Nikhef

Pitches by Dutch Companies

Holland@CERN 2019

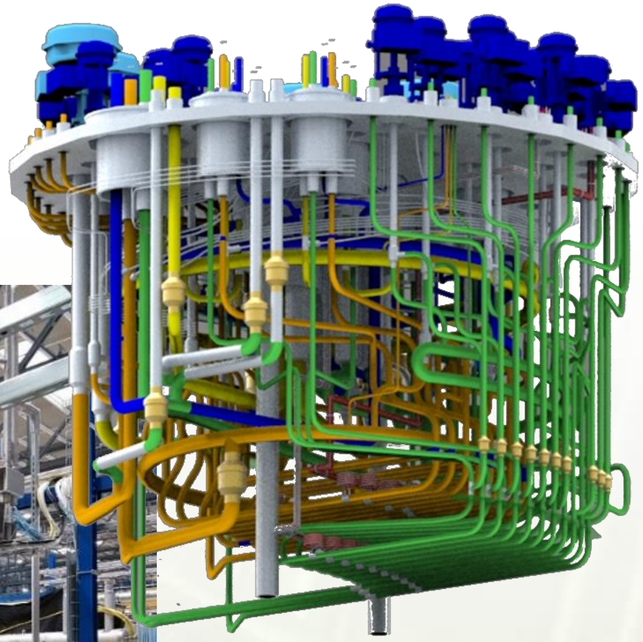
Order of pitches

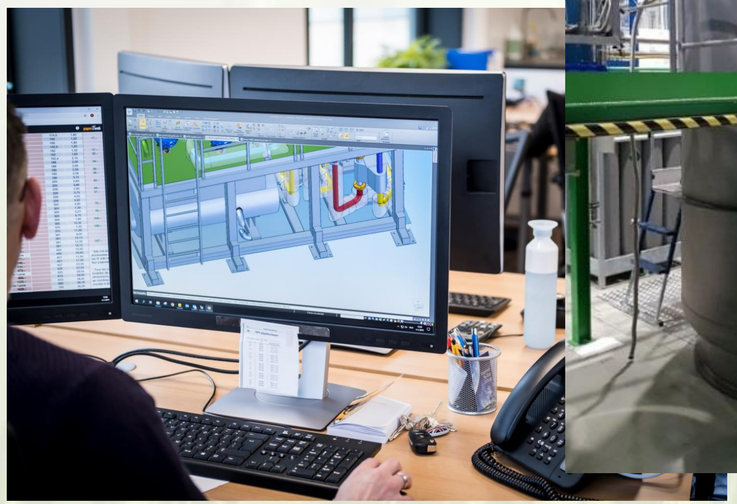
- Cryoworld
- HIT
- BKB
- BKL
- Ceratec
- Demaco
- FMI
- Hositrad
- Jeveka
- Kusters & Bosch
- LouwersHanique
- Mat-tech
- Mikrocentrum
- Nijdra
- Oceanz
- Photonis
- Settels Savenije
- Steered
- Technolution
- TNO

First 5

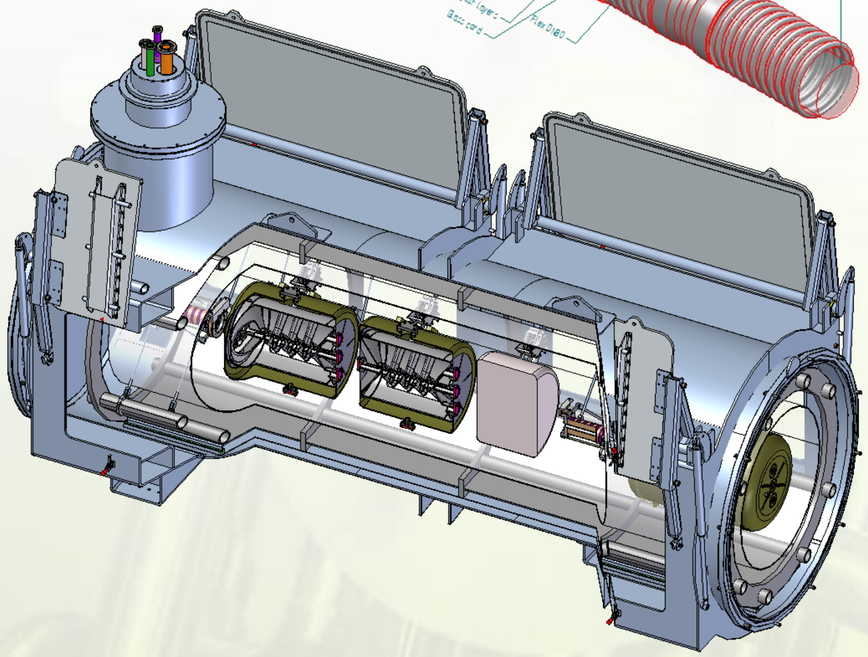
- Cryoworld
- HIT
- BKB
- BKL
- Ceratec

cryoworld
advanced cryogenics





- Cryogenic (special) products
- Concept and detail Design
- Process and thermal Design
- Engineering studies
- Manufacturing
- Testing
- Installation
- Start-up assistance
- Maintenance



Under development: Continuous wave linear accelerator
Cryostat for GSI

Universal testing cryostat GSI

Innovative design

cryoworld
advanced cryogenics

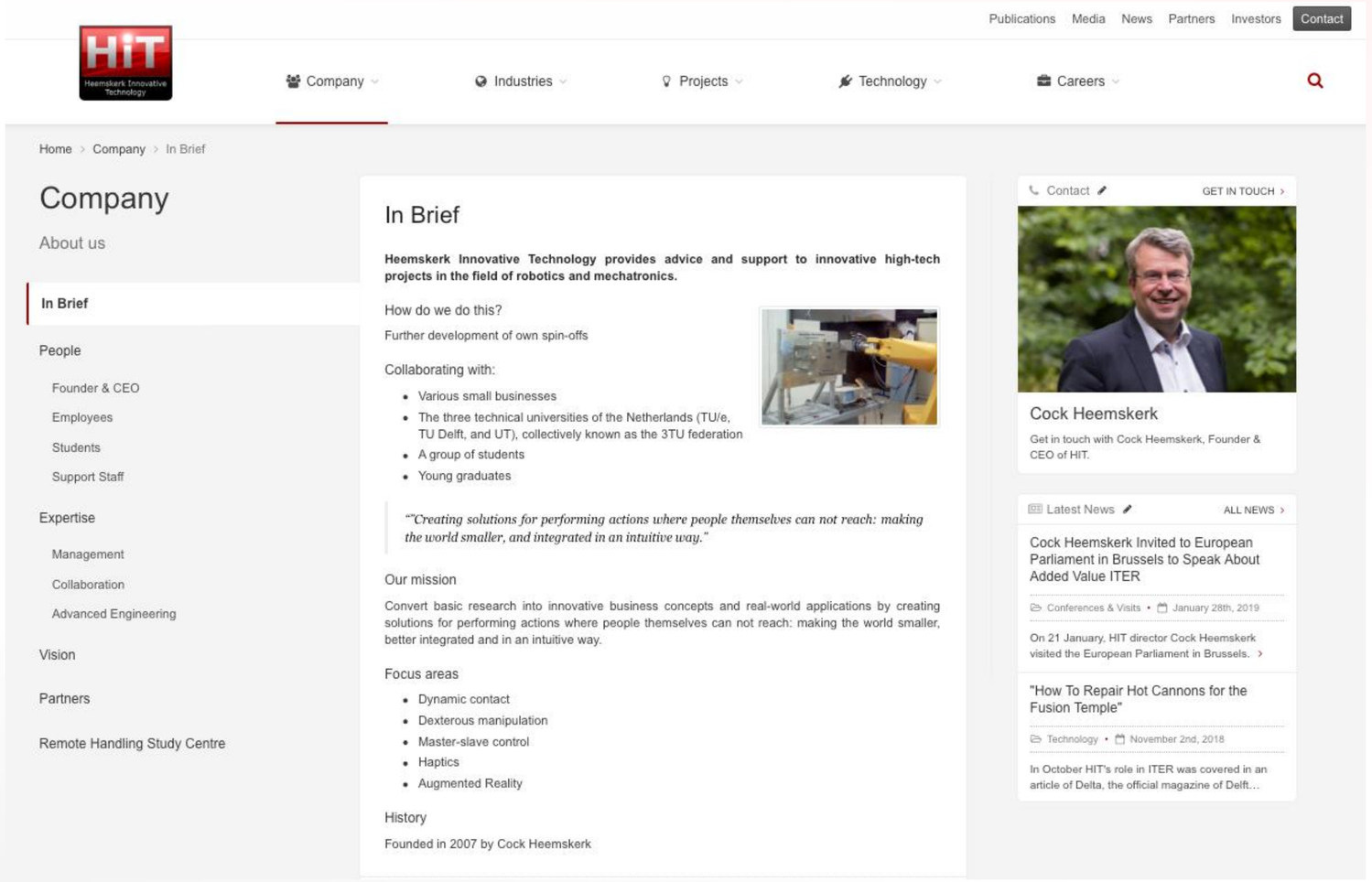
An Introduction of 12 years Remote Handling

Holland@CERN, Geneve, 4th June 2019

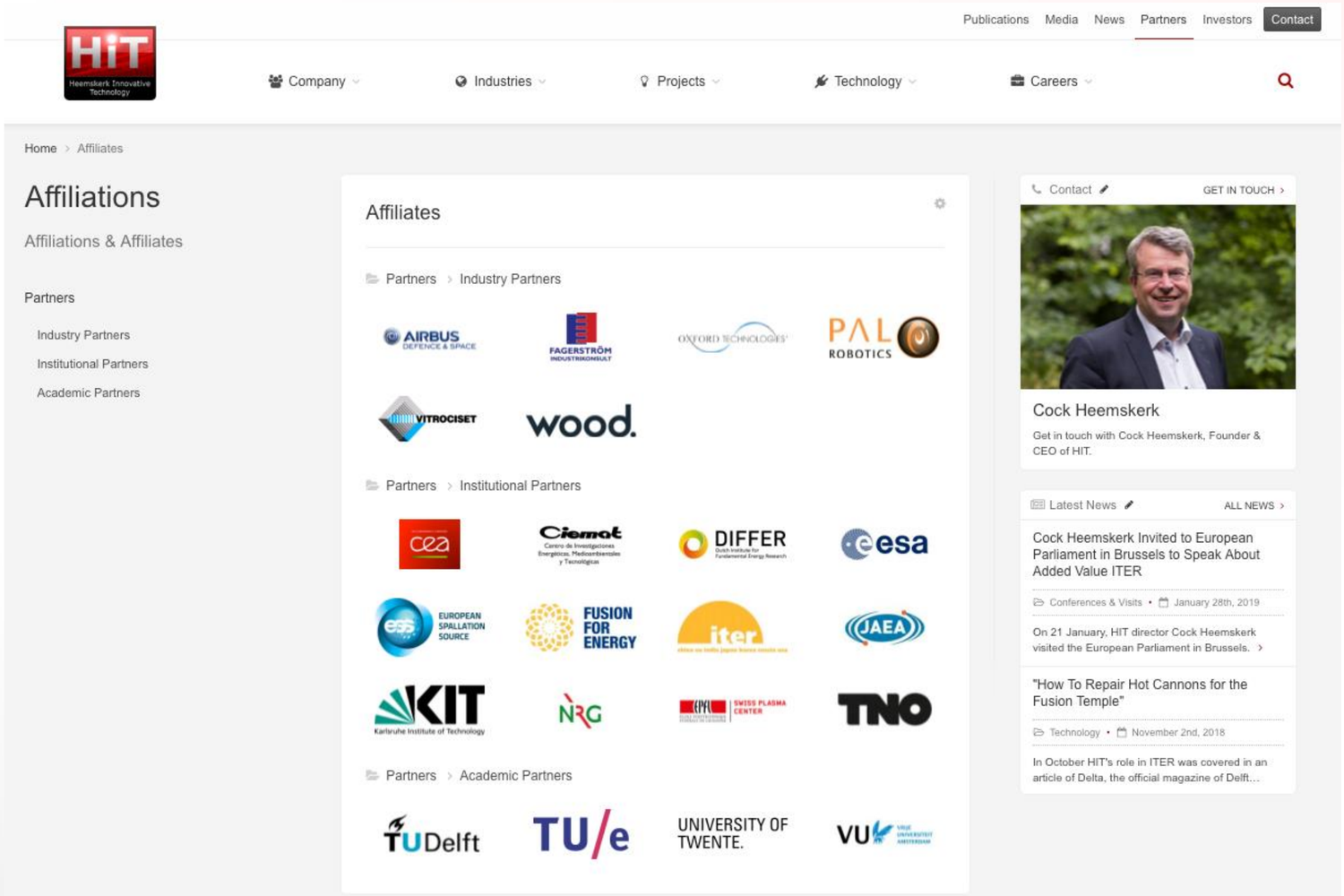
Ir. P.C.L. (Pieter) van den Berg

www.heemskerk-innovative.nl

An Introduction



Partners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Industries
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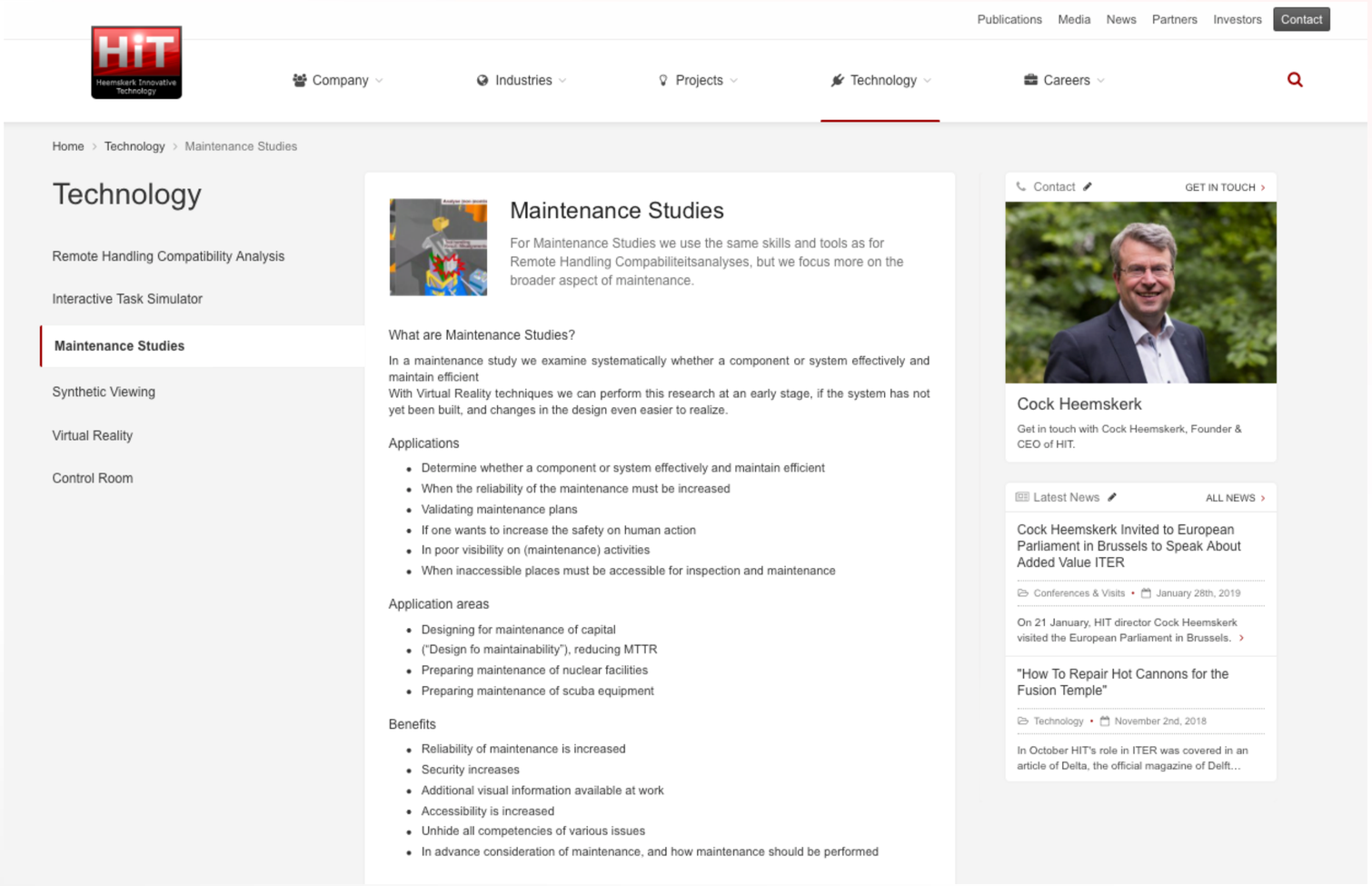
Careers
Home › Affiliates
Affiliations
Affiliations & Affiliates
Partners
Industry Partners
Institutional Partners
Academic Partners
Affiliates
Partners › Industry Partners
AIRBUS DEFENCE & SPACE
FAGERSTRÖM INDUSTRIKONSULT
OXFORD TECHNOLOGIES
PAL ROBOTICS
VITROCISET
wood.
Partners › Institutional Partners
cea
Ciemat
DIFFER
esa
EUROPEAN SPALLATION SOURCE
FUSION FOR ENERGY
iter
JAEA
KIT Karlsruhe Institute of Technology
NRG
SWISS PLASMA CENTER
TNO
Partners › Academic Partners
TU Delft
TU/e
UNIVERSITY OF TWENTE.
VU
Contact
GET IN TOUCH ›
Cock Heemskerk
Get in touch with Cock Heemskerk, Founder & CEO of HIT.
Latest News
ALL NEWS ›
Cock Heemskerk Invited to European Parliament in Brussels to Speak About Added Value ITER
Conferences & Visits • January 28th, 2019
On 21 January, HIT director Cock Heemskerk visited the European Parliament in Brussels. ›
"How To Repair Hot Cannons for the Fusion Temple"
Technology • November 2nd, 2018
In October HIT's role in ITER was covered in an article of Delta, the official magazine of Delft…

Technology


Publications
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Careers
Home › Technology › Maintenance Studies
Technology
Remote Handling Compatibility Analysis
Interactive Task Simulator
Maintenance Studies
Synthetic Viewing
Virtual Reality
Control Room
Maintenance Studies
For Maintenance Studies we use the same skills and tools as for Remote Handling Compabiliteitsanalyses, but we focus more on the broader aspect of maintenance.
What are Maintenance Studies?
In a maintenance study we examine systematically whether a component or system effectively and maintain efficient
With Virtual Reality techniques we can perform this research at an early stage, if the system has not yet been built, and changes in the design even easier to realize.
Applications
Determine whether a component or system effectively and maintain efficient
When the reliability of the maintenance must be increased
Validating maintenance plans
If one wants to increase the safety on human action
In poor visibility on (maintenance) activities
When inaccessible places must be accessible for inspection and maintenance
Application areas
Designing for maintenance of capital
("Design fo maintainability"), reducing MTTR
Preparing maintenance of nuclear facilities
Preparing maintenance of scuba equipment
Benefits
Reliability of maintenance is increased
Security increases
Additional visual information available at work
Accessibility is increased
Unhide all competencies of various issues
In advance consideration of maintenance, and how maintenance should be performed
Contact
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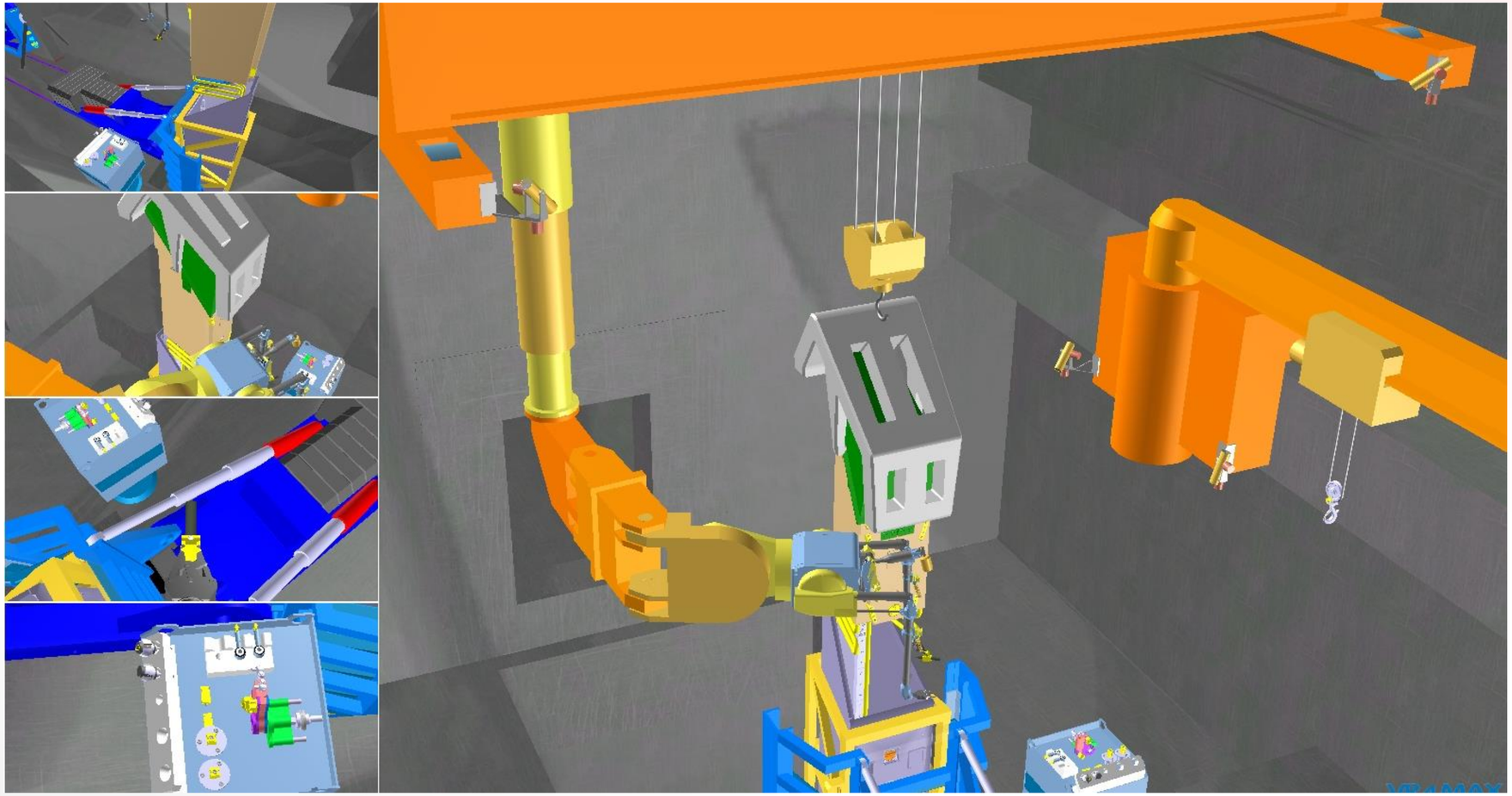
Interactive Task Simulator (GUPP)



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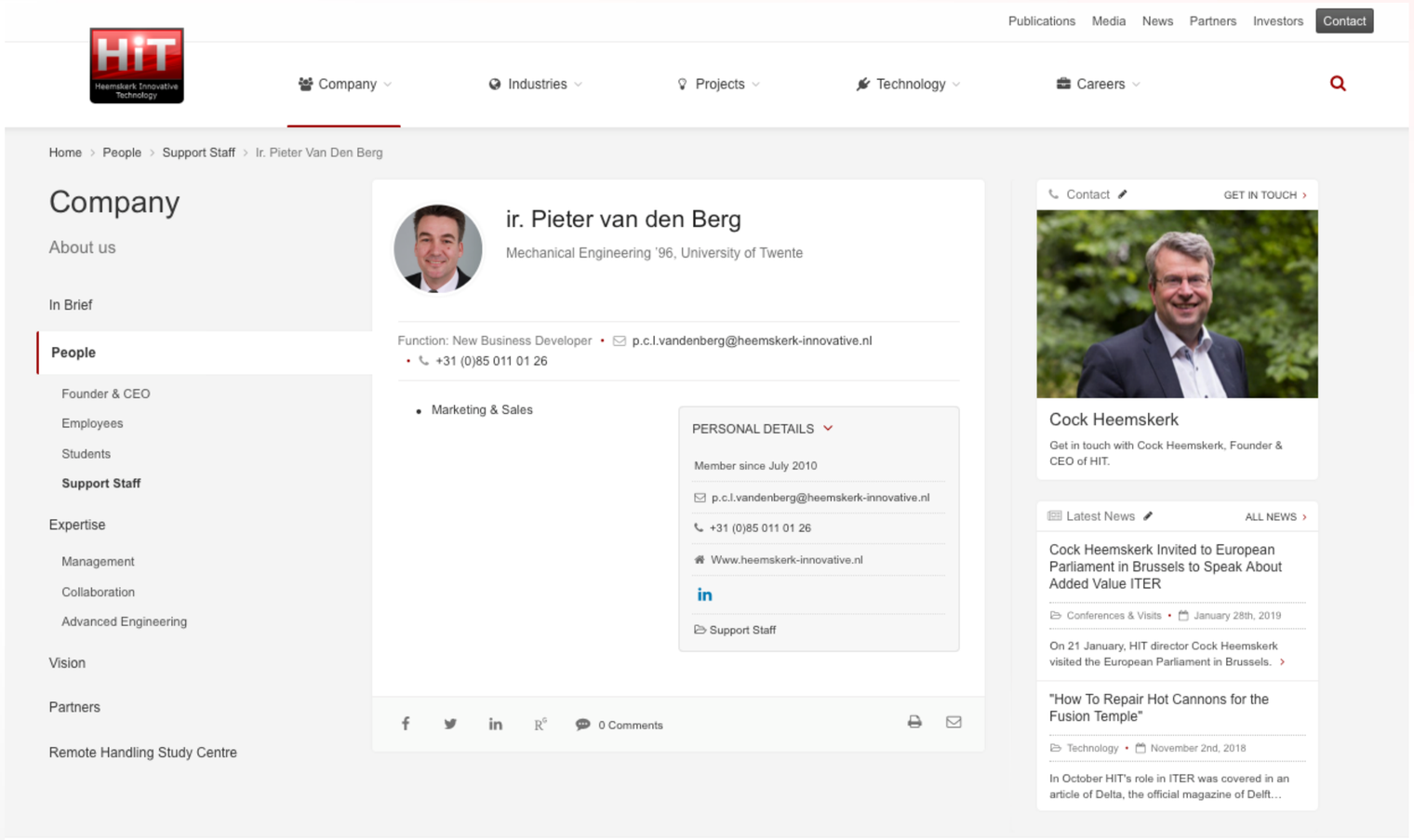
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Careers
Home › People › Support Staff › Ir. Pieter Van Den Berg
Company
About us
In Brief
People
Founder & CEO
Employees
Students
Support Staff
Expertise
Management
Collaboration
Advanced Engineering
Vision
Partners
Remote Handling Study Centre
ir. Pieter van den Berg
Mechanical Engineering '96, University of Twente
Function: New Business Developer • p.c.l.vandenberg@heemskerk-innovative.nl
• +31 (0)85 011 01 26
Marketing & Sales
PERSONAL DETAILS
Member since July 2010
p.c.l.vandenberg@heemskerk-innovative.nl
+31 (0)85 011 01 26
Www.heemskerk-innovative.nl
Support Staff
0 Comments
Contact
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“I am quite surprised that it happened during my lifetime. It is nice to be right about something sometimes.”

- Peter Higgs on CERN when scientists detected the Higgs boson particle.

BKB PRECISION

The plastics machining company for the high-tech industry

Holland@CERN June 2019

BKB PRECISION

The plastic machinist for the high-tech industry

- BKB Precision: Van den Berg Plastics machining BV Trading name
- Specialist in High Performance Plastics
- Prototyping / small series
- Expertise in accurate and complex machining.
- Located in Son, heart of the Brainport region
- 55 passionate employees

Machining, assembly and cleaning of high performance plastics up to 3µm

Climate-conditioned production facility ($3400m^2$)

INTERNATIONAL CHARACTER

Continuity in investments, innovation & export

PRECISE-PRODUCTION FOR THE HIGH-TECH INDUSTRY

- Semi-conductor
- Medical industry
- Defence
- Aerospace
- Optical industry
- Food
- Machine construction
- Chemical industry

WORLDWIDE CHARACTER:
Focus on Europe & N-America

CNC MILLING/TURNING

State of the art machinery

CNC MILLING

Hermle:

- 5-axles

VTC:

- 3- and 4-axle

Unipro:

- 3- and 5-axle

CNC MILLING/TURNING

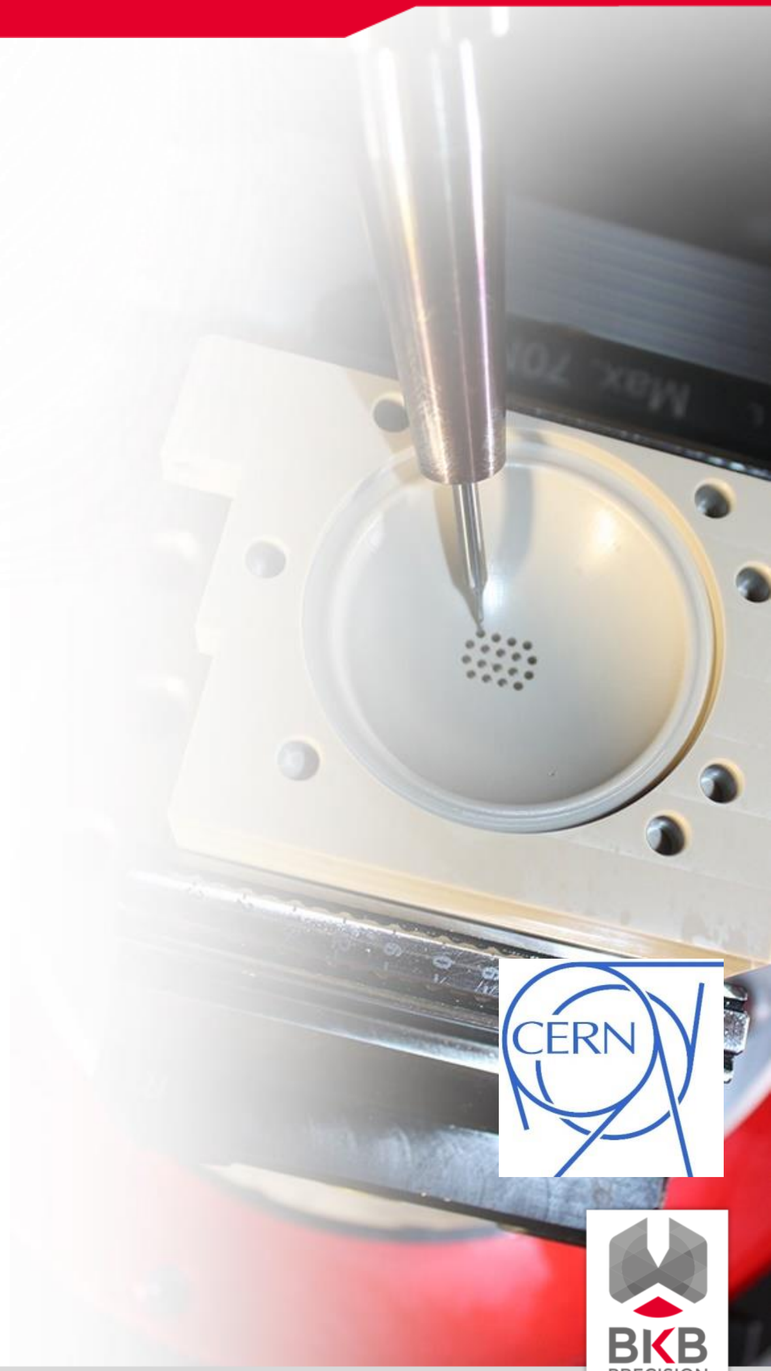
Okuma:

- 7-axle

PORTAL MILLING MACHINES

Wissner & Portatec

- 3-axle

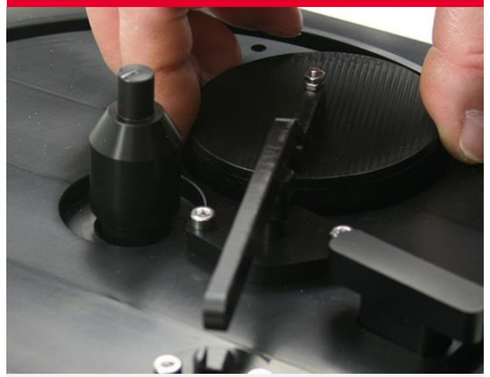


BKB PRECISION

ASSEMBLY & CLEANING

Unburdening: compositing, packaging, cleaning, gluing and testing

COMPOSING



- Assembly & subassemblies
- ISO class 7 clean room

GLUING

- UV-adhesive - bonding
- 2-components
- Specific glues

WELDING

- Hot gas welding

CLEANING

- Grade 4 classification
- ISO class 7 Protocols

PACKAGING

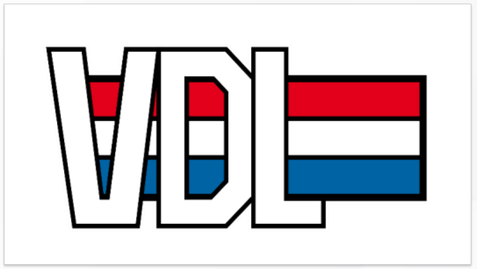
- Cleanroom packaging
- ISO class 7

CERN

BKB PRECISION

REFERENCES

Some of our customers…



BKB PRECISION

BKB PRECISION

Thank you!

Brilliance in **engineering**

Mechatronic and mechanical solutions
Inspection maintenance and repair
Hoisting - & lifting tools, special machinery

BKL
smart engineering works

> Your challenge?

You need: Safe, easy and low-risk processes

Assembly & Testing	Installations	System integration	Module replacements	Maintenance jobs	Service jobs

AND

Complex ‘handling’ required?

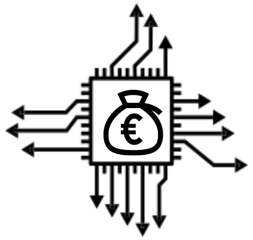
Sensitive

Accurate positioning

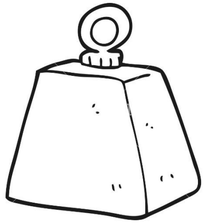
Specific Interfacing

Multi-directional

High-tech High-value



Large and heavy



Special environment

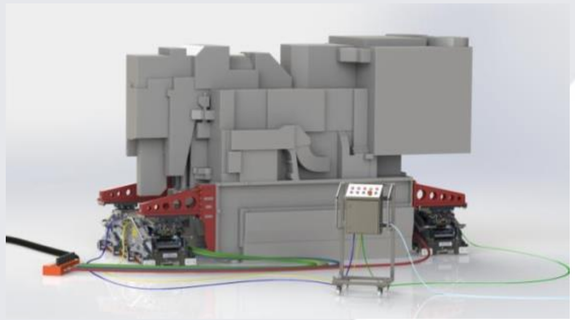
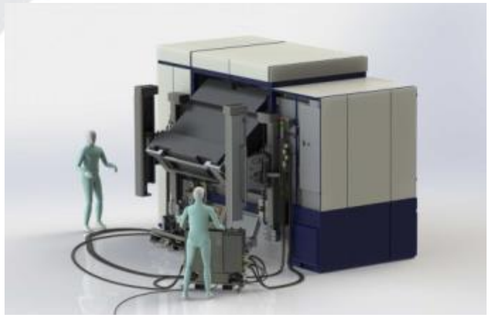
Limited time

BKL
smart engineering works

> BKL provides customized solutions

Specialist in safety related

Tooling & machines
Handling, hoisting & lifting


Total life-cycle support

From idea to installed base services

Engineering

Production

Inspection & Services

> Our profile and track-record

Experts in ‘safe handling’

More than…

35 years experience
50 highly qualified colleagues
€ 12 m turn-over
€ 110 m installed base

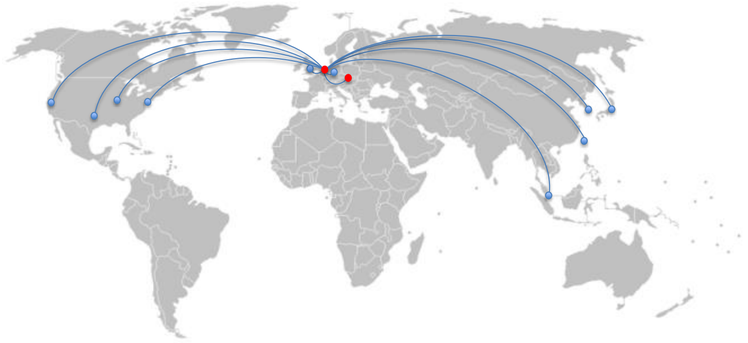
HQ Netherlands

Site Czech Republic

Serving high-tech clients

ASML
Fokker
GKN AEROSPACE
ThermoFisher SCIENTIFIC
VDL
ZEISS
PHILIPS

World-wide



BKL
smart engineering works

Thanks

Interested? You are welcome at stand 16

Holland@CERN 4 & 5 June 2019 Geneva, Switzerland

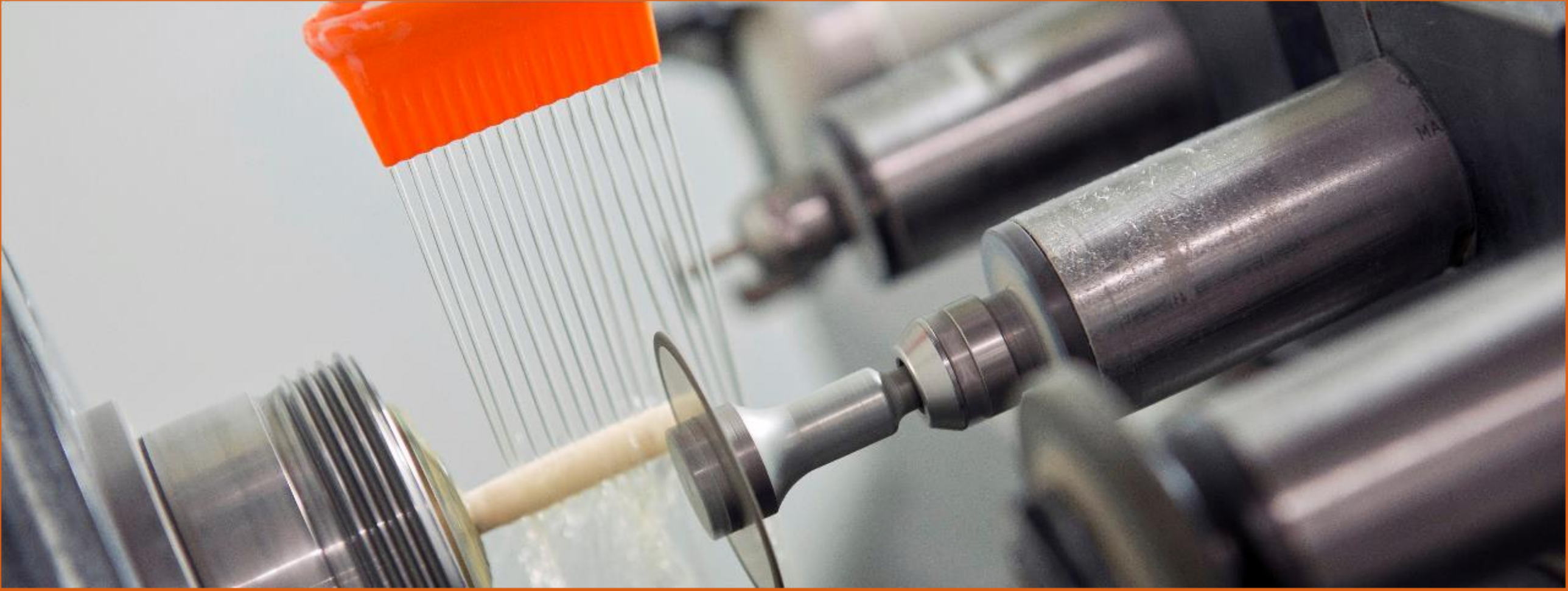
Holland.

BKL smart engineering works

CERATEC TECHNICAL CERAMICS BV

THE ADDED VALUE OF CERAMICS

KNOWLEGDE OF DESIGNING WITH CERAMIC MATERIALS



KNOWLEGDE OF MACHINING CERAMIC MATERIALS

KNOWLEGDE OF CONNECTING CERAMIC MATERIALS

KNOWLEDGE

INNOVATION

SOLUTION

KNOWLEDGE ON THE RIGHT SPOT!

MORE THAN 30 YEARS
KNOWLEDGE & CRAFTSMANSHIP

- high-tech materials
- people with a passion for ceramics
- niche player
- production in the Netherlands

Second 4

- Demaco
- FMI
- Hositrad
- Jeveka


DEMACO

DEMACO

CRYOGENIC DISTRIBUTION SYSTEMS

Rossi Mendez
Holland@CERN, June 2019

DEMACO: founded in 1960

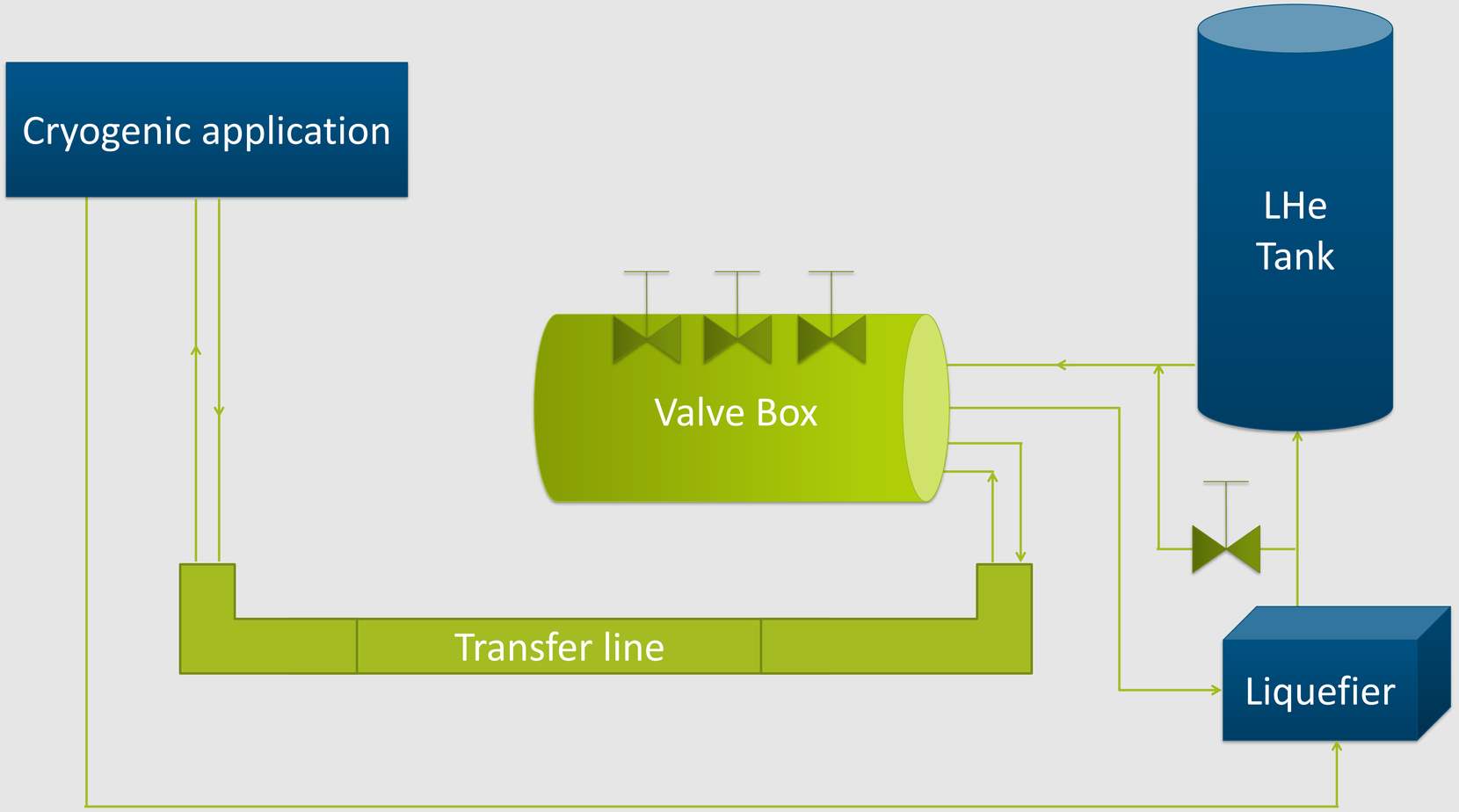
- **~ 120 employees**
- **HQ in the north of the Netherlands**
- **Turnover approx. 16 million €’s**
- **ISO 9001 (Quality)**
- **PED H & H1 (Pressure Directive)**
- **VCA** (Safety)**
- **ISO 3834 (Welding)**

Totally integrated company

- (Pre-) Design
- Engineering
- Manufacturing
- Testing
- PED acceptance
- Documentation (traceability)
- Installation on site
- Project management
- Service

Delivering cryogenic infrastructures

DEMACO Scope of Work



Cryogenic Infrastructure Scientific / LHe/LN2/LAr/LCO2

Big Science Projects

LCLS II SLAC Feed Caps/ Tunnel TLs/ Surface TLs

Project data	
Procurement method	Tender
Customer	SLAC / Fermilab
Site location	California, USA
Project status	Finished
Year of execution	2016-2018
Magnitude	> 4MM€

Project scope included thermal design, engineering, manufacturing, and supply of feed caps, tunnel transfer lines and surface transfer lines for the LCLS II project.

Big Science Projects

Neutrino Platform Proximity Cryogenics

Project data	
Procurement method	Tender
Customer	CERN / Fermilab
Site location	Geneva + Batavia USA
Project status	Finished
Year of execution	2016 – on going
Magnitude	> 5 MM€

Project scope included thermal design, engineering, manufacturing, supply and installation of thirty-eight (38) CVBs and ninety-two (92) N2/Ar TLs project.

Thank you
for your attention!

FMI HighTech Solutions

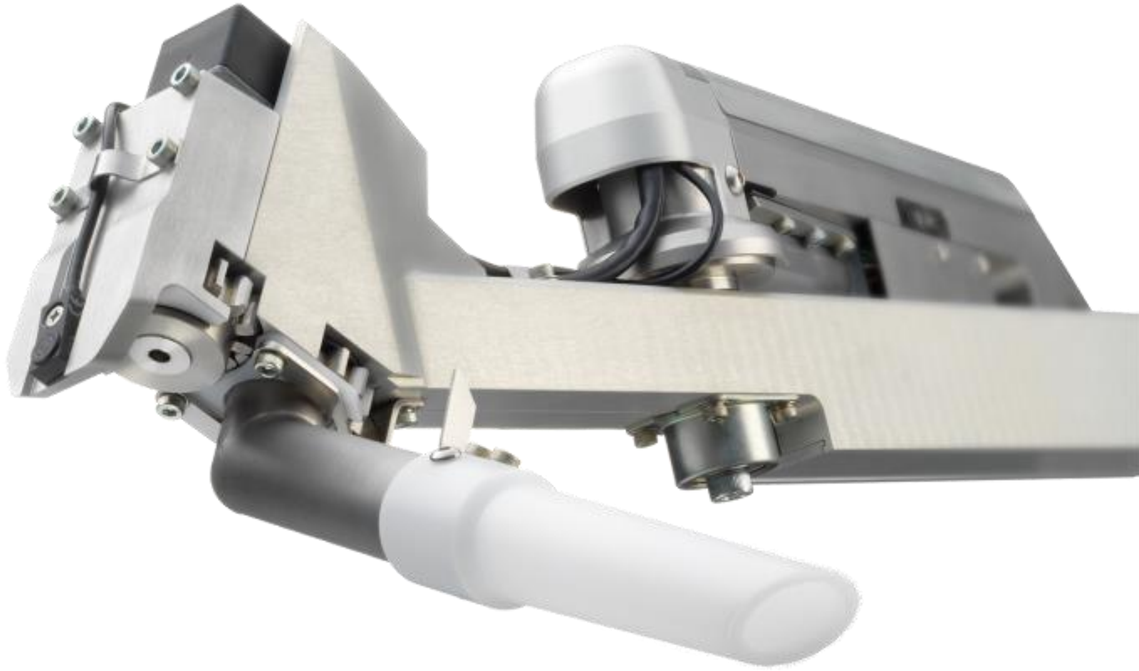
‘Solutions for small series to large quantities’

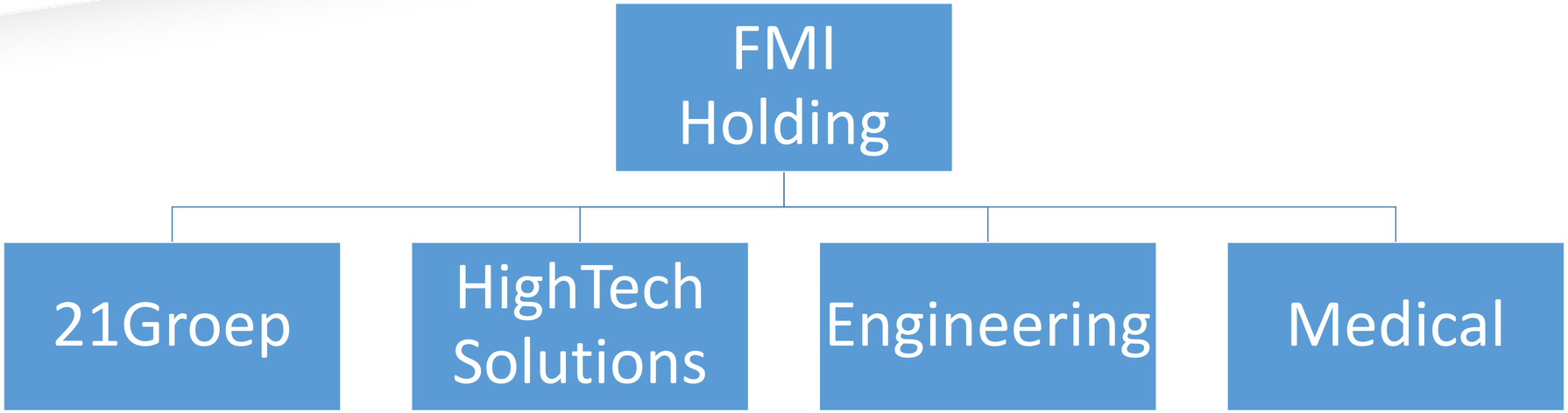
- **4-Locations in Uden (2x), Bergen op Zoom, Vlaardingen**
- **Our competences:**
  - Part Production: High Precision (~1µm)
  - Vacuum Parts
  - Cleanroom Assembly, Mechatronic Systems

FMI

More Added Value

Maximum Involvement





- **15-Locations in the Netherlands, Belgium, Germany**
  - 21Groep Installation, HVAC etc.
  - Medical: Manufacturer of e.g. implants (3D Metal-print)
- **450 Employees**
- **80 M€ Revenues**

FMI Engineering

‘Clever solutions for complex situations’

- **3-Locations in Drachten, Eindhoven & Aachen (D)**
- **Our competences:**
  - Complex/Cleanroom Tools
  - Mechatronic Systems
  - Vacuum Parts
  - Qualification Tools
  - Production automation

VACUUM TECHNOLOGY
Hositrad

Hositrad Vacuum Technology

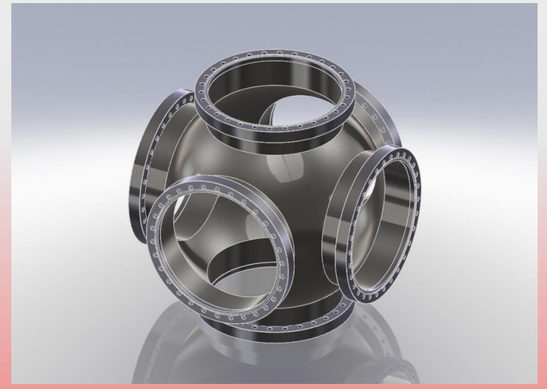
Vacuum Experts
since 1966

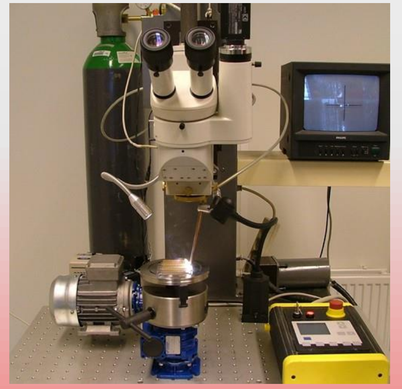
Our Company

- 1966 founded by Jacob Tomassen (mechanical engineer) : start in selling Andar Ion-pumps, Ti Sublimation, Hall flanges (compatible to CF) without knife edges, valves, manipulators etc.
- 1967 start with manufacturing of vacuum chambers and specials.
- 1968 selling Veeco products:
leak detectors, gas analyzers, vacuum evaporators, sputter systems etc.
- 1977 selling UTI Instruments with High Sensitivity Mass Spectrometers.
- 2001 Jurgen Tomassen took over the company

Our Company

- Specialized in selling of Vacuum and Cryogenic Technology
- Major Supplier to:
  - European Research Institutes
  - Important High Tech Industries
  - Universities all over Europe
  - Synchrotron Accelerator Facilities
  - Space Laboratories
  - Vacuum Companies
- Fields of Activities
  - Welding, Laser and TIG
  - Helium leak Detection
  - Ultrasonic Cleaning
  - CAD Service
  - Maintenance of Vacuum Equipment
  - Mass Spectrometer Service
  - Electronic Repair Service





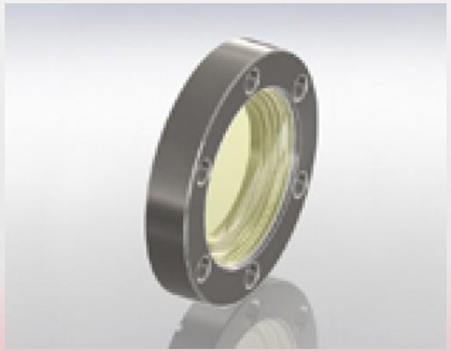
Our Company

- Hositrad's head office with 2500 m2 is located in Holland
- Sales Office in Germany

- We have a big stock room where we store all standard flanges fittings and electrical feedthroughs

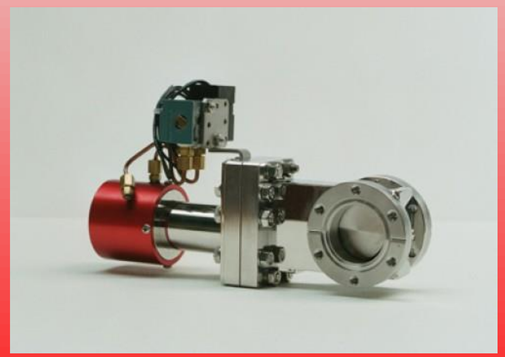
Our Products

KF, ISO, CF Compoents



Viewports

Vacuum Chambers



Valves : Gate Valves, Right Angle, Leak Valves , Full Metal

Our Products

We can weld these feedthroughs in our workshop in Holland very quickly on any type of standard or special customized flange. In addition, Hositrad's experience enables them to provide our customers with precision-engineered custom feedthroughs.

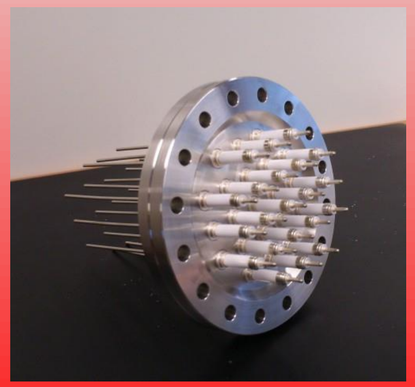
Standard feedthroughs from stock : BNC, MHV, SHV, Thermocouple, Power, High Voltage, Multipin, 50-Ohms, Typ-D, Circular Connectors, Viewports Sapphire and Fused Silica.

The latest products include the Circular Connectors from 3-Pin up to 41-Pins with plugs on both sides.

Special Products

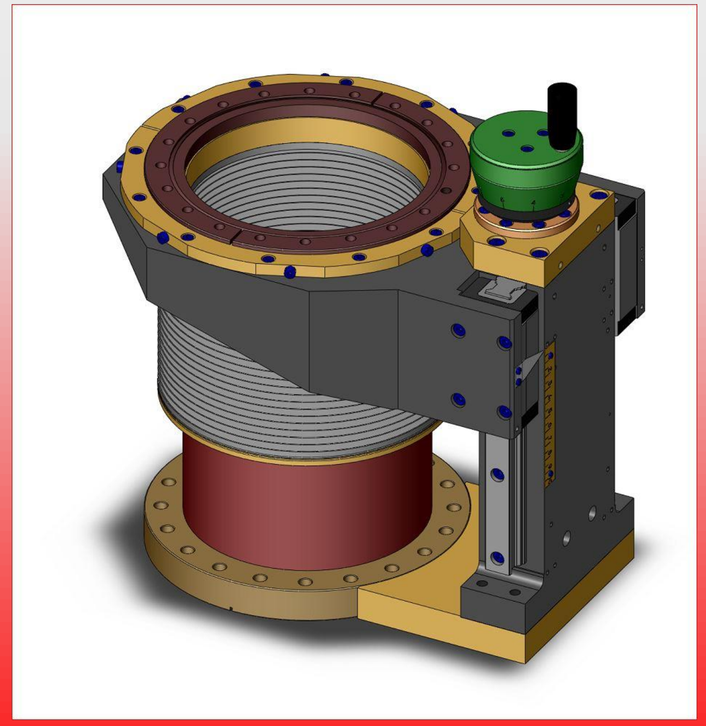
Special Products

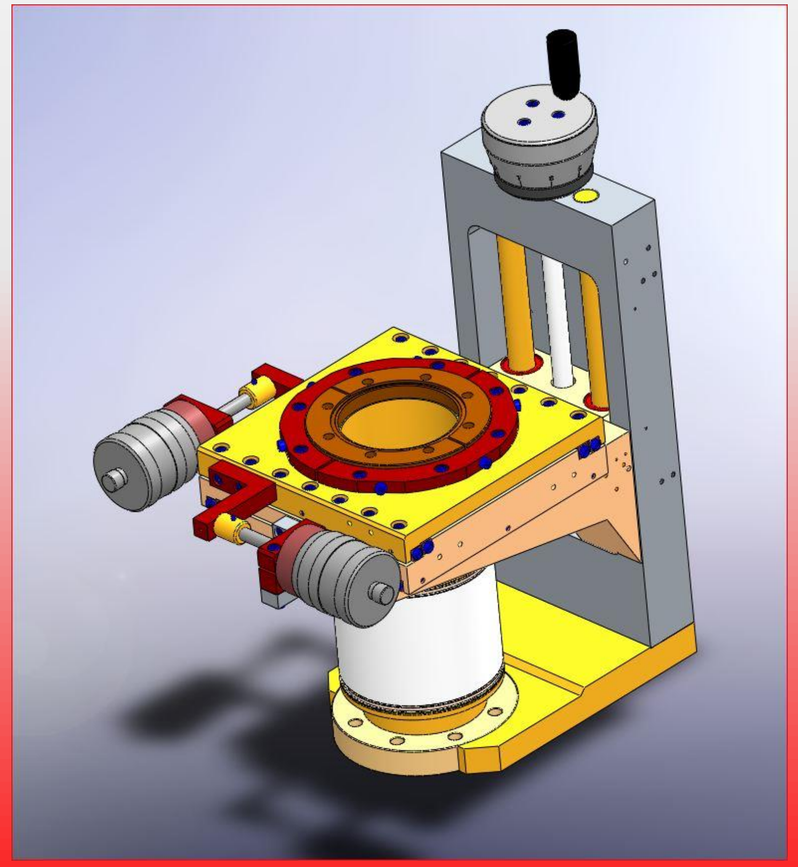
- Custom Vacuum Chambers
- Special Feedthroughs
- Custom Design Flanges
- Special Bellow Assemblies



Manipulators

MANIPULATORS





Quadrupole Mass Spectrometers

Quadrupole Mass Spectrometers
Mass Range 1 – 16000 amu

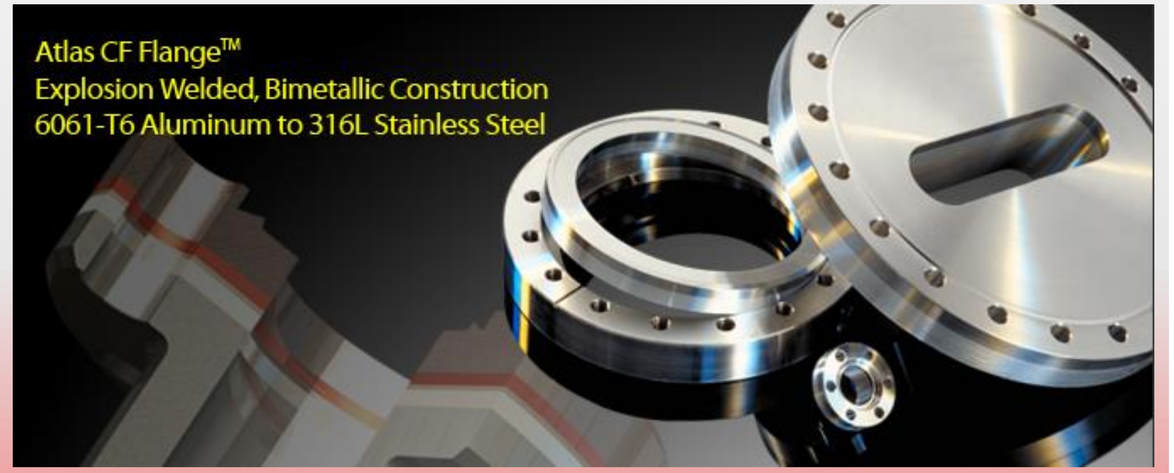
Tripple QUADS w/ 9,5 and 19 mm rodsystems.

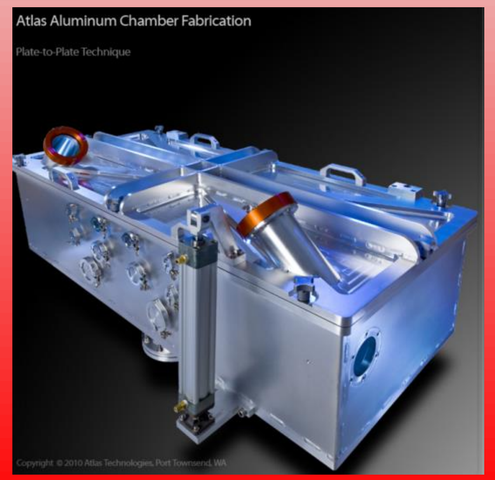
Flange mounted systems, Ionguides, RF electronics, component solutions (MS and MS/MS Systems), Complete work stations

Overall sensitivity specification until 10^{-16} mbar partial pressure detection

- TPD/TDS , Clusters
- RGA , Plasma Analysis , Molecular Beam, Beam Flux
- Gas Analysis Systems 100% to low ppt (EI, CI , API sources)

Atlas Aluminum Vacuum Science





Why choose Aluminum?

- Low Outgassing
- Low Contamination
- High Thermal Conductivity
- High Vibration Dampening
- Superb Machinability
- Space and Weight Reduction
- Low Nuclear Activation
- Low Magnetic Permeability
- High Chemical Resistance
- Low Cost of Ownership

Our References

HZB Helmholtz Zentrum Berlin

PTB

DESY

Max-Planck-Institut

GSI

KIT Karlsruher Institut für Technologie

JÜLICH FORSCHUNGSZENTRUM

MBI

PAUL SCHERRER INSTITUT PSI

DLR

ESRF

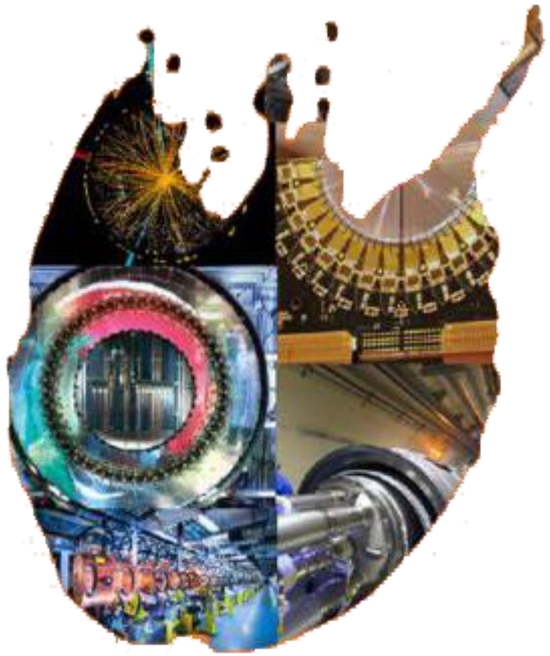
CERN

ALBA Synchrotron Light Facility

VACUUM TECHNOLOGY
Hositrad

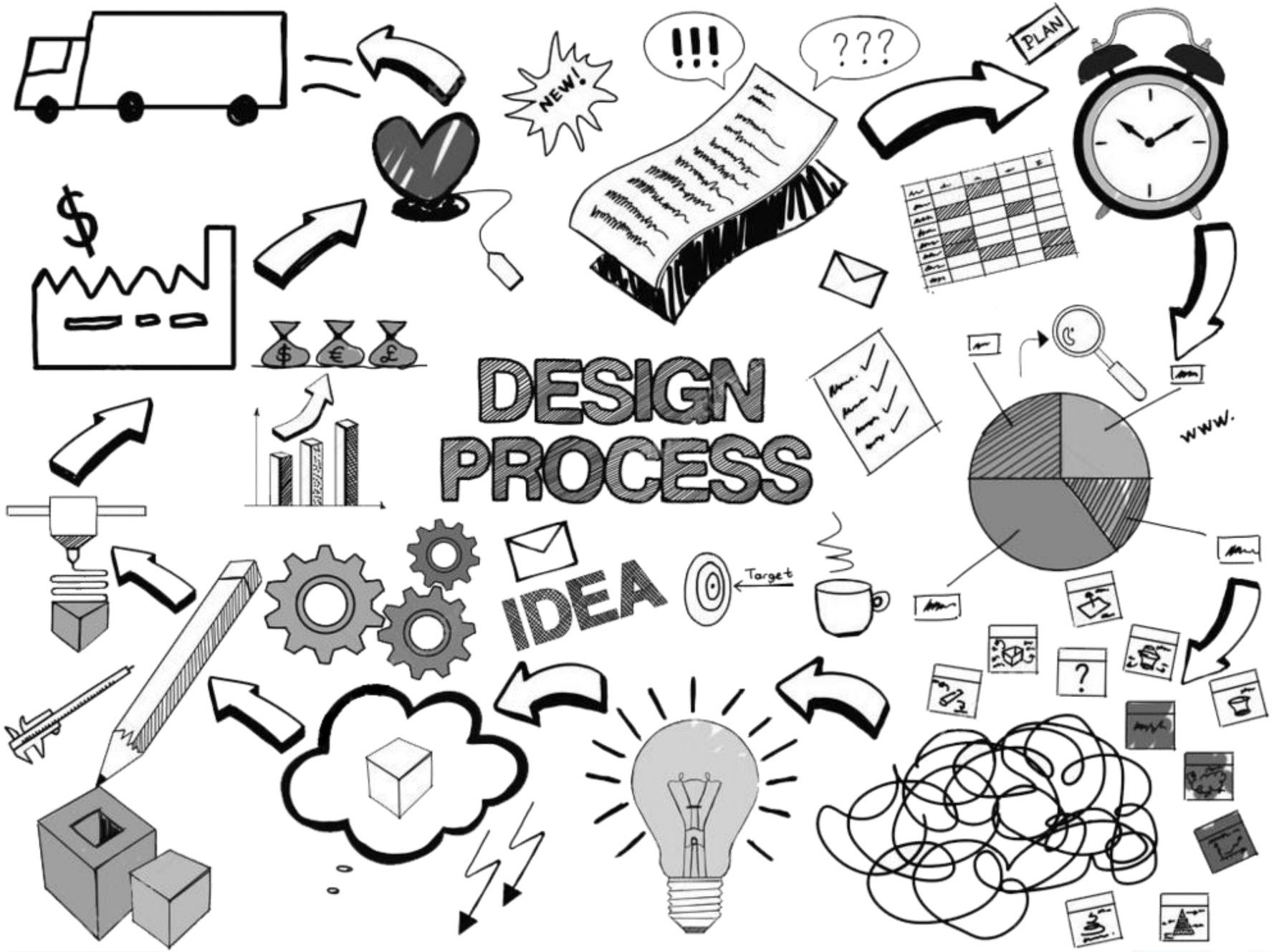
Thank you !

Jeveka@Cern

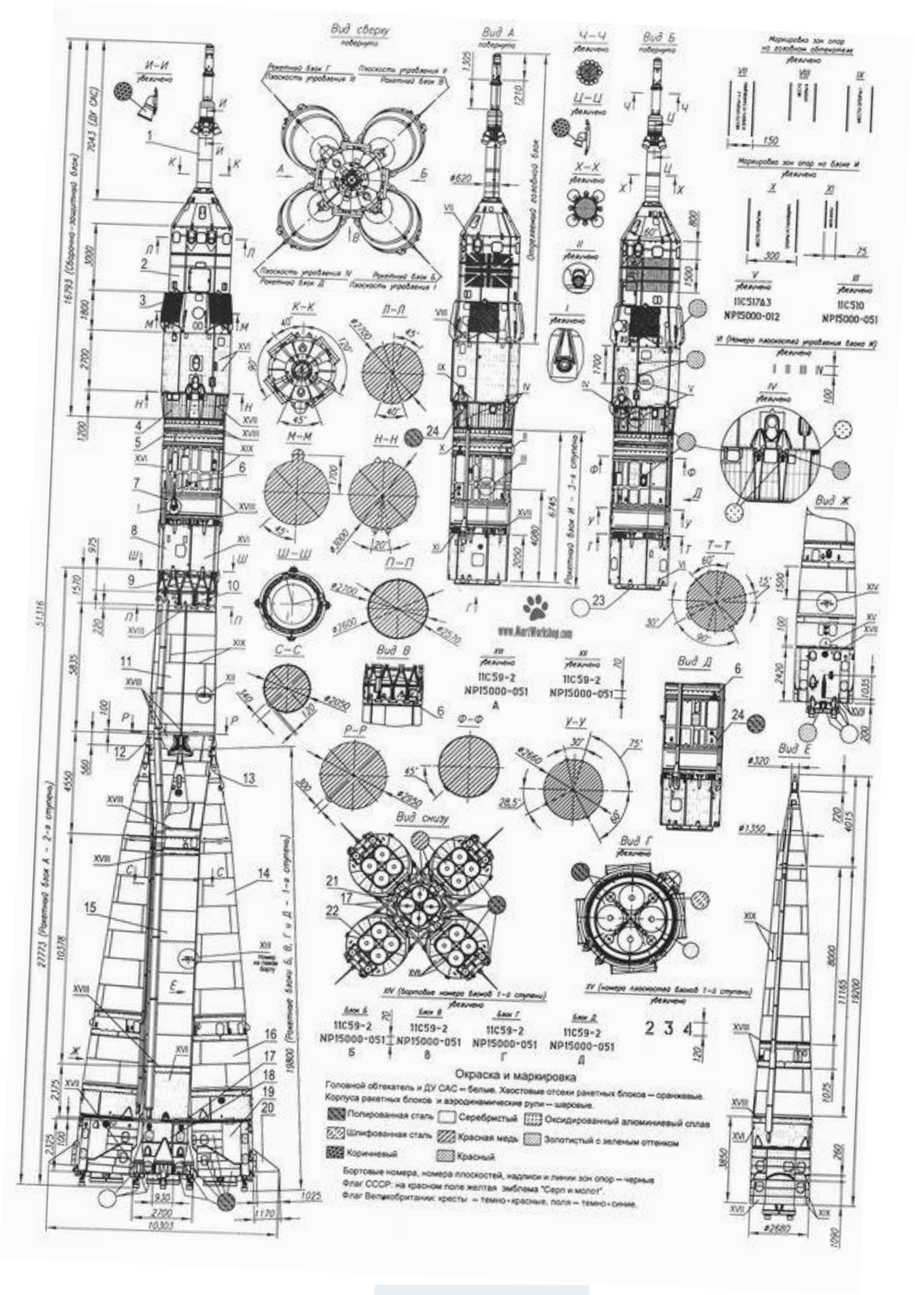


4-6-2019

Jeveka



Jeveka


Вид сверху
повернуто
Вид А
повернуто
Ц–Ц
повернуто
Вид Б
повернуто
Маркировка зон опор
на головном обтекателе
повернуто
И–И
повернуто
Ракетный блок Г
Плоскость управления II
Плоскость управления III
Ракетный блок В
Плоскость управления IV
Ракетный блок Д
Ракетный блок Б
Плоскость управления I
Плоскость управления V
Маркировка зон опор на блоке И
повернуто
К–К
повернуто
Л–Л
повернуто
М–М
повернуто
Н–Н
повернуто
Ш–Ш
повернуто
П–П
повернуто
С–С
повернуто
Вид В
повернуто
Р–Р
повернуто
Ф–Ф
повернуто
У–У
повернуто
Вид Г
повернуто
Вид Д
повернуто
Вид Ж
повернуто
Т–Т
повернуто
Вид Е
повернуто
Вид снизу
повернуто
IV (номера плоскостей блоков 1-й ступени)
повернуто
XIV (бортовые номера блоков 1-й ступени)
повернуто
Блок Б
11С59-2
NP15000-051
Б
Блок В
11С59-2
NP15000-051
В
Блок Г
11С59-2
NP15000-051
Г
Блок Д
11С59-2
NP15000-051
Д
2 3 4
11С59-2
NP15000-051
А
11С59-2
NP15000-051
11С517А3
NP15000-012
11С510
NP15000-051
Окраска и маркировка
Головной обтекатель и ДУ САС – белые. Хвостовые отсеки ракетных блоков – оранжевые.
Корпуса ракетных блоков и аэродинамические рули – шаровые.
Полированная сталь
Серебристый
Оксидированный алюминиевый сплав
Шлифованная сталь
Красная медь
Золотистый с зеленым оттенком
Коричневый
Красный
Бортовые номера, номера плоскостей, надписи и линии зон опор – черные
Флаг СССР: на красном поле желтая эмблема "Серп и молот".
Флаг Великобритании: кресты – темно-красные, поля – темно-синие.
www.AscriWorkshop.com

+

=

Available from stock

Co-engineering

High-quality fasteners

Another 5

- Kusters & Bosch
- LouwersHanique
- Mat-tech
- Mikrocentrum
- Nijdra

kusters & bosch

Specialist in precision machining

We do like a challenge

Projects we did/are doing for CERN

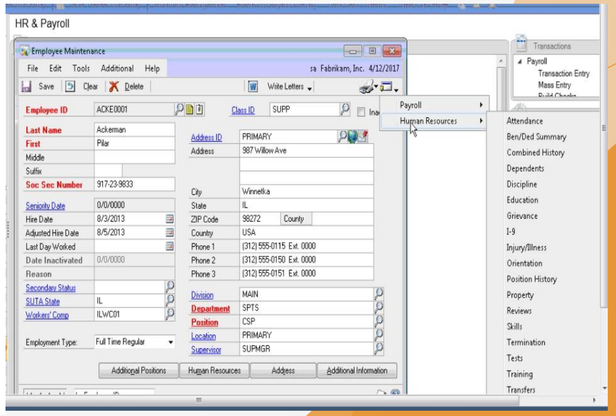
Carcan assembly

Laminations

OFC part

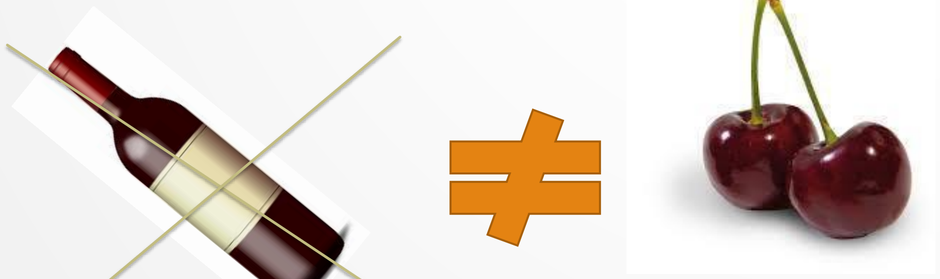
How:

- Acclimatized facilities
- Accurate machinery
- Modern ERP
- Modern 3 measuring
- Highly skilled staff



Who we are

- Founded 1990
- Privately owned by Tom Kusters and Paul Bosch
- Aprox 30 FTE
- ISO 9001 certified
- Located in high tech area (Mierlo)



Contact us

=

kusters & bosch

Kusters administratie

KUSTERS ENGINEERING

KÜSTERS

Kusters logistic services

KUSTERS OPLEIDINGSINSTITUUT

LOONBEDRIJF KUSTERS BV
KASSENBOUW & KASSENSLOOP

Please be welcome at our booth on 3th floor

LouwersHanique

CERN PITCH

June 2019

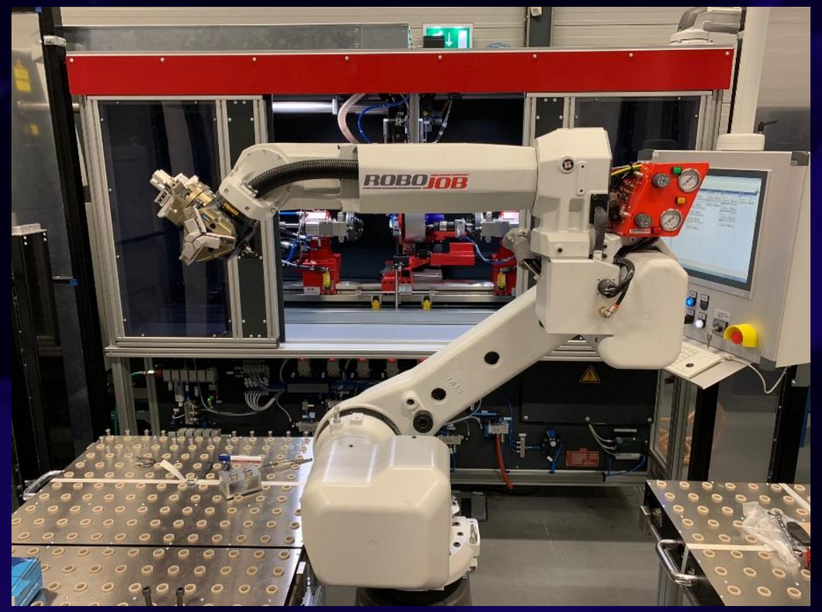
Company Introduction

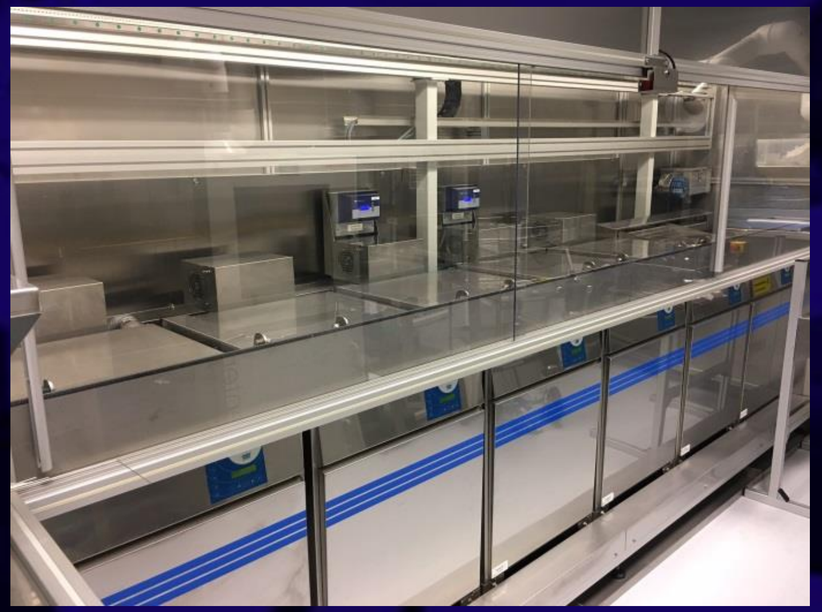
LouwersHanique

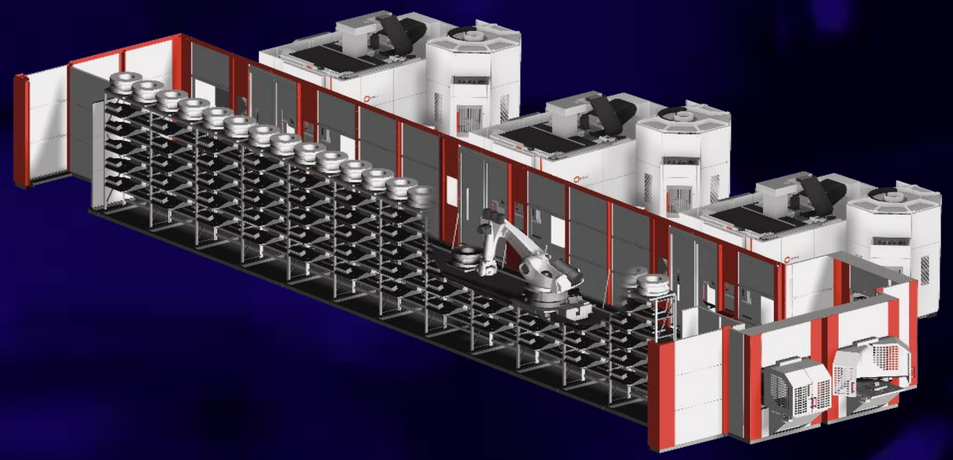
- Founded in the early 1950´s
- 135 Employees, Turnover 30M Euro
- Specialized in the high-end processing of technical glass and ceramics
- And the combination and bonding of materials & technologies
- Main markets: semicon, analytical, energy, opto-el., medical/pharma
- ISO 9001:2015 certified

Thermal / Mechanical / Cleanroom Processing

LouwersHanique



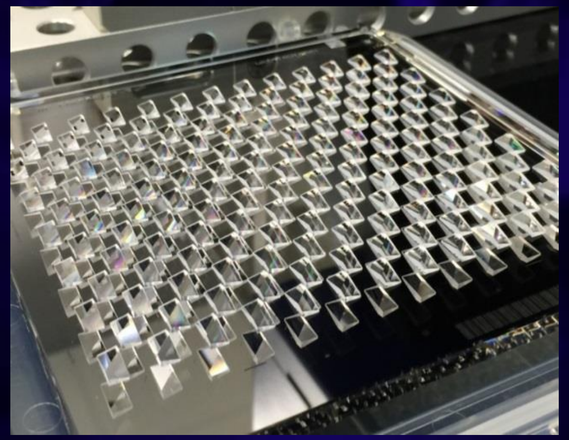


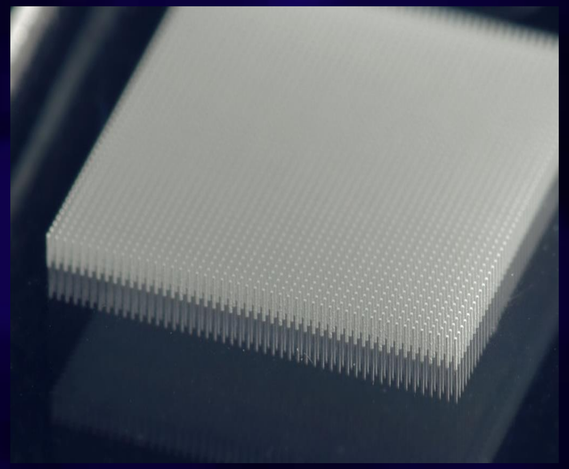


Precision Machining Bonding

LouwersHanique

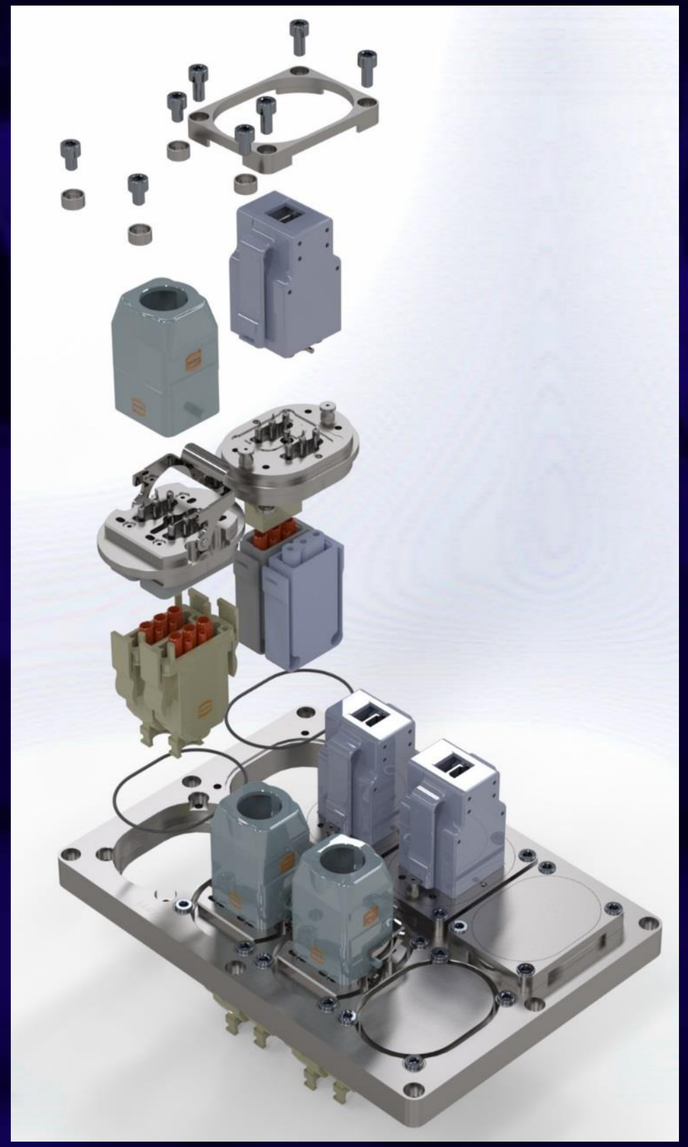
- Ultra precision assemblies , Glass and technical ceramics





Ultra High Vacuum Feedthroughs

LouwersHanique




LouwersHanique

Company presentation

mat-tech
innovative soldering & brazing

Dr. Mehran Maalekian

CTO

mat-tech
development & testing

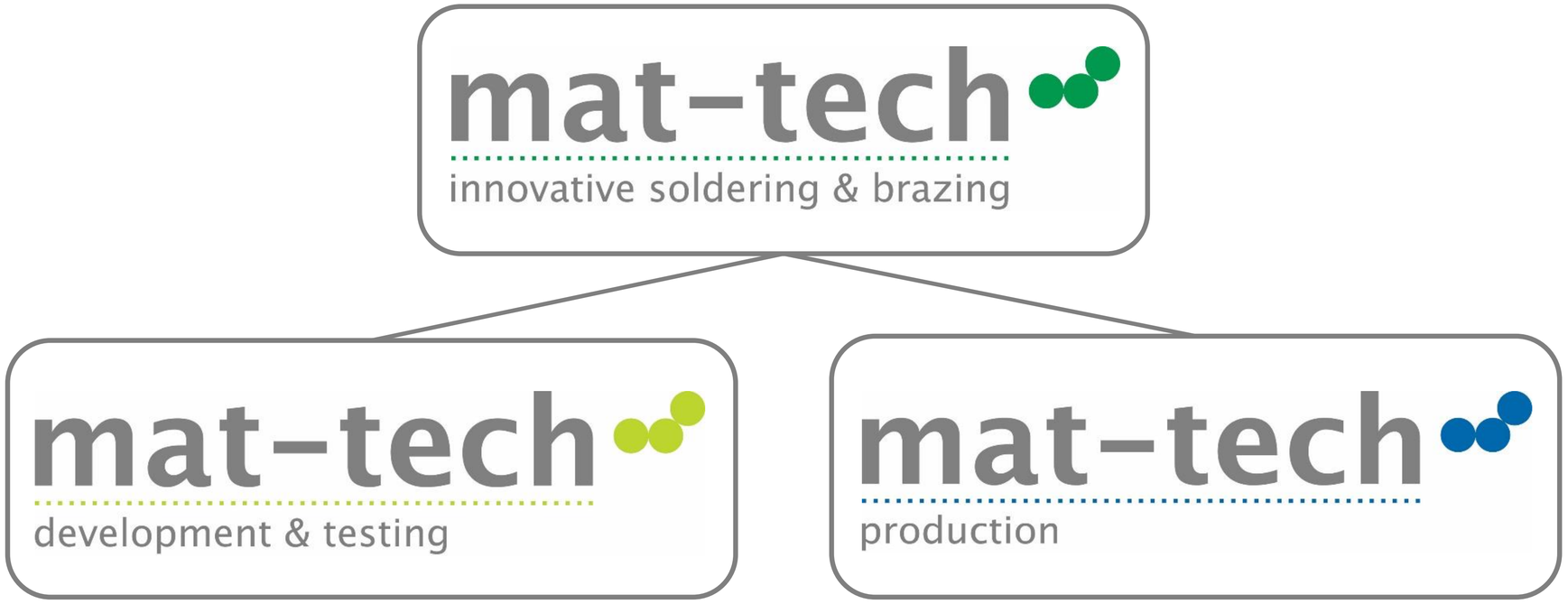
mat-tech
production

General information on Mat-Tech

- Founded in 2001 with the support of TU/Delft
- Independent privately held company
- “Business through knowledge” philosophy: for innovative and sustainable solutions in joining technologies
- Scientific staff: PhD, MSc, BSc level in Material Sciences, Mechanical Engineering and Chemistry

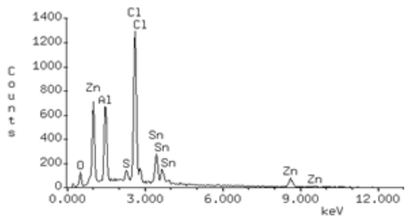
Organization

Mat-tech is divided in two divisions:

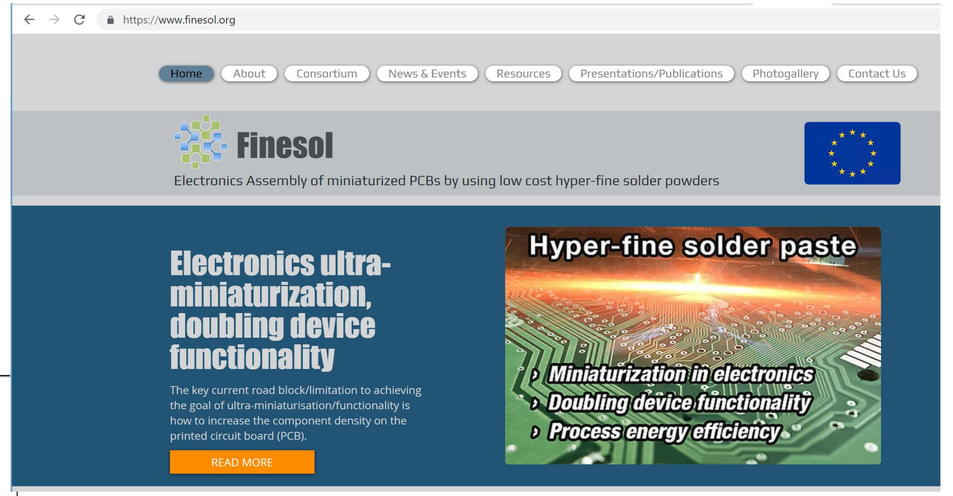


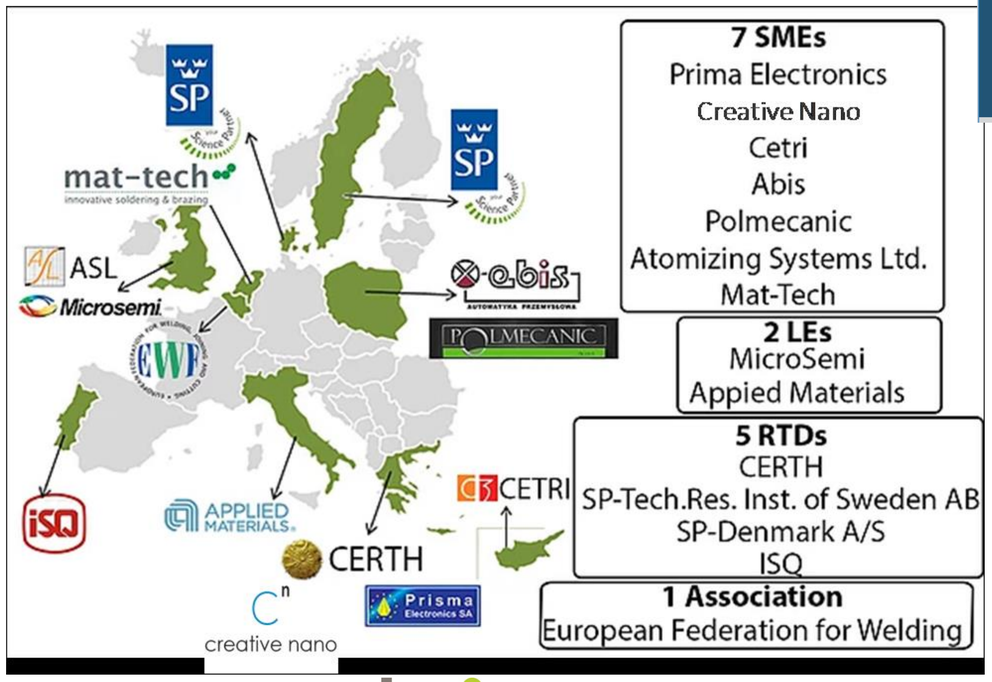
Mat-Tech Development & Testing

- Application development (co-development with customer/OEM)
  - Our IC3P-model: Idea - Concept - Prototyping - Pre-production - Production
  - Defining Go/ No Go points
- Process development
  - Technology Transfer (IP) if desired
- Testing & Metallographic Research
  - Preparation of samples
  - Failure analysis, environmental & mechanical testing, solderability, chemical analysis
  - SEM, Optical Microscopy, Energy Dispersive X-ray Spectroscopy
  - X-ray Imaging
- Alloy development and production of special alloys
- EU Research project participations
- Industries have worked with:
  - Electronics, semiconductor, mechatronics, solar, automotive, aerospace, , energy and electric power, defense, tooling…



Assembly of miniaturized PCBs by using low cost hyper-fine solder powders





FineSol

European Commission

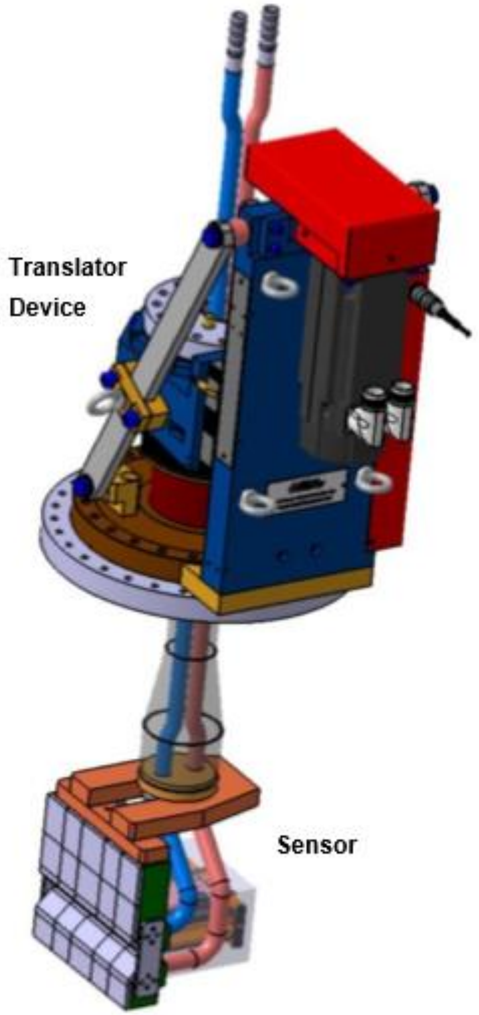
DEREC Design for recycling & re-use

- When a solar panel reaches its end of life, it is currently not possible to re-use all materials.
- The purpose of DEREC is to develop and apply materials that allow re-use, while ensuring the desired life time of a solar panel.
- The production of such panels is a major distinctive feature for European panel manufacturers.
- Exasun, ECN, DSM and Mat-Tech are involved.

BigScience project

- Joining W to Cu & SS to Cu

FUSION FOR ENERGY



Mat-tech Production

- High quality soldering & brazing services:
  - Specialized in complex assemblies
  - Supply Chain Management
  - Testing options available
  - Quality always goes first!
- Processes available:
  - Vacuum brazing
  - Inductive soldering & brazing
  - Atmospheric brazing (inert and in air)
  - Aluminum soldering & brazing
  - Ceramic soldering & brazing
  - Fluxless soldering in air
  - Transient Liquid Phase Bonding
  - Diffusion Bonding
  - Annealing processes (prior or subsequent to joining)

ISO 9001 Certified

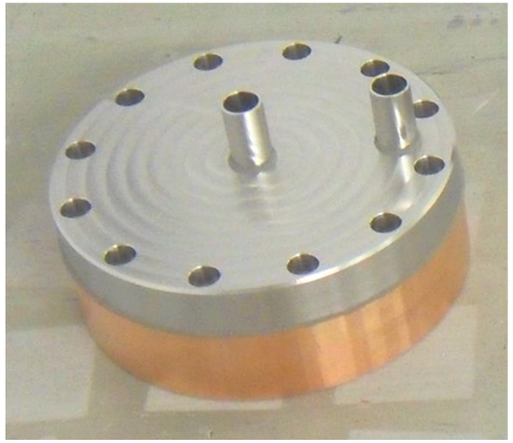
mat-tech
production

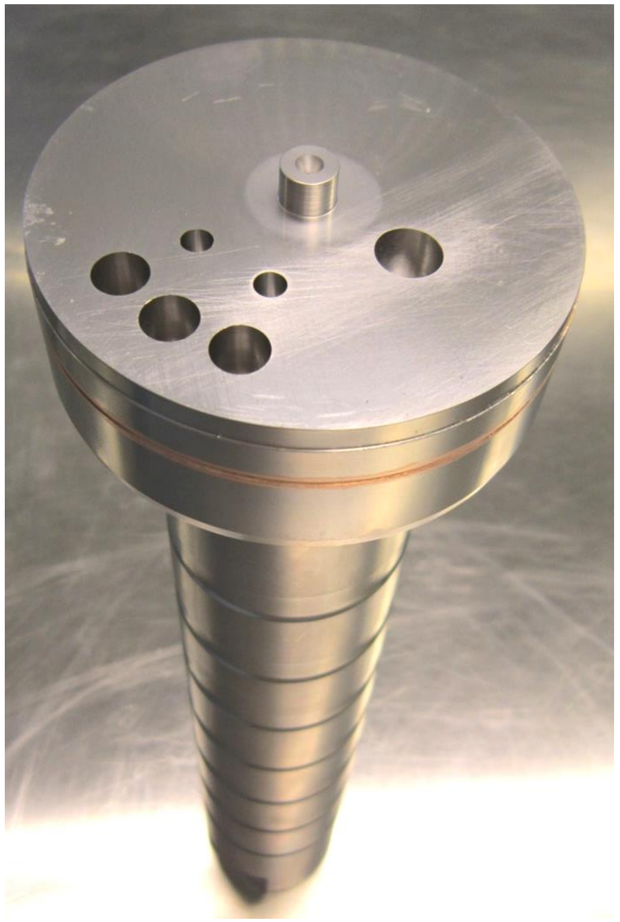
mat-tech
innovative soldering & brazing

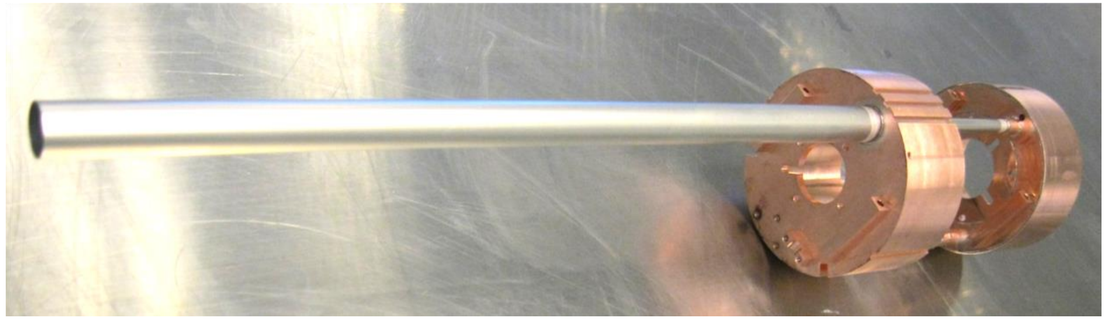
Some of our customers

EXASUN
ECN
AIXTRON
TE connectivity
BRUKER
FEI
part of Thermo Fisher Scientific
PHILIPS
VACUTECH
VACUUM EN PRECISIE TECHNOLOGIE
dyson
PRODRIVE TECHNOLOGIES
APPLIED MATERIALS
STMicroelectronics
Bronkhorst®
HIGH-TECH
SIEMENS
ASML
NEWAYS®
VDL
NESPRESSO
FLEXTRONICS
Fokker
ATAG
Quooker®

Some examples:







Join the winning team

mat-tech
innovative soldering & brazing

We will develop a strong bond!

mat-tech
development & testing

mat-tech
production

mikrocentrum

training • events • business

Trade fairs (11 annually)

Courses (> 600 annually)

mikrocentrum

training • events • business

Networking events and Conferences (>30 annually)

High Tech Platform (>550 members)

Precision Fair

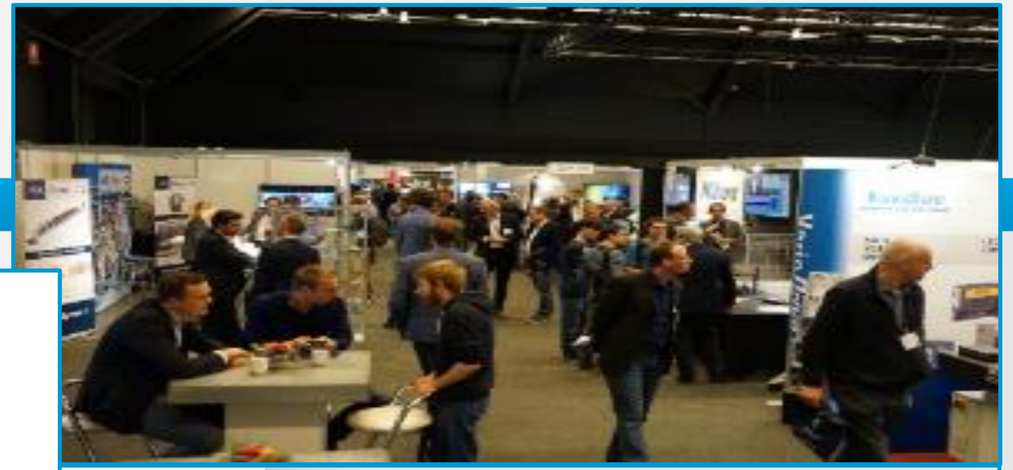
INVITATION:

Precision Fair

Visit our main technology event!

Since 2012 a yearly growing number of your Big Science colleagues visited this event!

Speaker program, dedicated BIG SCIENCE sessions



Tradeshow, >300 selected high-tech suppliers and OEMs

Ongoing parallel meet-and-match event

Precision Fair

Strong profile visitors from top-tech supply chain, institutes and universities

Your colleagues visiting previous years, including Mr. Sijbrand de Jong, president of the CERN council;

Precision Fair

2012:

Philippe Lebrun
Cristina Lara Arnaud
Germana Riddone
Nerea Mouriz Irazabal
Christophe Collette
Mark Butcher
Wim Maan
Laurent Deparis
Andrea Cornacchini
Adriaan Rijllart
Tim Tsarfati
Piet van Otterloo
Kirsten Soekhoe
Rob Klöpping

2013:

Erwin Siesling
Yacine Kadi
Kurt Artoos
Stef Janssens
Pierre Moyret
Gabor Nemeth
Dimitri Argyriou
Eric Boom
Jan Visser
Germana Riddone
Christophe Collette
Wim Maan
Tim Tsarfati
Piet van Otterloo
Kirsten Soekhoe
Rob Klöpping
Sebastien Sonnerat
Ron(aldus) Suykerbuyk
Ute Gunsenheimer
Bert Wolterbeek
Roelof Klöpping

2014:

Mateusz Sosin
Erwin Siesling
Kurt Artoos
Stef Janssens
Eric Boom
Christophe Collette
Tim Tsarfati
Kirsten Soekhoe
Rob Klöpping
Ron(aldus) Suykerbuyk
Ofelia Capatina
Jean-Marc Malzacker
Clement Derrez
Boi-Lan Nguyen Lemoine
Didier Dallé
Jean-Michel Georgoux
Stan Bentvelsen
Nuria Catalan Lasheras
Olivier Brunner

2015:

Eric Boom
Christophe Collette
Tim Tsarfati
Rob Klöpping
Ron(aldus) Suykerbuyk
Philippe Lebrun
Anastasiya Solodko
Nuria Catalan Lasheras
Helen Mainaud Durand
Solomon William Kamugasa
Vasileios Vlachakis
Peter Novotny
Francois-Xavier Nuiry
Adam William Horridge
Frédéric Savary
Lukas Pazdera
Arnout Tromp
Roberto Tamai
Håkan Danared
Leonardo Biagioni
Michael Krisch
Ingrid Milanese
Caroline Paris
Dean Gibson
Kirsten Verkaik
Roelof Klöpping
Toon Verhoeven
Ramon Navarro
Wilfried Boland
Rik Linssen

2016:

Mateusz Sosin
Eric Boom
Rob Klöpping
Ron(aldus) Suykerbuyk
Kirsten Verkaik
Toon Verhoeven
Stan Bentvelsen
Arend Dinius
Hector Garcia Gavela
Gaelle Breuillaud
Henrik Bjerke
Luigi Semeraro
Anthony Courtial
Kees Bertus Scheidt
Gerard Cornet
Patrick Werneke
Eric Hennes
Henk van Weers

2017:

Eric Boom
Rob Klöpping
Kirsten Verkaik
Toon Verhoeven
Gerard Cornet
Eric Hennes
Leonardo Biagioni
Michael Krisch
Jan Visser
Mark Butcher
Sijbrand de Jong
David Carbajo Perez
Nordine Azizi
Olaf Dunkel
Miguel Lino Diogo dos Santos
Guillaume Kautzmann
Markus Brugger
Mehdi Daval
Maxim Brendike
Jean-Charles Deshayes
Roelof van Silfhout
Harun Dzafic
Freek Sanders

2018:

Ron(aldus) Suykerbuyk
Patrick Werneke
Eric Boom
Rob Klöpping
Kirsten Verkaik
Toon Verhoeven
Eric Hennes
Leonardo Biagioni
Jan Visser
Nordine Azizi
Mehdi Daval
Jean-Michel Georgoux
Erwin Siesling
Didier Dallé
Beniamino di Girolamo
Carmen Casteras
Anneke Spitzen
Clavel
Pierre-Yves Lacombe
Maurizio Vannoni
Pelle Speet

What to find in most dense concentration possible:

- **Technology transfer** opportunities
- **Purchasing** of small parts and services
- **Purchasing** of big complex parts and services
- **Connect** with universities and institutes
- **Form collaborative groups**;

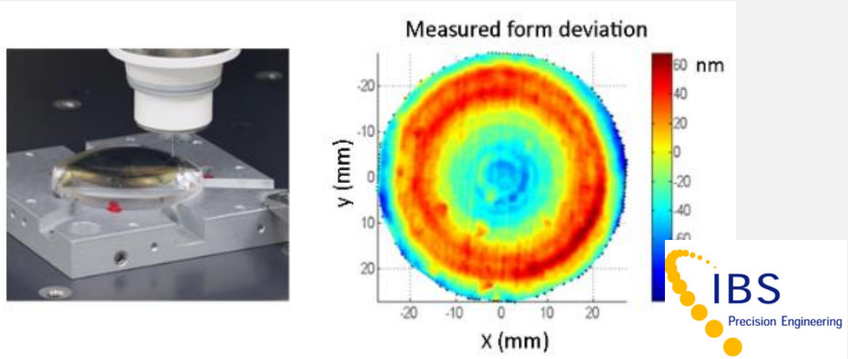
  a strong competence of this region
  to collaborate and incorporate many technologies
  in 1 common innovative high-tech end-product.

Come meet over 300 top-tech companies behind previous successful projects:

Precision Fair

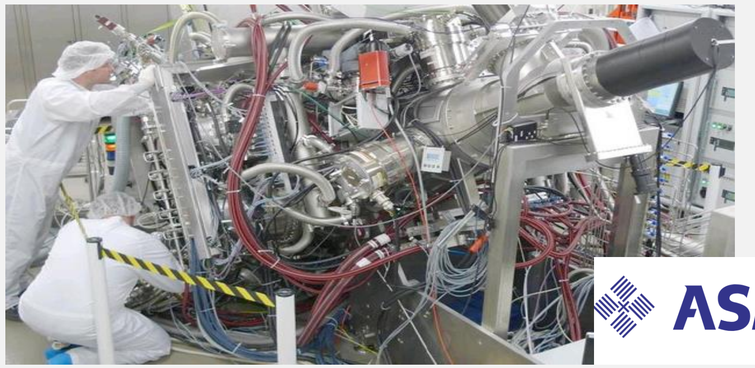
IBS for soft materials project:

9 nm (2σ) accurate measurements performed that the rest of Europe could not manage.



ASML worldleader OEM for chipmanufacturing machines:

Full top-tech supply chain in this region

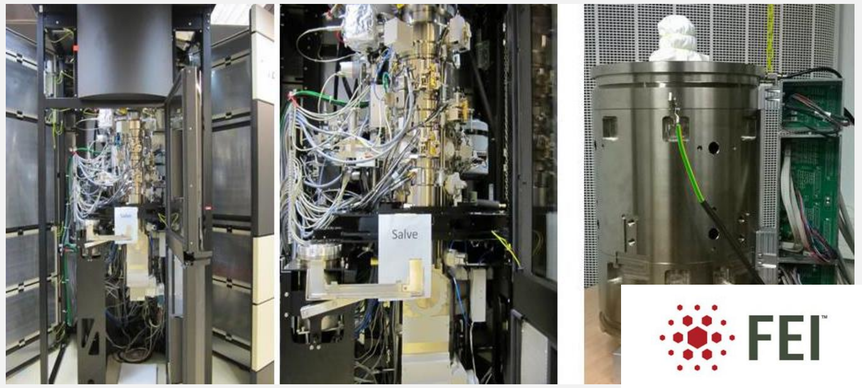


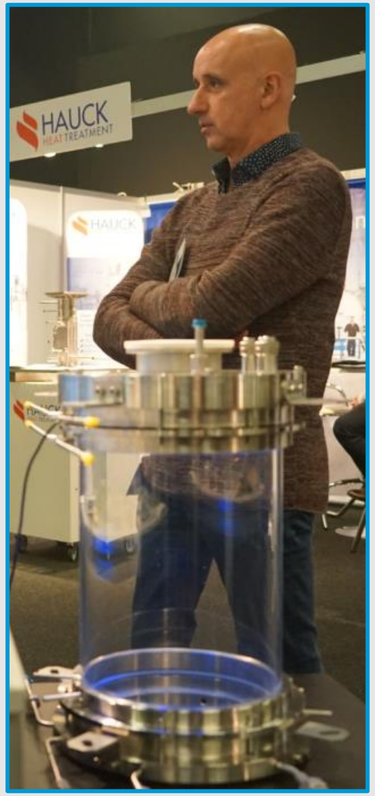
PHILIPS world innovator origin:

Full high-tech supply chain and spinout technology companies attending

FEI OEM for sub angstrom electron optics:

Full top-tech development and supply chain in this region





More info

Precision Fair

Today Attending @ CERN:

Mr. Geert Hellings, Managing Director

Mr. Bart Kooijmans, Manager Precision Technologies

Stand No 1. on second floor (Salle “Pauli 1-001”)

- - Share your ideas! - -

Precision Fair

Come visit, meet scientists and top technology companies!

Nijdra Group – System Supplier

Nijdra Group @ CERN 2019

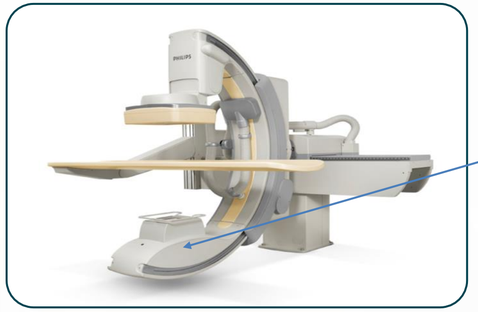
Company Information

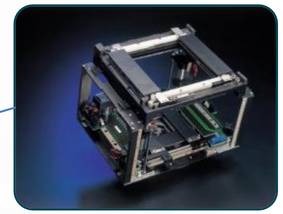
- Family owned company, since 1947 (Amsterdam)
  - CNC turning & CNC milling, highly automated and robotised series production
  - CNC grinding in micron range
  - Co-engineering, (cleanroom) assembly and testing of mechatronic assemblies
  - Protoshop / fast-lane production of small series high complex parts
- FTE: 110
- Turnover 2018: >€23M
- Export: >50%

Project examples

Collimator:

- Adjustment of X-rays
- Module consists of 450 parts
- Fully assembled and tested
- Parts traceable via track & traceability system
- Service and upgrading

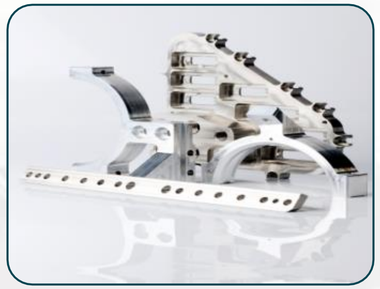




PHILIPS

ASML parts:

- Grade 2-4 parts
- Cleaning proces
- Cleanroom assembly



ASML

Project example

Goniometer XRD:

- High resolution X-ray diffract meter
- Linear alignment within 3 Mu
- Axes set tolerance 5 Mu
- Developed together with Panalytical/CERN/Nijdra

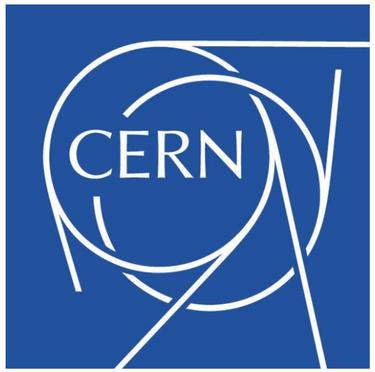
PANalytical

Final 6

- Oceanz
- Photonis
- Settels Savenije
- Steered
- Technolution
- TNO

Additive Manufacturing:

“A disruptive technology,
enabling you to change paradigms”



Erik van der Garde
CEO

oceanz.
Your 3D printing professional

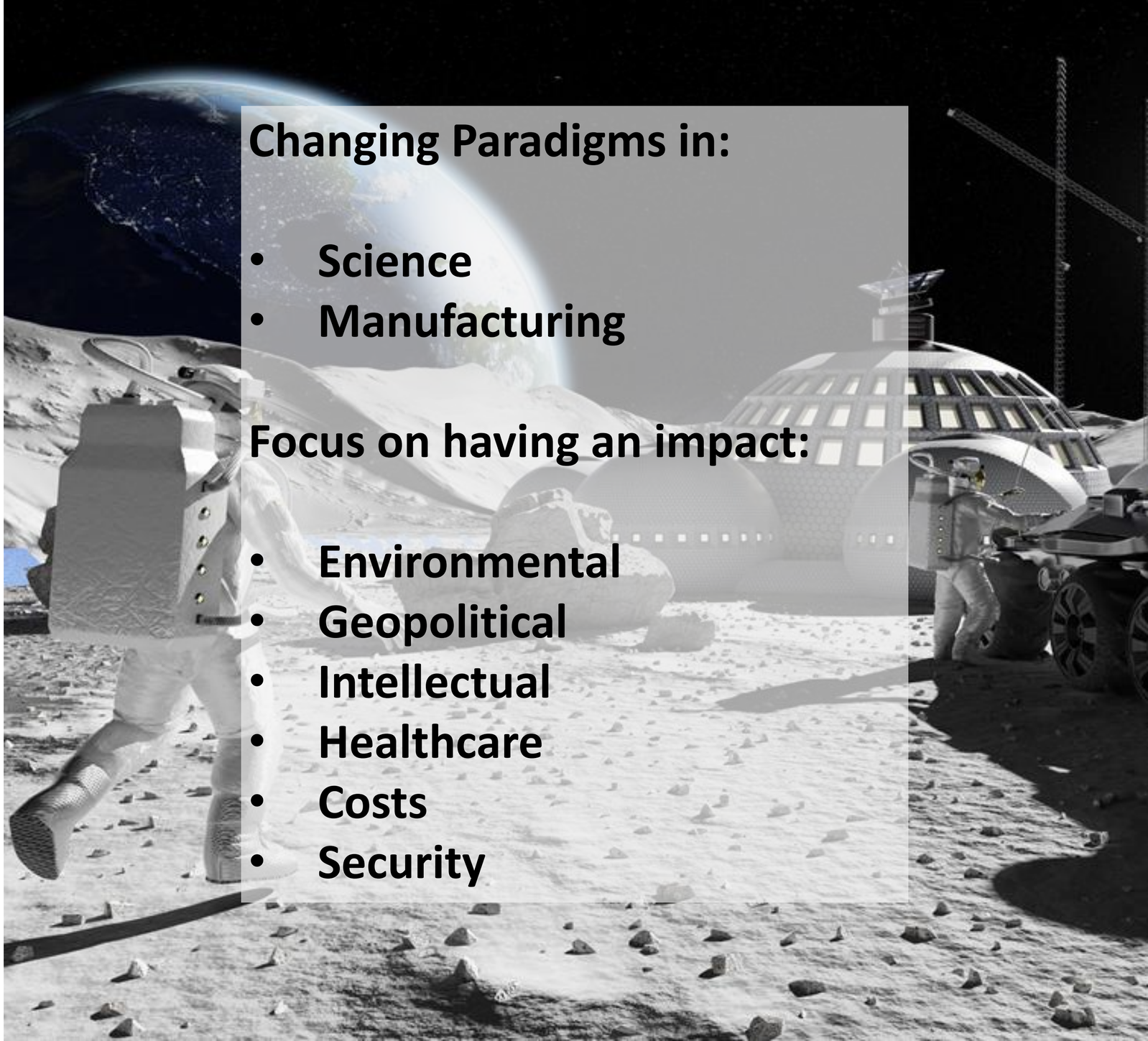
MUTUAL MISSIONS

Mission CERN:

- To provide a unique range of particle accelerator facilities that enable research at the forefront of human knowledge.
- To perform world-class research in fundamental physics.
- To unite people from all over the world to push the frontiers of science and technology, for the benefit of all.

Mission Oceanz:

- Make it Matter



Changing Paradigms in:

- **Science**
- **Manufacturing**

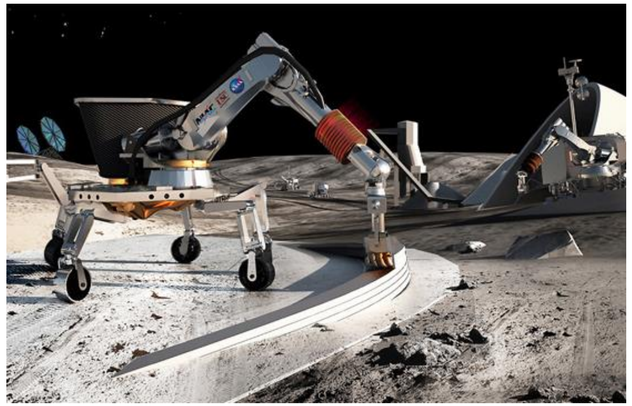
Focus on having an impact:

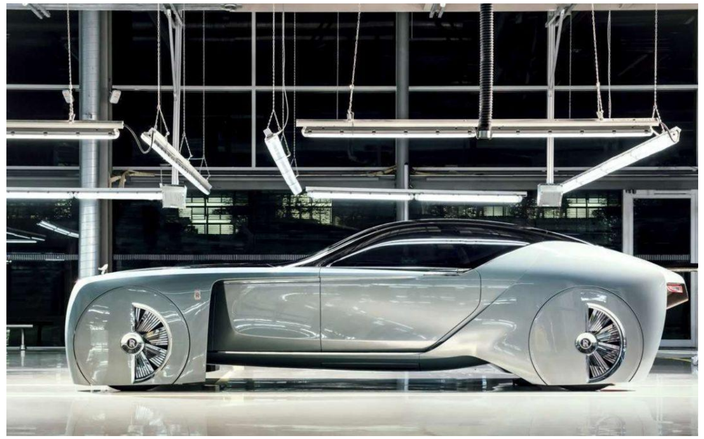
- **Environmental**
- **Geopolitical**
- **Intellectual**
- **Healthcare**
- **Costs**
- **Security**

LET’S
CO CREATE!

- Only if we add value
- Any shape
- Dutch Additive Manufacturing
  - ISO 9001
  - Quality

What would you build?





oceanz.
Your 3D printing professional

PHOTONIS
Scientific Detectors

PHOTONIS @ CERN

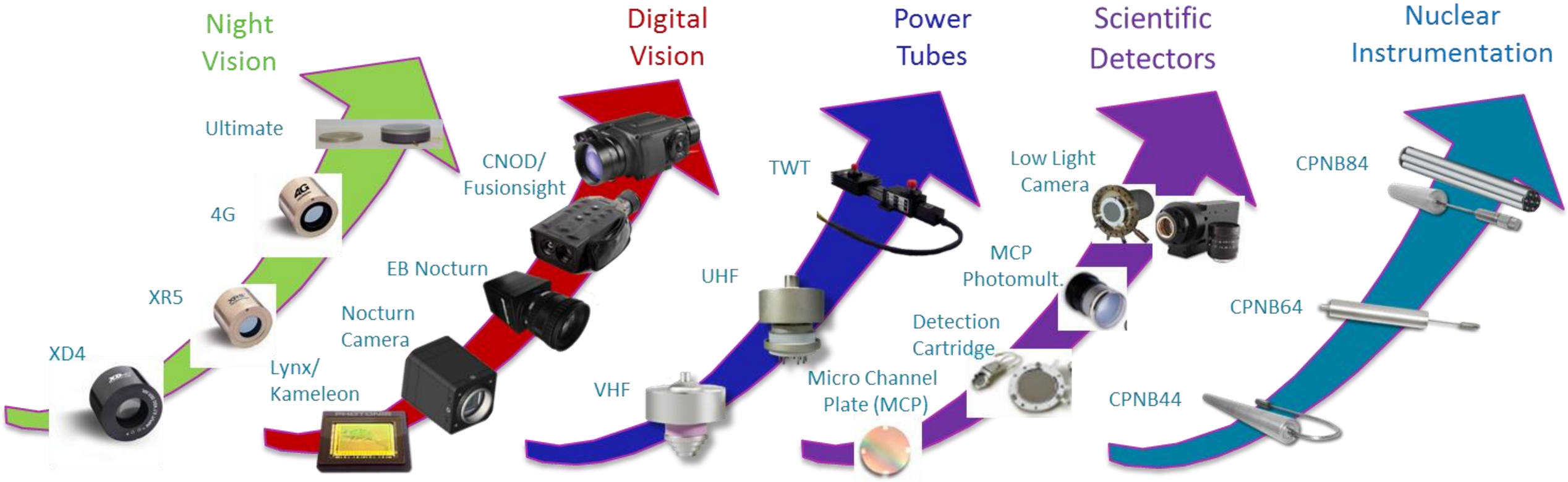
Building Blocks for customized Solutions

Holland at CERN
04-06.06.2019
Dmitry Orlov

PHOTONIS : a short introduction

PHOTONIS
Scientific Detectors

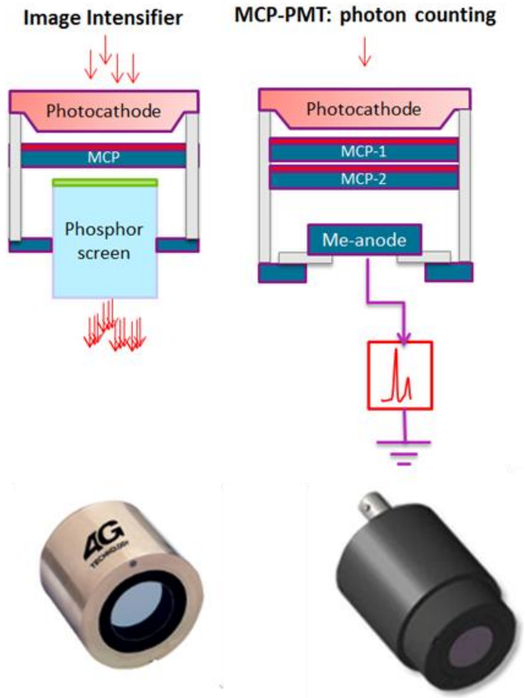
- Figures: >40 years – 1000employees – US / F / NL
- Fields: defence – space – scientific instrumentation – industry



Key performances

- High Speed
- High Quantum Efficiency
- Low noise

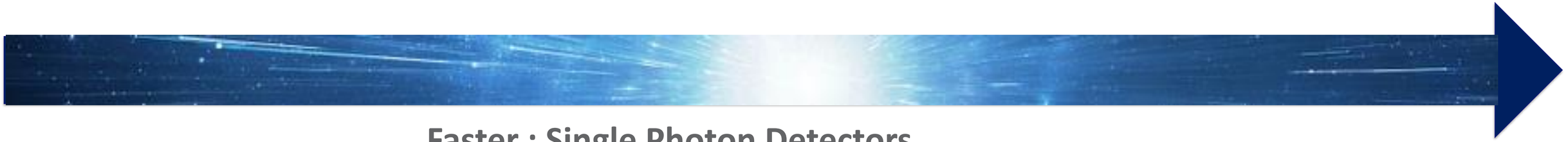
- Custom designed



Key features : Timing

Fast : Gated Intensified camera's

- Fast gating : 3 ns - 300ps



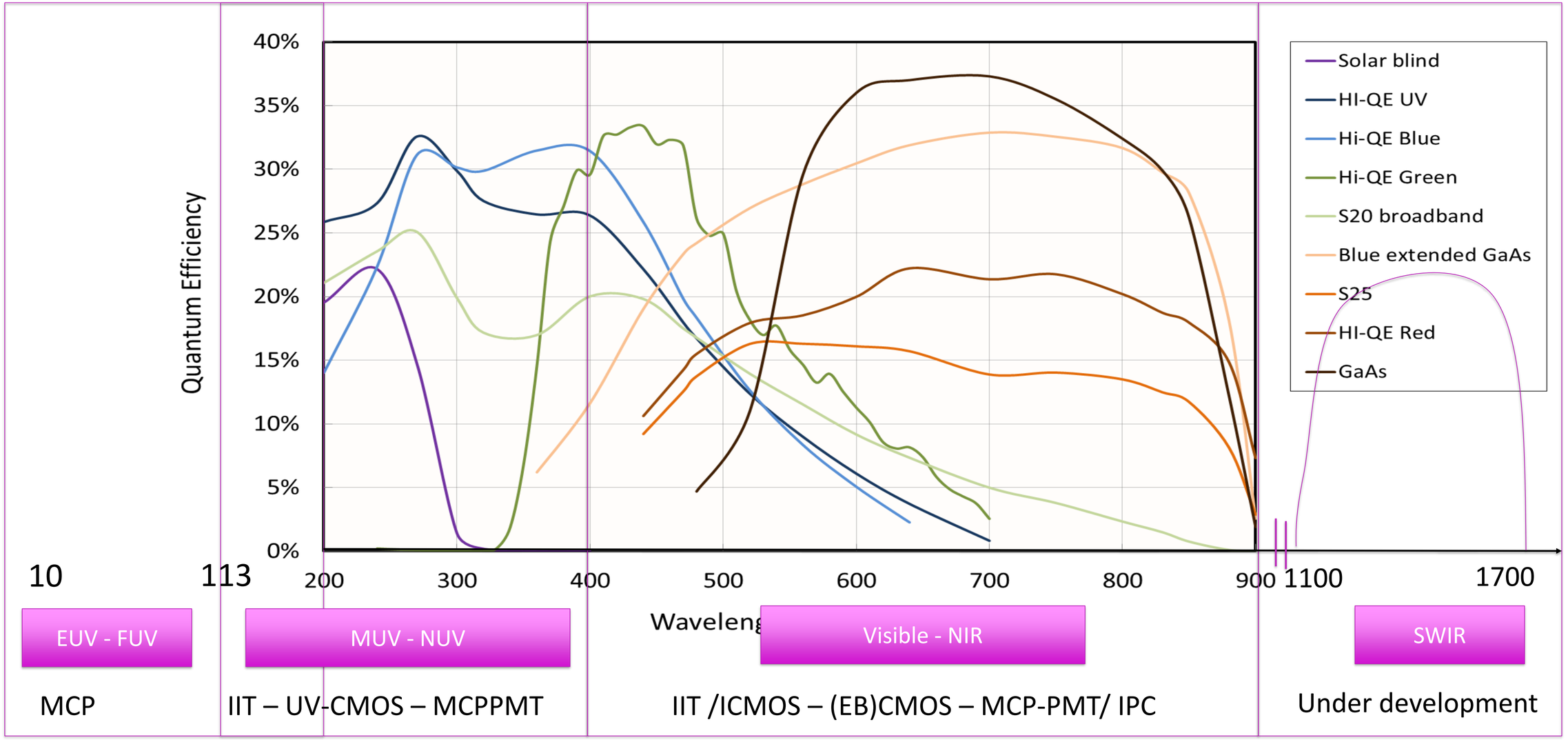
Faster : Single Photon Detectors

- <40ps TTS – 100ps rise time – 300ps FWHM
- >2GHz detection rate

Fastest: Streak cameras

- < 1ps time resolution

Spectrum coverage



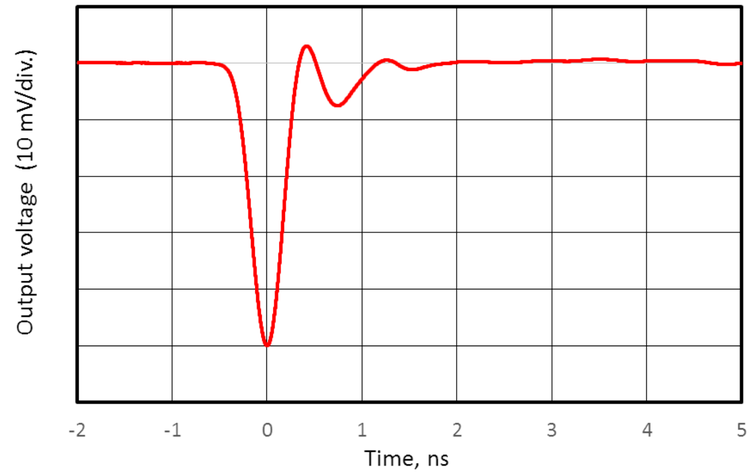
Neutrons / X-rays

MCP-PMT : Hi-QE QE, dark rate, PHD

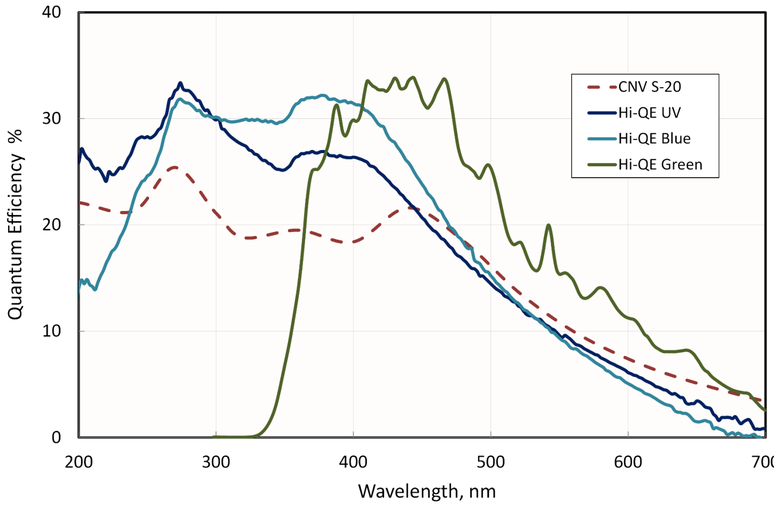
PHOTONIS Scientific Detectors

Number of MCPs: 2 (chevron)
Dimensions: 18mm (also 8mm UCD)
Gain: 10^5
TTS : ~40 ps sigma
Max. rate (photon counting): ~1 GHz (pulse mode)
Detection: Single photon
Magnetic resistance: 3 T

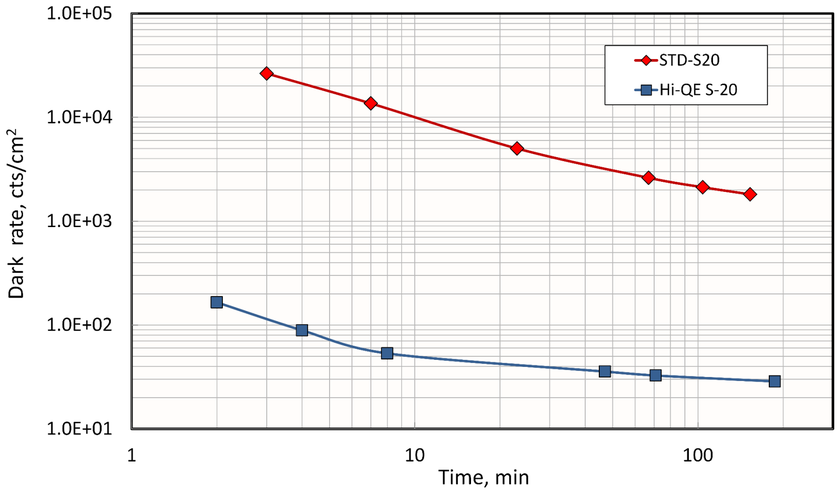
QE peak (Hi-QE series) > 30%
Dark rate: down to 30 cts/cm2
PHD: single photon resolved



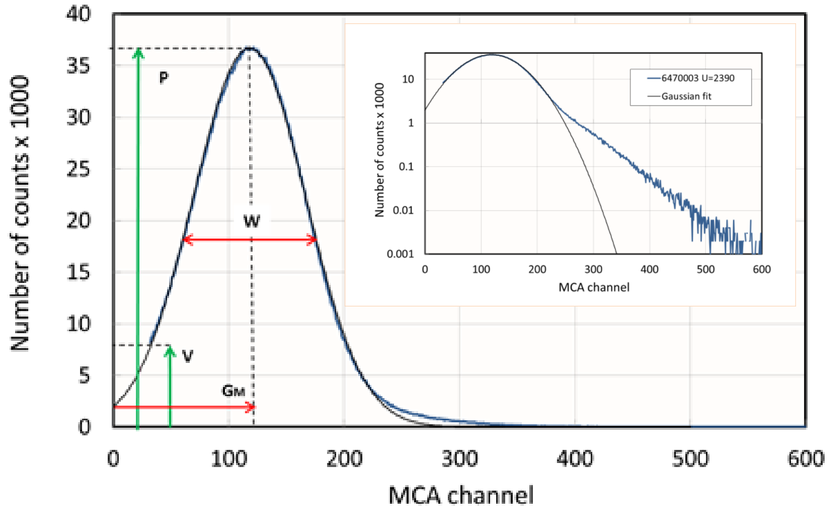
QE spectra Hi-QE S-20 photocathodes



Dark rate vs time



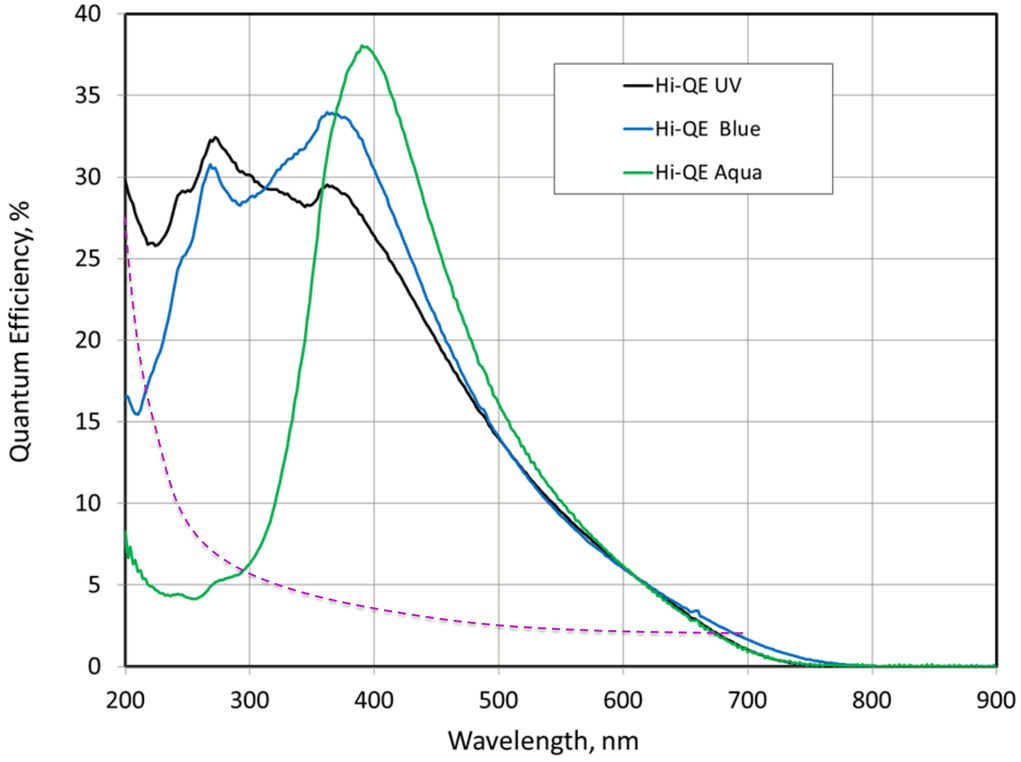
Pulse Height Distribution (single photon)

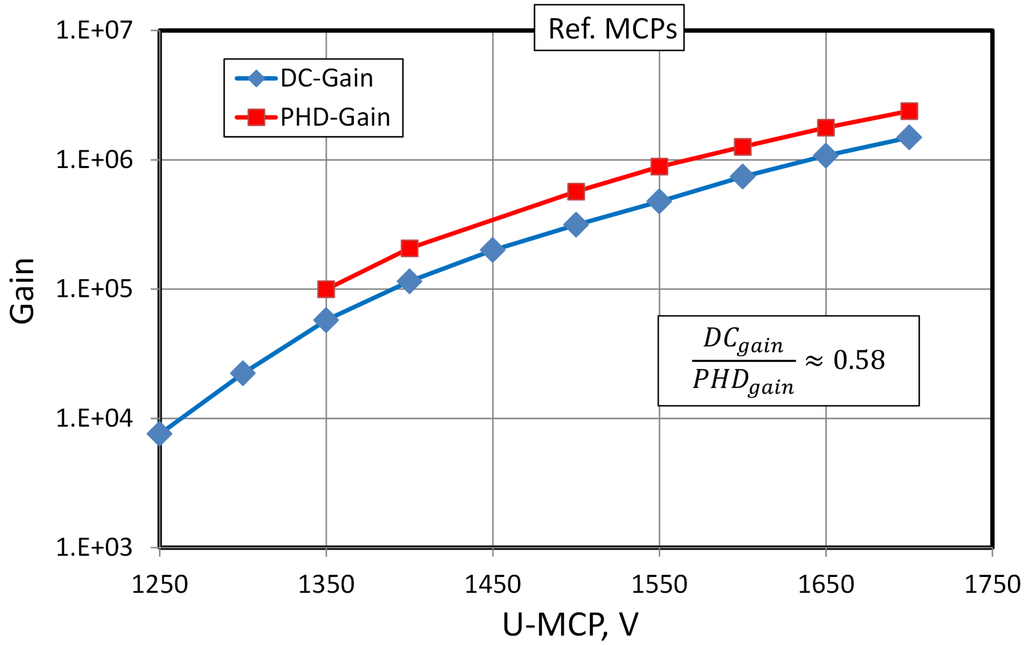


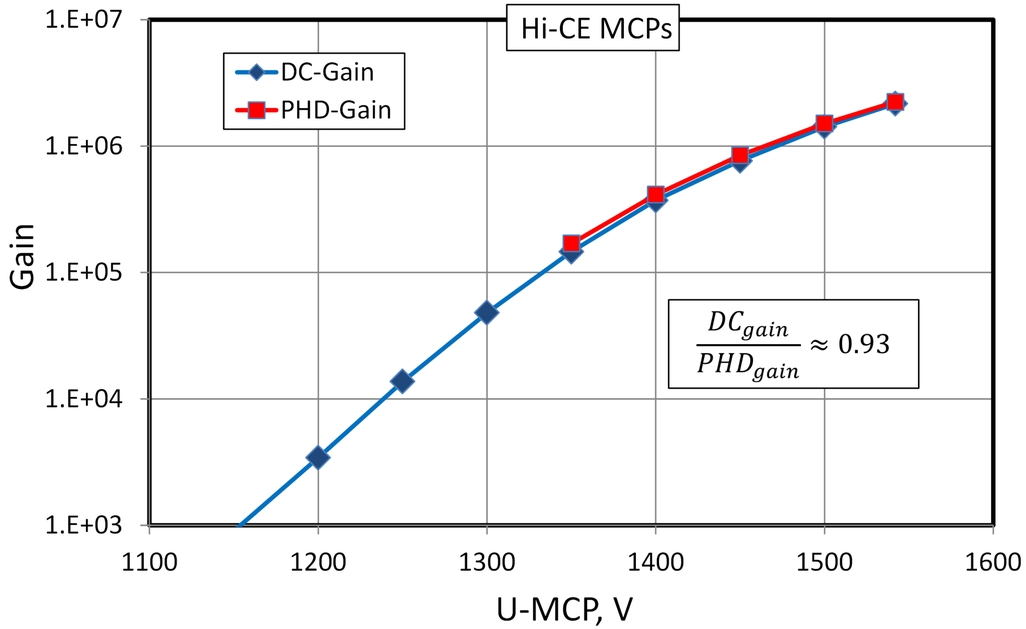
D.A. Orlov, J. DeFazio, S. Duarte Pinto, R. Glazenborg, E. Kernen, High quantum efficiency S-20 photocathodes in photon counting detectors, JINST **11** (2016) C04015

Cherenkov Radiation : Planacon

- Photocathode QE >32% in the peak / tuning peak possible
- Gain >1E6
- DQE = >90%QE => CE close to 100% !
- Small degradation of TTS <1ns in the Hi-CE config.







For questions
and more information

PHOTONIS
Scientific Detectors

Please join us at our stand

PHOTONIS Technologies S.A.S.
Domaine de PELUS - Axis Business Park
Bât 5 E - 18 Avenue de Pythagore
33700 MERIGNAC - France

T +33 (0)556 16 40 50
F +33 (0)556 16 40 62
www.photonis.com

E.Schyns, F.Baas & D.Orlov

settels savenije
group of companies

WHEN BUSINESS, PEOPLE & TECHNOLOGY NEED AN IMPULSE

settels savenije
group of companies

Holland.

WHERE PHYSICS, MECHATRONICS & CLEANLINESS MEET

Settels Savenije – where physics, mechatronics and cleanliness meet

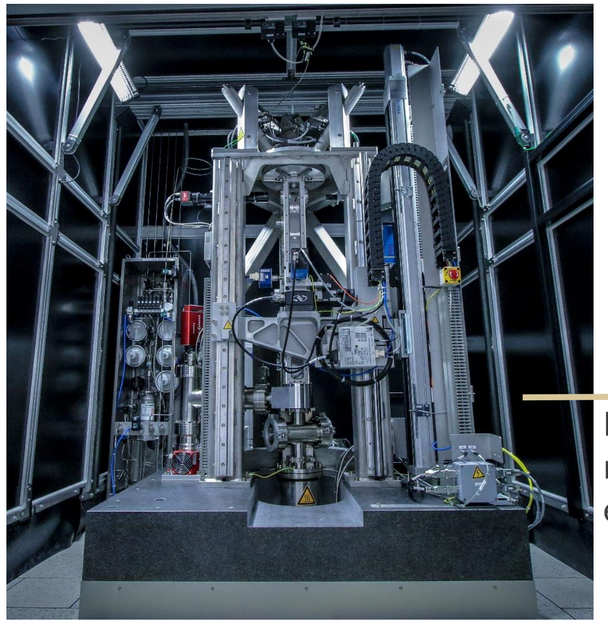
total solution provider

for development and realization

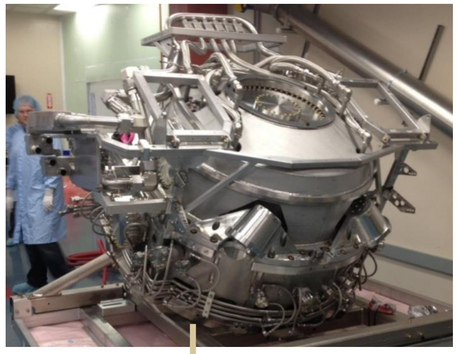
of high tech equipment, systems and critical components

- R&D integrating physics, optics and mechatronics
- In-house production of critical components
- Assembly & test (600 m² Iso6), cleaning & qualification (RGA 2x2x1m)

when everything is uncertain, anything is possible..

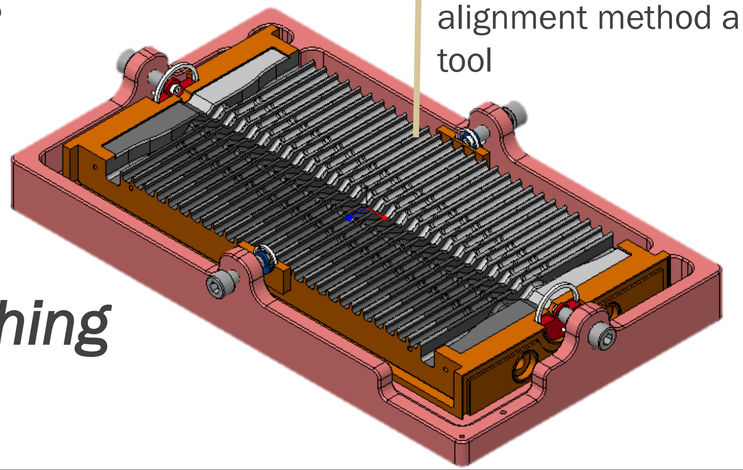


Research tool for molten metals at extreme pressures

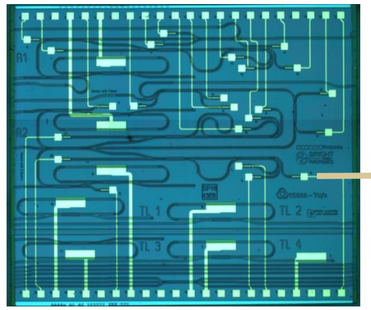


EUV Source Vessel design

Research tools for materials deposition



CLIC Module alignment method and tool



Integrated Photonics Interferometer

thank you for your attention

WHEN BUSINESS, PEOPLE & TECHNOLOGY NEED AN IMPULSE

STEERED Technology

Connecting the dots to make your system work!

Holland@CERN

2019

CERN, Geneva, Switzerland

High Performance interconnection systems

- **Engineering & Manufacturing company**
- **Locations in the Netherlands, France & India**
- **Focus on high mix, low volume**

- **Copper**
- **Fiber**
- **Flex**

- **For System to System, Inside cabinet & Testing.**

Engineered Solutions Creating Value

Reduce Total Cost of Ownership ……

- Increased performance or functionality
- Reduced production or assembly time,
- Creating design freedom for engineering
- Improve reliability, reduce service cost
- Flexibility in manufacturing or application

- **HIGH MIX, LOW VOLUME!**

High Performance, different media.

STEERED Technology

Fiber

AOC: Active Fiber

Copper

High Performance and ruggedized connectors.

STEERED Technology

T&M

CPCI

Semi conductor

Medical

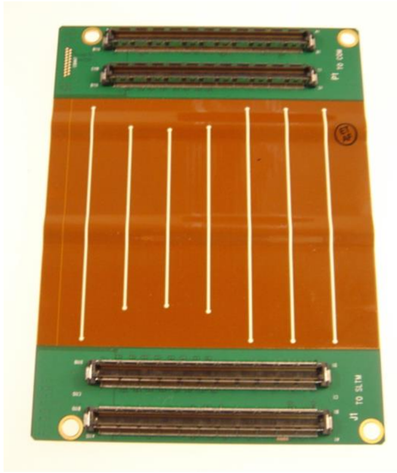
Military

Server

Flex and Interposer technology

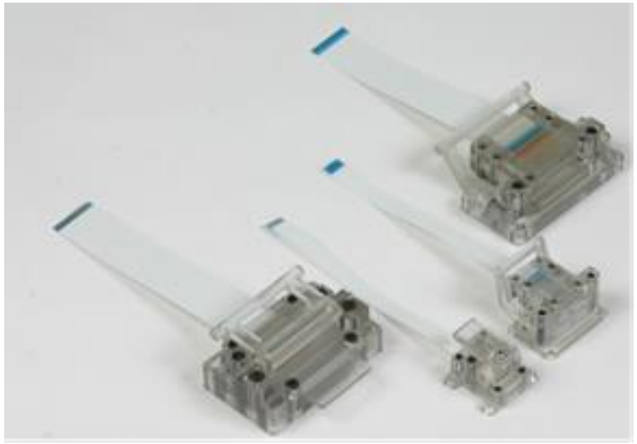
STEERED Technology

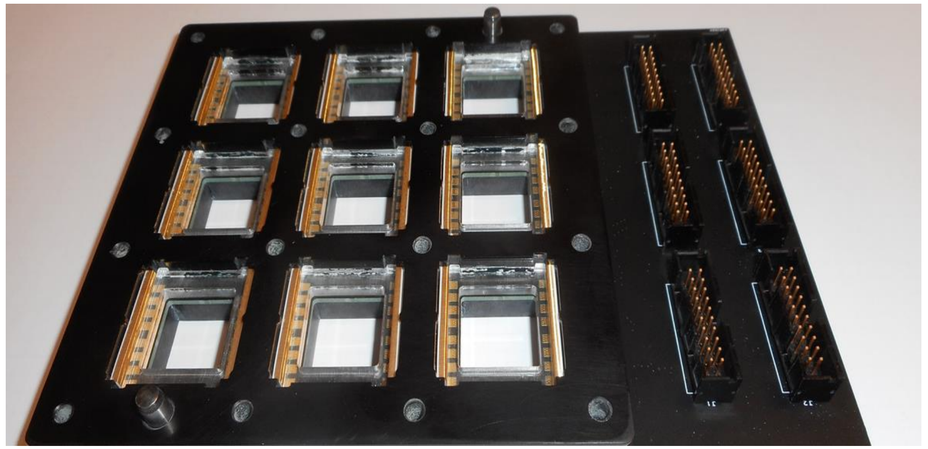
T&M



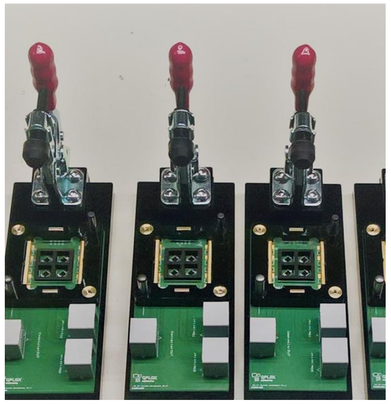
Flex as cabled interface

Semiconductor & Module test adapters

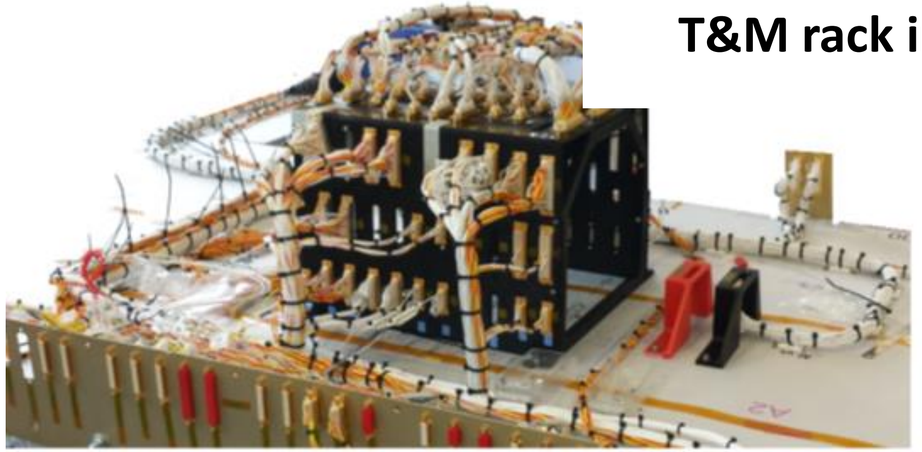




Integration solutions



T&M / Satellites test bench,
T&M rack integration



Selection Customer base

STEERED Technology

Test & Measurement

Semiconductor

Mil / Aerospace

Embedded Computers

EMS & sub systems

STEERED Technology

Summary:

- Experienced team
- Own Technology + World class portfolio
- Easy to do business with.
- High mix / Lower volume specialist
- From brainstorming to supply

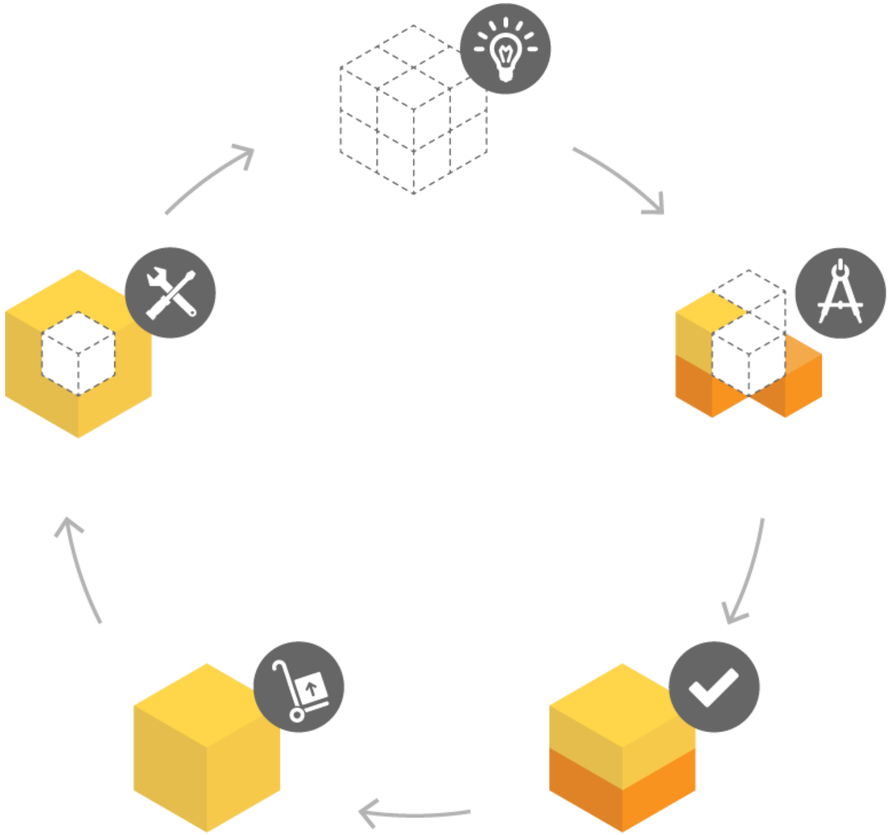
STEERED Technology

Connecting the dots to make your system work!

Thank you


Technolution

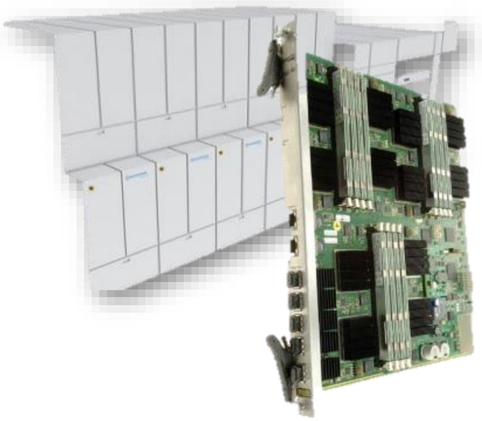
- System Development
  - Electronics Design
  - VHDL design for FPGA / ASIC
  - Embedded / Application Software
  - Algorithms



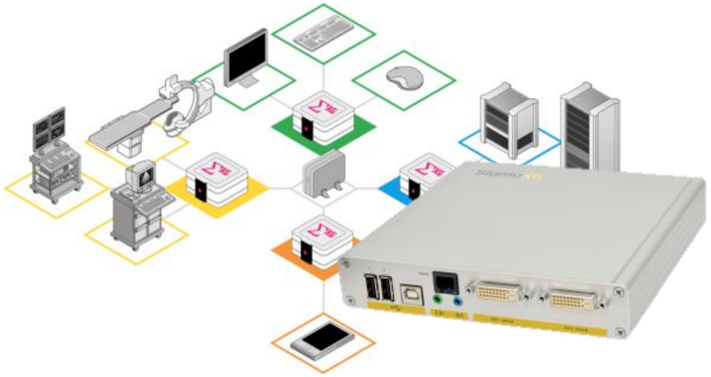
- Project / Life Cycle / Supply Chain Management
  - ISO 9001 / 14001 / 27001
  - Mission-, safety-, security-critical

Technolution

/ high-tech



High volume data processing



SigmaXG by Technolution

Imaging & Control

Motion Control

Electron Optics

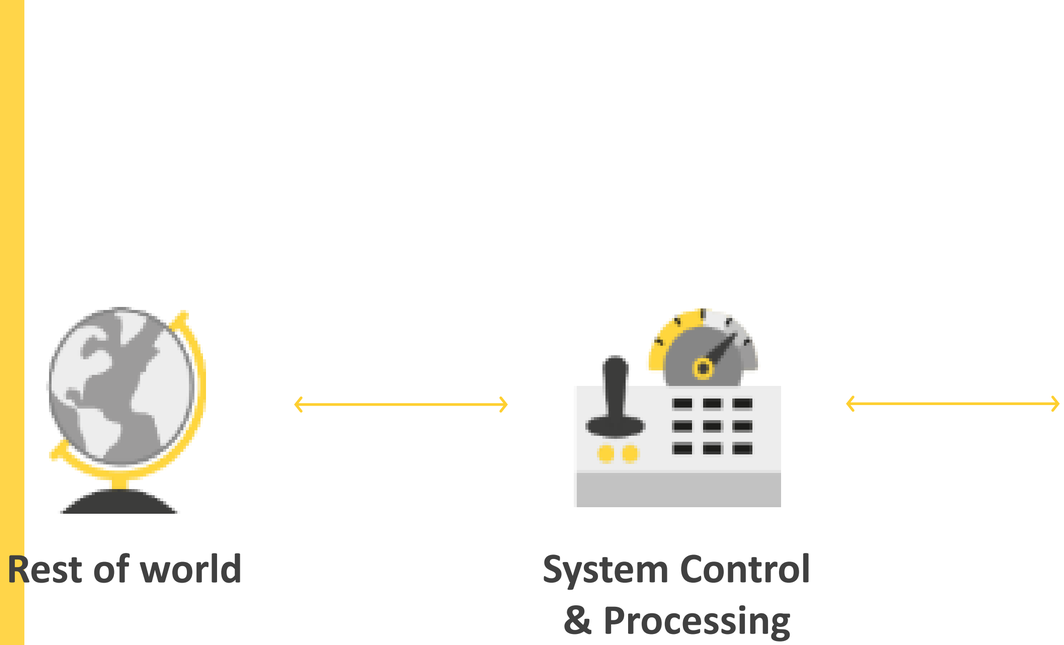
BOSCH

PANalytical

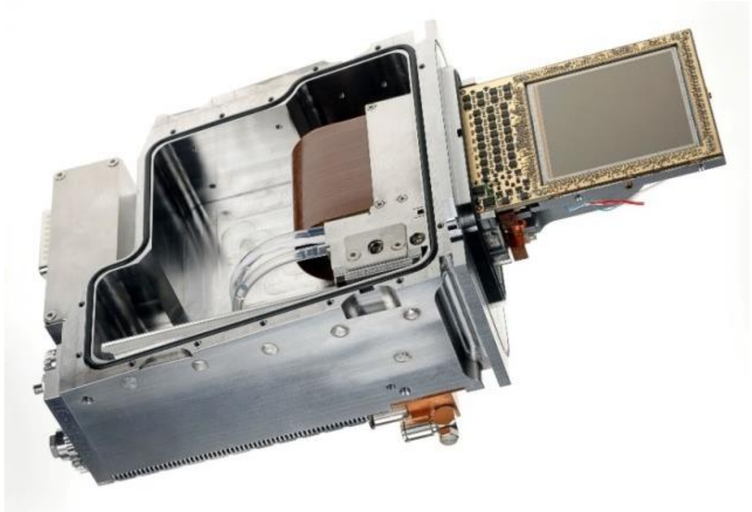
PHILIPS

ASML

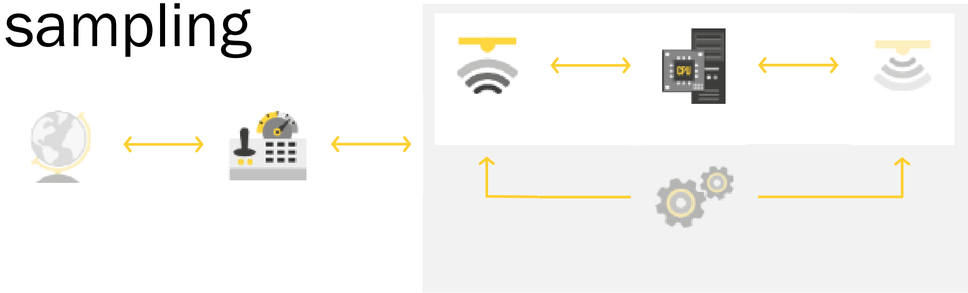
FEI COMPANY


Rest of world
System Control
& Processing
Sensor
Processing
& Control
CPU
Actuators
The Physical System

Electron microscope imaging

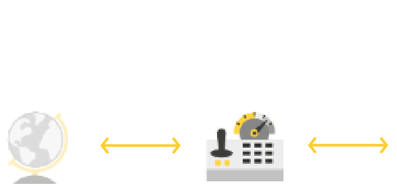


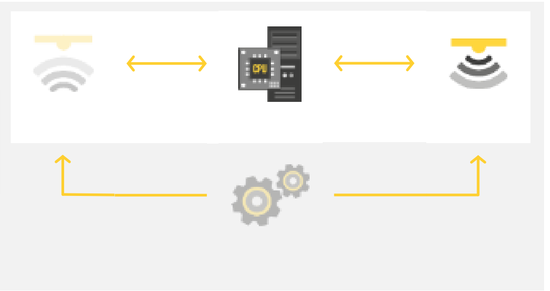
- High-speed low-noise analogue signal transport / sampling
- High-vacuum compatible PCB design
- 10-Gigabit data communication
- High-speed image processing
- Real-time video transport



Pattern Streamer for e-beam lithography

- Real-time image processing in FPGA @ 21 Tb/s
  - Error corrections
  - Resample and re-dither
- Massive parallel processing
  - Multiple FPGAs per board, multiple boards per system
  - Bit synchronous @ 4Gb/s operation throughout the system





Technolution

Gerard Rauwerda Business Developer
Edwin Hakkennes Architect
T: +31 182 59 4000
E: Gerard.Rauwerda@technolution.nl

TNO SPACE & SCIENTIFIC INSTRUMENTATION

MATTHEW MANISCALCO
SENIOR BUSINESS DEVELOPER, TNO

TNO innovation for life

Credits: ESO

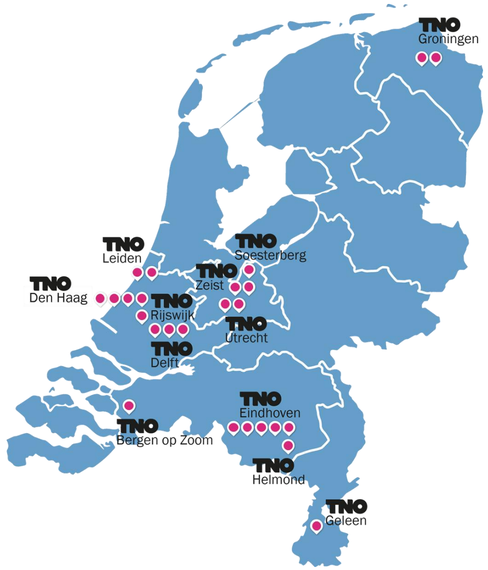
TNO

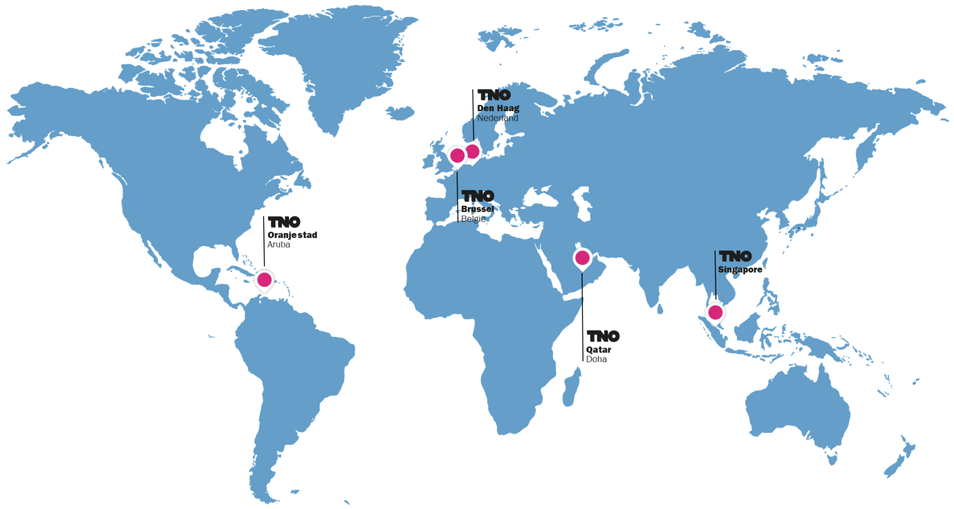
Mission

TNO connects people and knowledge to create innovations that boost the sustainable competitiveness of industry and well-being of society.

Key facts

- Technology development and consultancy
- Independent, not-for-profit organization
- Founded in 1932
- Annual Turnover ~500 MEur; 2/3 from industry and 1/3 from Dutch Government
- Some 3,000 employees, scientists and engineer, professors (MSc, PhD)
- TNO = Netherlands Organization for Applied Scientific Research





MORE THAN 50 YEARS HERITAGE, 100% RELIABILITY

Within a flight heritage of more than 35 years TNO has a proven track record in space instruments and components. Delivering breakthrough technology, components, ranging from spectrometers for Earth observation and planetary exploration to high-tech mission-critical space components.

Dozens of satellites are equipped with systems that have been designed, built and tested by TNO. Our climatological models, which combine ground-based and space measurement are used on a daily basis by the Royal Netherlands Meteorological Institute. TNO works in compliance with international quality and confidentiality regulations. TNO helps to improve the quality of life on Earth and stimulates the search for signs of life beyond our world.

Spectrometer S59
1970

R7 on Skylark sounding rocket

UV and soft X-ray on ANS satellite

Sun Acquisition Sensor

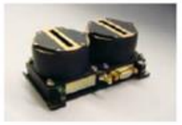
Leinax on Terrier – Sandhawk sounding rocket

1980
Faint Object camera on Hubble space telescope

DAX on IRAS

Refocus mechanism on Hipparcos

Attitude Anomaly Detector



Short Wave Spectrometer on ISO satellite
1990

Global Ozone Monitoring Experiment (GOME)

Achromatic phase shift for DARWIN satellite

1996
Launch ARIANE 5

InSAR PSI

Nulling breadboard for DARWIN satellite

OMI

2000
SCIAMACHY on ENVISAT

High Precision Optical Metrology for DARWIN

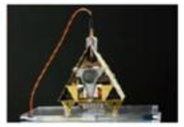
Optical delay Line for DARWIN2009

LOTUS-EUROS

GOME-2

DESDEMONA

A range of miniaturized sun sensors



RAMAN/Libs

SENTINEL 3

HERSCHEL HIFI

PRIMA Star Seperator

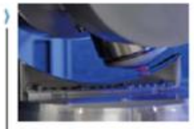
E-ELT Mirror Cell

Micro-propulsion
2010

VLT Delay lines

GAIA
Wave Front Sensor

GAIA
Basic Angle Monitoring



OTA

GAIA Auto Collimating Flat Mirror Assembly

LISA Pathfinder

OTA Laser Guide Star

TROPOMI / Sentinel 5 precursor

Cool Gas on PROBA-2

70 1980 1990 2000 2010 2020

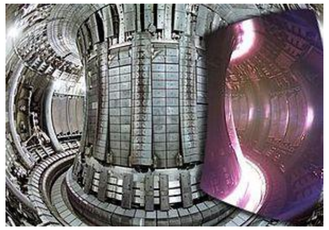
TNO innovation for life

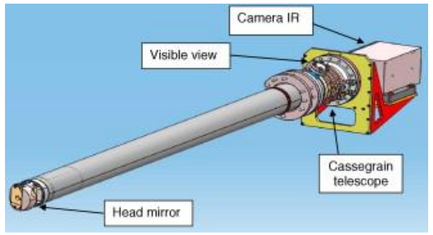
ENABLING NUCLEAR FUSION RESEARCH

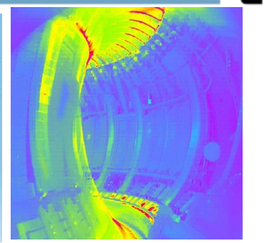
TNO innovation for life

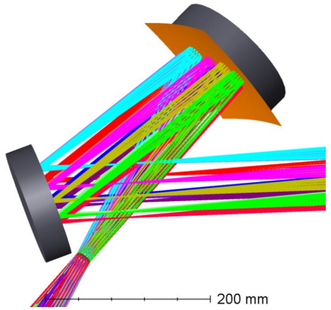
TNO Fusion Diagnostics Heritage

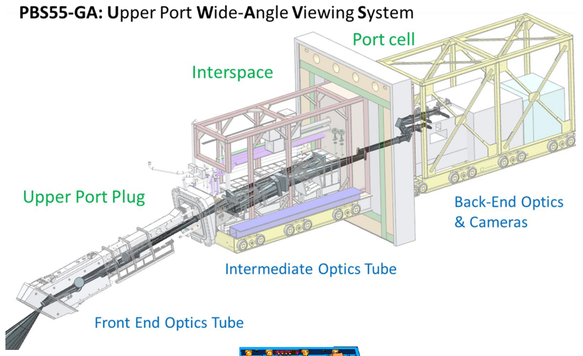
- Implemented JET EFDA visible/IR endoscope (CEA)
- Optical Design, Shutter & Plasma cleaning for ITER UWAVS (for US PPPL, GA)
- ITER Core CXRS (for ITER-nl)
- FADIS Optimized Control beamline diplexer
- W7X Optical Diagnostic Design options
- ITER-NL

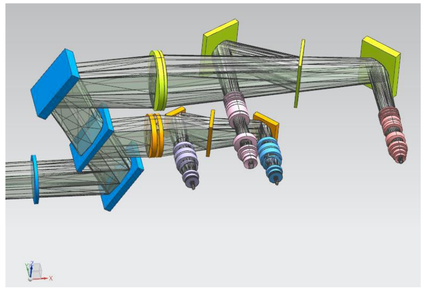


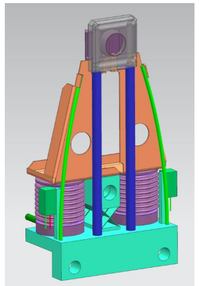


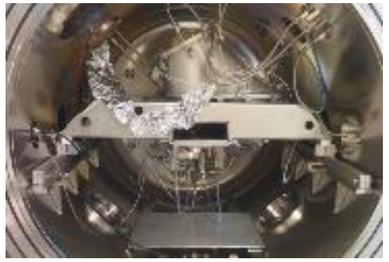






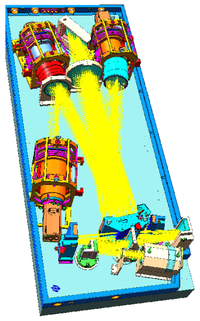


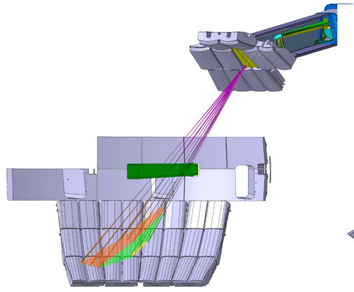


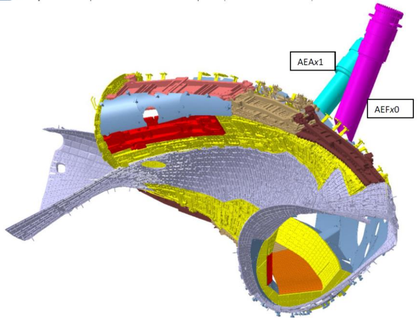


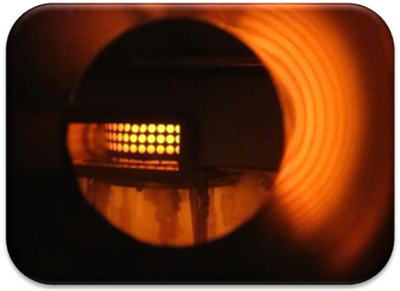
Future Diagnostics and Plasma Cleaning

- VSRS, Plasma Cleaning Japan, UWAVS Restart, Liquid Metal, General Fusion…





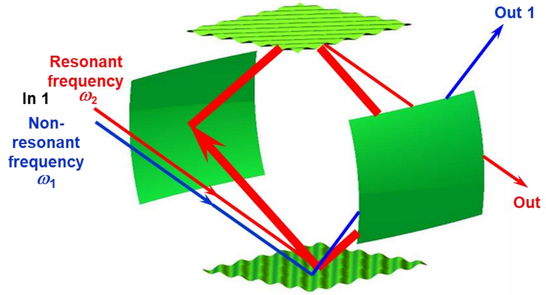


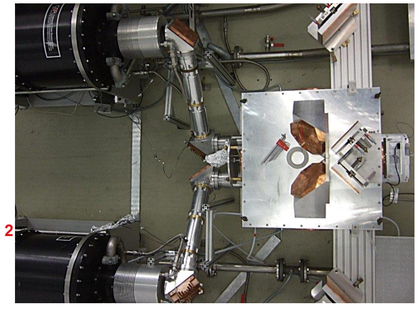


Challenges:

Extreme environment inside fusion reactors.

- Temperatures of stars, extreme radiation, magnetic fields, and high velocity particle contamination.
- TNO understands how to deliver extremely accurate instruments that will survive and function.





THANK YOU FOR YOUR ATTENTION

Take a look:
TIME.TNO.NL

TNO innovation for life

Interested, Questions?

- Please find a company representative
  - During the coffee break 15:00 – 15:30
  - Tomorrow during lunch 11:30 – 13:30
  - Contact me Jan Visser at jvisser@cern.ch