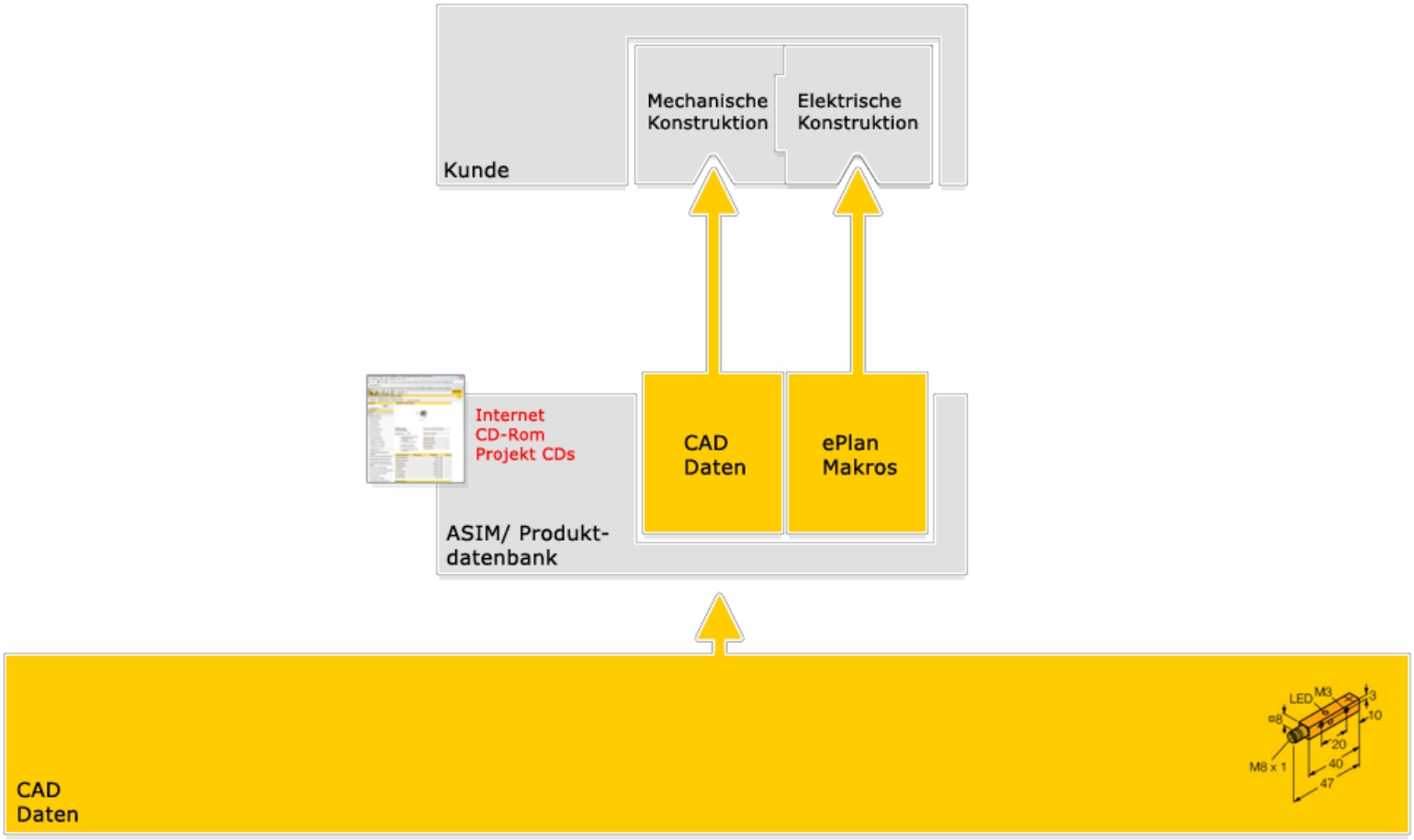


Requirements for a CAD Solution



Supplier Selection

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- Which suppliers were evaluated?
- How did the selection land on Cadenas?

Evaluation: CAD with Cadenas

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Pros

- Project runtime
  (approximately: 18 months)

- Interfaces ERP/ PIM

- TURCK services are massively enhanced

- Customer obtains **HIS** CAD format from TURCK (native data)

- Only one “product cover” to customers.
(technical know-how remains internal)

- Contact information of interested parties

- Availability of our products on two further internet portals with a user number of 370,000 total

- Many Cadenas installations in universities

Cons

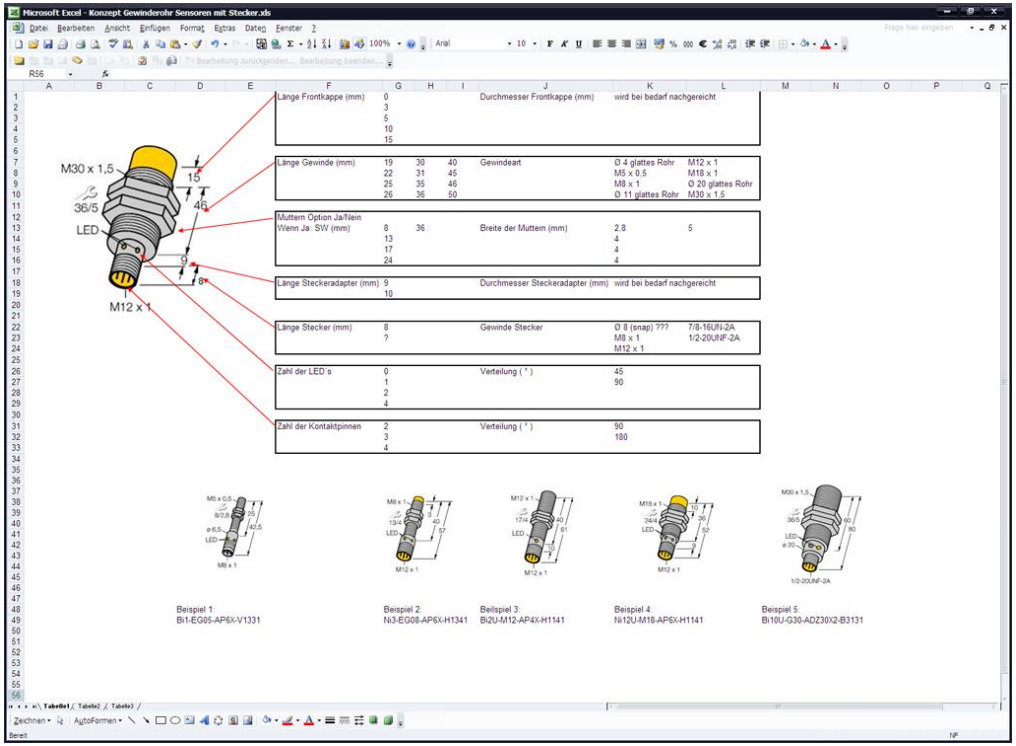
- Budget/ pricing model

- Dependency on Cadenas

- Cadenas: large = inflexible?

Course of Project

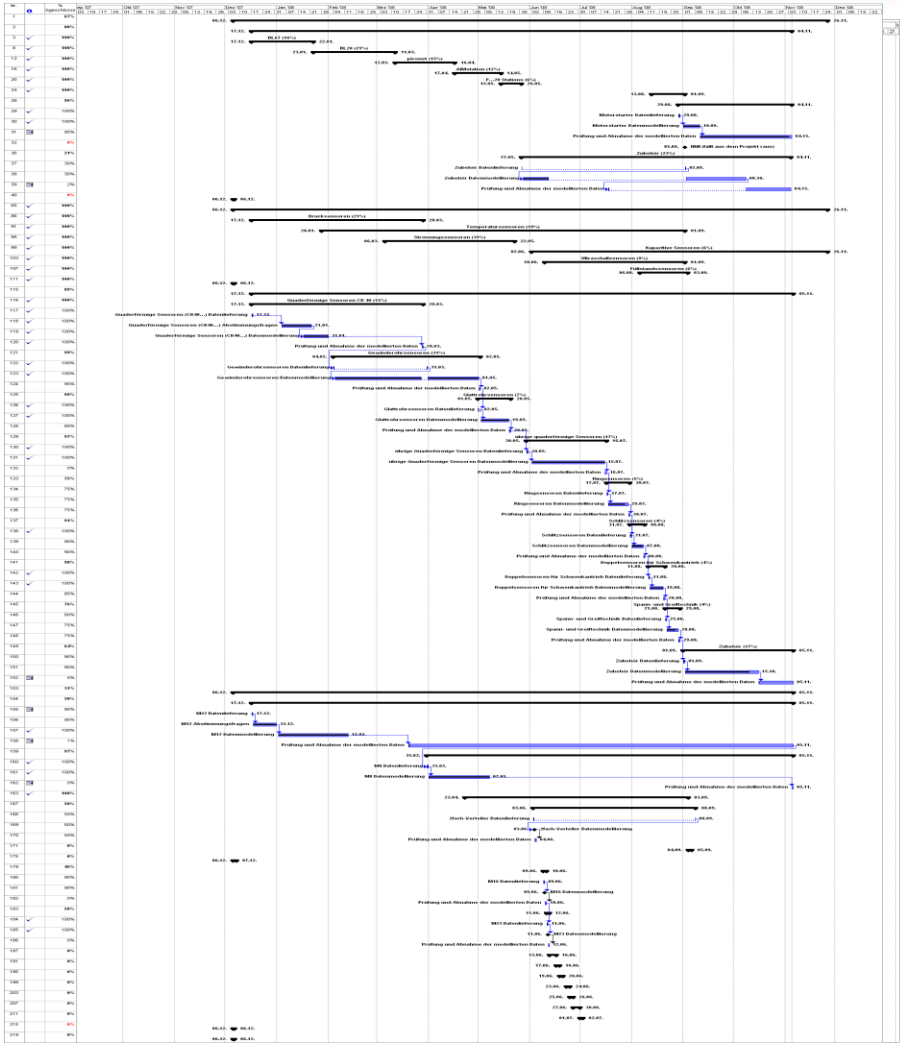
- **October 2007:**
  The basics were worked on in one workshop per department. (Level of detail, data availability, parameter assignment, etc.)



Course of Project

- **December 2007:**
  - Start modeling work
    (4 product areas in parallel)

- **December 2008:**
  - completion of work &
  - connection of TURCK product database to Cadenas infrastructure



Project plan 12/2007

InDetail: CAD Data Creation

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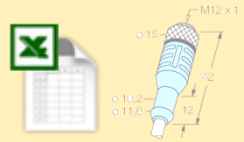
Neue Produkte

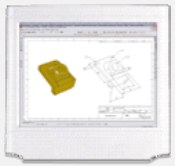
TURCK

Produkt Mangement &
Application Sales Support



Produktlisten & 2D CAD

Cadenas



Erstellung
3D Daten

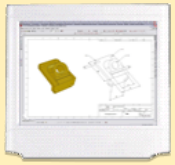
Bestehende Produktlinien

Produkt Mangement &
Application Sales Support

ASIM Daten
(BMEcat Export)

Korrekturbedarf

Freigabe



Prüfung durch
Produkt Mangement

Datenlieferung

In Detail: CAD Geometries Based on Parameters

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Example for parameter creation of CAD models

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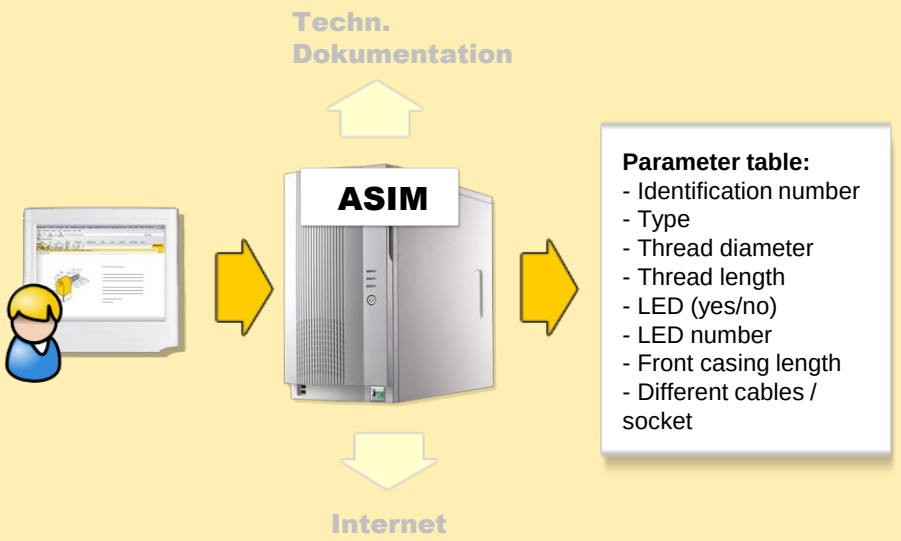
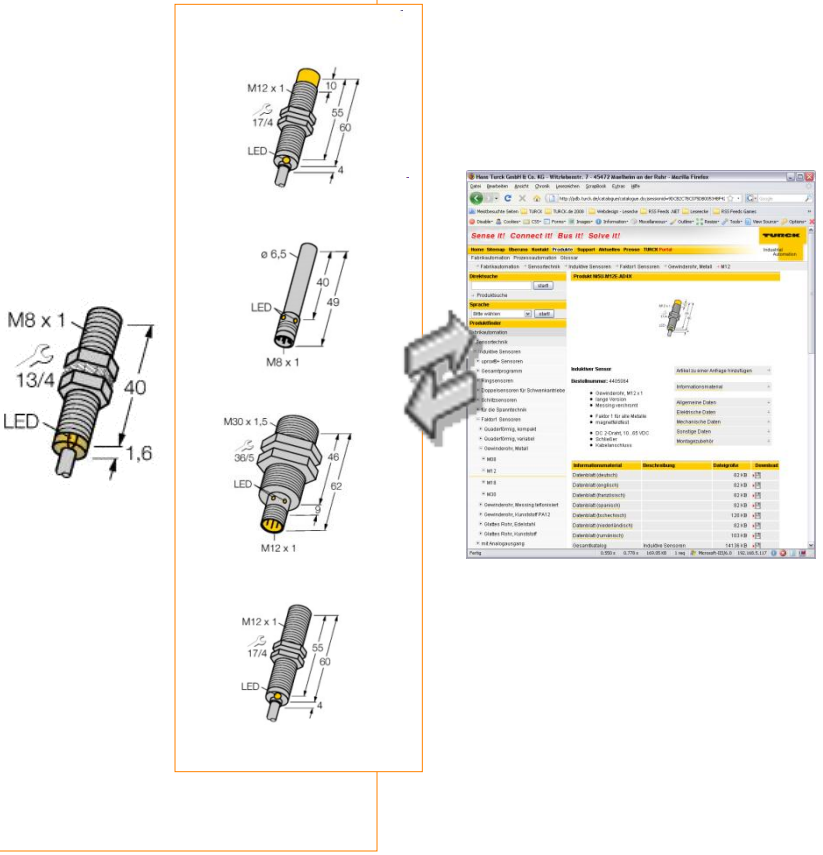


Parameter table:
- Identification number
- Type
- Thread diameter
- Thread length
- LED (yes/no)
- LED number
- Front casing length
- Different cables / socket

Cadenas



Status: CAD @ TURCK

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- Service currently available on 26 TURCK websites
- CAD covering current product portfolio ca. 65%
- Data enters work in the following departments:
  - Multimedia marketing (3-D animations/ illustrations)
  - Technical documentation (Hands on: Sensor technology, entire catalog)
  - Product management
  - Field work / office work

Outlook: CAD@TURCK

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- **Expansion of CAD offer (increase coverage)**
  (Business area: Process automation)
- **Create an all-encompassing ePLAN macro offer**
- **Participate in PartServer program**
- **Improve product classification**
  (Wholesale)
- **Increase degree of automation in the creation of technical documentation**

Thank you!

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- **Any questions???**

Technology: TURCK Online CAD Service

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Send part/assembly info
to PARTserver. E.g. command line
parameter, XML, INI, CSV, etc.

Add customer info like
E-mail, name, company etc.

PARTserver

PARTserver master

PARTserver client farm

PARTserver client | PARTserver client
PARTserver client | PARTserver client
PARTserver client | ...

Send mail with CAD data to user