



Tecnovia Group BV
Reutummerweg 19
7651 KJ Tubbergen
The Netherlands
www.tecnovia.nl

ISO 9001
AS 9100
AQAP 2110



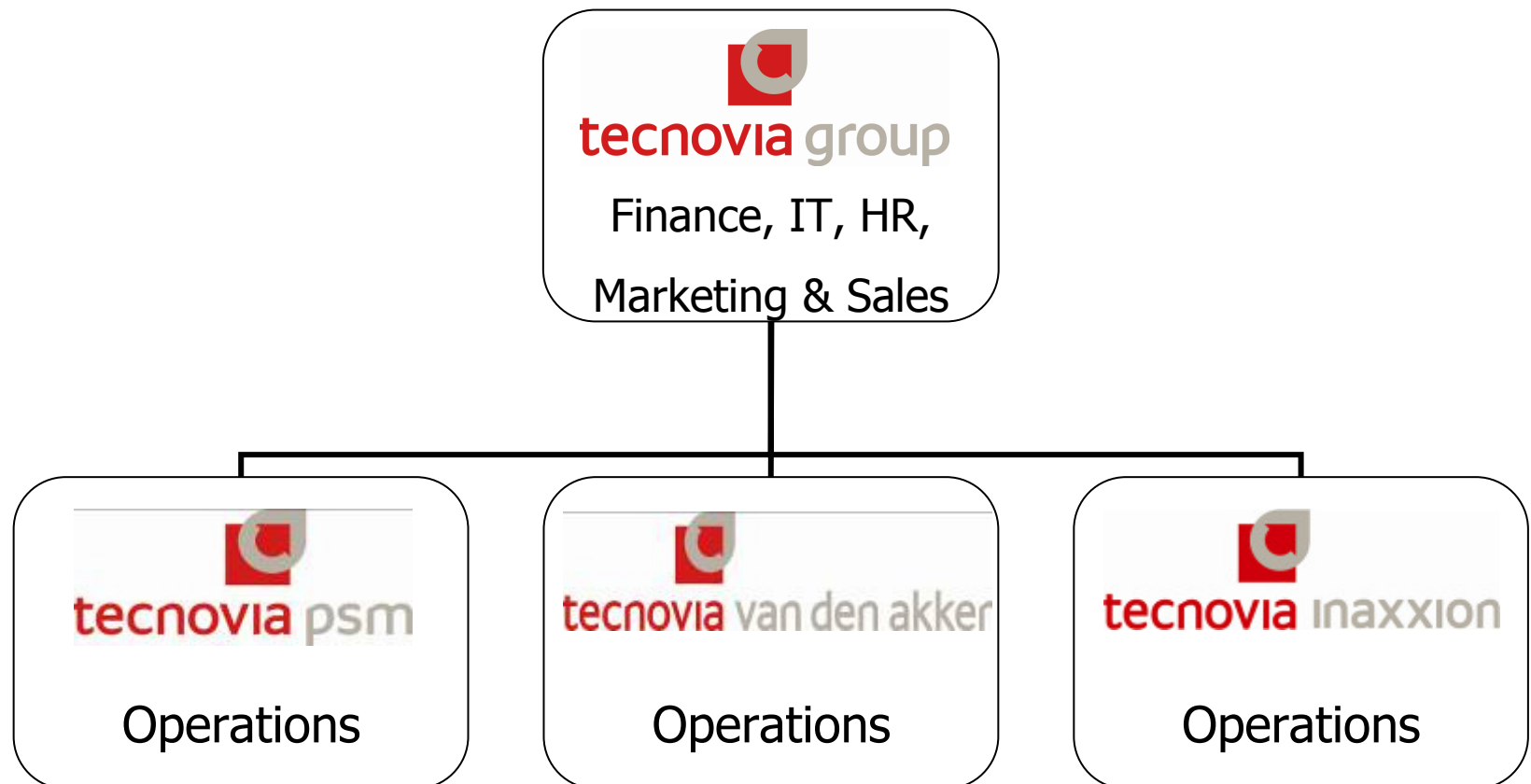
**Excellence
in
low volume
production**

History

- 1978 Start subcontracting activities in machining for Aerospace markets
- 1992 MBO sheet metal activities from Thales
- 2000 Integration of sheet metal and machining activities into electro- mechanical assemblies
- 2007 Introduction of new brand name Tecnovia covering all group activities
- 2009 New modern facility in Hoogezand



Tecnovia Group Structure

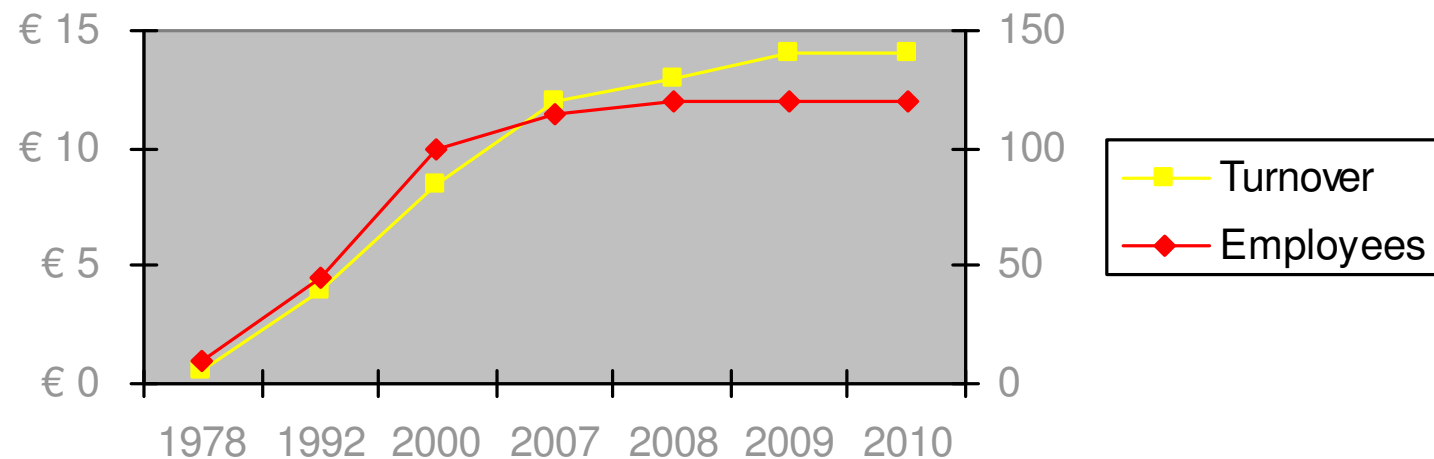


Locations



Key figures

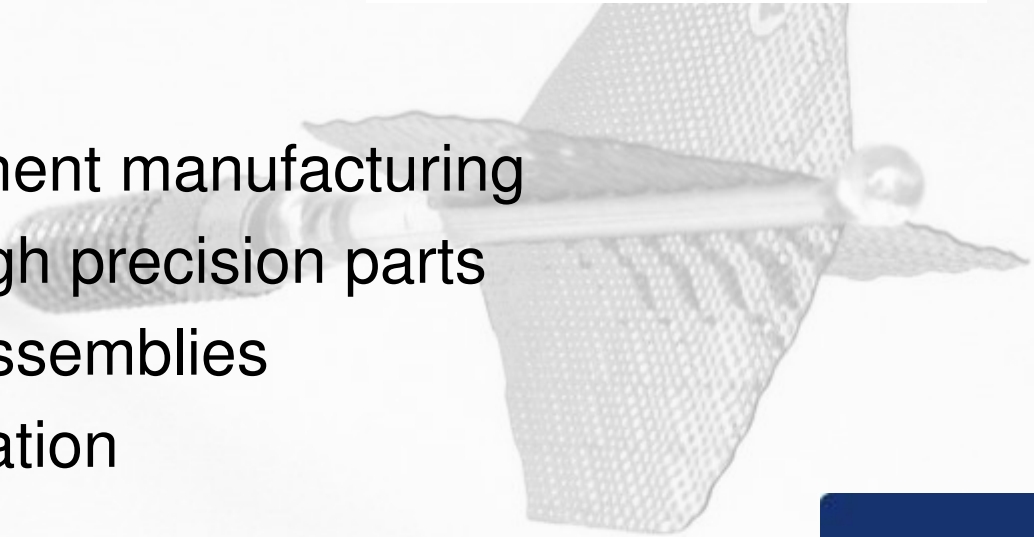
- Track record of 32 years in subcontracting



- Projected sales 2010: € 13.5 mio.
- (Tecnovia PSM + Tecnovia van den Akker + Tecnovia Inaxxion)

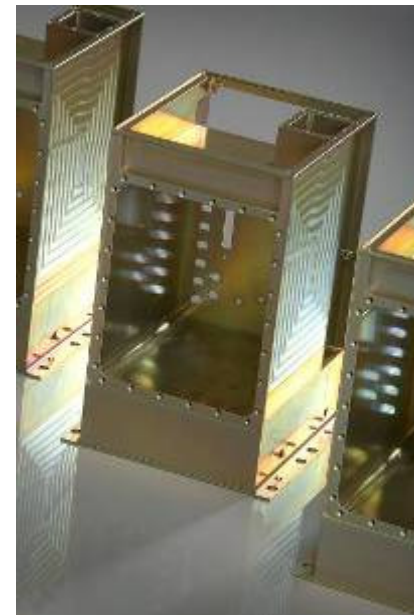
Added value

- Project Management
- Engineering
- Prototyping
- Single component manufacturing
- Mechanical high precision parts
- Sheet metal assemblies
- System integration



Project approach

- Project management
- Project planning PRINCE - 2
- Single point of contact
- Progress control
- Supply chain management
- Configuration management
- Quality assurance
- Inventory management
- ERP



Engineering

- Concurrent engineering
- Product engineering → Pro-E, Catia, Solid works
- Process engineering → Edge Cam, Radan,
- FMEA (Failure mode and effects analysis)
- Validation
- Prototyping
- Testing
- Documentation
- Value engineering



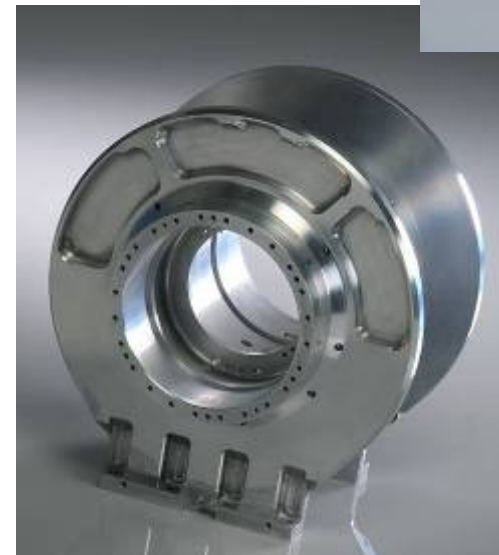
Prototyping

- Single part production of mechanical and sheet metal parts
- Sourcing of components and special processes
- Qualification of suppliers
- First Article Inspection (FAI)
- First-off integration
- First Article Test (FAT)



In-house manufacturing of mechanical components

- CAD-CAM Programming online
- CNC turning
- CNC milling
- CNC measuring
- Finishing / Polishing
- Heat treatment
- Surface treatment



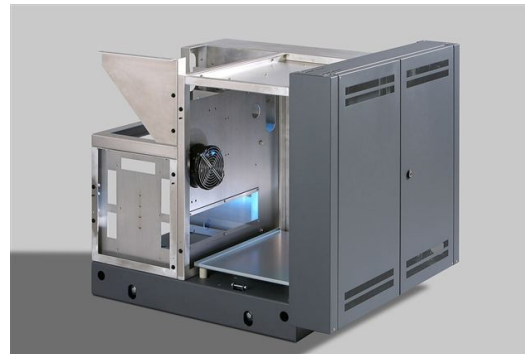
In-house manufacturing of sheet metal components

- CNC-Laser cutting
- CNC-Punching < 10 mm
- Polishing / grinding
- Bending
- Welding (certified)
- Manual sheet metal working
- Coating



Sheet metal assemblies

- Welding
- Riveting
- Bonding
- Alignment
- Coating
- Cleanroom



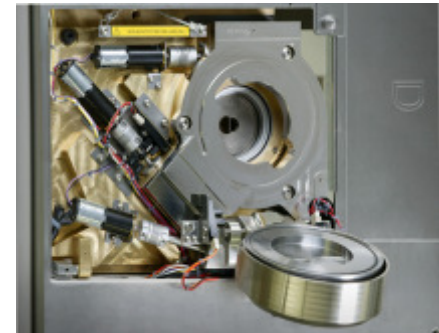
System integration

- Electro- mechanical assemblies
 - Mechanical parts
 - Electronics, controls, ESD
 - Hydraulics
 - Pneumatics
 - Vacuum technology
 - Wiring
- Supply chain management
- System testing
- Test reports and certificates



Raw materials

- Titanium
- Super alloys
- Stainless steel
- Aluminum
- Copper alloys
- Steel
- Plastics




Quality Assurance (1)

- ISO – 9001: 2000
- AQAP 2110
- AS9100
- Lloyd's certificate
- Certified welding:
(EN 287/ISO 9606/DIN
2303/DIN 3824-2)
- Customer audits



Quality Assurance (2)



CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

**Tecnovia Group
Tecnovia PSM
Tecnovia Van den Akker
Hengelo(Ov), The Netherlands**

has been approved by Lloyd's Register Quality Assurance Limited, Coventry, UK, to the following Quality Management System Standards:

AS 9100 rev B : 2004

This certification has been performed in accordance with the requirements of EN 9104:2005
The Quality Management System is applicable to:

Production of precision sheet metal, turning and milling components and assembly of mechatronical modules for aircrafts.


Approval Certificate No: 660091

Original ISO Approval: 16 April 1996




Original ASCS Approval: 23 July 2008

Current Certificate: 23 July 2008


Certificate Expiry: 30 April 2011



Issued by: Lloyd's Register Quality Assurance Limited

This document is subject to the provision on the reverse
31 Fenchurch Street, London EC3A 4BS, United Kingdom. Registration number 1816203
The approval is evidence in accordance with the UKAS certification and certification procedures and requirements (UKAS
The use of the UKAS certification mark is subject to the conditions set out in the UKAS certification mark rules (UKAS)



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has been approved by Lloyd's Register Quality Assurance to the following Quality Management System Standards:

NEN-EN-ISO 9001 : 2000

The Quality Management System is applicable to:


Engineering and production of precision sheet metal, turning and milling components and assembly of mechatronical modules, in compliance with the criteria for quality management systems of AQAP 2110 Ed.2: 2006.

Approval Certificate No: 650790


Original Approval: 16 April 1996

Current Certificate: 23 July 2008

Certificate Expiry: 30 April 2011



Issued by: LRQA (Rotterdam)



This document is subject to the provision on the reverse
The approval is evidence in accordance with the UKAS certification and certification procedures and requirements (UKAS)

Quality inspection

- Calibrated inspection equipment
- First Article Inspection
- Intermediate inspection
- Final inspection
- Measurement reports
- Certificate of Conformity
- Documentation and traceability



Market segments

- Aircraft industries
- Aerospace
- Defense technology (Land systems)
- Defense technology (Naval systems)
- Gas turbines
- Nuclear industries
- Optics industries
- Medical technology
- Process industries
- Mechanical construction general













References

Dutch Space
an EADS Astrium company

RUAG
Aerospace Defence Technology

PILATUS

BOEING

TERMA^T

Parker

PANalytical

EADS
SODERN

WENDT

BAE SYSTEMS

GENERAL DYNAMICS
Strength On Your Side®

STORK[®]

Thermo
SCIENTIFIC

KMW
KRAUSS-MAFFEI WEGMANN

KRAUSECTP
HORSTMANN GROUP

RHEINMETALL
DEFENCE

tecnovia group

THALES

Tecnovia Inaxxion BV



Building under construction



Tecnovia Inaxxion BV
Korte Groningerwg 1F
9607 PS Foxhol
The Netherlands



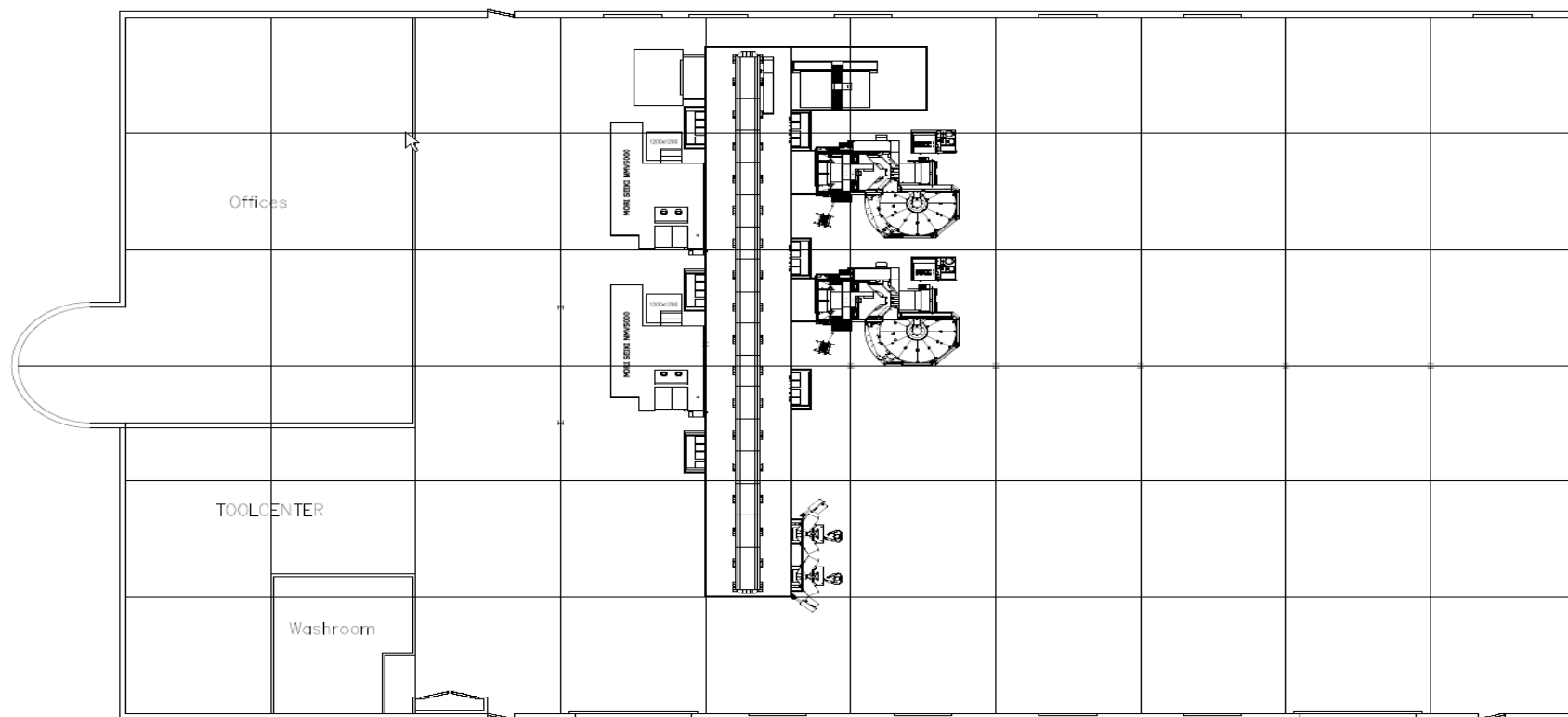
Business concept

- Low human factor costs
- Minimized leadtimes
- High yield
- 24/7-capacity
- Repeat production
- Small batches (5-500 pcs.)
- 5-Axis simultaneous milling
- Precision parts
- Measuring reports
- Identification
- Traceability
- AS 9100 certified

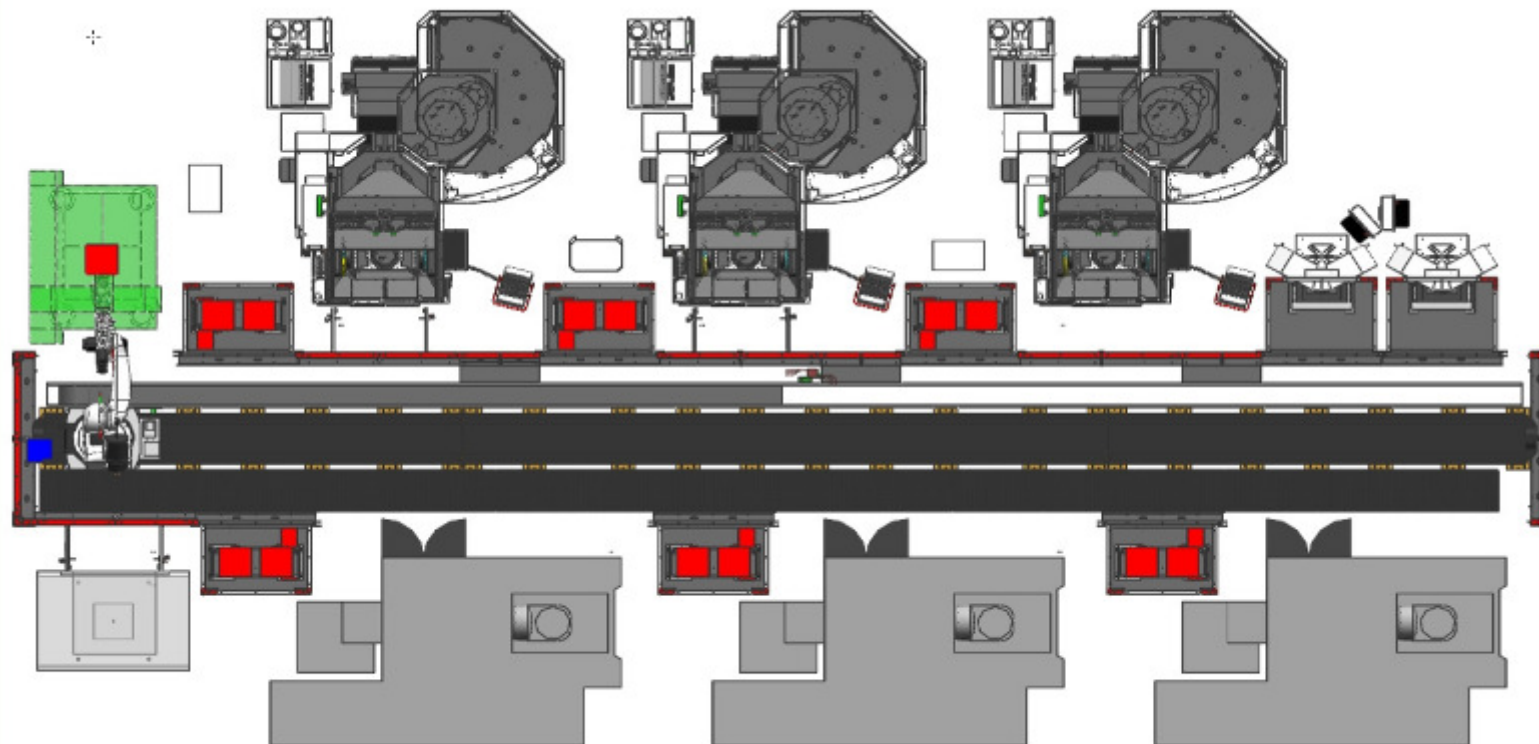
**First 100% robotized
machining plant in the
Netherlands !**



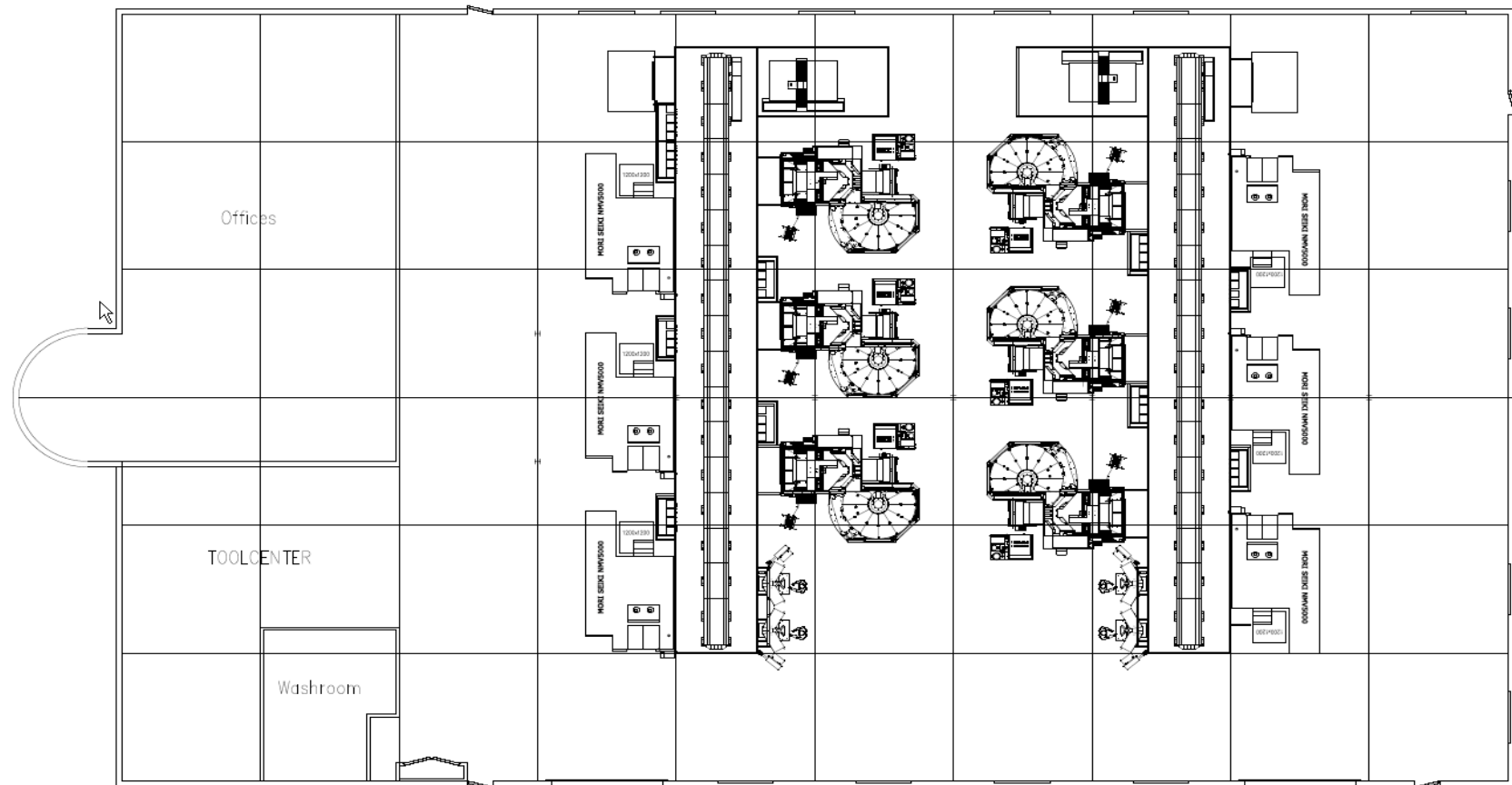
Plant lay-out (initial)



Plant lay-out initial (2)



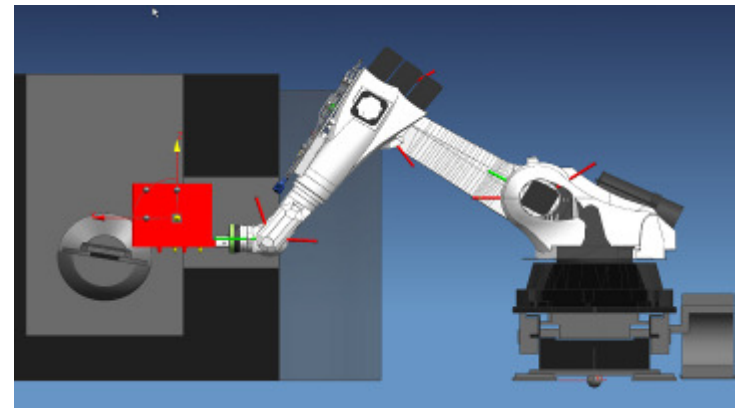
Plant layout (final)



Machines list (initial as of December 2010)

- ▣ 2 x Hermle C40 (December, 2009)
- ▣ 2 x Mori Seiki NMV 5000 (May, 2010)
- ▣ 1 x Perkute washing machine (May, 2010)
- ▣ 1 x Zeiss Accura 12/18/10 (February, 2010)
- ▣ 1 x Zoller Venturion
- ▣ Erowa MTS clamping system (hydraulic)

Capacity: (4 machines)
approx. 7500 hrs.
24 hrs./day, 7 days/week

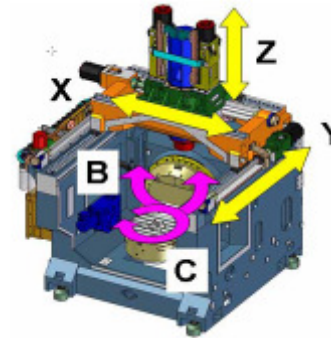


Hermle C-40



- 5-axis simultaneous milling
- 800 x 750 x 500 mm (XYZ)
- pos. accuray 8 μ m VDI
- spindle 18.000 rpm
- 10/15 kW, 70/130 Nm
- 195 tools
- Renishaw measuring probe

Mori Seiki NMV 5000



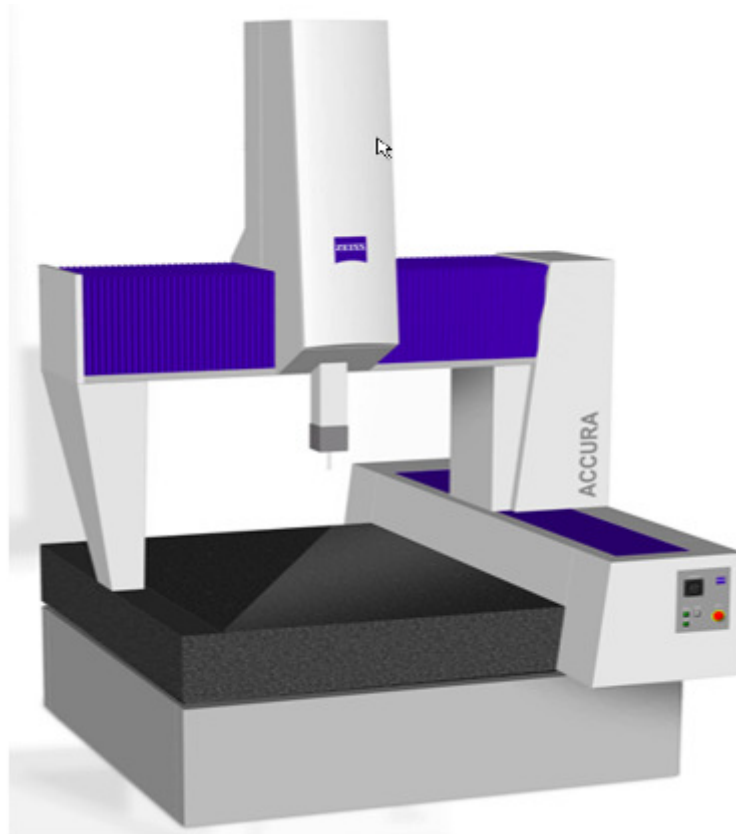
- 5-axis simultaneous milling
- 730 x 510 x 510 mm (XYZ)
- pos. accuray 3 μ m VDI
- spindle 12.000 rpm
- 19/15 kW, 70/130 Nm
- 181 tools
- Renishaw measuring probe

Washing machine



- rotary washing machine
- washing, rinsing, drying
- max. pallet 500x500 mm
- detergent solution
- environmental friendly
- 20° C

Zeiss Accura



- CNC-measuring machine
- 1200 x 1800 x 1000 mm (XYZ)
- Articulating probeholder RDS
- accuray 3 μ m VDI
- Calypso software
- MBD-prepared

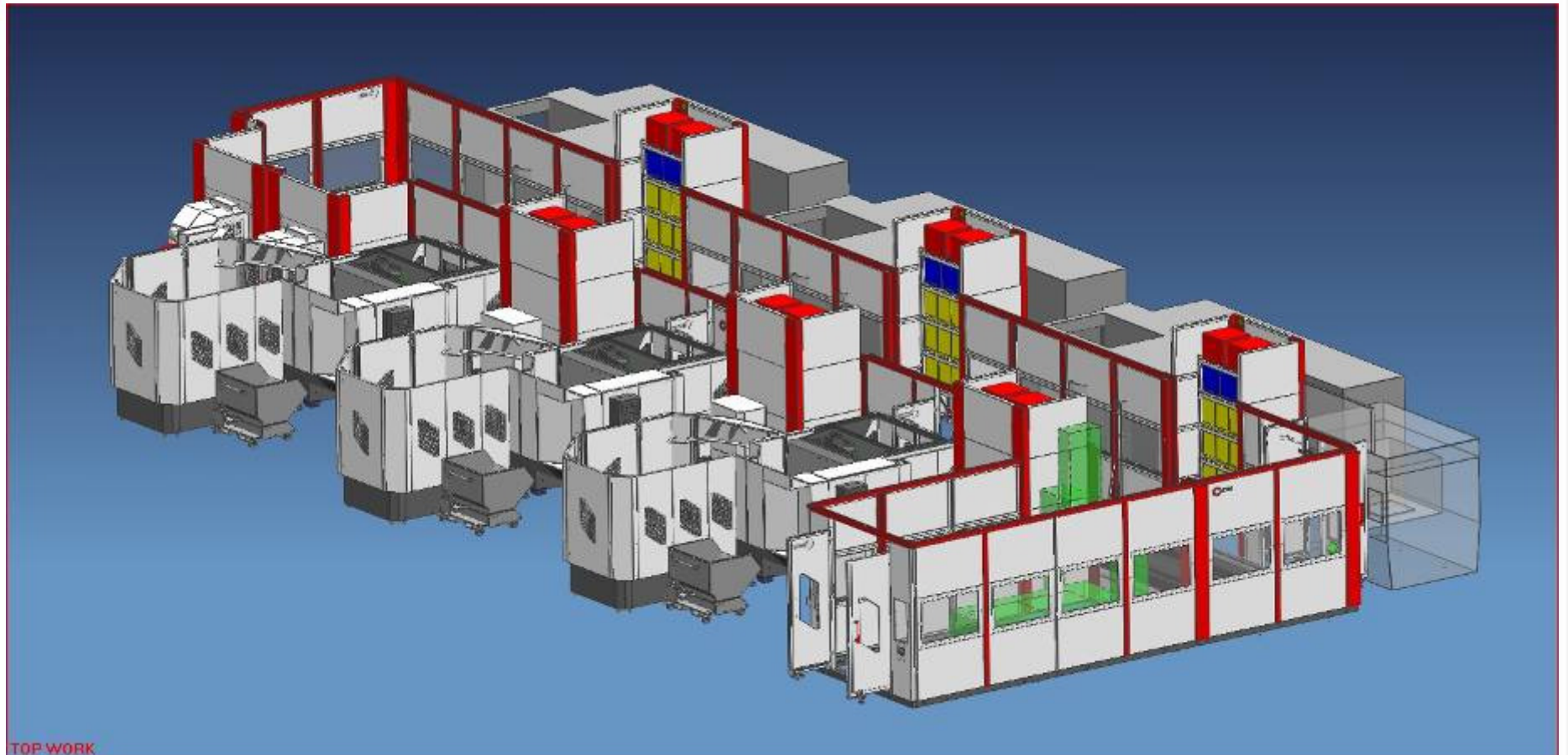


Zoller Venturion



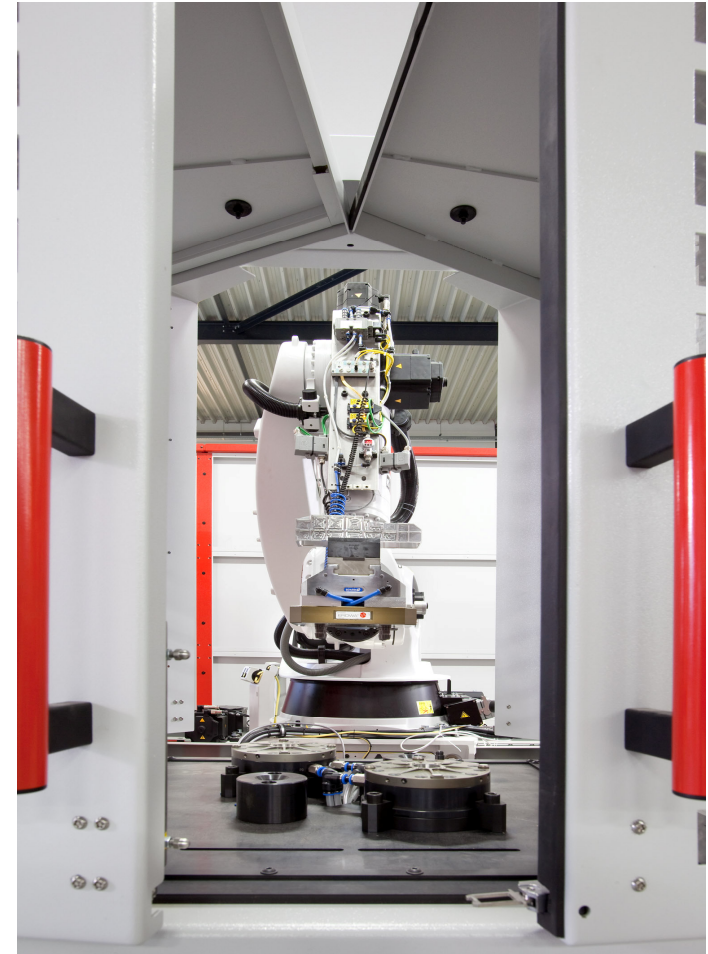
- Tool presetter
- data link through Soflex
- transfer of setting data to the machines

Lay-out impression (1)

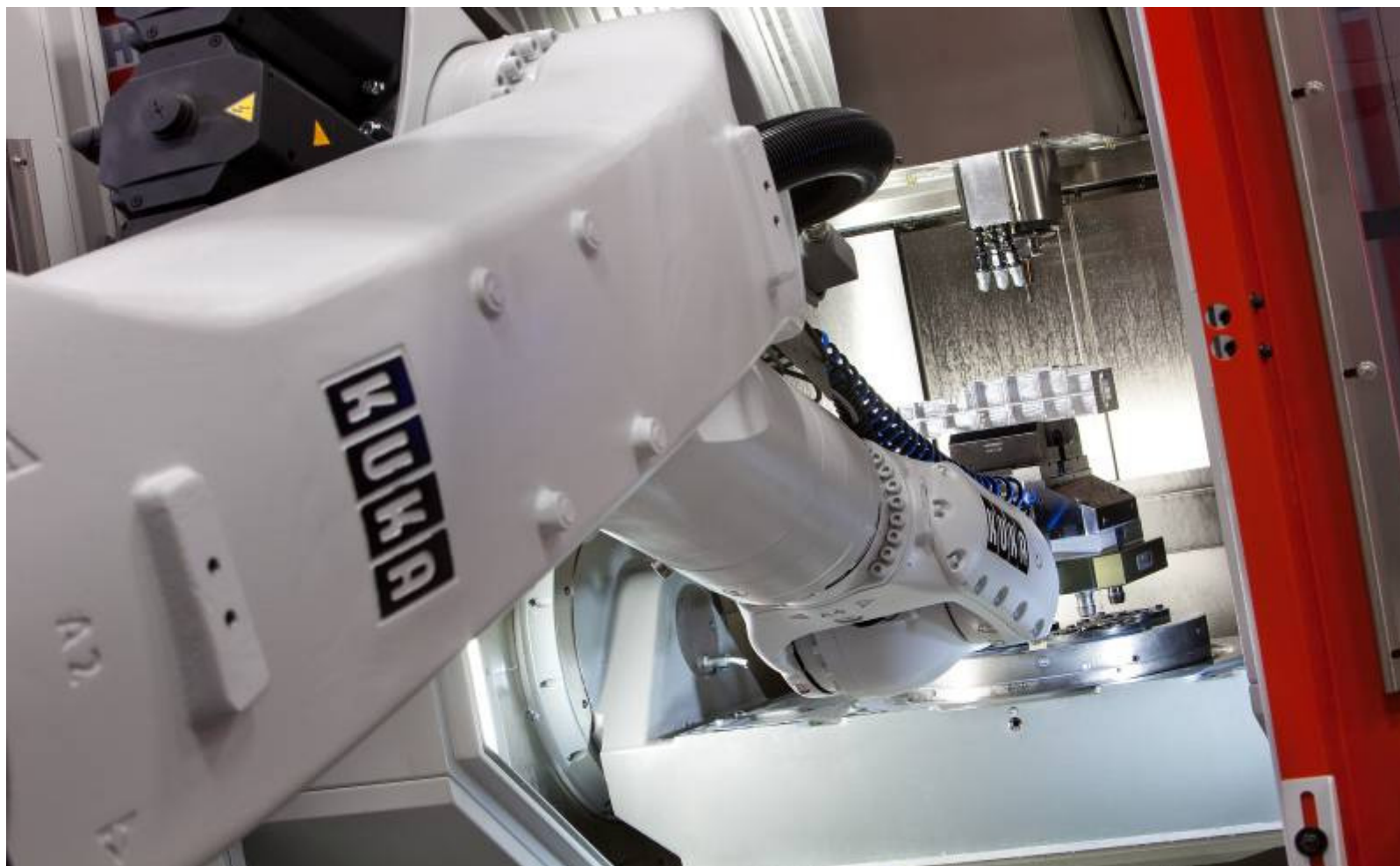


TOP WORK





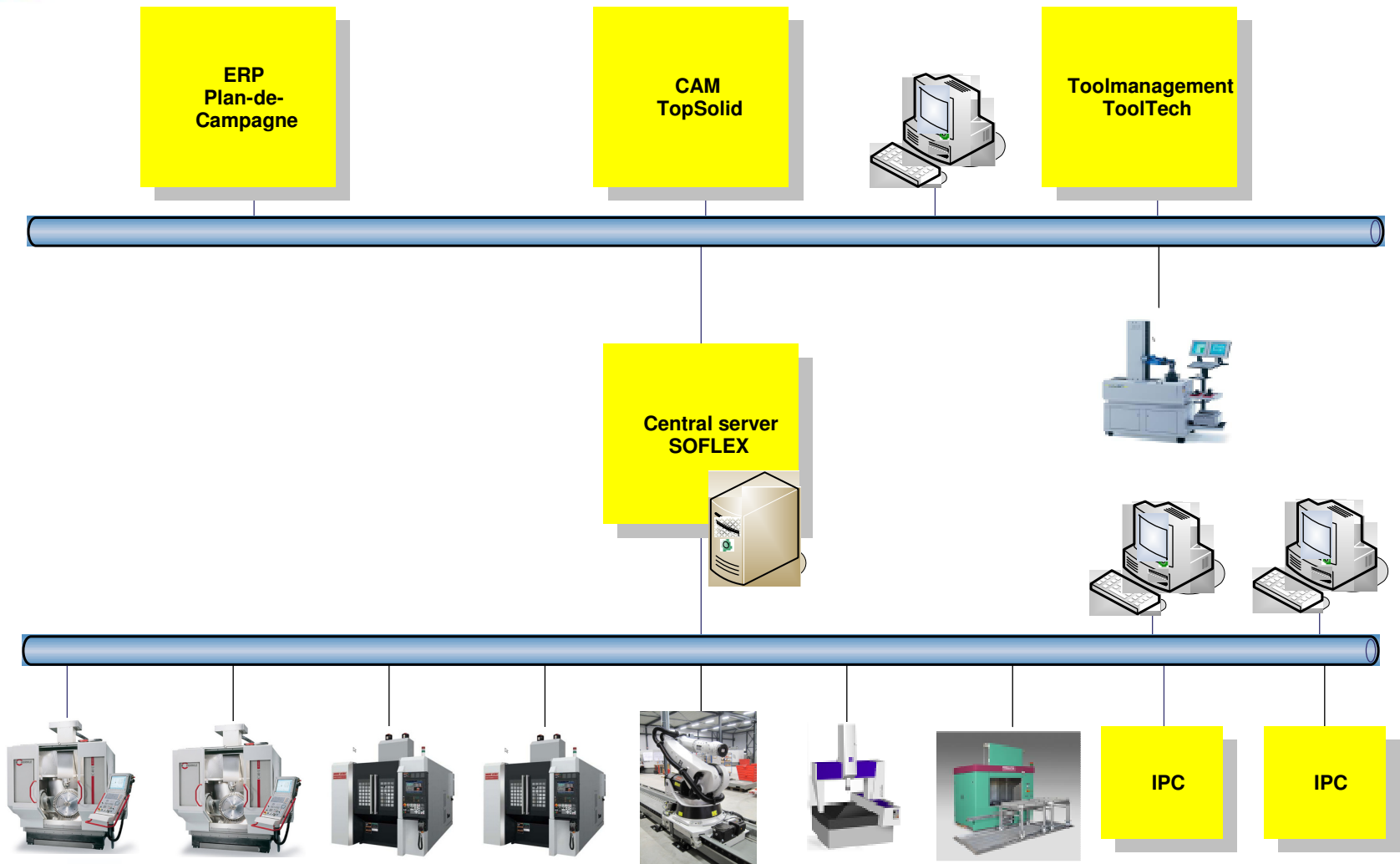




Integrated software

- ▣ ERP-system Plan-de-Campagne
- ▣ Job management Soflex
- ▣ CAM Top Solid
- ▣ Measuring Zeiss Calypso
- ▣ Siemens 840D CNC-control





Q & A

For more information, please contact us!



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