Einsatz von PartSolutions bei Voith Paper

VOITH

Übersicht

Voith

Group Division‘s

Kennzahlen

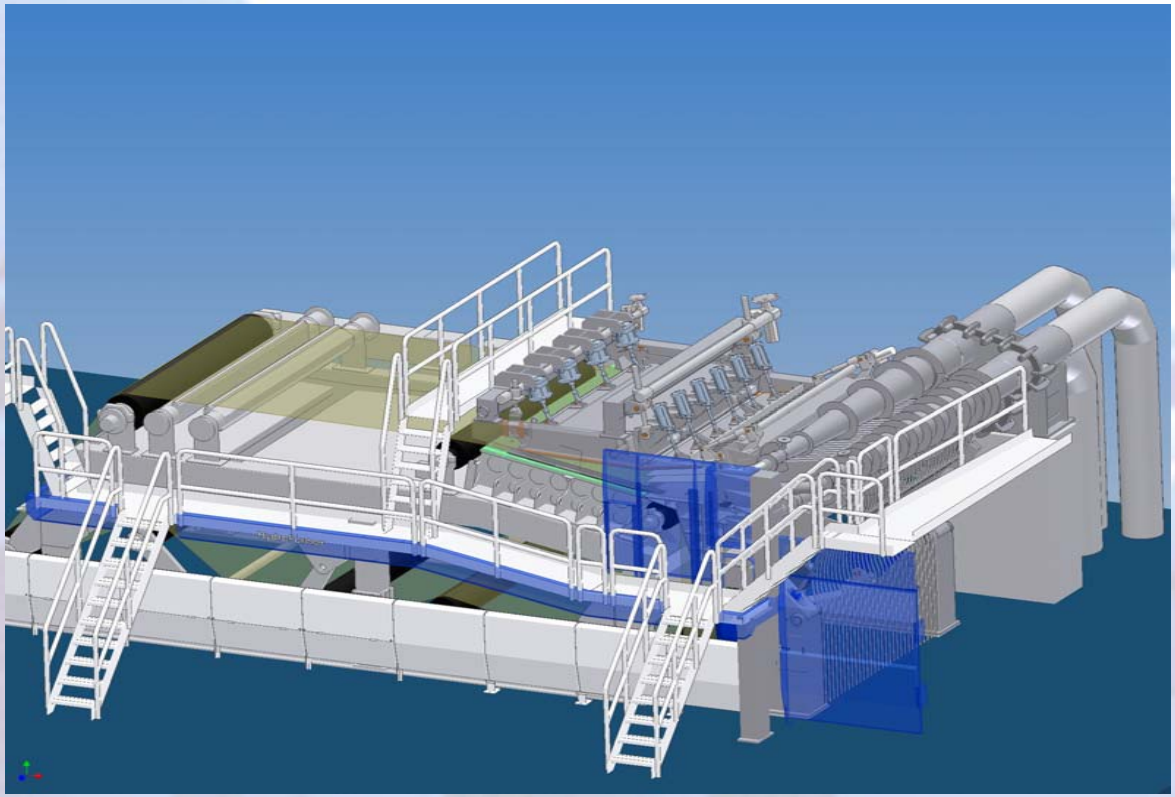
Voith Paper

Papiermaschinen

CAD Systeme

Cadenas

Klassifikation



Voith, the company

Which are the products ?

What does makes Voith special ?

Operating figures

VOITH

The Group Divisions

Voith Paper
Machines and plants for the paper making industry

Voith Fabrics
Wires and felts for paper machines

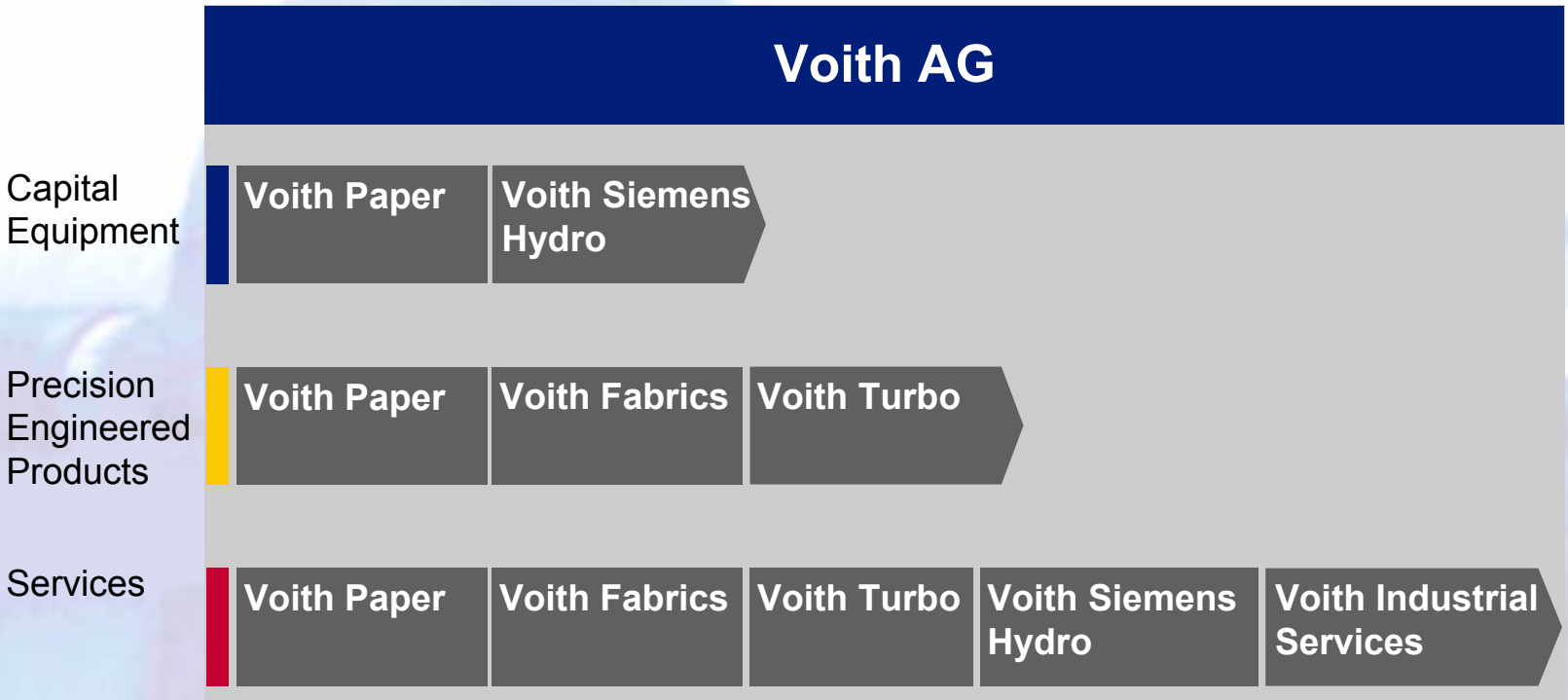
Voith Turbo
Drive components for road, rail and industry

Voith Siemens Hydro Power Generation
Electrical and mechanical equipment for hydro power plants, integrated services.

Voith Industrial Services
Technical services for various areas of industry

VOITH

Reliability based on core competencies



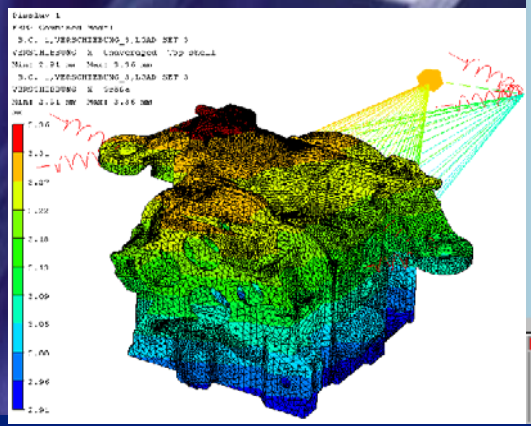
Voith Turbo

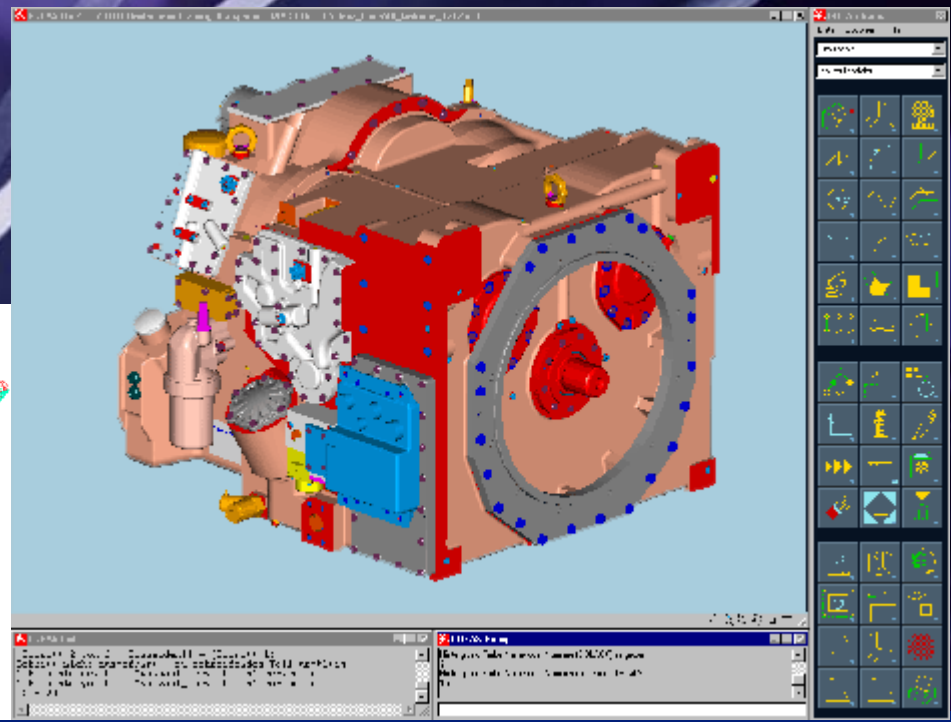
Design and development of
- mechanical,
- hydrodynamic and hydrostatic,
- electric and electronic drive and brake solutions

VOITH

Voith Turbo (CAD)

SDRC Ideas + Cadenas
(Unigraphics)





I-deas

VOITH

Voith Marine Technology

SDRC Ideas
(Unigraphics)

Voith-Schneider® propeller

VOITH

Voith Siemens Hydro Power Generation

Environmentally friendly generation of energy by hydro power

Nearly 30% of the world`s hydro power energy is generated by Voith Siemens turbines.

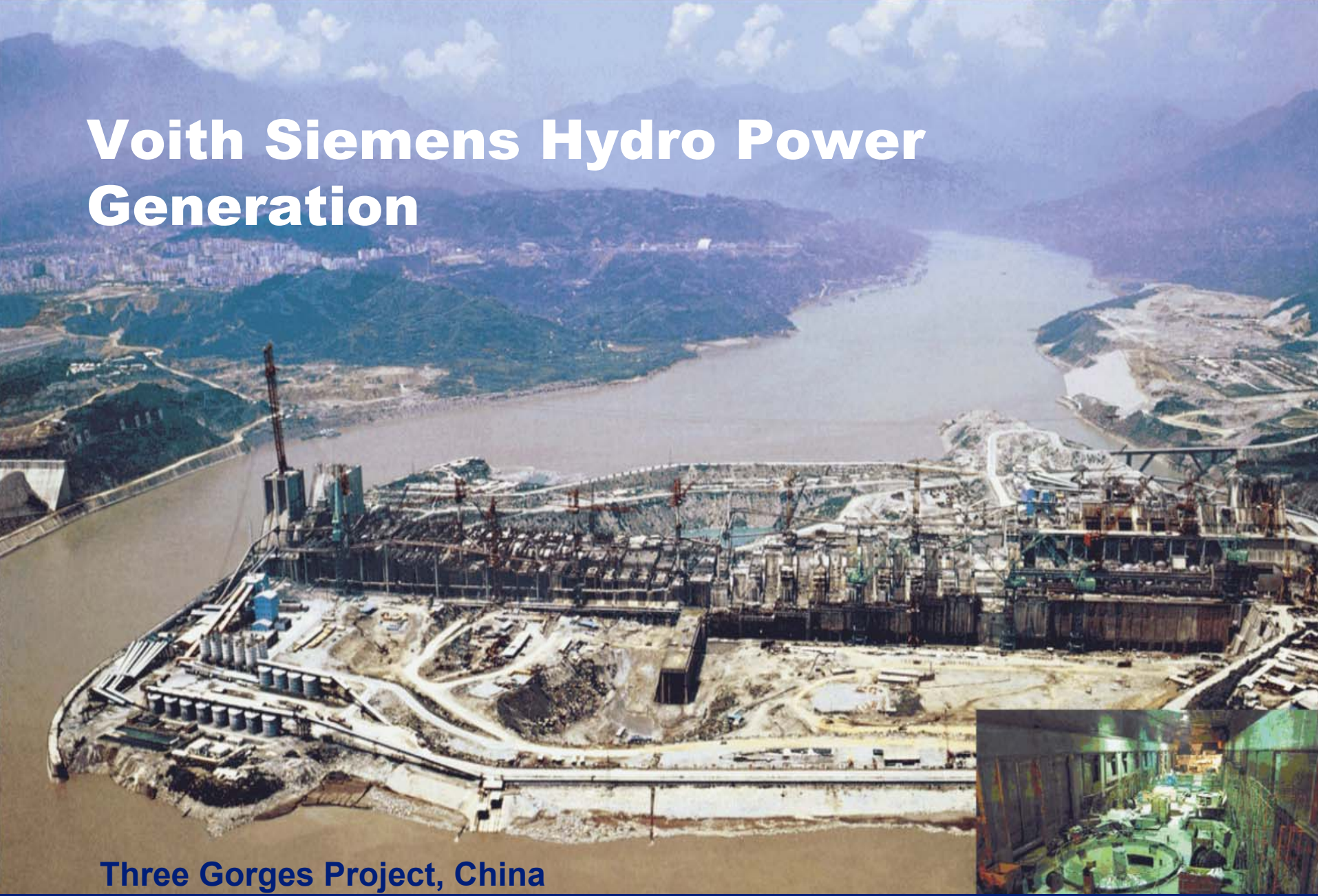
1903 Niagara Falls

1978 Itaipú / Brasil
power station with the world largest capacity

1997 Three Gorges / China
World most powerful hydro power plant

VOITH

Voith Siemens Hydro Power Generation

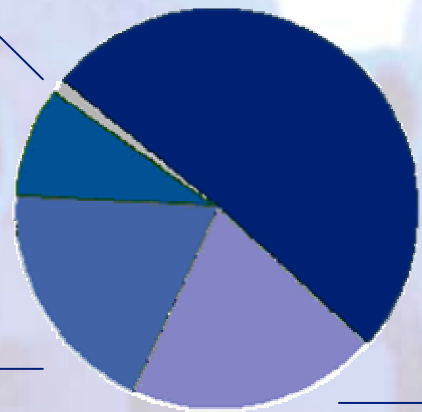


Three Gorges Project, China

VOITH

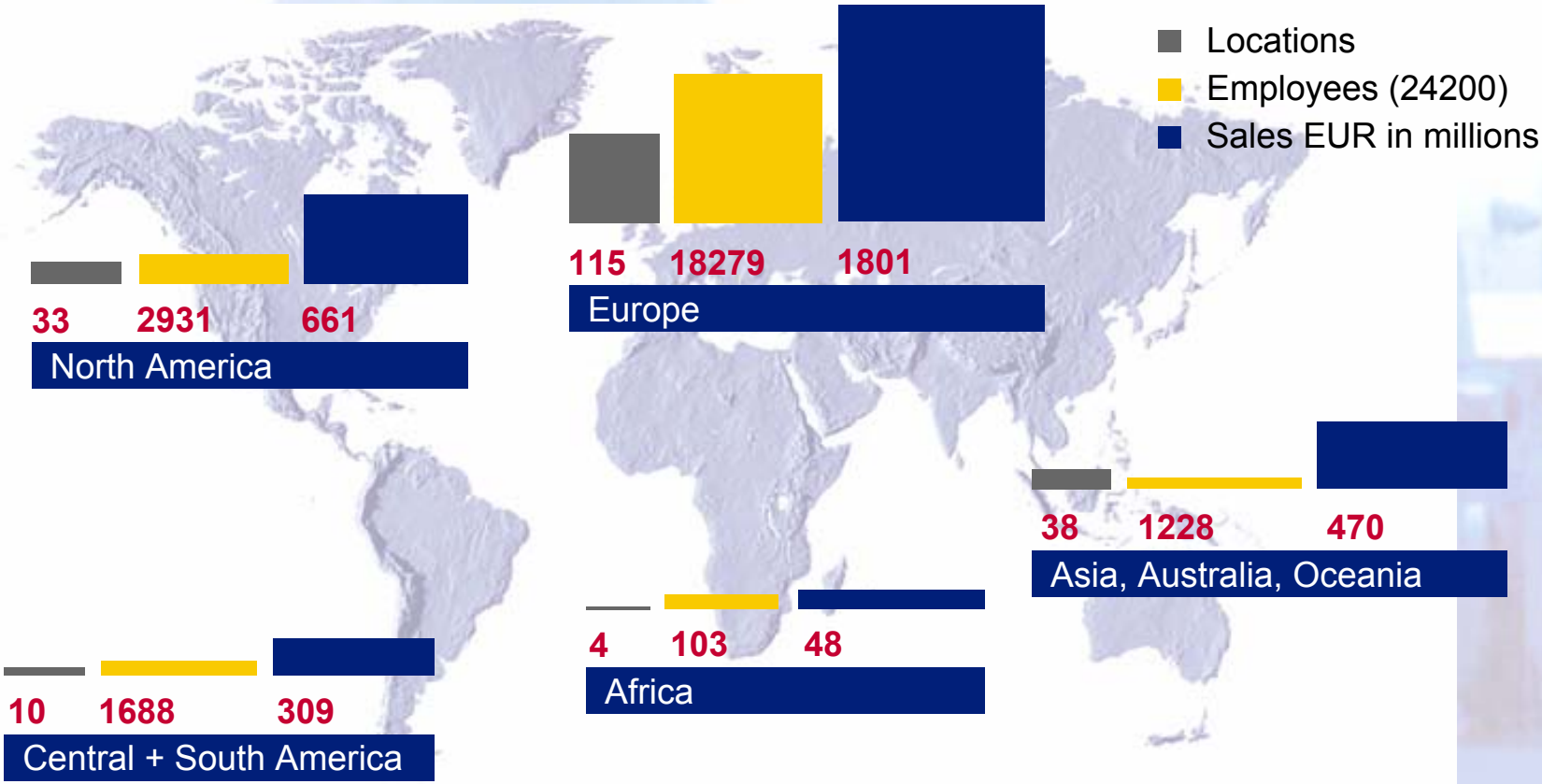
Sales Structure by Group Division

Sales 2001/02 3 289 EUR in millions



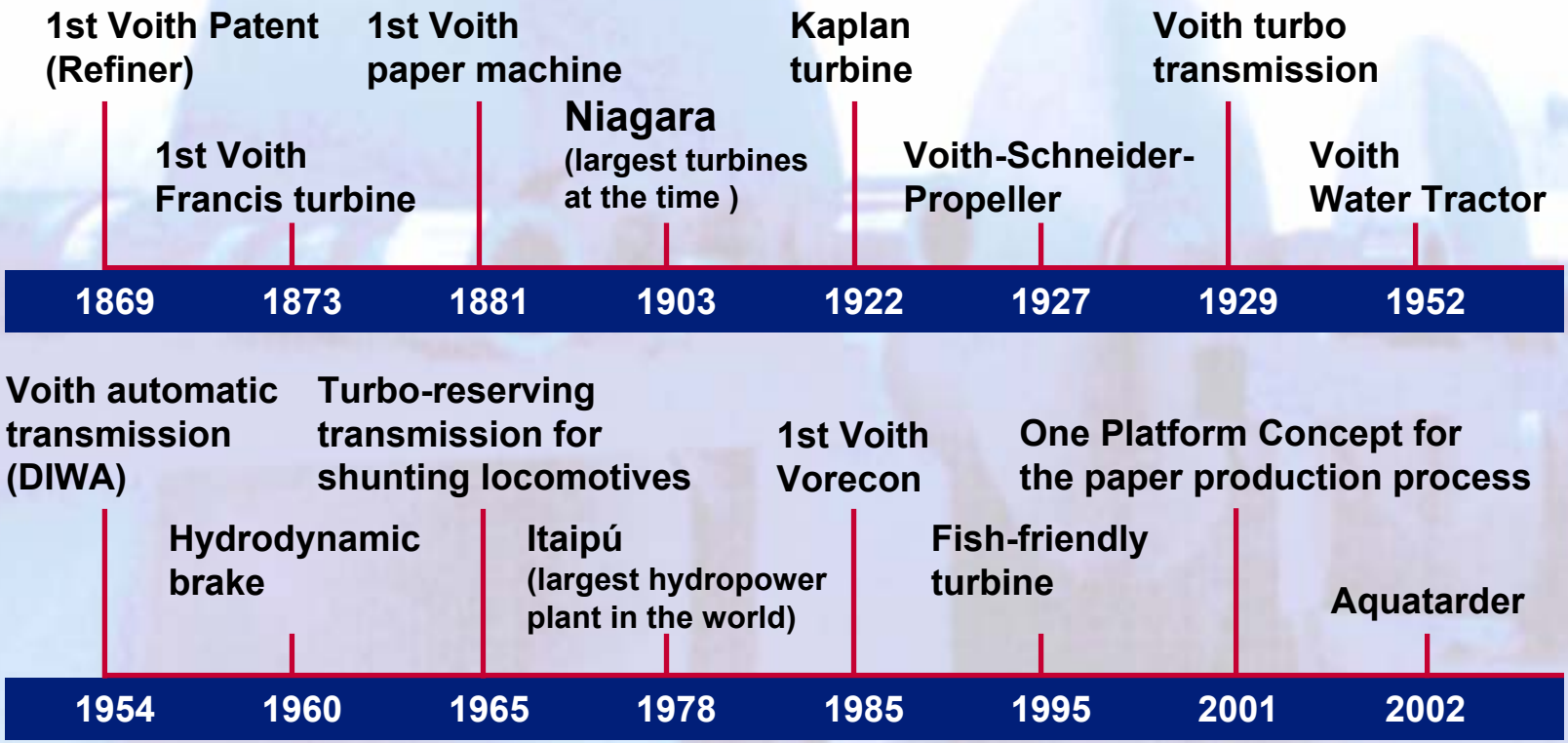
Voith Others	1%
Voith Industrial Services	9%
Voith Siemens Hydro Power Generation	19%
Voith Paper Technology	51%
Voith Turbo	20%

Present for customers worldwide



An uninterrupted succession of superior technical achievements

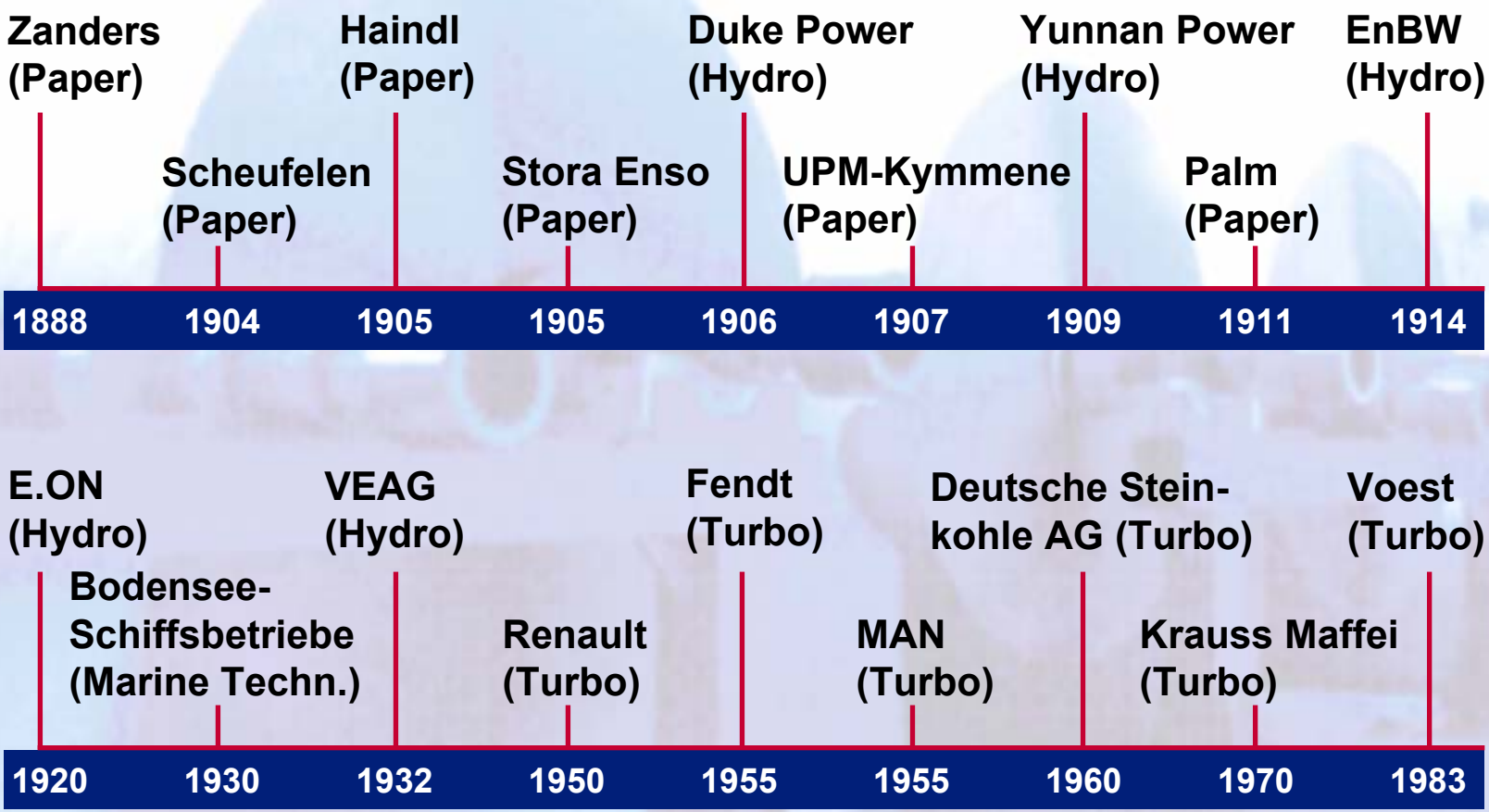
400 patents per year; 7000 active patents



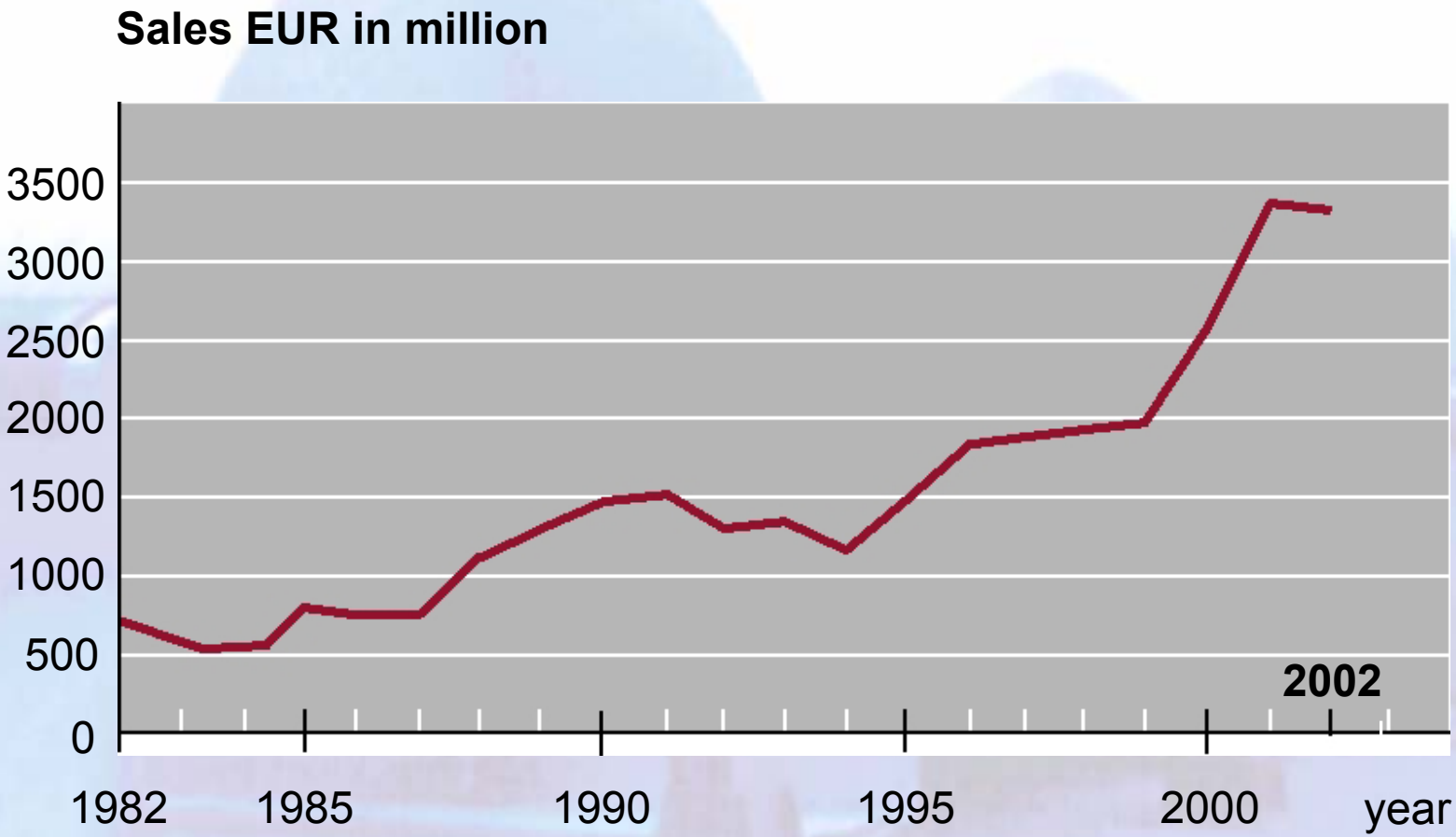
Reliable partnerships

- Business relations based on trust
- Often developed over generations
- Resulting in leading market positions worldwide in all our markets
- Resulting in dynamic growth and solid earnings
- Based on the values and long-term strategy of a family company

Our partnerships last for generations

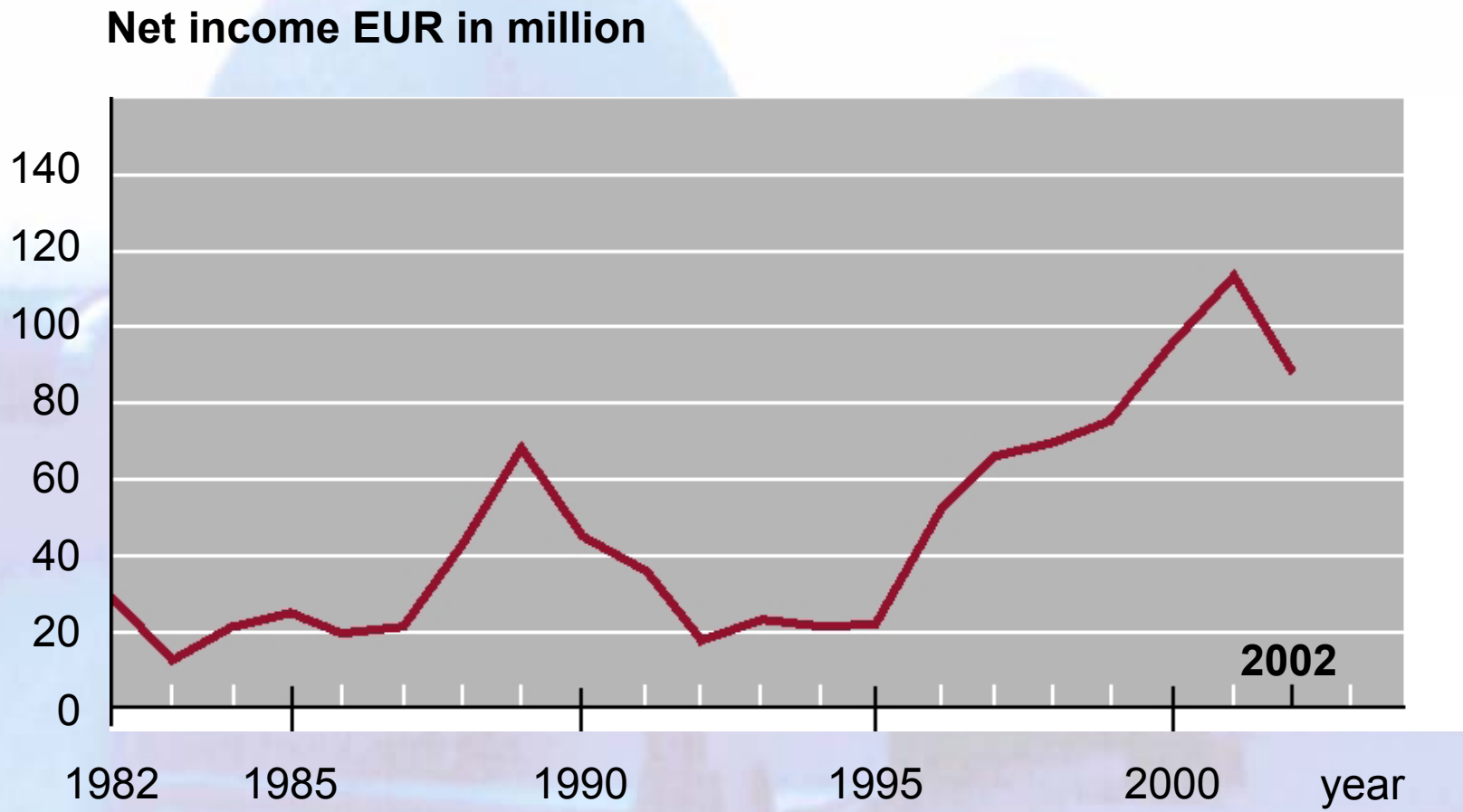


Dynamic growth



VOITH

Solid income



Voith, the Company
Summing-up

- 24.200 Employees
- 3.300 Million € Turnover
- Four major Divisions
  Voith Paper,
  Voith Turbo,
  Voith Siemens-Hydro,
  Voith Industrial Services

VOITH

Voith Paper Division

VOITH

*Technology **and** History*

At the beginning of the company‘s history which spans over 130 years is the small locksmith‘s workshop of Johann Matthäus Voith.

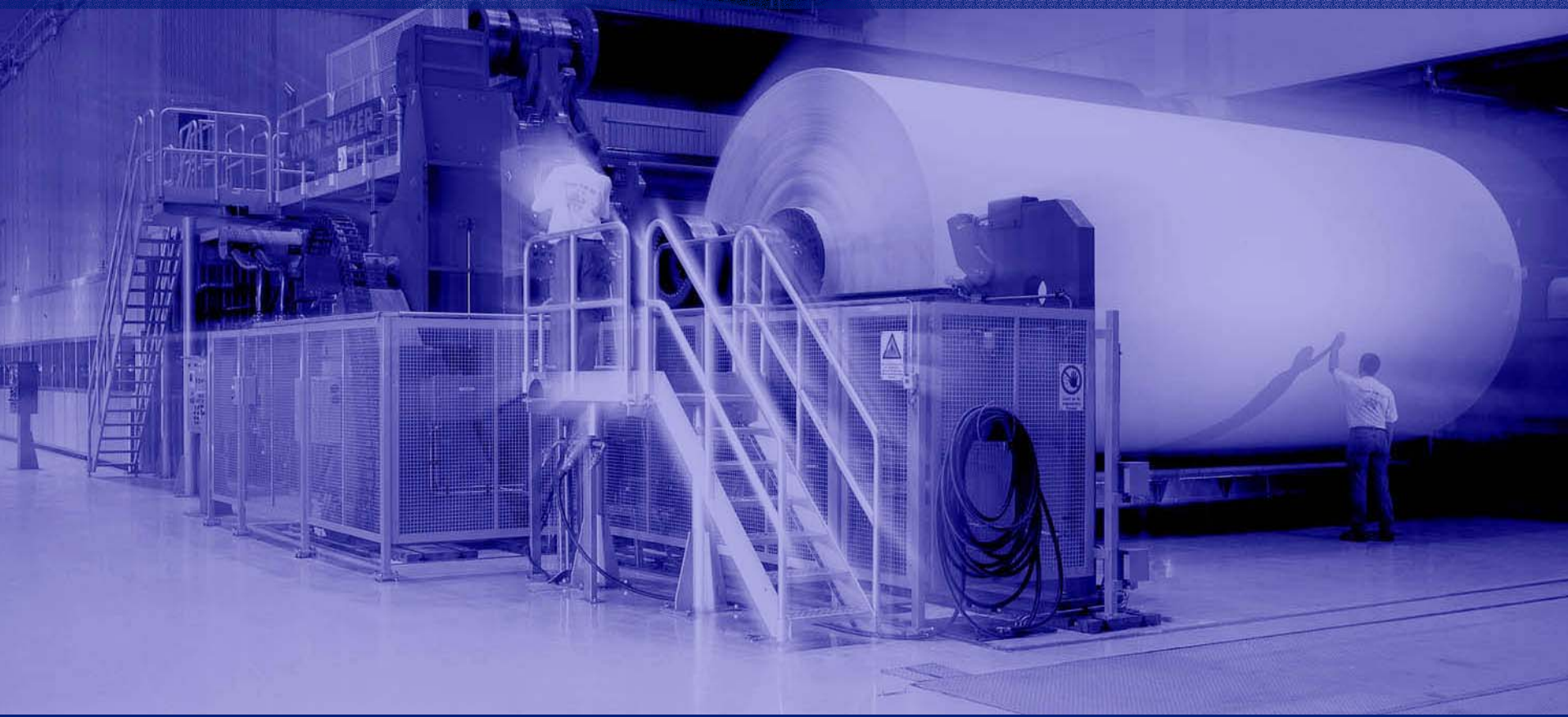
Within a few years, the Heidenheim craftsman‘s workshop developed into one of Gearmies largest engineering company with contacts throughout the world.

Since then, Voith products have been corner stones in technical history.

1867 **Official foundation of the Maschinenfabrik J.M. Voith**

Hürth PM1

The most cost-effective production line for standard newsprint



VOITH

Hürth PM1, World Speed Record

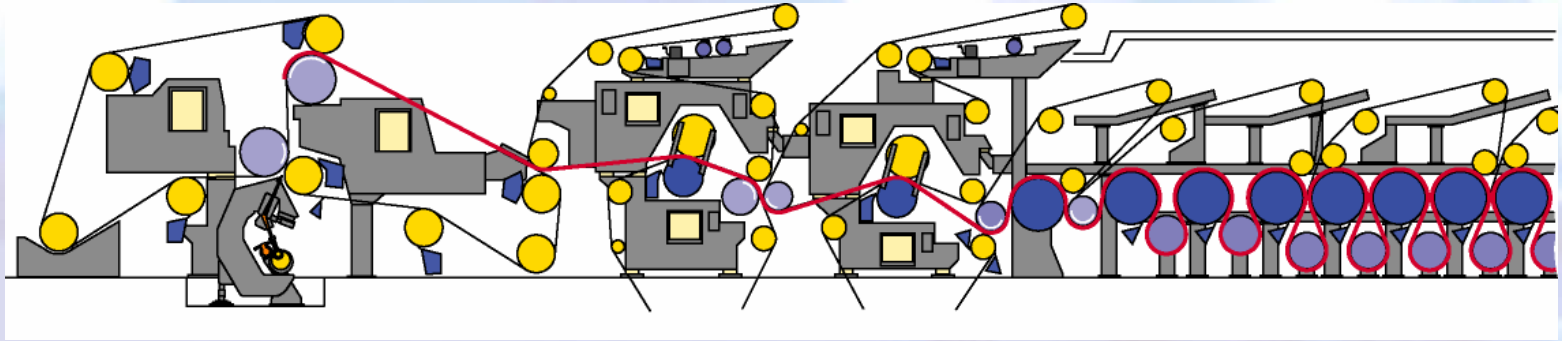
On 21. March 2003, PM 1 in Hürth established a new speed world record for newsprint. The machine produced newsprint for a period of 30 hours at a speed of 1912 m/min. (114 km/h, = 72 mph)

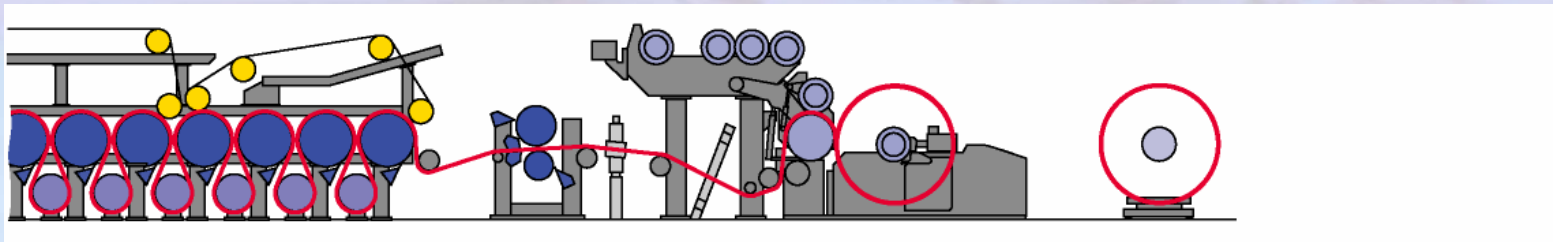
- Record project period of 16 months,
  from contract to paper at the Sirius reel
- Construction time of 12 months
  from start of construction work up to paper at the Sirius reel
- Newsprint Paper of 42.5 g/m2 from 100% recovered paper was then produced for a period of almost 30 hours at exactly this speed. During this period of time, PM 1 was operating without breaks for 7h.

VOITH

Hürth PM1

	Wire width in mm	Production in to/day	Paper Grades	Start up
Hürth/Myllykoski PM 1 (Germany)	8 900	950	Newsprint	July 2002

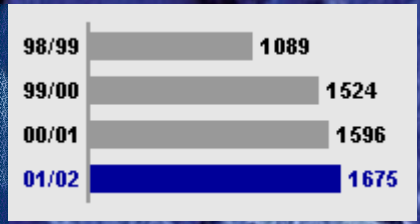




Voith Paper

Today, more than one third of the world‘s paper production is produced on Voith Paper plants.

10.500 employees in 85 affiliates on all continents.



Sales (Euro in millions)

1985 Completion of the worlds largest Yankee dryer – 125 tons from single casting.

1993 First paper machine for the production of newsprint from 100 % recovered paper. (Schwed)

1996 The world’s fastest newsprint machine. Sweden. 1.700 m/min

1996 Delivery of two of the world‘s largest paper machines to China

1997 Delivery of Triple Star, the world’s most efficient paper production plant. Austria

VOITH

Voith Paper, History

1825 Johann Matthäus Voith takes charge of his father's workshop employing five workers.

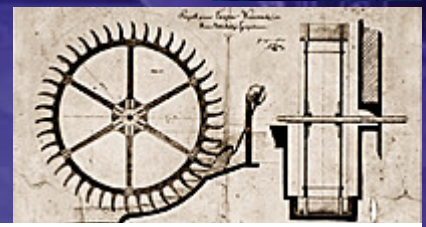
1848 First wood milling machine

1867 Product Division of Paper Machines and Stock Preparation.

1881 First Complete Voith paper machine. Wire width of 2.35 meters

1900 25 paper machines delivered. 330 employees.

1913 Newsprint paper machine with wire width 5.20 meters. Sweden.



VOITH

Voith Paper Heidenheim

- Systemlieferant für grafische Papiermaschinen mit einer Breite von mehr als 5200 mm
- Center of Competence für grafische Papiermaschinen und Streichmaschinen
- Center of Product für Stoffaufläufe, Schuhpressen, Streichaggregate und Aufrollsysteme

Papermaschines Graphic, Heidenheim

Production lines for graphical papers

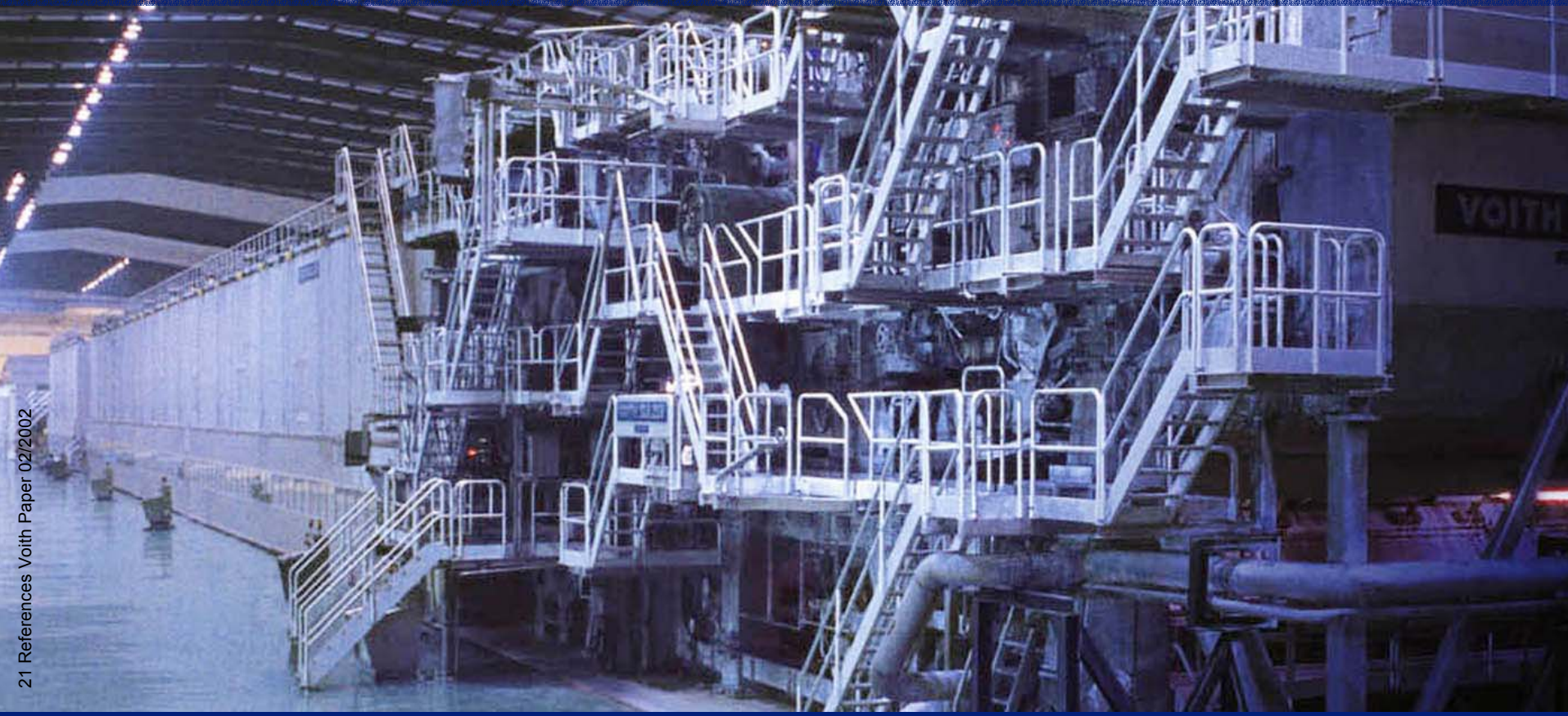
- Copy paper
- Newsprint
- Magazine paper

- Calendered paper
- Coated papers

- Woodfree paper
- Woodcont. paper

Dagang PM1/PM2

The most efficient fine-paper production plant in the world (920 000 tons/year PM1 and PM2)



VOITH

Ettringen PM5

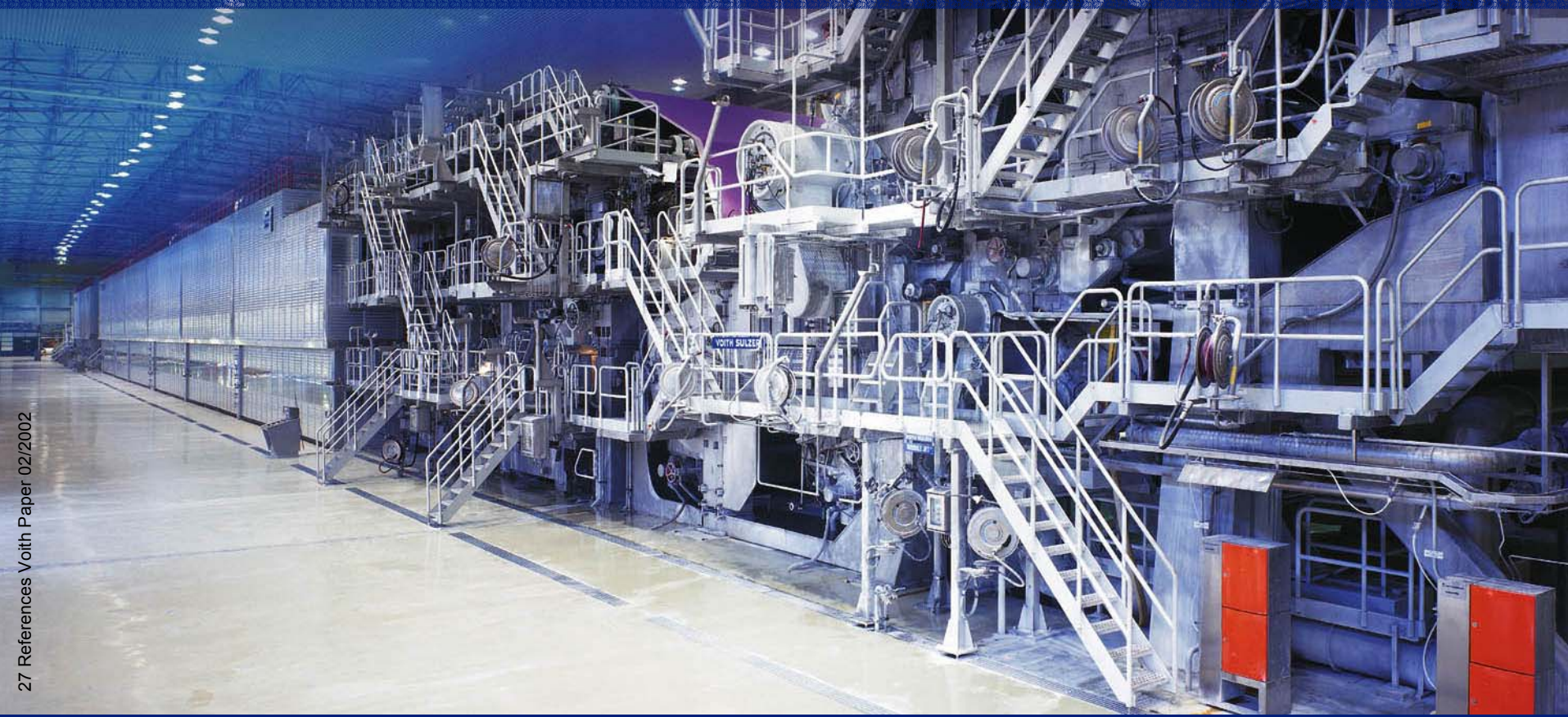
The world’s fastest online SC-paper machine

25 References Voith Paper 02/2002

VOITH

Soporcel PM2

Europe’s biggest fine paper machine for copy paper



VOITH

Voith Paper Division
Summing-up

- Voith Paper founded 1825
- Today 10.500 Employees
- More than one third of the World Paper Production is made on Voith Machines
- A Voith Machine holds with 72 miles/hour the World Speed Record for these Machines.

VOITH

Voith 3d CAD Project

VOITH

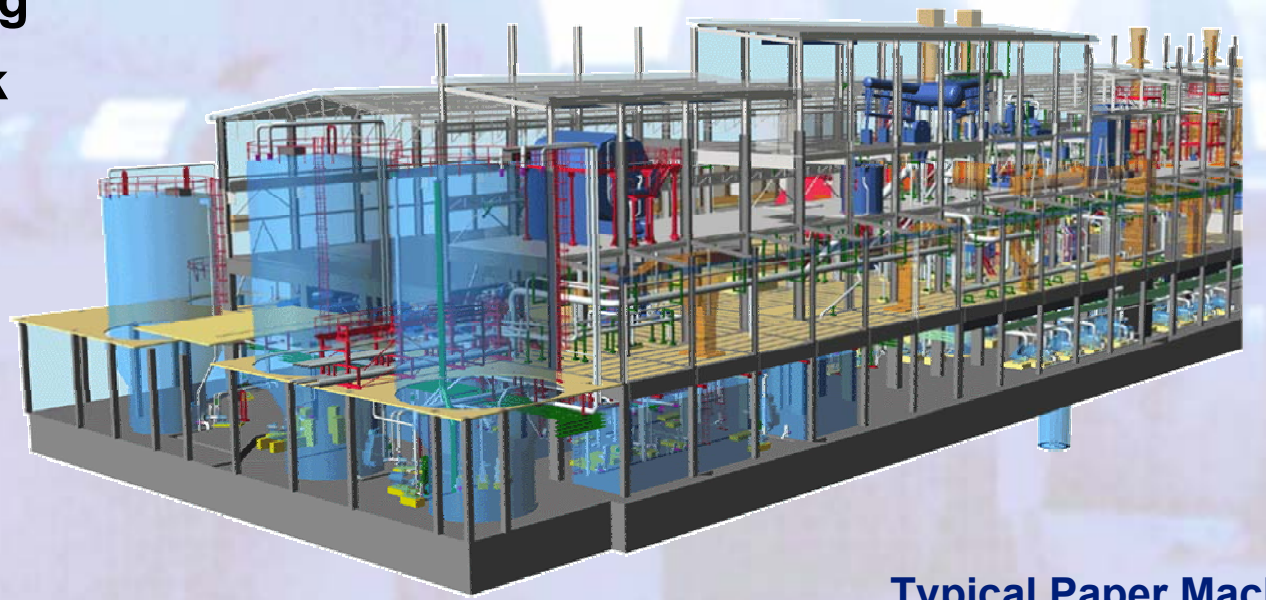
Strategic Tools

- **CAD**
  INVENTOR is the future CAD-System of Voith Paper
  -> Migration from 2D CAD MicroStation to 3D CAD Inventor
- **Plant Layout**
  Intergraph PDS
- **CAE**
  ComosPT for Electrical wiring
- **PDM**
  SAP is the future Product Data Management System
  -> One Integrated PDM System for all Voith Paper subsidiaries.

Strategic objectives

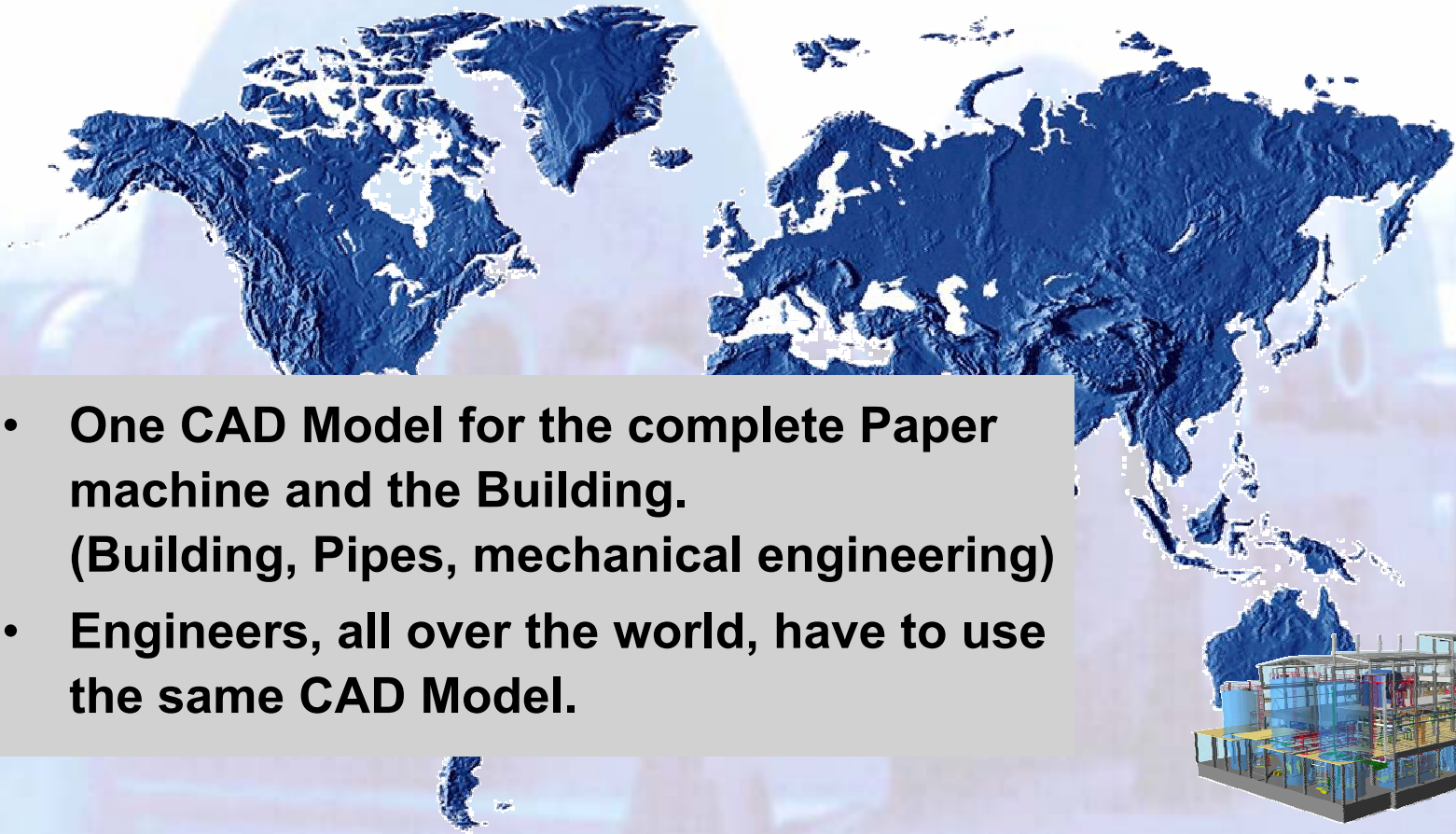
Efficiency increase in

- **Engineering**
- **Team Work**
- **Quality**

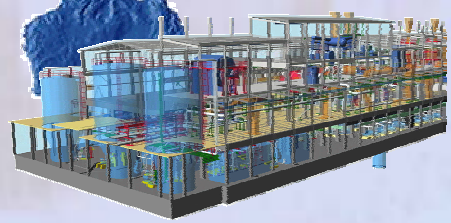


Typical Paper Machine
app. 60 000 different Parts

3D CAD and PDM

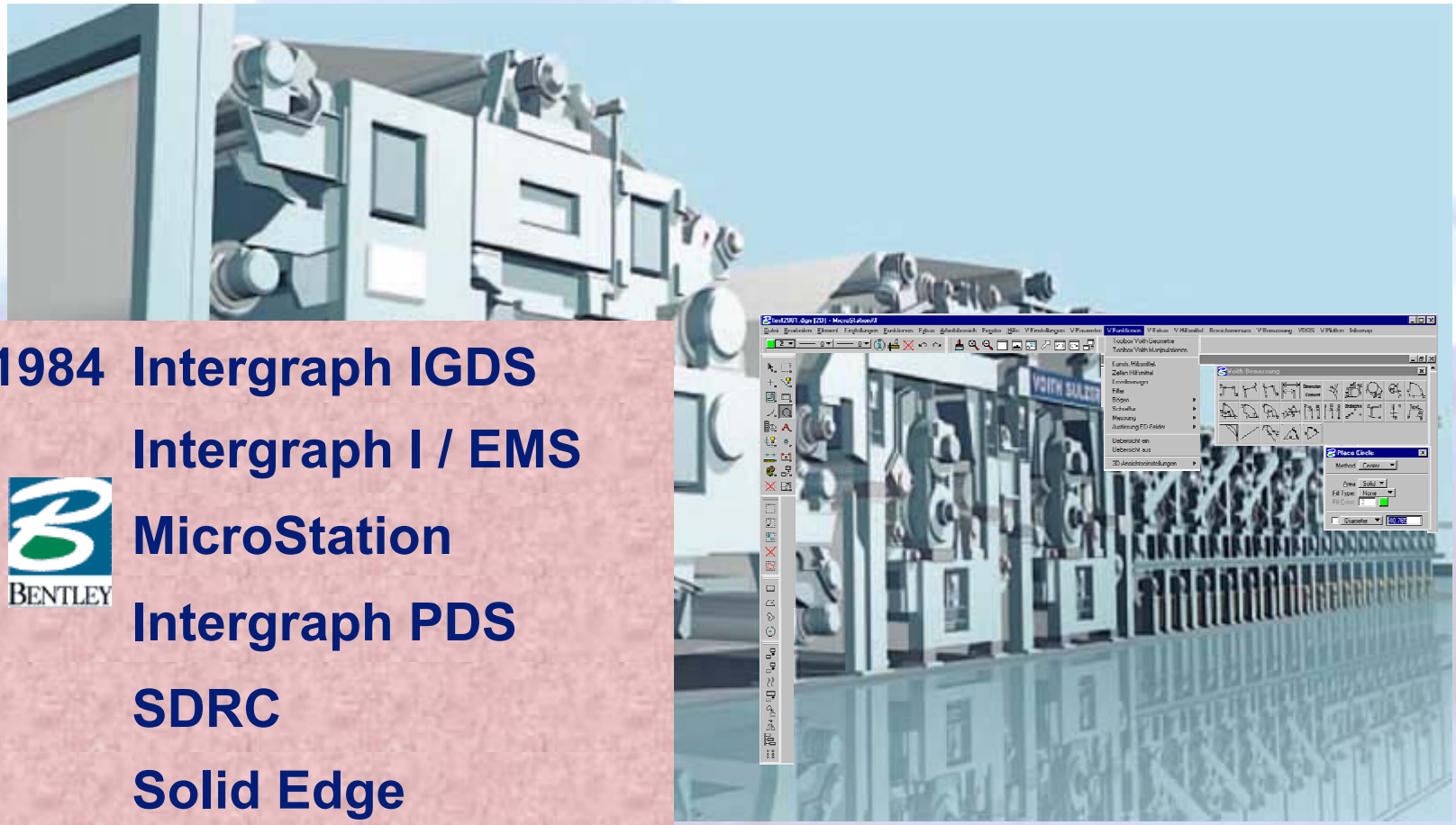


- One CAD Model for the complete Paper machine and the Building.
  (Building, Pipes, mechanical engineering)
- Engineers, all over the world, have to use the same CAD Model.



VOITH

CAD History



1984 Intergraph IGDS

Intergraph I / EMS

MicroStation

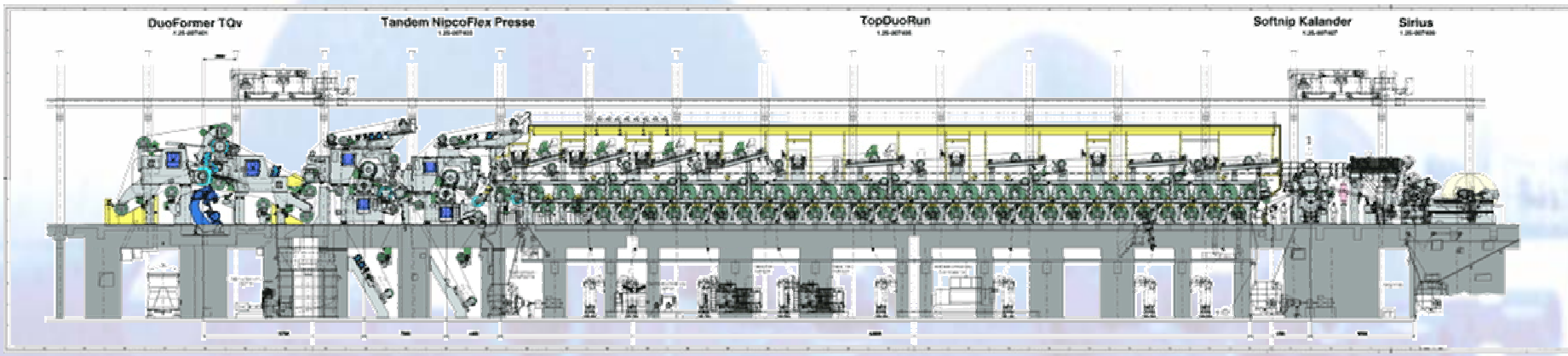
Intergraph PDS

SDRC

Solid Edge

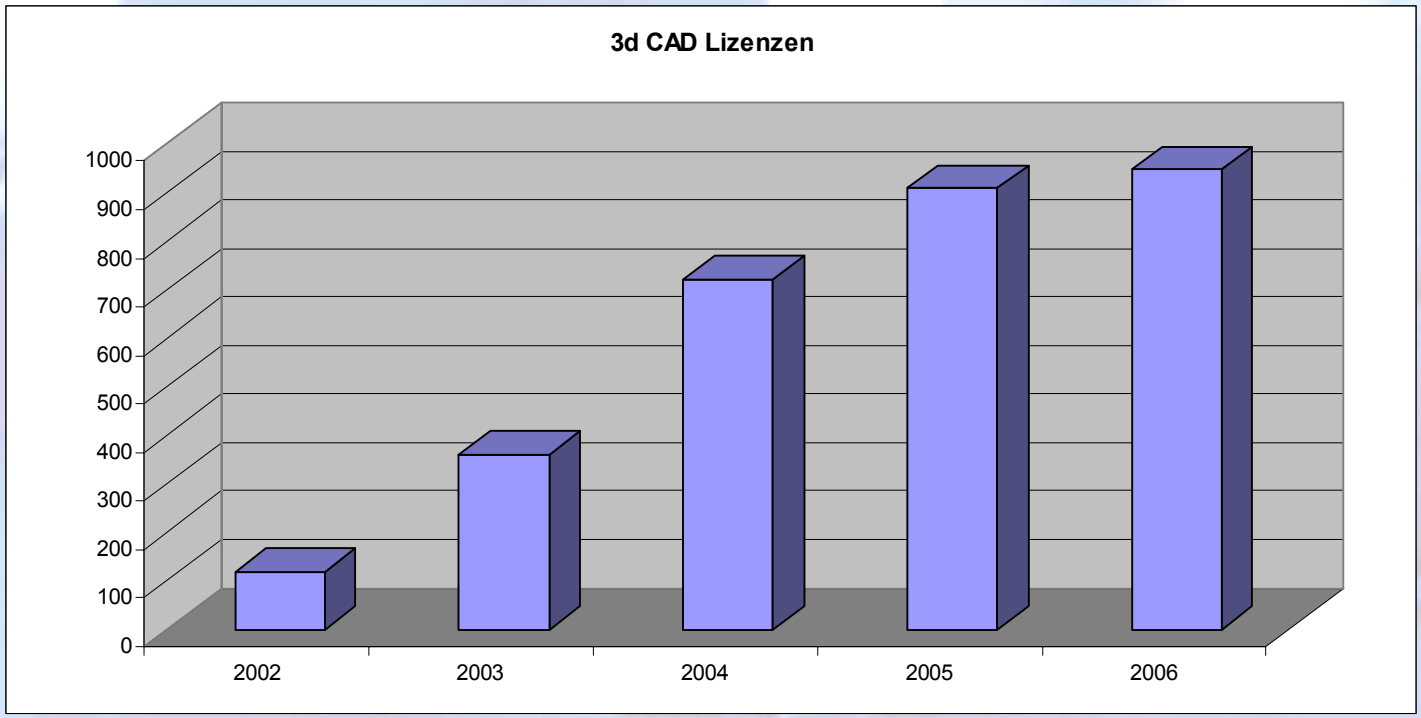
VOITH

Paper Machine, Amount of Drawings / Hours



- One Machine consists approximately of 6.000 Drawings
- 70.000 hours of work in the engineering department

Rollout Plan



VOITH

Cadenas

VOITH

Cadenas

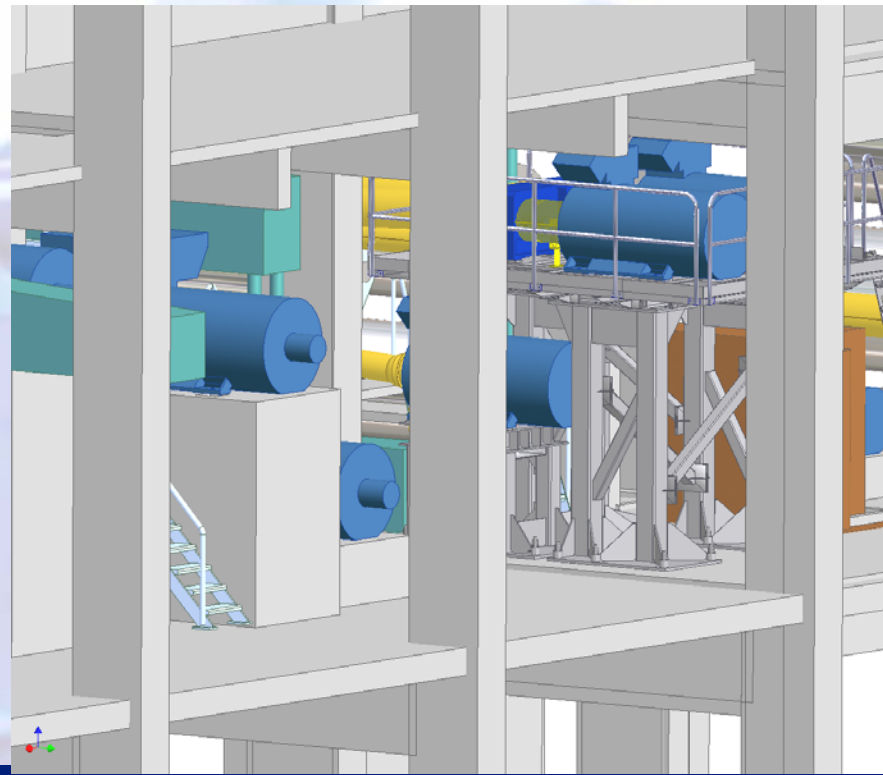
- Ziele
- Systemlandschaft
- SAP Integration

VOITH

Cadenas Ziele

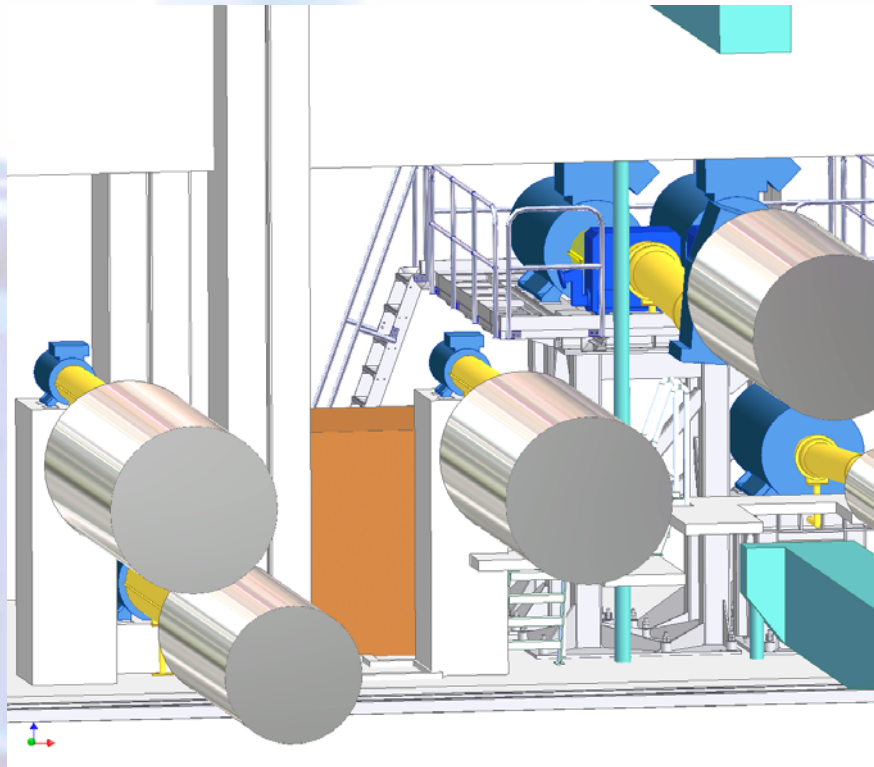
Einheitliche Verwendung von Norm- und Kaufteilen

- **eine zentral gepflegte Datenbank**
- **Materialnummer zentral vergeben**
- **identische CAD Modelle für problemlosen Austausch der CAD Baugruppen**
- **SAP Integration**



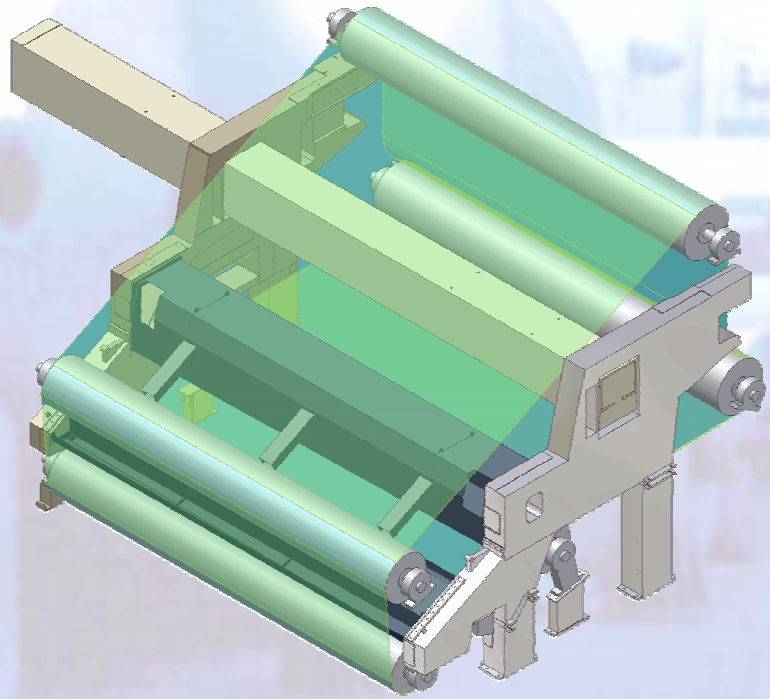
Realisierung

- Projektbeginn Sommer 2003
- Realisierung der SAP Kopplung mit Cideon
- Produktivsetzung Anfang dieses Jahr

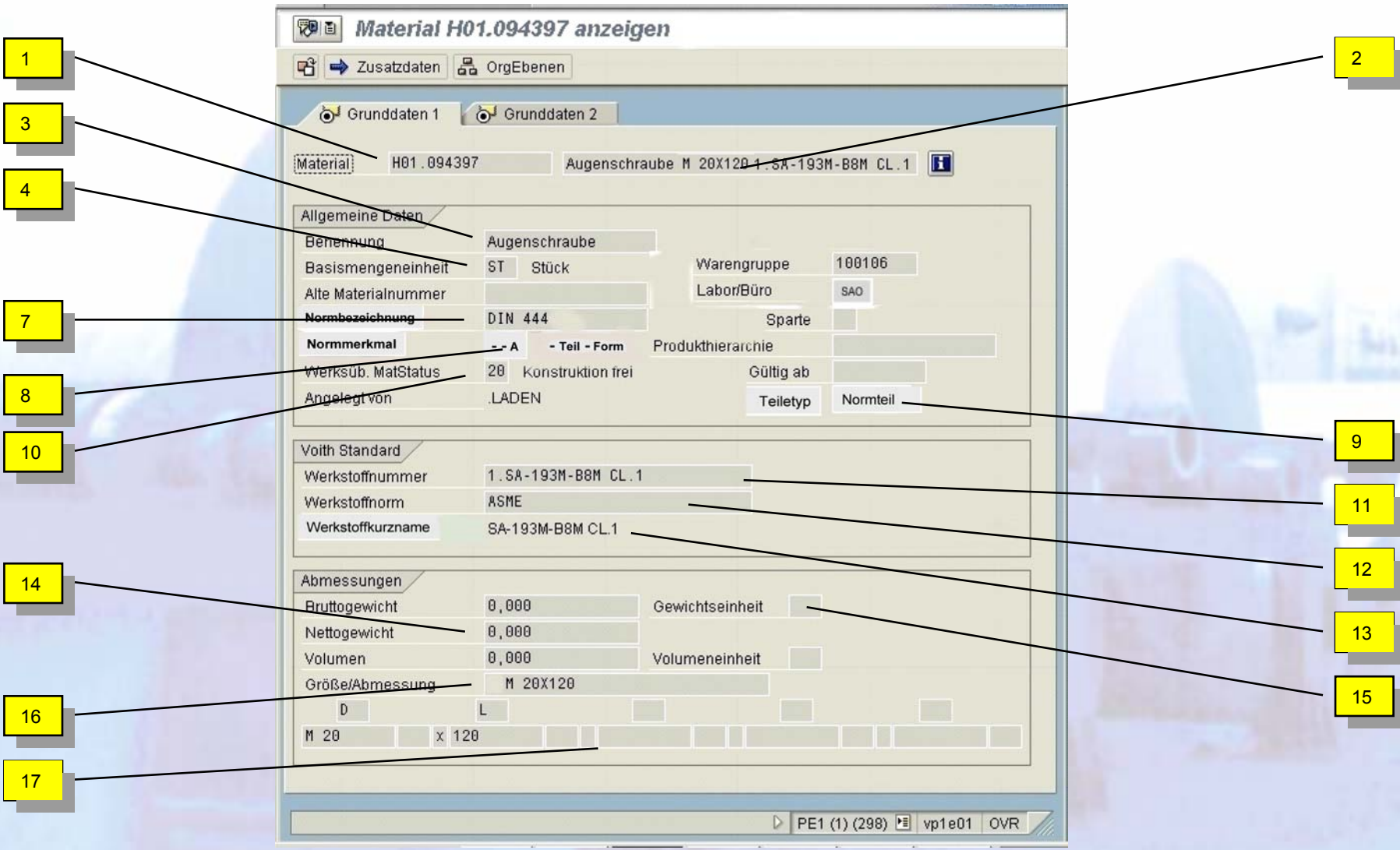


Cadenas <-> SAP

- **Übergabe der Daten**
  (Normbezeichnung, Größen, ..)
  von Cadenas an SAP
  Material und Dokumentinfosatz.
- **Speichern von Mat-Nummer, Werkstoff usw. in der Link-DB**
- **Ablegen des CAD Modells in SAP**
- **Verknüpfung von Dokumentinfosatz und Material in SAP erzeugen.**

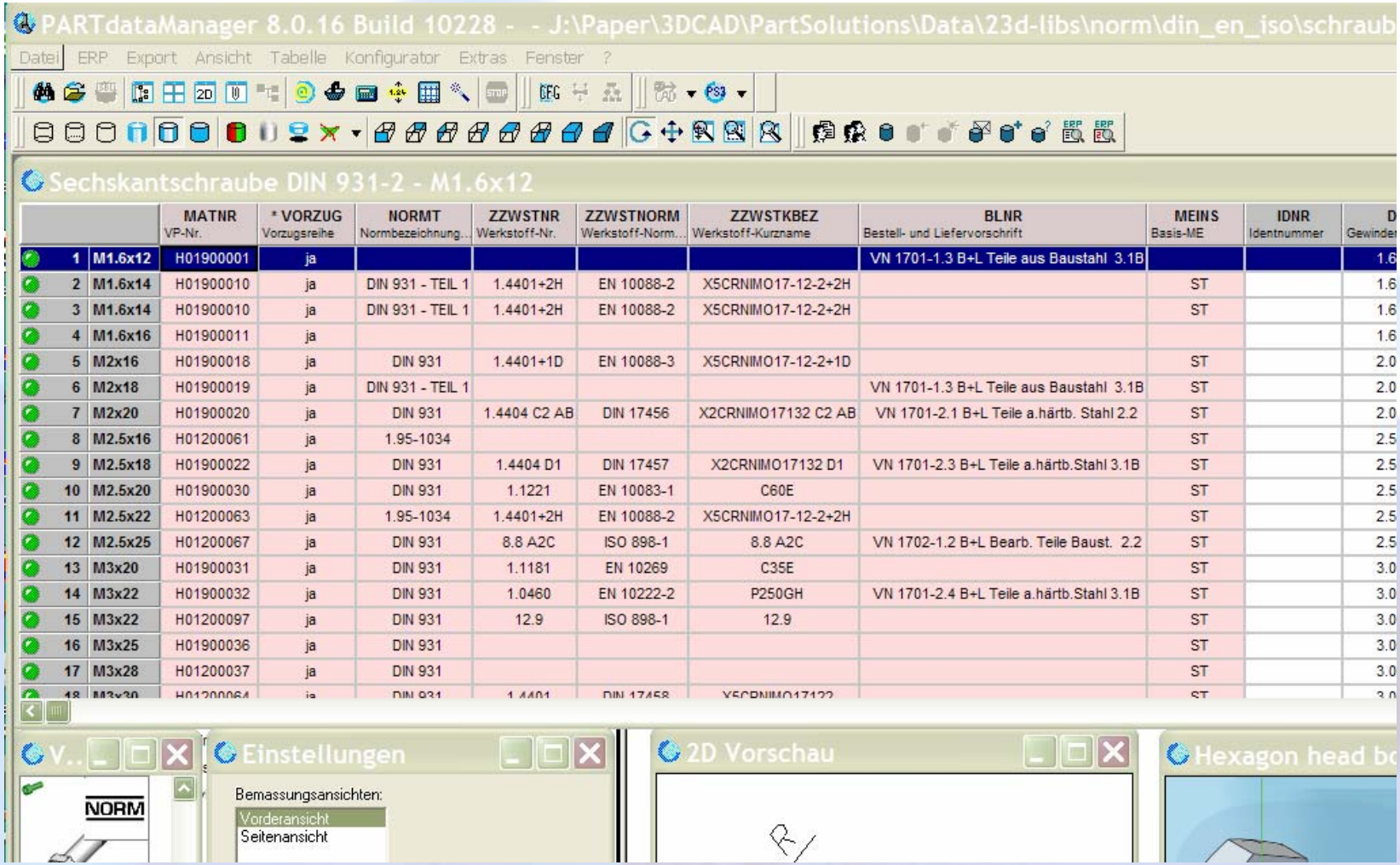


SAP Material Daten



VOITH

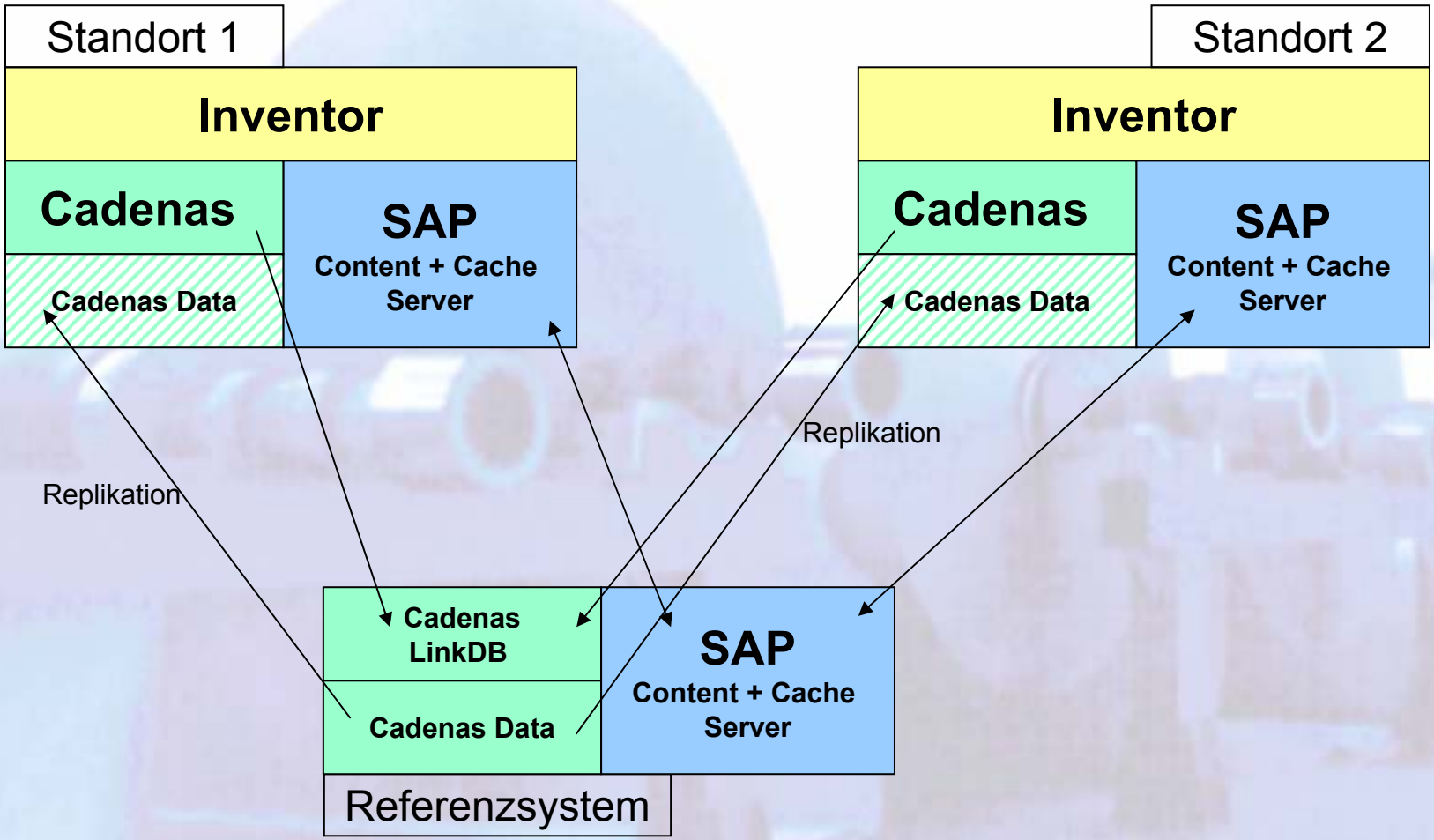
Cadenas LinkDB



		MATNR VP-Nr.	* VORZUG Vorzugsreihe	NORMT Normbezeichnung...	ZZWSTNR Werkstoff-Nr.	ZZWSTNORM Werkstoff-Norm...	ZZWSTKBEZ Werkstoff-Kurzname	BLNR Bestell- und Liefervorschrift	MEINS Basis-ME	IDNR Identnummer	D Gewinde
1	M1.6x12	H01900001	ja					VN 1701-1.3 B+L Teile aus Baustahl 3.1B			1.6
2	M1.6x14	H01900010	ja	DIN 931 - TEIL 1	1.4401+2H	EN 10088-2	X5CRNIMO17-12-2+2H		ST		1.6
3	M1.6x14	H01900010	ja	DIN 931 - TEIL 1	1.4401+2H	EN 10088-2	X5CRNIMO17-12-2+2H		ST		1.6
4	M1.6x16	H01900011	ja								1.6
5	M2x16	H01900018	ja	DIN 931	1.4401+1D	EN 10088-3	X5CRNIMO17-12-2+1D		ST		2.0
6	M2x18	H01900019	ja	DIN 931 - TEIL 1				VN 1701-1.3 B+L Teile aus Baustahl 3.1B	ST		2.0
7	M2x20	H01900020	ja	DIN 931	1.4404 C2 AB	DIN 17456	X2CRNIMO17132 C2 AB	VN 1701-2.1 B+L Teile a.härtb. Stahl 2.2	ST		2.0
8	M2.5x16	H01200061	ja	1.95-1034					ST		2.5
9	M2.5x18	H01900022	ja	DIN 931	1.4404 D1	DIN 17457	X2CRNIMO17132 D1	VN 1701-2.3 B+L Teile a.härtb.Stahl 3.1B	ST		2.5
10	M2.5x20	H01900030	ja	DIN 931	1.1221	EN 10083-1	C60E		ST		2.5
11	M2.5x22	H01200063	ja	1.95-1034	1.4401+2H	EN 10088-2	X5CRNIMO17-12-2+2H		ST		2.5
12	M2.5x25	H01200067	ja	DIN 931	8.8 A2C	ISO 898-1	8.8 A2C	VN 1702-1.2 B+L Bearb. Teile Baust. 2.2	ST		2.5
13	M3x20	H01900031	ja	DIN 931	1.1181	EN 10269	C35E		ST		3.0
14	M3x22	H01900032	ja	DIN 931	1.0460	EN 10222-2	P250GH	VN 1701-2.4 B+L Teile a.härtb.Stahl 3.1B	ST		3.0
15	M3x22	H01200097	ja	DIN 931	12.9	ISO 898-1	12.9		ST		3.0
16	M3x25	H01900036	ja	DIN 931					ST		3.0
17	M3x28	H01200037	ja	DIN 931					ST		3.0
18	M3x30	H01200064	ja	DIN 931	1.4401	DIN 17458	X5CRNIMO17122		ST		3.0

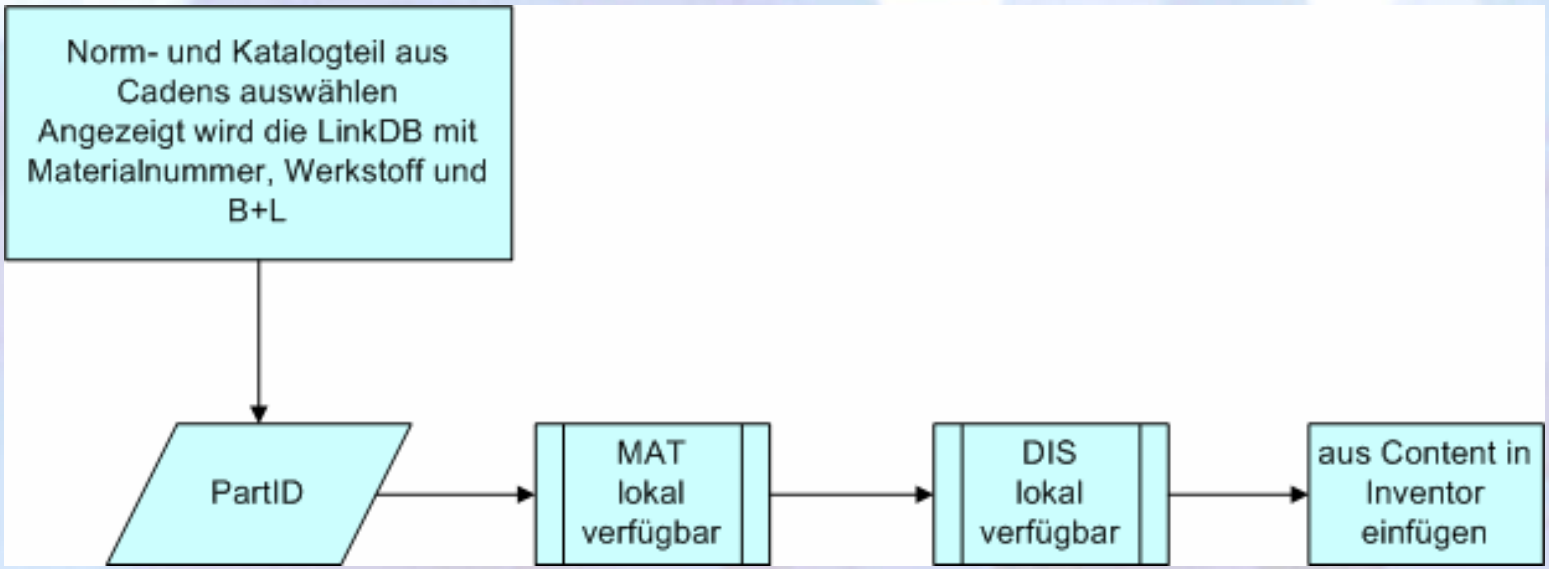
VOITH

Systemlandschaft



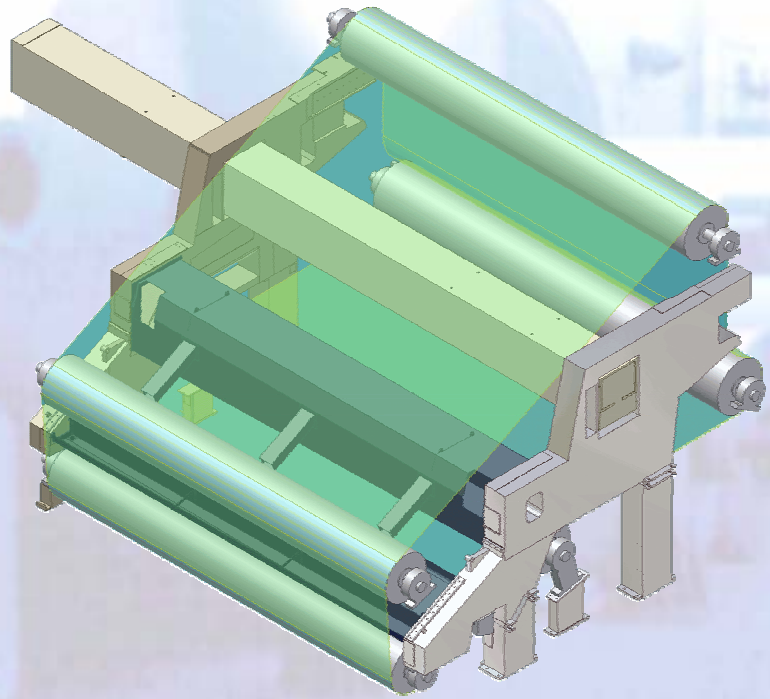
Systemlayout

Ablaufdiagramm für das „Verbauen“ Norm- und Katalogteile aus Anwendersicht

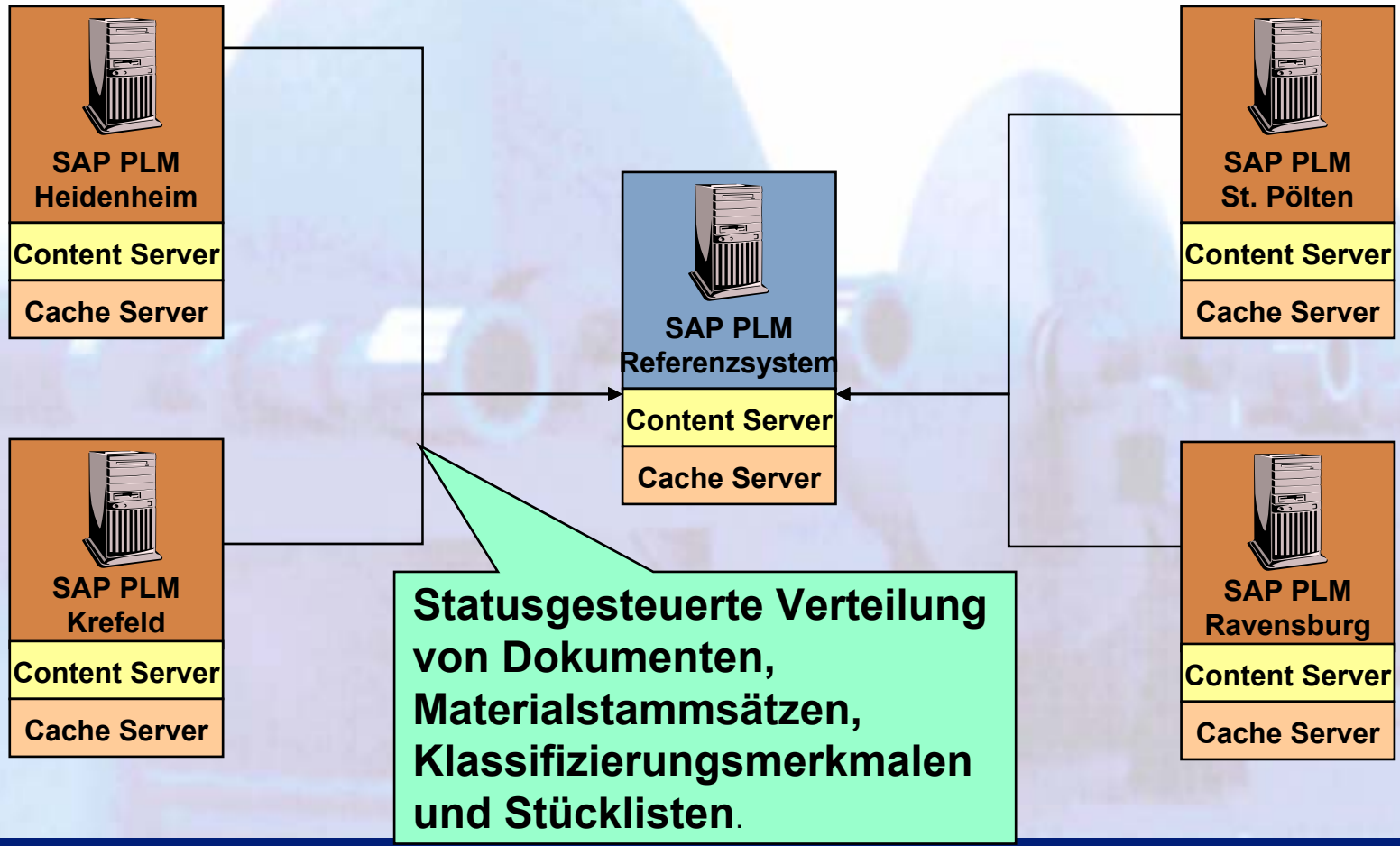


SAP Referenzsystem

- Standort übergreifender Austausch der CAD Modelle
- Alle lokal angelegten CAD Modelle werden im Referenzsystem gespiegelt.

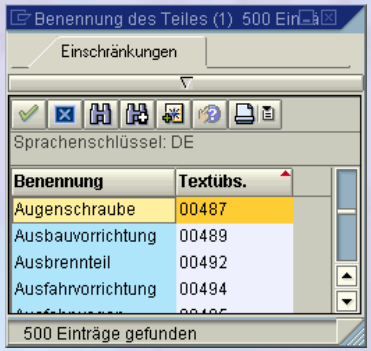


SAP Referenzsystem



Anpassung Cadenas

- **Standardbenennungen**
  Damit die in im PARTdataManager verwendeten Begriffe in die standardisierten Voith Begriffe übersetzt werden können wurde eine spezielle Übersetzungstabelle eingeführt.



Kataloge / Normen

Von den bei Voith Paper eingesetzten Katalogteile sind

52 Kataloge bereits in Cadenas vorhanden

nicht vorhanden:

160 häufig verwendet
1040 selten verwendet.

Cadenas at Voith
Summing-up

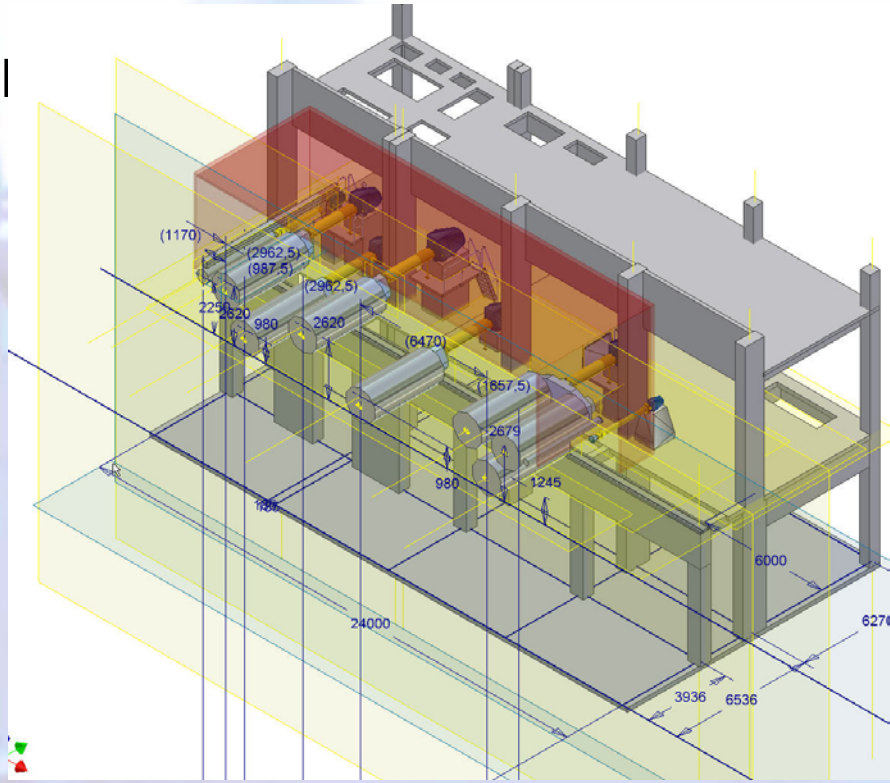
- Das Projekt begann im Sommer 2003
- Integration mit SAP
- ca. 30 % der benötigten Kataloge vorhanden

VOITH

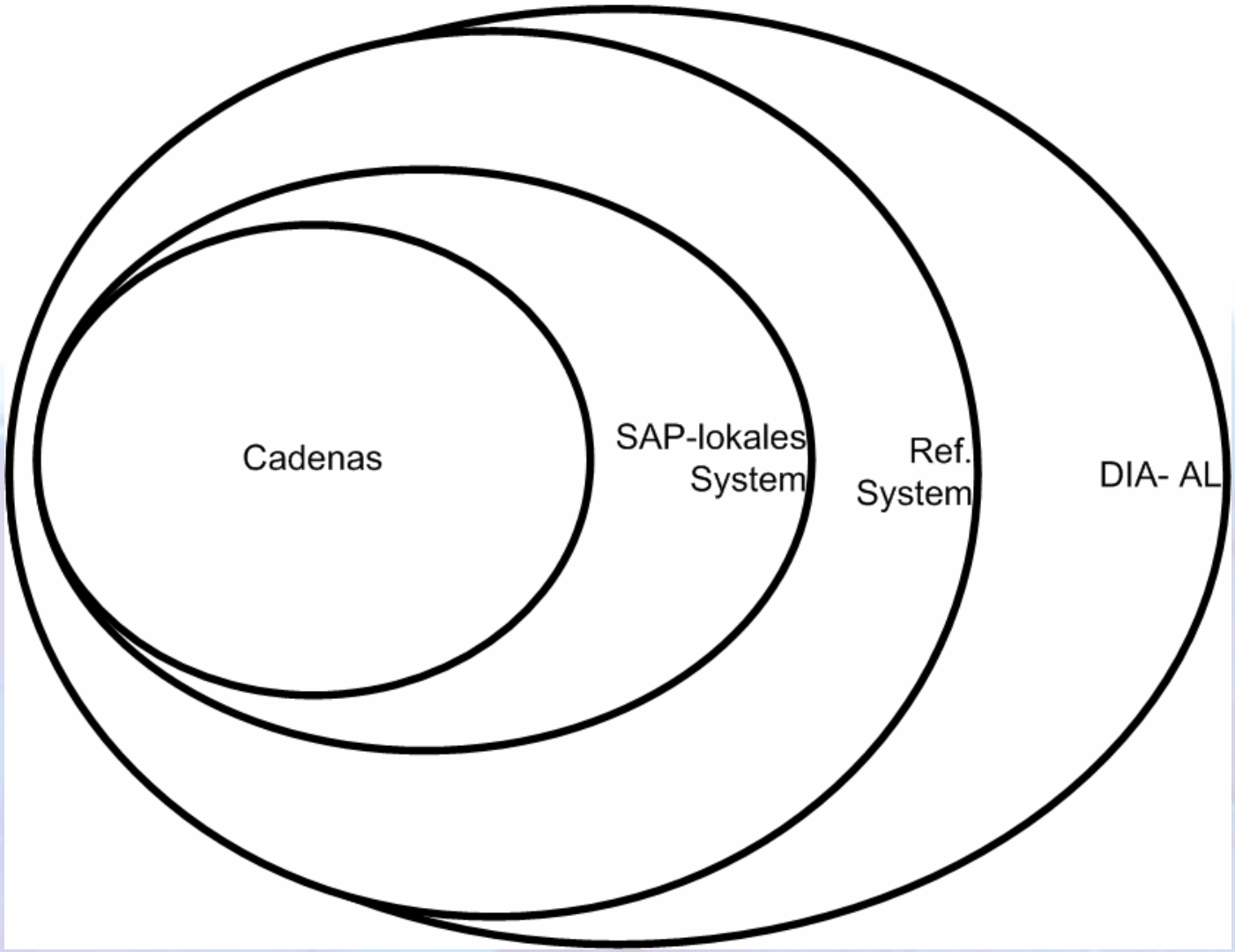
Klassifikation

Klassifikation

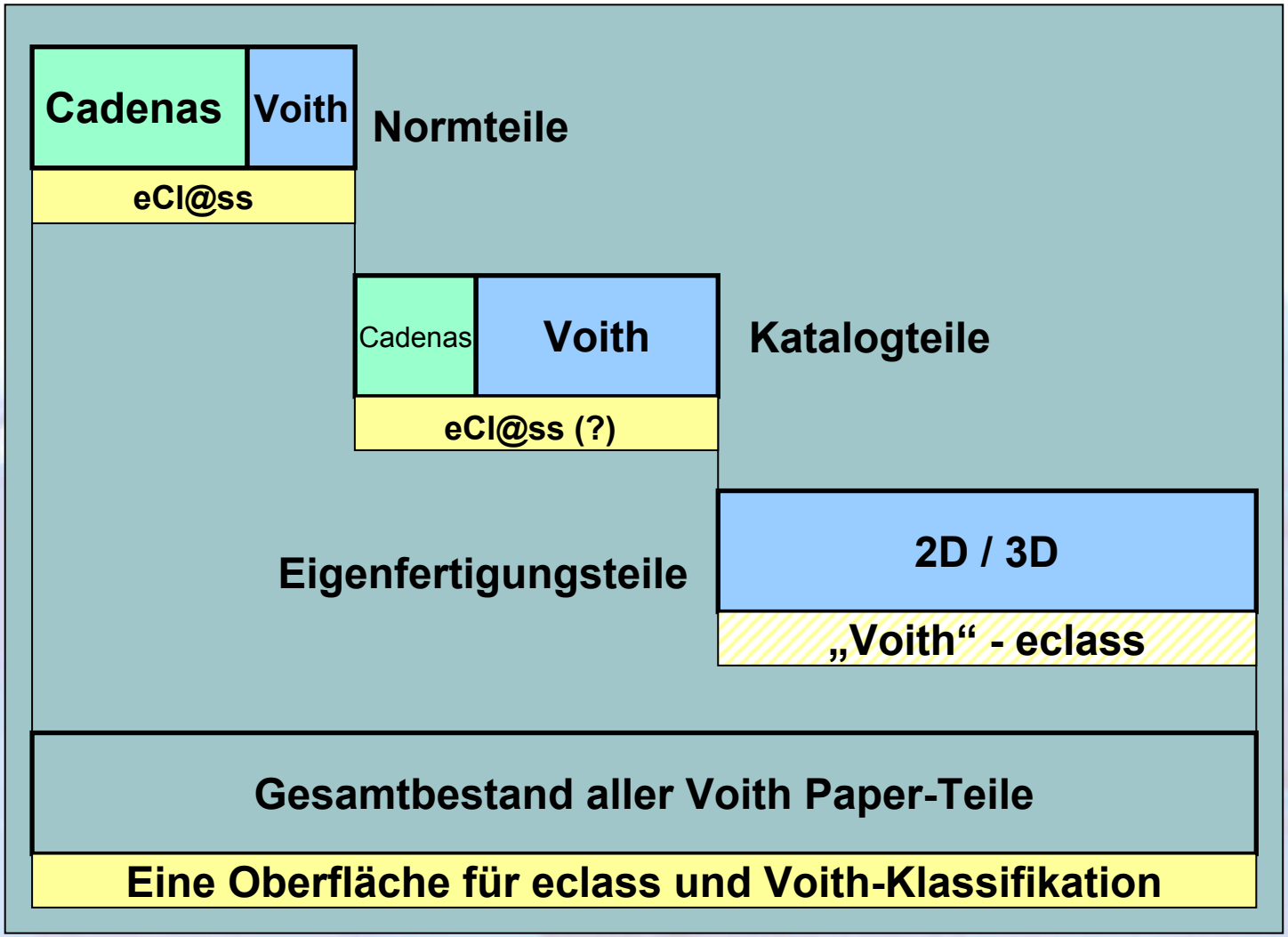
- Finden von gleichen / Ähnlichen Teilen
- Norm- und Katalogteile sind sowohl in Cadenas und SAP abgelegt.



Klassifikationssysteme



Teilearten


Cadenas
Voith
Normteile
eCl@ss
Cadenas
Voith
Katalogteile
eCl@ss (?)
Eigenfertigungsteile
2D / 3D
„Voith“ - eclass
Gesamtbestand aller Voith Paper-Teile
Eine Oberfläche für eclass und Voith-Klassifikation

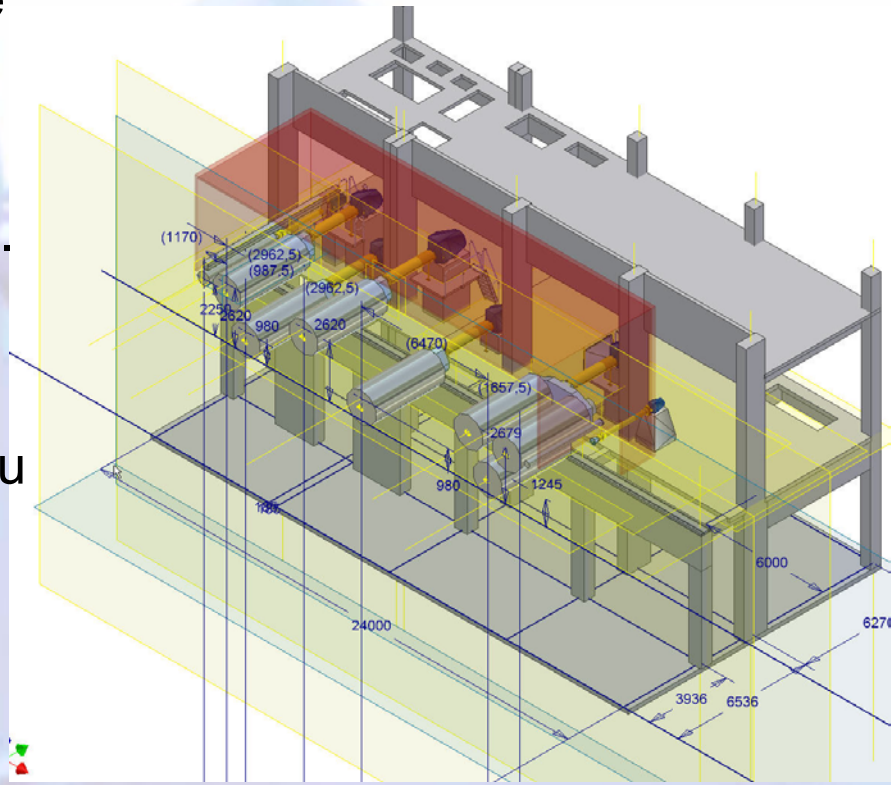
Finden von Wiederholteilen

Da in Cadenas nur ein Teil der verwendeten Norm- und Katalogteile gefunden werden können ist eine

einheitliche Suchoberfläche

für Cadenas und SAP wünschenswert.

Aus meiner Sicht ideal wäre eine Möglichkeit in Cadenas, zusätzlich zu den vorhandenen Katalogen, **die SAP Teile anzuzeigen.** Basis dazu könnte die eCl@ss Klassifizierung sein.



VOITH

Einsatz von PartSolutions bei Voith Paper

- Voith 24.200 Mitarbeiter
- 3.300 Mio € Umsatz
- Hersteller von Papiermaschinen, Wasserturbinen, Getrieben

- CAD Software Inventor
- PDM System SAP

- Das Cadenas Projekt läuft seit Sommer 2003
- Einheitliche Normteilverwaltung im Konzern
- Integration in SAP und Inventor


VOITH
Engineered reliability.