CRIOTEC IMPIANTI srl

Via F. Parigi 32/a
10034 Chivasso (TO) - ITALY

Company presentation

Roma - 22-06-2012

History

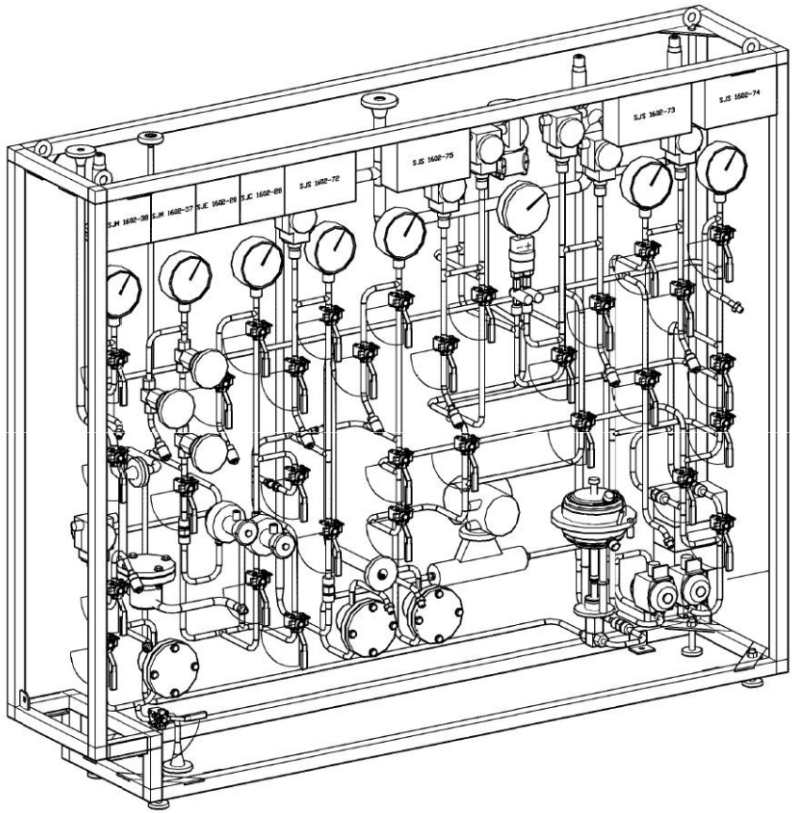
CRIOTEC IMPIANTI S.r.l. is a company specialized in cryogenic constructions and special plants.
It has been founded in 1988 by a group of specialists with more than 20 years of experience in the cryogenic field.

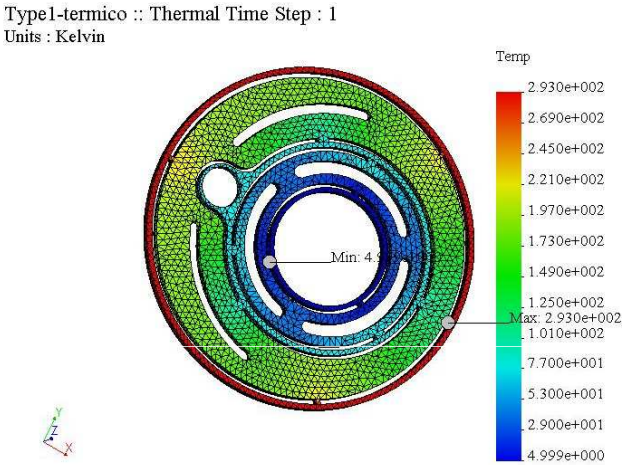
The technical competence, the professionalism and the experience of this solid and dynamic group, are the most significant characteristics which permit CRIOTEC IMPIANTI S.r.l. to be always highly competitive in the realization of sophisticated cryogenic plants on the Italian as well as on the European market.
CRIOTEC IMPIANTI S.r.l. designes, realizes and assembles plants according to customer's requirements.

History

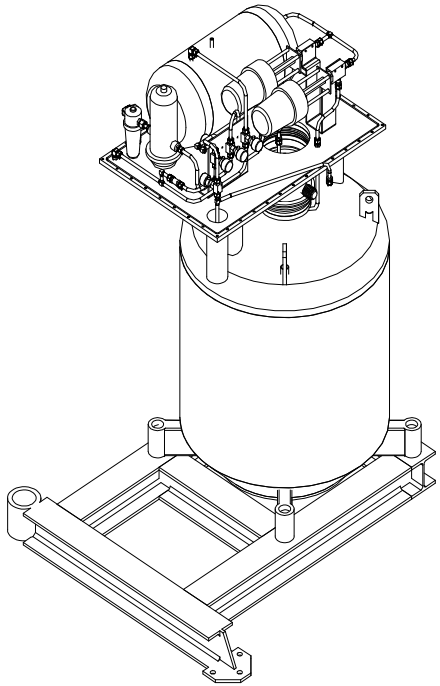
Design department:

›n.1 Technical department responsible
›n.2 Engineers
›n.5 Draftsmen





›n.5 3D CAD workspaces
›n.1 FEM analysis workspace



History

Manufacture and on-site installation:

Workshop area	> 3000 m²
Office area	600 m²
Clean room area	60 m²
Employees	35
Turnover 2011	4’000 k€

Know-how

CRIOTEC IMPIANTI experience can be mainly grouped in the following technical areas:

- ➔ Cryogenics
- ➔ High Vacuum
- ➔ Special heat exchangers
- ➔ Technical gas distribution
- ➔ Special plants
- ➔ Superconductor cables

Cryogenics – Transfer lines

➔Standard cryogenic transfer lines:

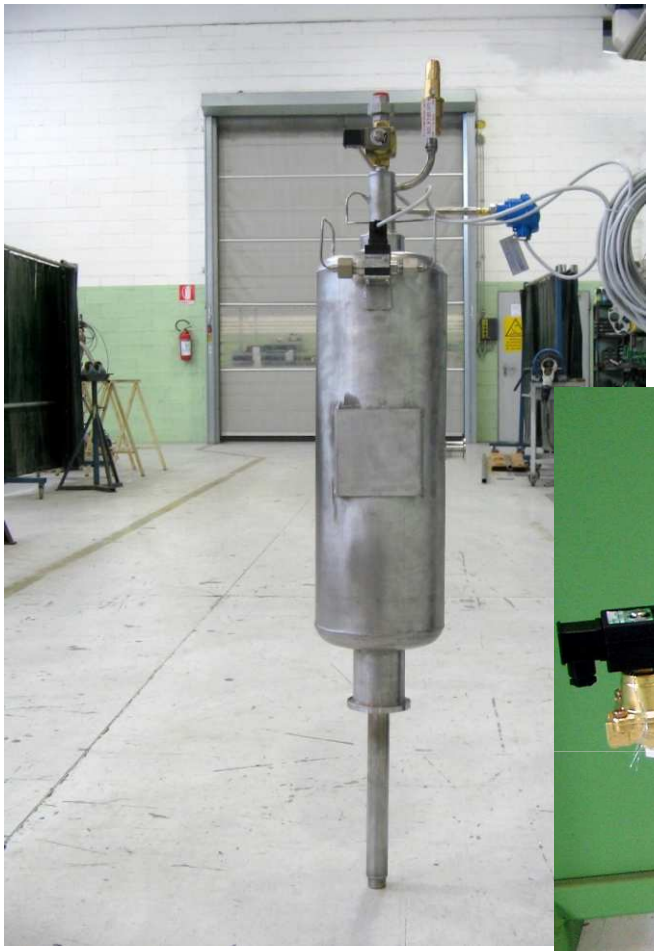
Standard super insulated vacuum lines for Liquid Nitrogen, Liquid Oxygen, Liquid Argon.

Flexibles lines, phase separators, manual and automatic vacuum insulated valves, etc…

Cryogenics: Transfer lines

Cryogenic manual valves

Automatic phase separator



Vacuum insulated manual valve and automatic line cooling system

Cryogenics: Transfer lines

➔Helium transfer lines

Helium transfer lines for LHC superconducting cable – CERN (2007)

Cryogenics: LHe cryostats

➔Helium Cryostats

Satellite cryogenique – CEA (2007)

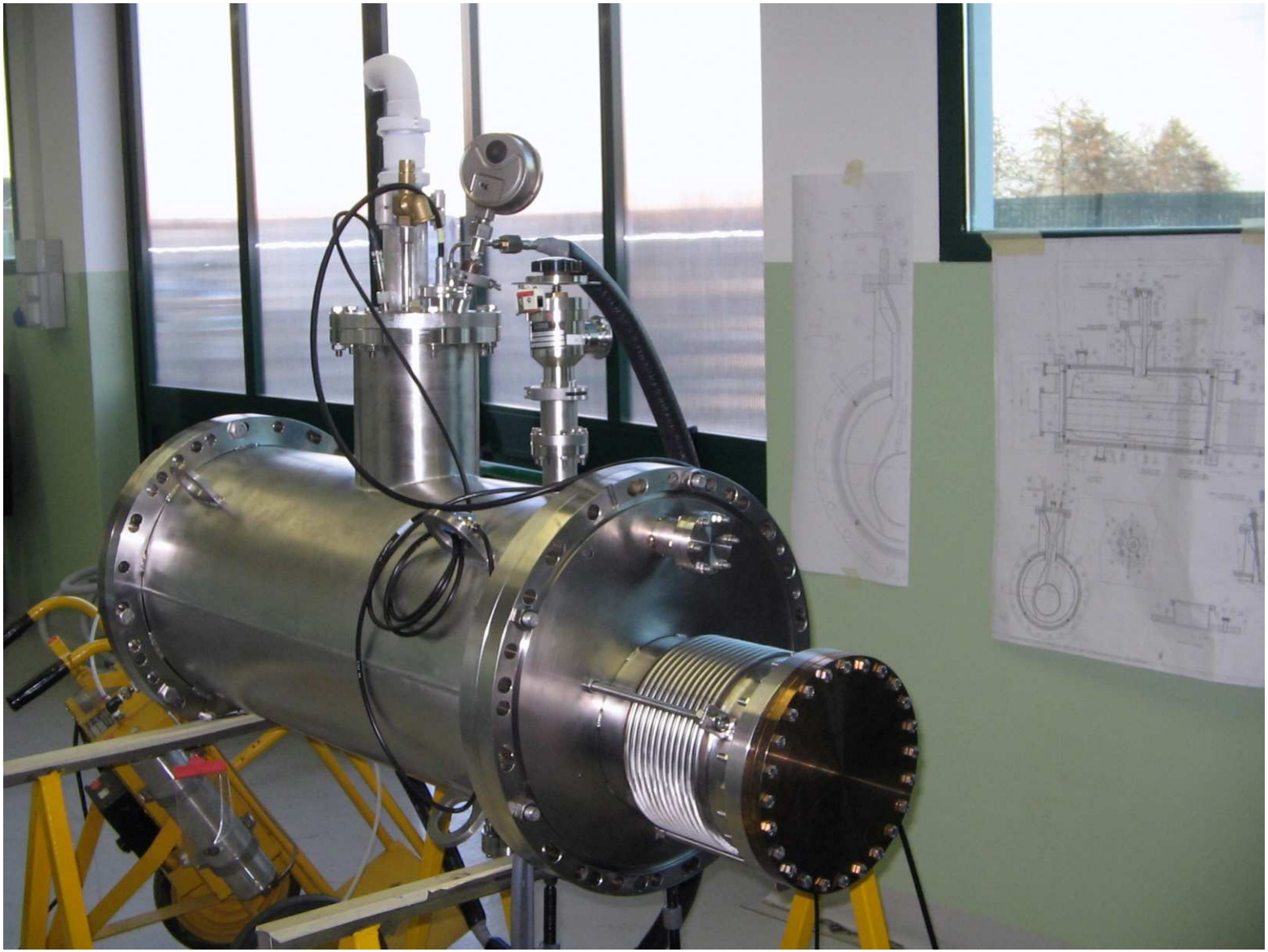
Boite à vannes – CEA (2006)

Cryogenics: LN2 liquefaction plant

Liquid nitrogen liquefaction plant – Politecnico di Torino (2008)

➔Liquid nitrogen liquefaction plant

Cryogenics: Custom built equipments

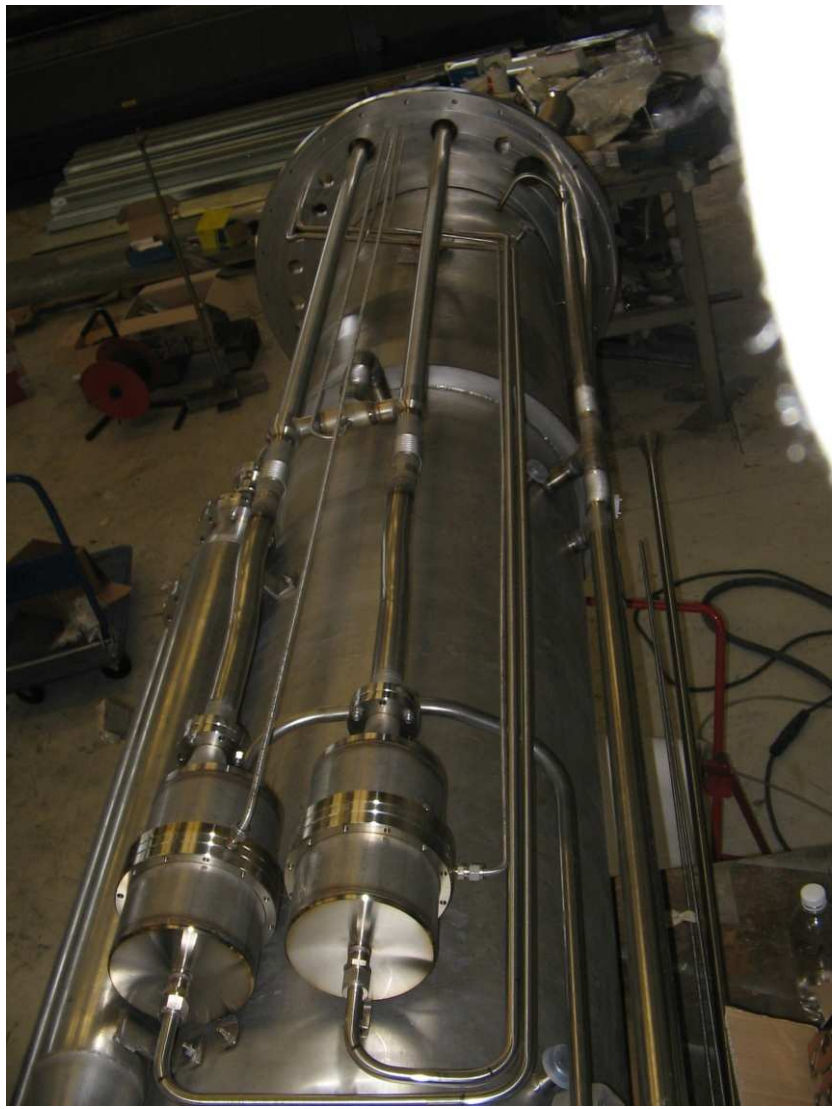


Liquid nitrogen cryogenic trap for high vacuum tube -
EGO laboratories (European Gravitational Observatory) – (2008)

Cryogenics: Custom built equipments

Liquid Helium cryostat for superconductivity test – INFN (2010)

Cryogenics: Custom built equipments



Liquid Argon purification system (with cryopumps)

Bern University (2010)

Cryogenics: Custom built equipments

➔Custom built equipments

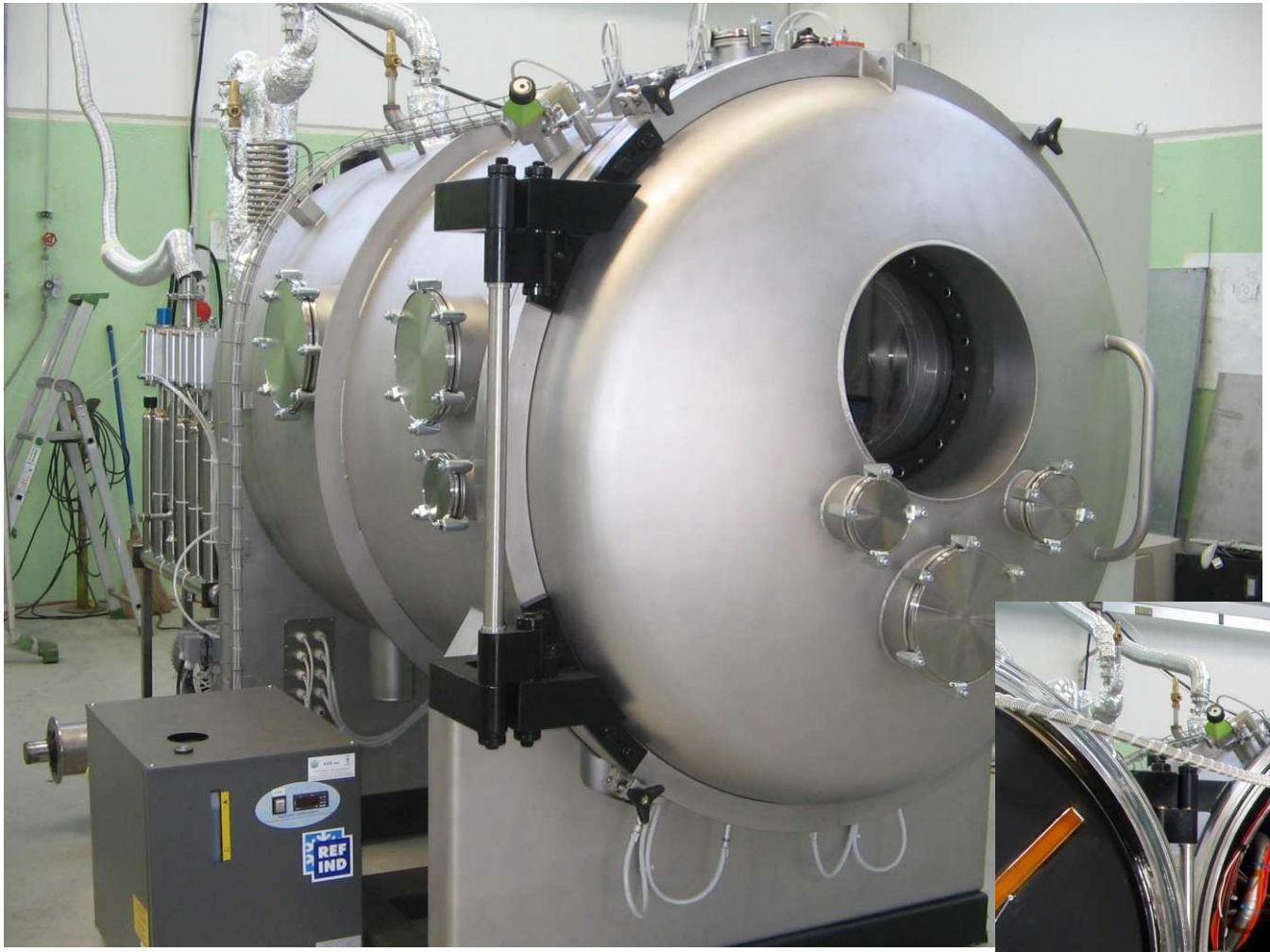
CMS central superconducting solenoid thermal shield – CERN (2005)

Cryogenics: Custom built equipments

500 gls LOx reservoir for Air transport – AMI (2008)

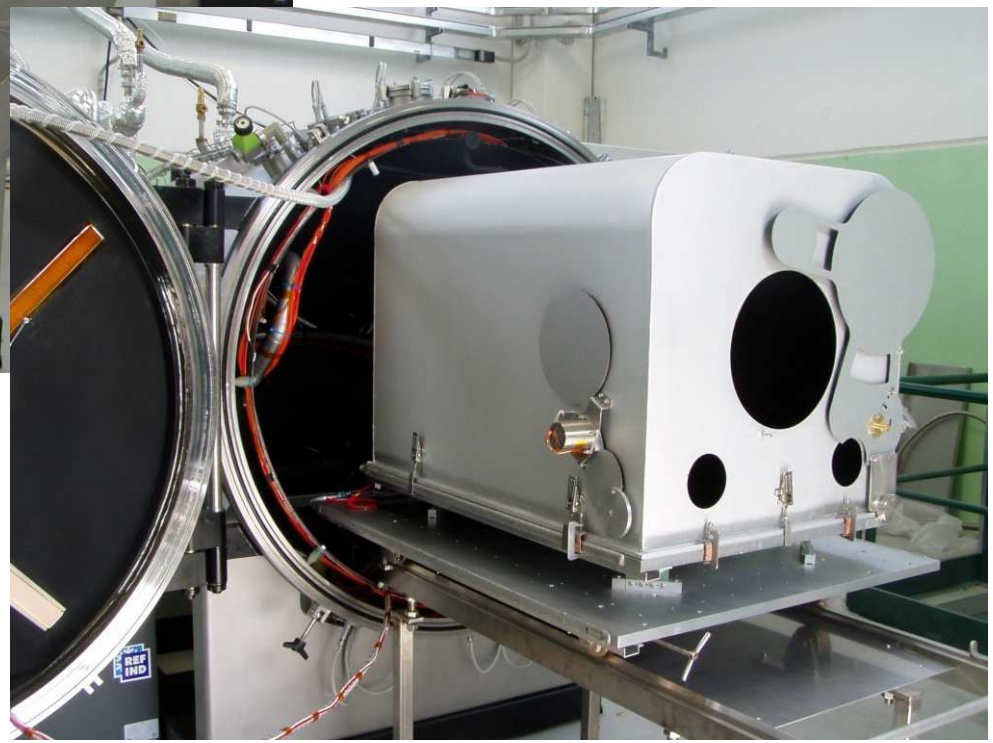
200 gls LOx reservoir– AMI (2008)

High vacuum



➔Thermo-Vacuum chambers

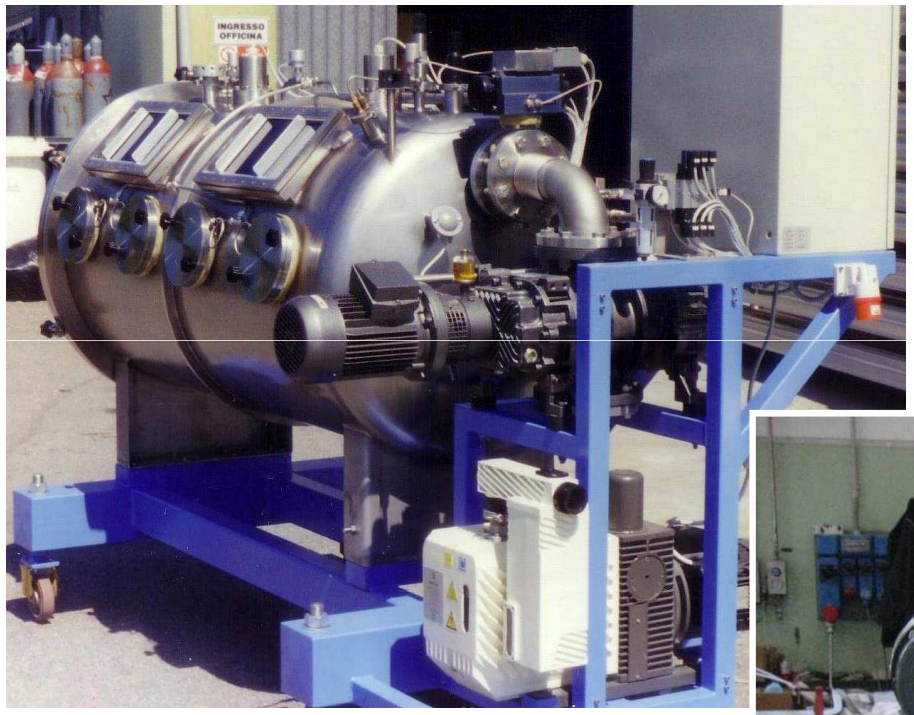
Thermo-Vacuum chamber for space application optics test – Galileo Avionica (2007)



Performances:

Vacuum	10E-7 mbar
Temperature	10 – 350 K

High vacuum



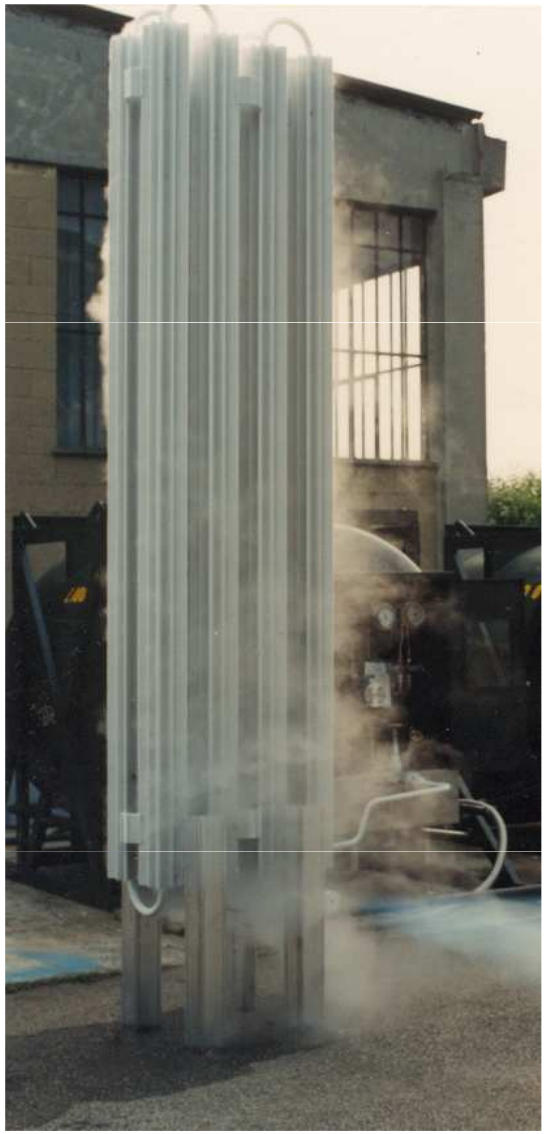
Vacuum chamber for (TIG) arc welding machine – ALENIA (2003)

➔Vacuum chambers

High vacuum chamber for thin film deposition – TOPCAST (2009)

Heat exchangers

➔Cryogenic heat exchangers



Atmospheric vaporizers

Heat exchangers

➔Cryogenic heat exchangers

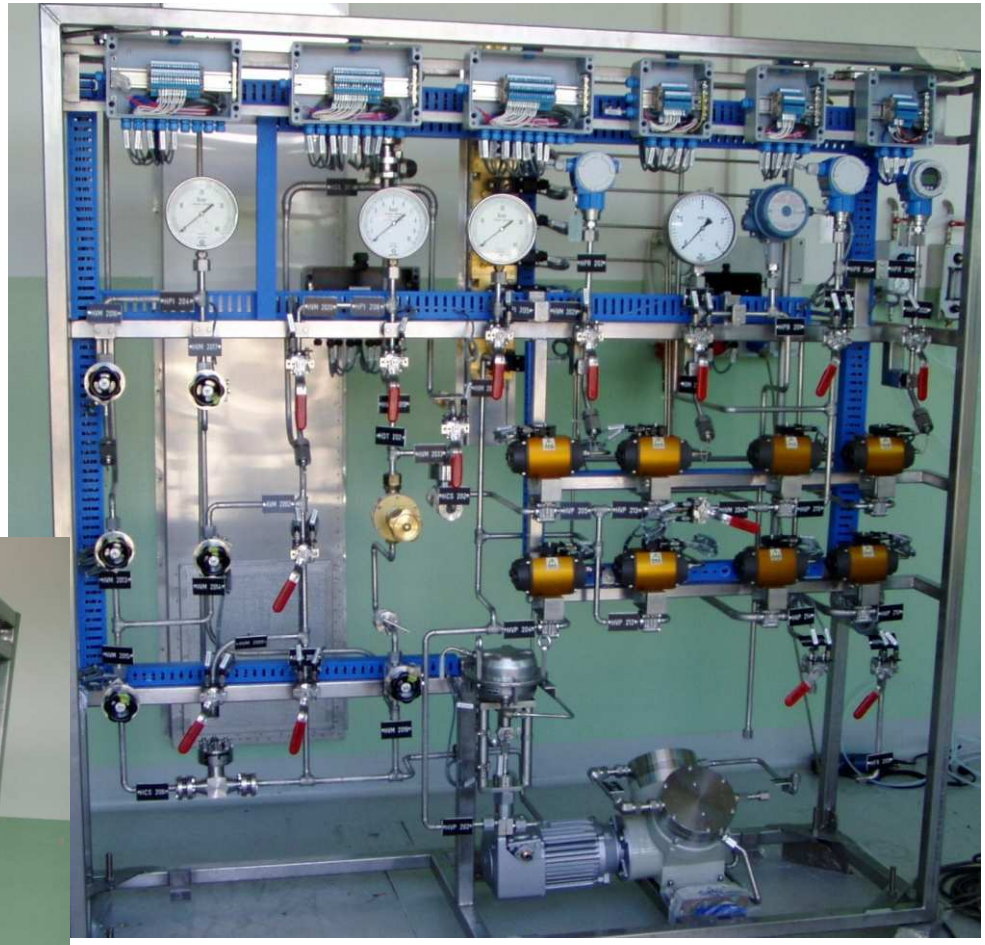
Pool water vaporiser: steam or hot water heated

Technical gas distribution

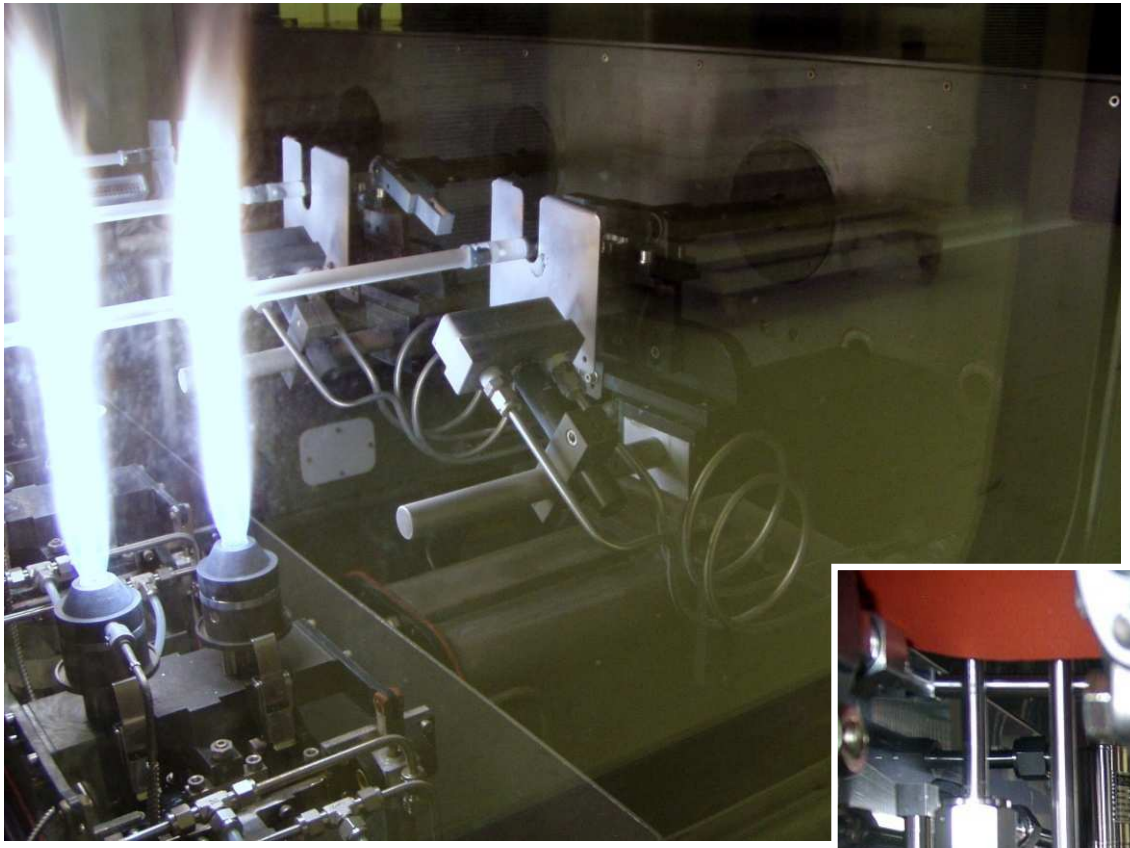
Gas distribution lines: from gas room to underground cavern – CERN (2006)

Technical gas distribution

Gas panels for VEGA project
– Carlo Gavazzi Space (2008)

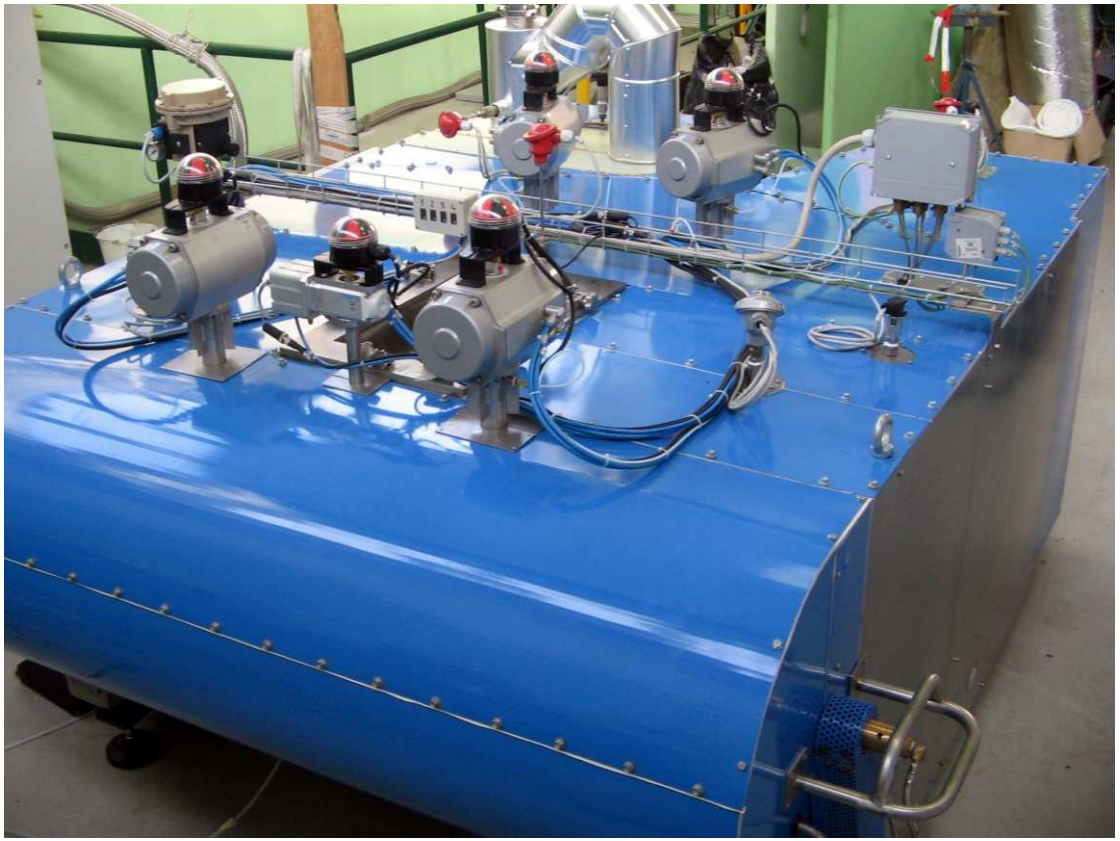


Technical gas distribution



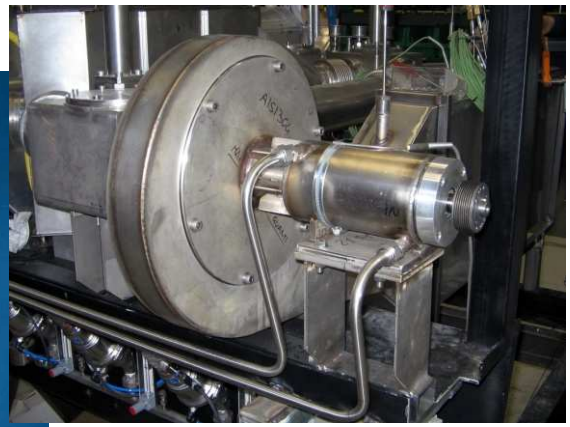
Optical fiber production gas cabinet – PIRELLI cavi (2003)

Special plants



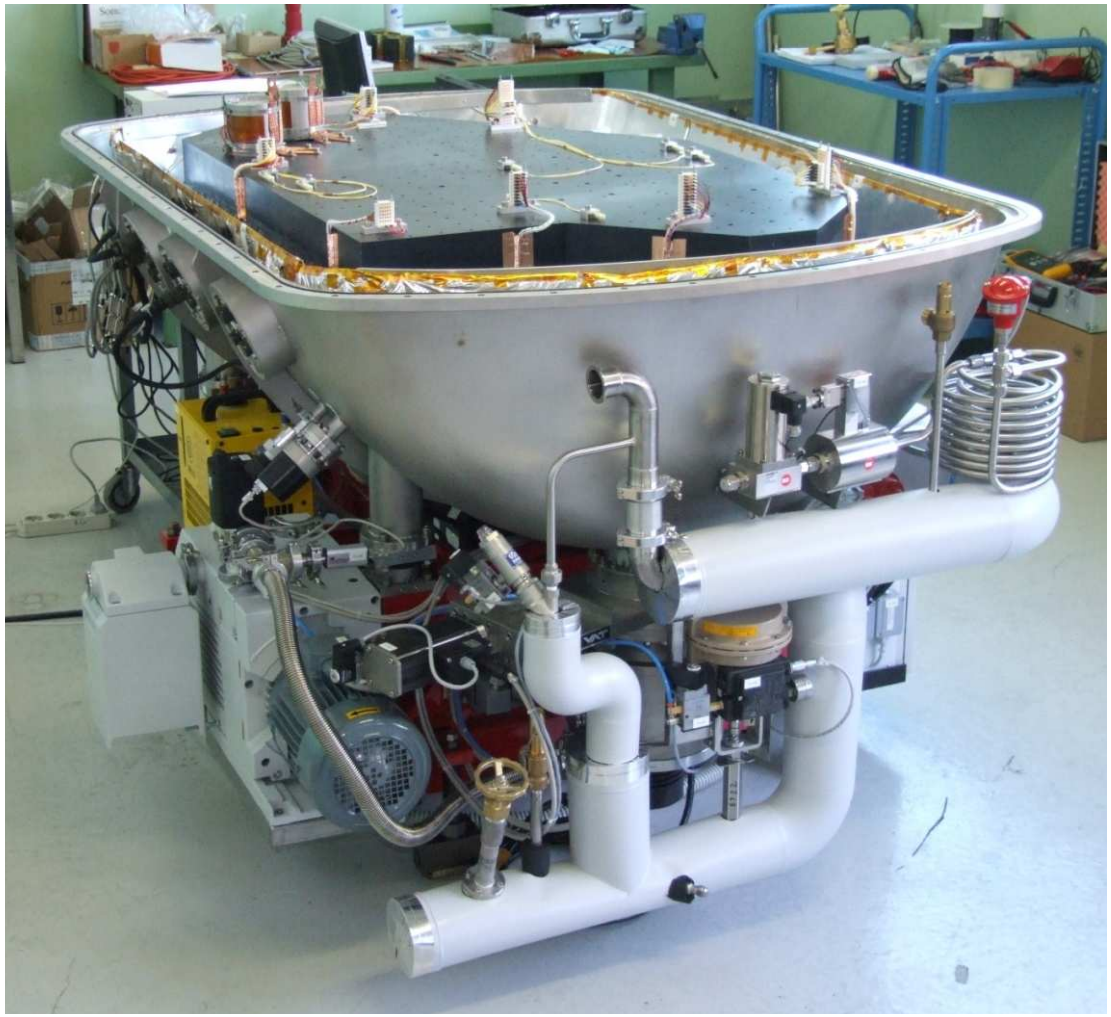
Accelerated Thermal Cycling Chamber – ALTA/ESA (2007)

Cycling form -180℃ to 320℃ in 7 minutes cycle



Special plants

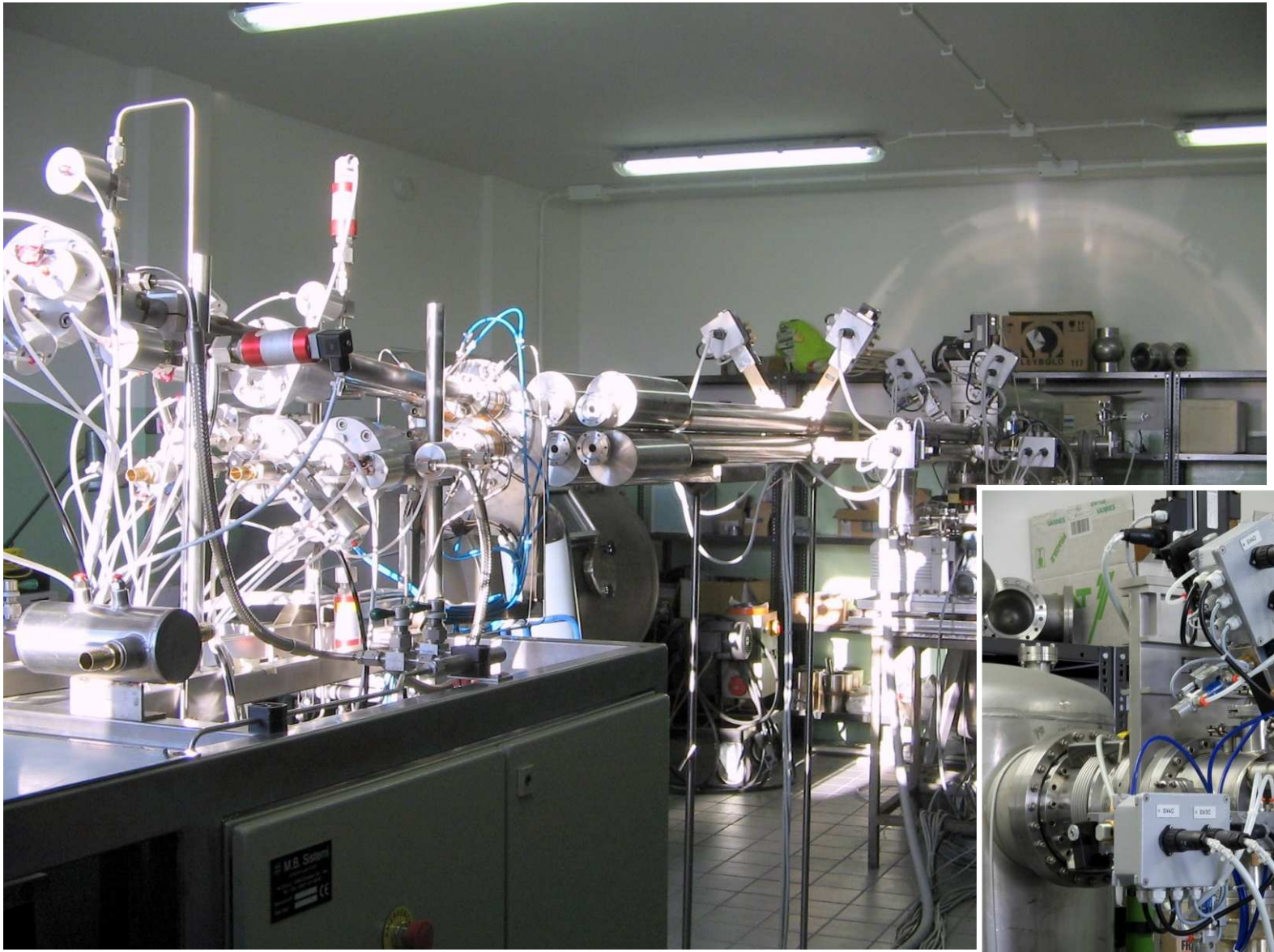
Superinsulated vessel for the cooling system of an optical bench installed at Gran Canaria (Spain) - Fundacion Galileo Galilei (2007-2008)

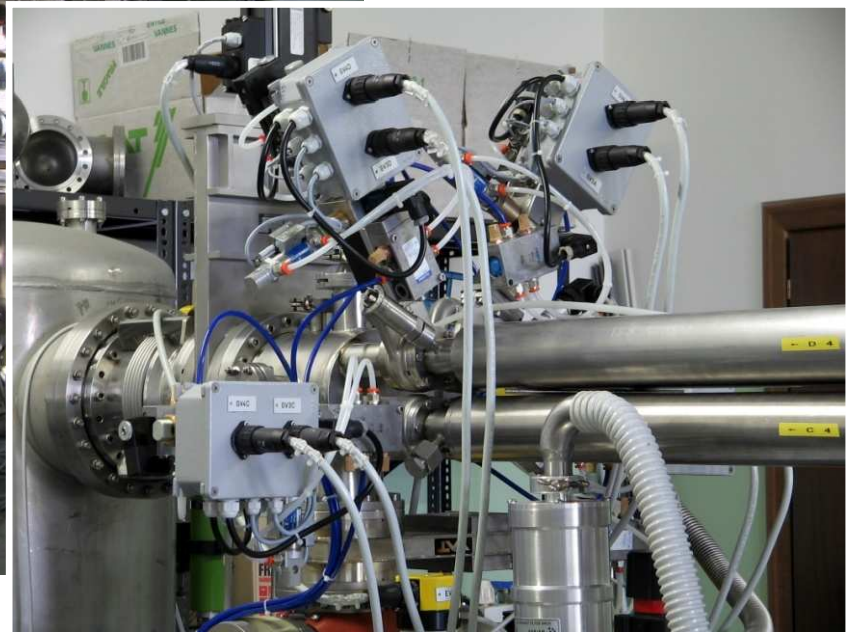


Thermal stability of the optical bench at 77 K = ± 1mK

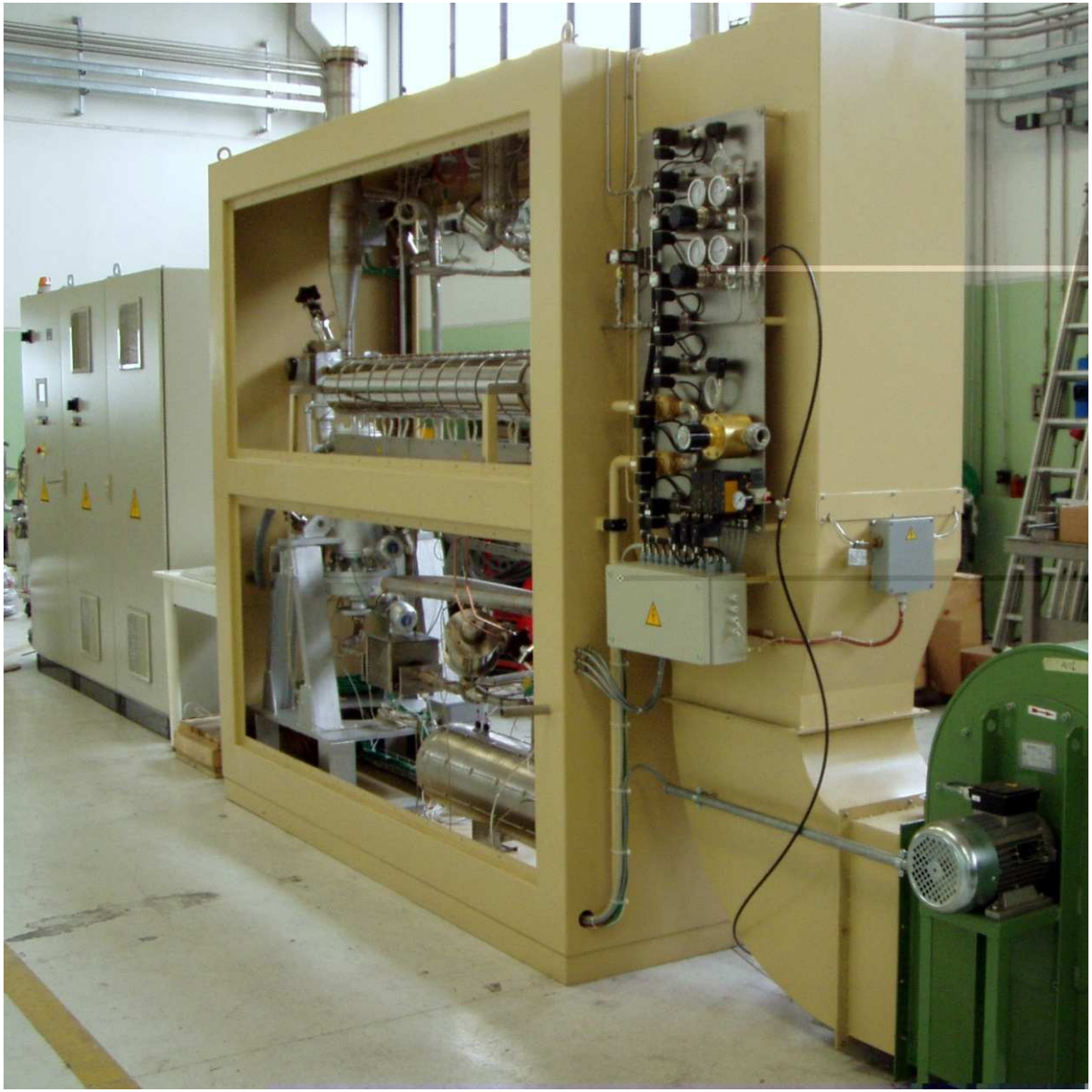
Special plants

Fast Deuterium pellets injection system for tokamak vacuum chamber – ENEA Frascati (2005)





Special plants



LiFUS III – ENEA
Brasimone (2004)

Liquid lead test section for material characterization for nuclear fusion application

Special plants

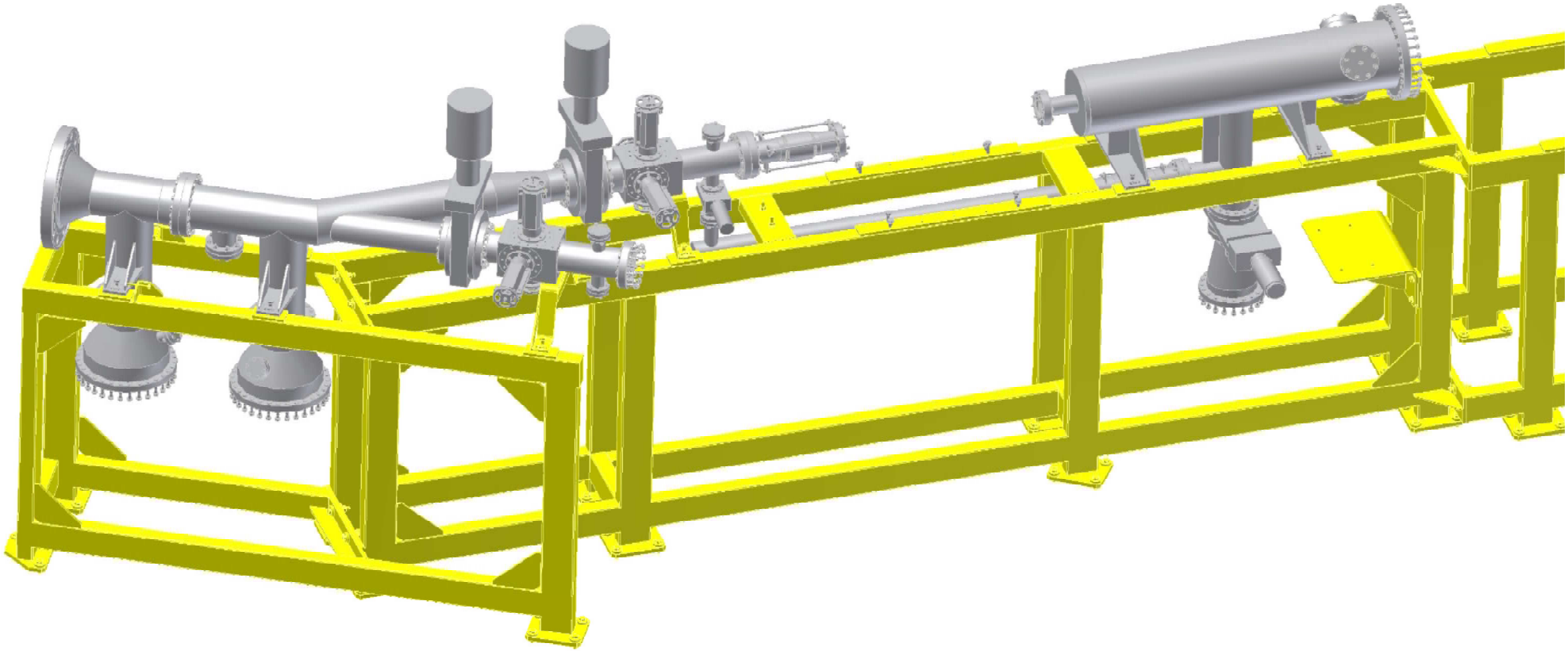
HeFUS – ENEA Brasimone (2002)

High temperature and high pressure test facility for helium cooling characterization for nuclear fusion application.

Pressure = 100 bar Temperature = 530 °C

Special plants

Injection line and main support frame of the HFPI project - EFDA – JET (2007)



Special plants

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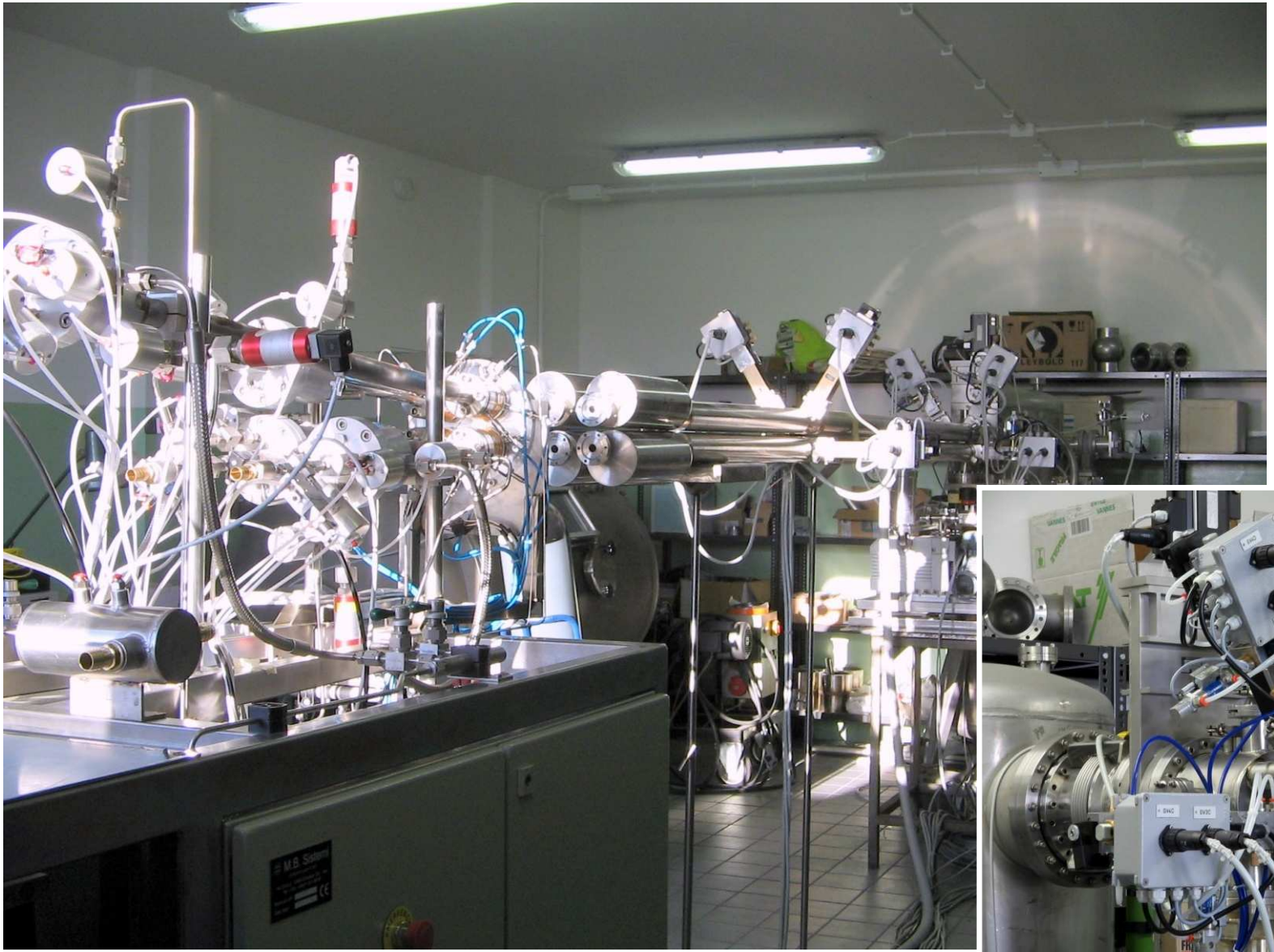
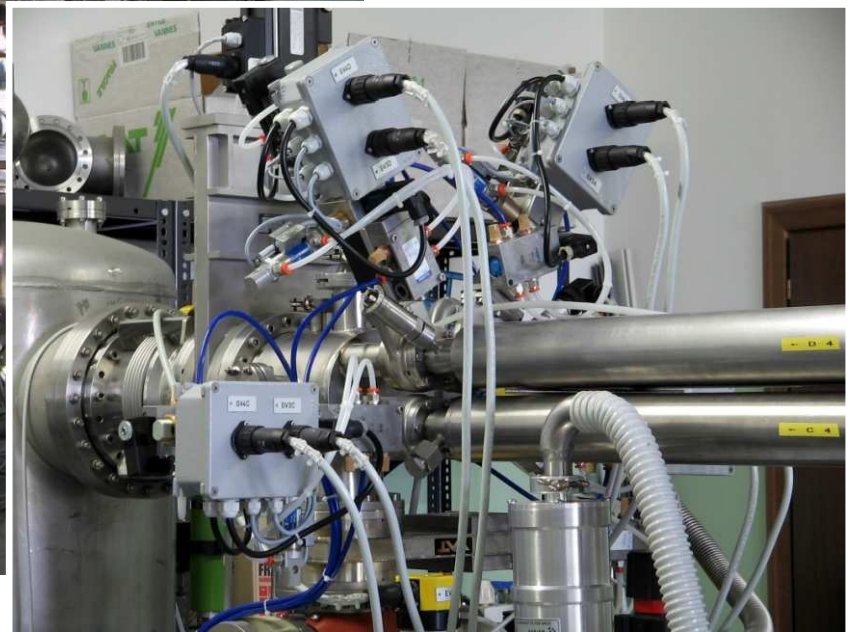
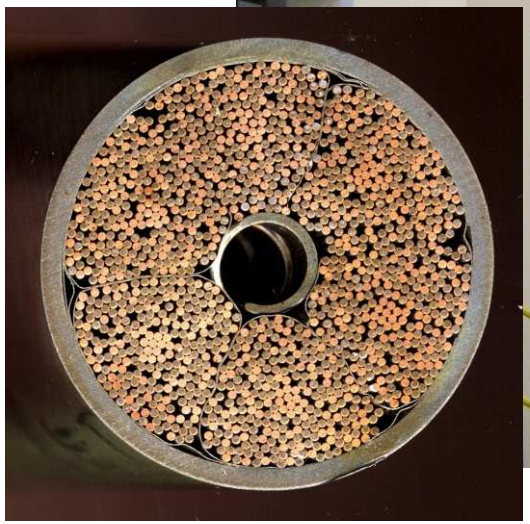




Superconducting Cables (CICC)

Jacketing line for production of superconducting cables for ITER (2011)



Main Customers

Industry customer

- AERONAUTICA MILITARE ITALIANA (Italian Air Force)
- AIR LIQUIDE spa
- ALENIA spa
- ANSALDO / ASG
- LINDE GAS srl MESSER GRIESHEIM (Austria)
- MESSER ITALIA spa
- PRYSMIAN spa
- PRAXAIR spa
- RIVA ACCIAI spa
- RIVOIRA spa
- SIAD MACCHINE IMPIANTI spa
- SIAD spa
- SIMA TECTUBI spa
- SOL spa

Research centre customer

- CEA – (France)
- CERN – Ginevra
- DLR (Germany)
- ESA (Netherland)
- ENEA of Frascati, Brasimone and Saluggia
- F.S.U. of Tallahasse (U.S.A.)
- HZB of Berlin (Germany)
- KIT of Karlsruhe (Germany)
- I.N.F.N. (Italy)
- ISTITUTO METROLOGICO COLONNETTI (Italy)
- ITER Organization / F4E / ITER RF / KODA
- L.N.G.S. (Laboratori Nazionali Gran Sasso)
- POLITECNICO DI TORINO
- POLITECNICO DI MILANO
- PSI (Switzerland)
- UNIVERSITA' DI TORINO

Certifications

- Our Quality Control System is certified DIN EN ISO 9001:08.
- We certified according to EN 3834-2 HP0 AD-MERKBLATTER.
- Our welders are qualified according to EN287 and our welding procedures are in accordance to EN 15614, ASME BPVC sec. IX
- For NDT test we have the following certifications:
  - Visual Test, Radiographic Test, Dye Penetrant Test according to ASME BPVC sec. V
  - Dye penetrant test (EN 479)
  - Helium leak test with mass spectrometer (ASNT-TC-1A)

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Italia

CERTIFICATO

Nr 50 100 6073 - Rev. 02

Si attesta che / *This is to certify that*

IL SISTEMA QUALITÀ DI
THE QUALITY SYSTEM OF

CRIOTEC IMPIANTI S.r.l.
SEDE LEGALE E OPERATIVA:
VIA FRANCESCO PARIGI 32/A - Z.I. CHIND
I-10034 CHIVASSO (TO)

È CONFORME AI REQUISITI DELLA NORMA
HAS BEEN FOUND TO COMPLY WITH THE REQUIREMENTS OF

UNI EN ISO 9001:2008

Riferirsi al manuale della qualità per eventuali dettagli delle esclusioni ai requisiti della norma ISO 9001:2008
Refer to quality manual for possible details of exclusions of requirements of the norm ISO 9001:2008

Questo certificato è valido per il seguente campo di applicazione
This certificate is valid for the following product or service range

Progettazione e fabbricazione di apparecchiature criogeniche, apparecchiature in pressione e sistemi di vaporizzazione e distribuzione di fluidi (EA 18)

Design and manufacture of cryogenic equipment, pressure equipment, vaporization and fluid distribution systems *(EA 18)*

ACCREDIA L'ENTE ITALIANO DI ACCREDITAMENTO
SGQ N° 049A SSI N° 005Q PRD N° 081B
SGA N° 018D ITX N° 001L ISP N° 057E
SCR N° 009F
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

Per l'Organismo di Certificazione
For the Certification Body
TÜV Italia S.r.l.

Andrea Vivi
Amministratore Delegato - *CEO*

Data di emissione / *Issue date*
2010-08-26

Data di scadenza / *Expiry date*
2012-07-06

Riemissione del certificato emesso per la prima volta in data 2006-07-25

"La validità del presente certificato è subordinata a sorveglianza periodica a 12 mesi e al riesame completo del sistema di gestione aziendale con periodicità triennale"
"The validity of the present certificate depends on the annual surveillance every 12 months and on the complete review of company's management system after three-years"

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Contacts

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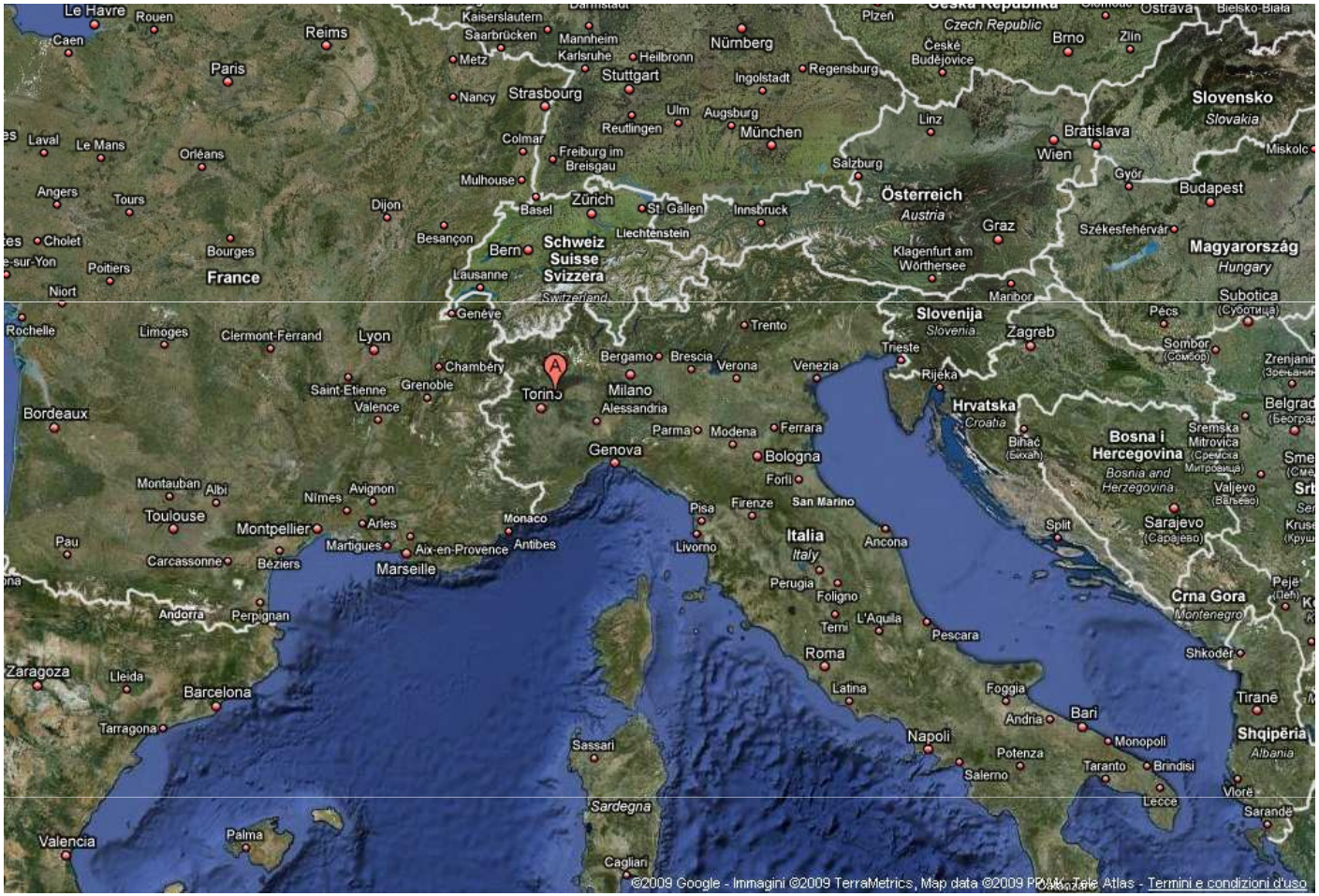

Mr. Marco ROVETA – marco.roveta@criotec.com