



# European Committee for Future Accelerators Kraków 2011

## Spin-off and Industry

Maciej Chorowski - Industrial Liaison Officer for Poland

---

Piotr Bielówka

11<sup>th</sup> May, 2012, RECFA

# Spin-off and Industry

## Content:

- First contacts between CERN and Polish industry, „pilot“ orders
- Industrial exhibitions organised by TECHTRA
  - Poland @ CERN 1995
  - Poland @ CERN 2000
- Consortium of Polish Companies
- Polish supplies (ZEC Service, ZEG, ZPAS ....)
- Statistical summary of Polish supplies
- Technology transfer to industry
- Present activities
- Conclusions

# Spin-off and Industry



First Polish „pilot” supply to CERN: RAFAKO - vacuum vessel.

# Spin-off and Industry

## Poland @ CERN 1995

The exhibition was organised by the team led by Maciej Chorowski, **Industrial Liaison Officer**, under the auspices of National Atomic Energy Agency, December 1995, over 30 participants.



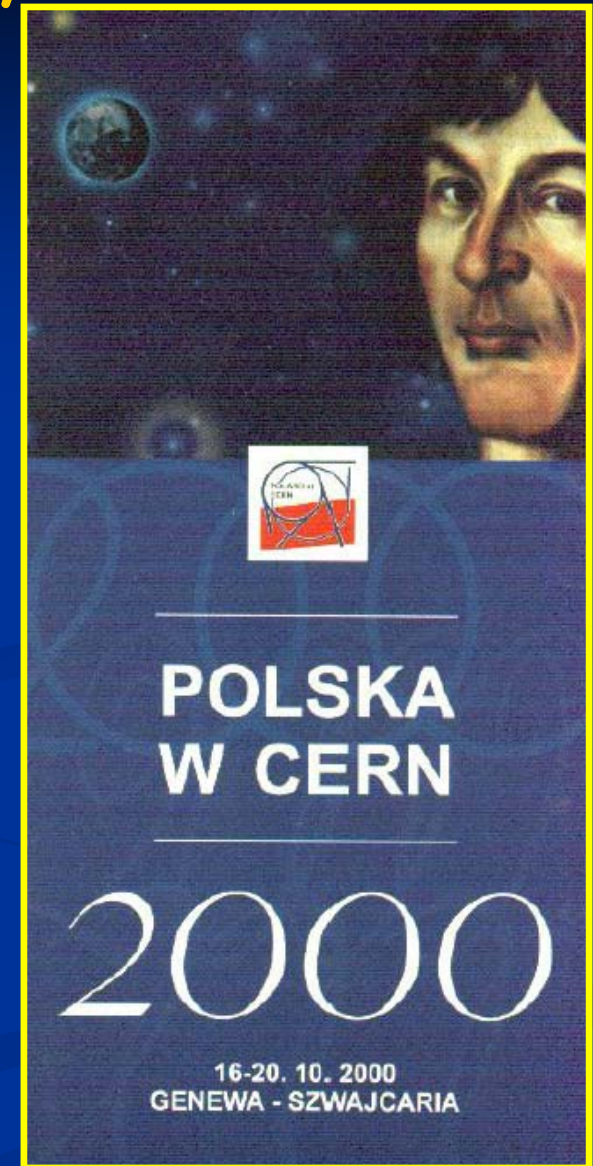
The exhibition was officially opened by Polish Deputy Prime Minister M. Łuczak and was the first event promoting CERN as a market for Polish Industry



# Spin-off and Industry

## Poland @ CERN 2000

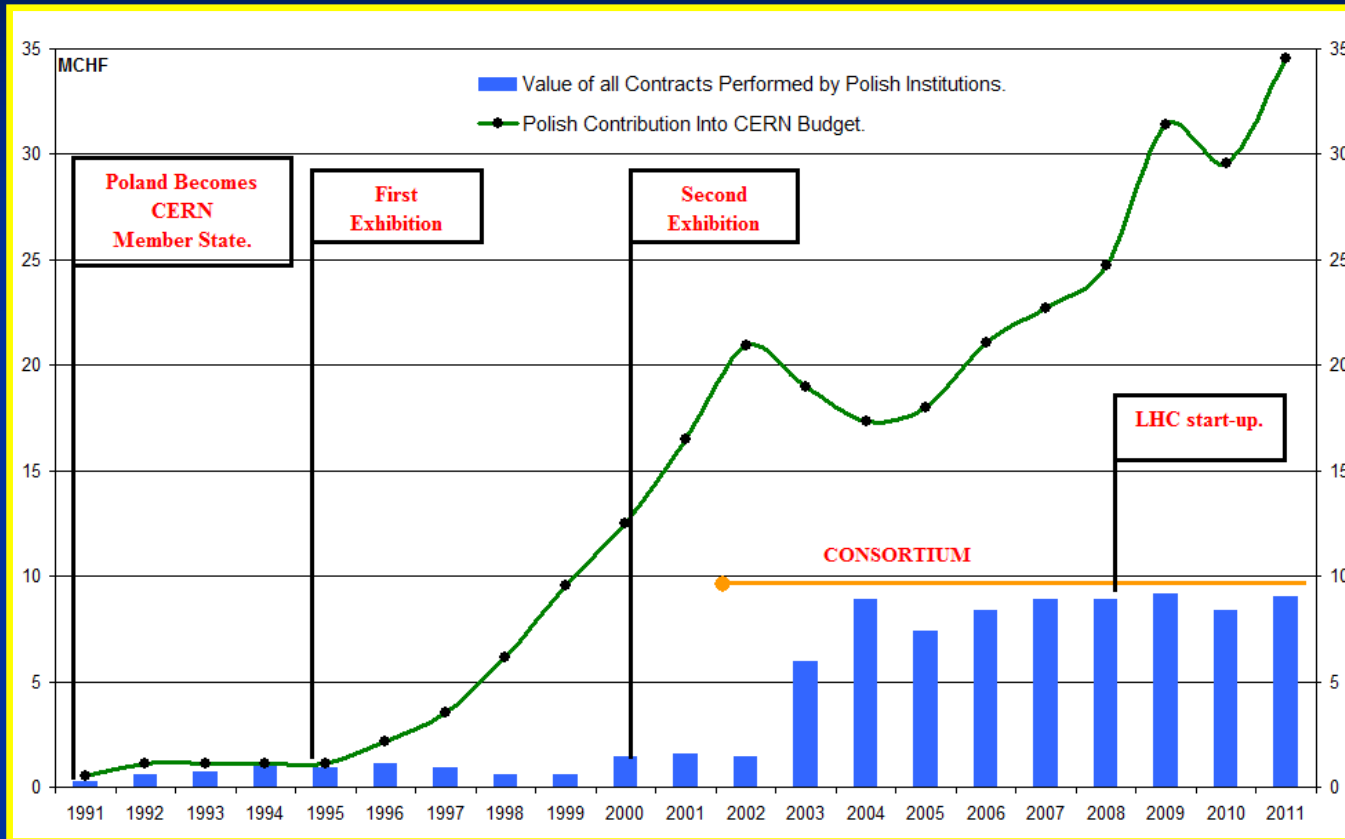
The second exhibition Poland @ CERN was organized in October 2000, by TECHTRA Ltd. under the auspices of National Atomic Energy Agency, over 30 participants.



# Spin-off and Industry

- A consortium „Poland @ CERN” gathering 19 companies has been created in 2001, the consortium coordinator became TECHTRA Ltd, board chaired by Maciej Chorowski, Industrial Liaison Officer
- The consortium managed to enter the CERN market with such products and services as:
  - data servers from **JTT**
  - cooling Installations from **ZEC Service**
  - CMS gas piping from **ZEC Service**
  - electronic instrumentation boxes from **ZEG Tychy**
  - electrical enclosures and components from **ZPAS Przygórze** and **Microomega**
  - cabling services from **Energomontaż Południe**
  - electronics from **Fideltronik**
  - cars
  - helium from **Odolanów**
  - miscellaneous ...

# Spin-off and Industry



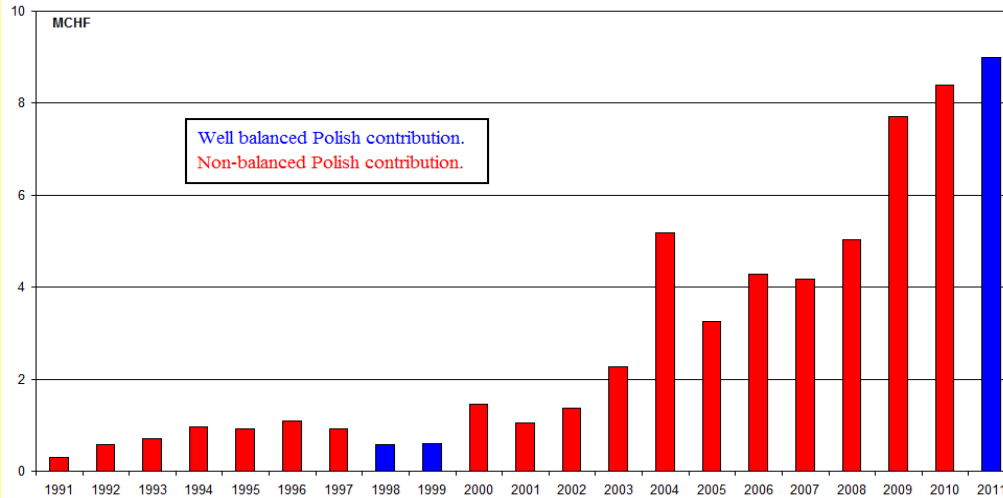
Polish Contribution at CERN vs Industrial Return.



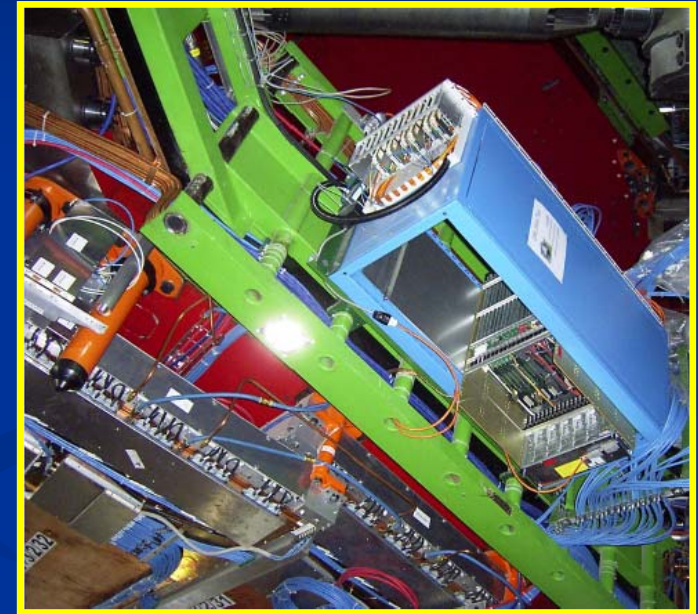
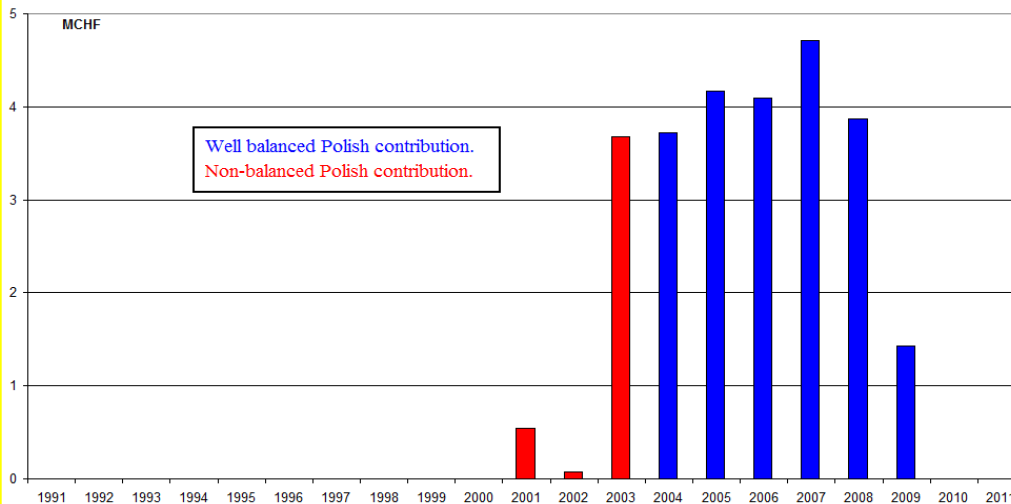
Cryogenic elements from Kriosystem

# Spin-off and Industry

Balancing of Polish Contribution Through Supply Contracts



Balancing of Polish Contribution Through Industrial Service Contracts.

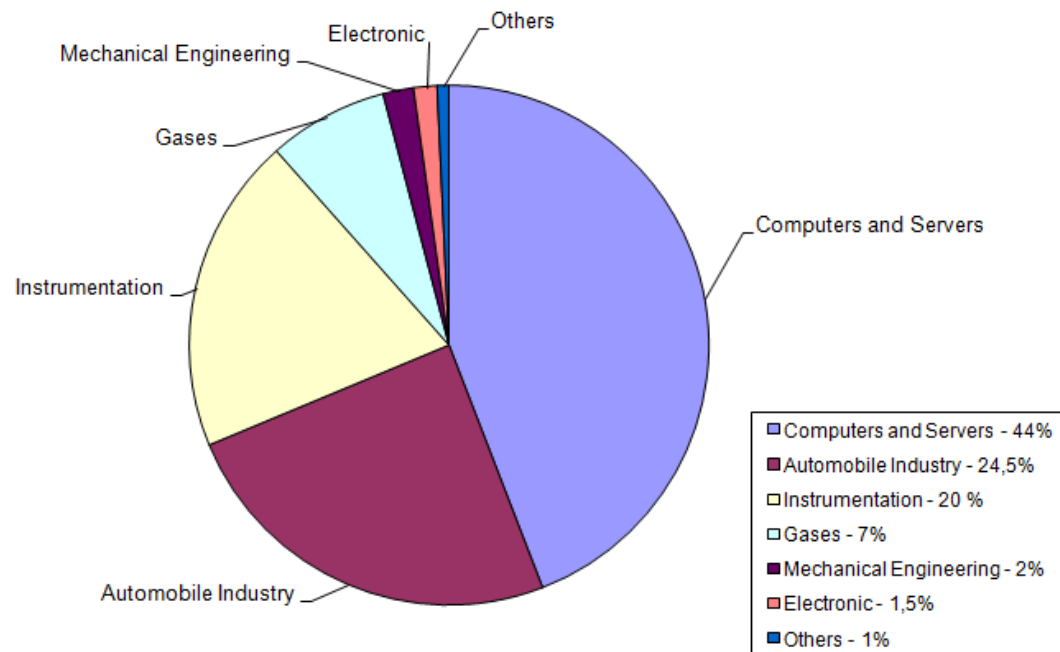


Electronic devices from  
ZPAS Przygórze at CERN.



# Spin-off and Industry

Structure of Polish Supply Contracts in 2011

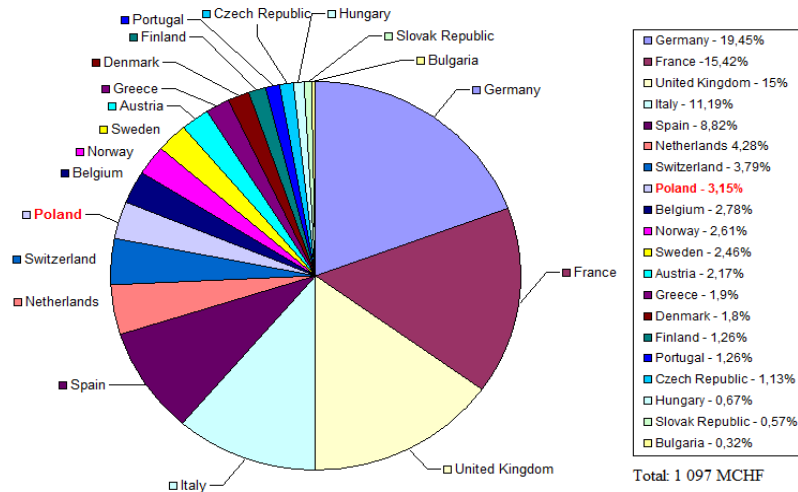


Kriosystem - He II  
cryostats for material  
research

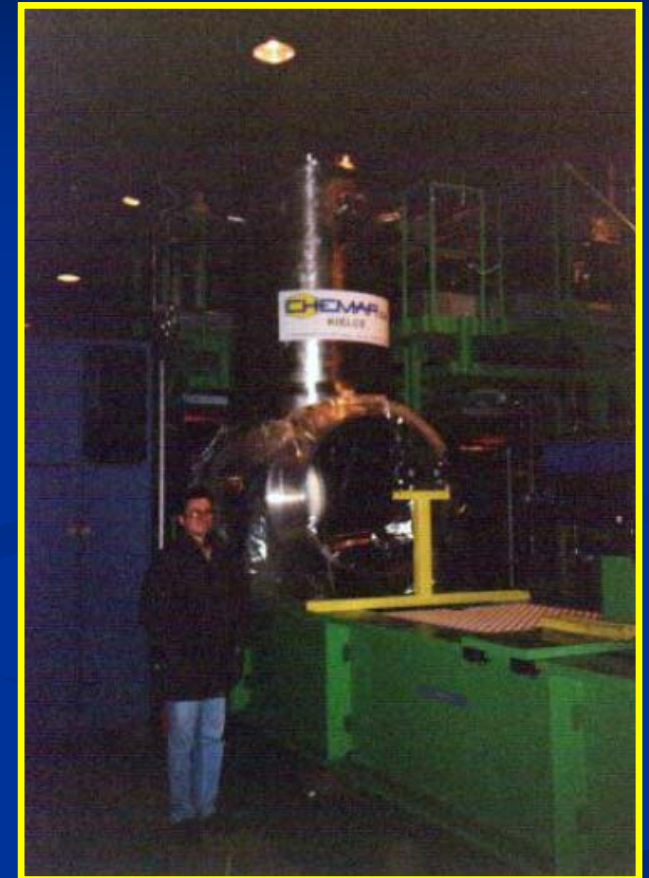
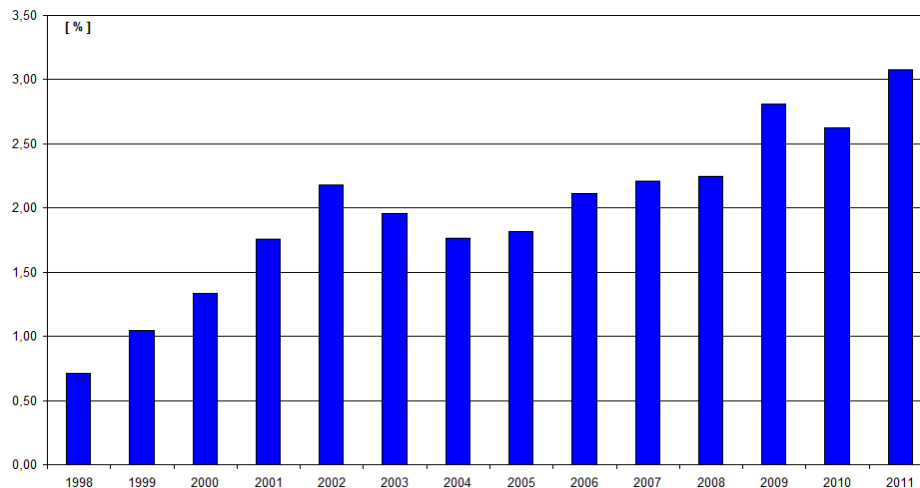
11<sup>th</sup> May, 2012, RECFA

# Spin-off and Industry

Member States Contributions Into CERN Budget in 2011

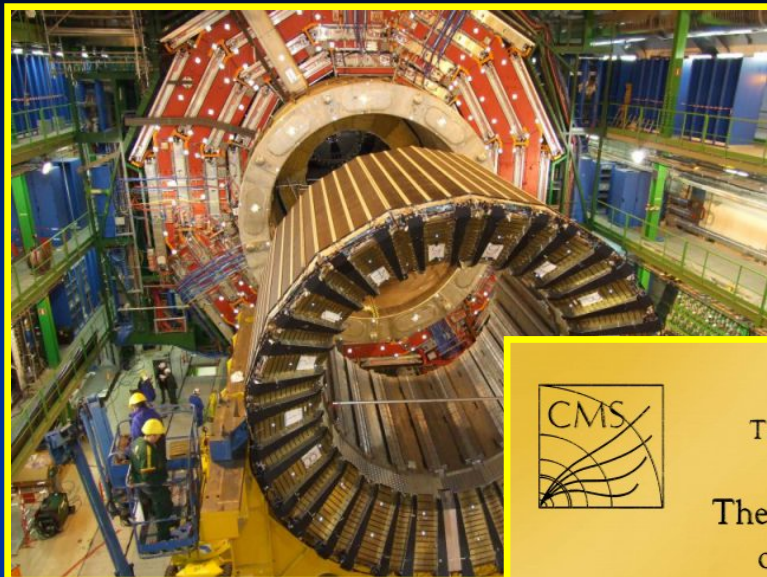


Evolution of Polish Contribution Into CERN Budget



CHEMAR - vacuum box for the LHC dipole test bench





The CMS Collaboration  
presents



## The CMS Gold Award of the Year 2006

to

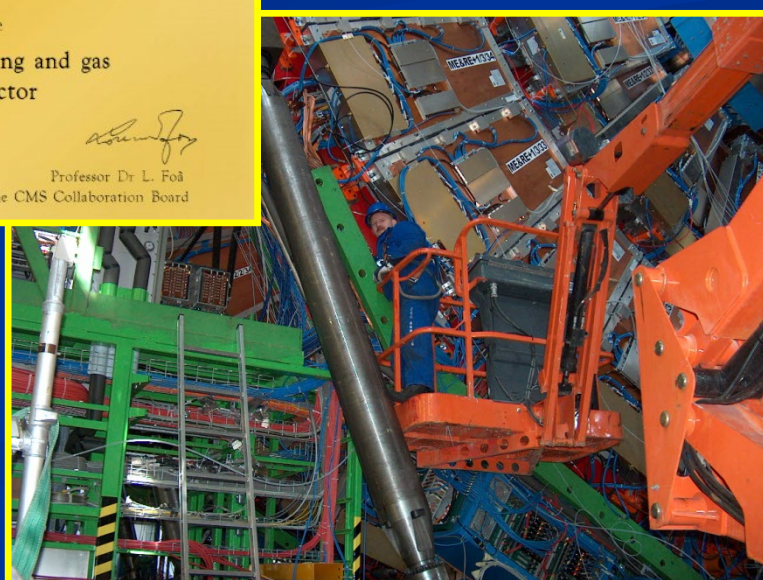
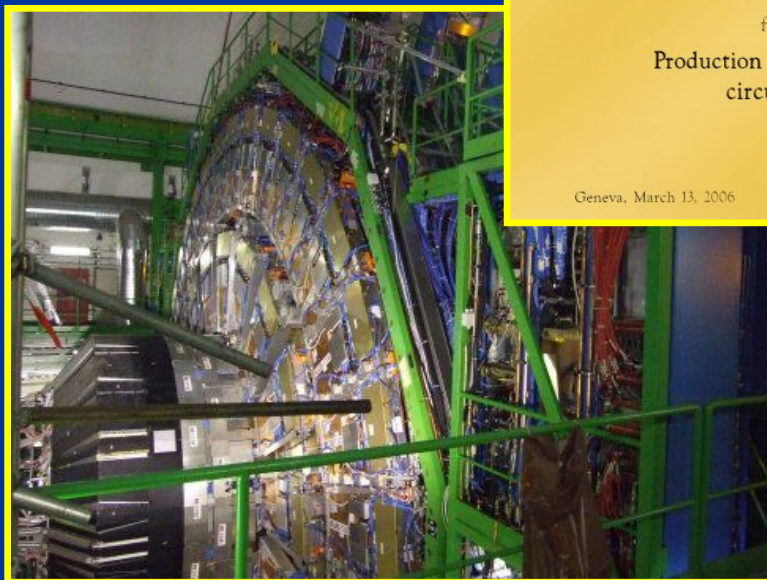
ZEC Service  
Wroclaw, Poland

for their achievements in the  
Production and installation of cooling and gas  
circuits for the CMS Detector

Professor Dr L. Foà

Geneva, March 13, 2006

Chairperson of the CMS Collaboration Board





# Spin-off and Industry

ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE  
**CERN** EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

AGREEMENT K 922/ETT

LICENCE AGREEMENT FOR MICROVIA TECHNOLOGY

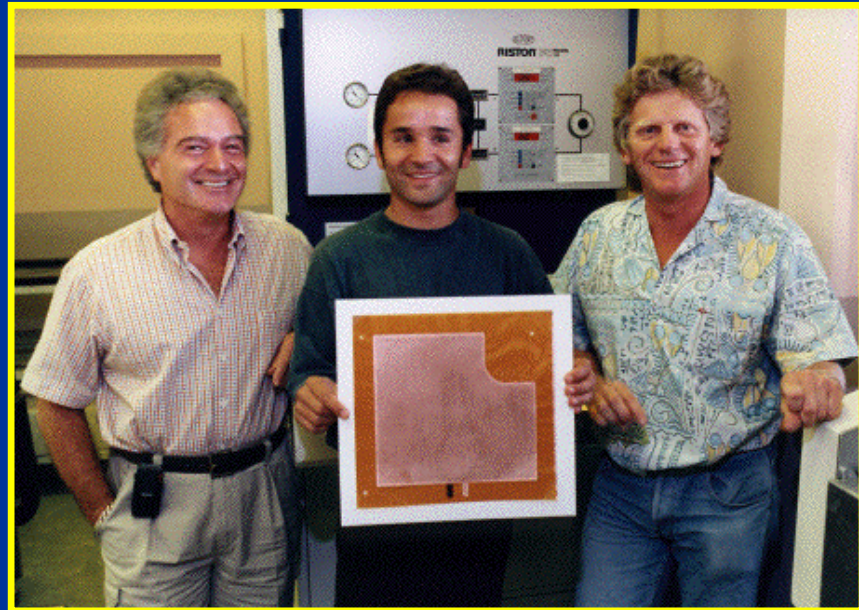
Licensee: Technology Transfer Agency Techtra Ltd.

**TECHTRA**  
TECHNOLOGY TRANSFER AGENCY

## „Microvia Technology“ licence (2002)

Technology suitable for:

- GEM foils - CERN
- Multilayer PCB



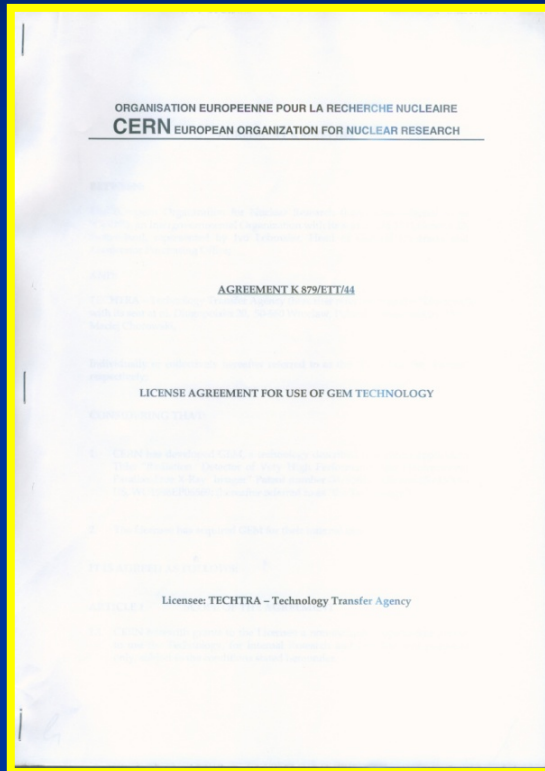
Rui De Oliveira - the technology inventor.

11<sup>th</sup> May, 2012, RECFA

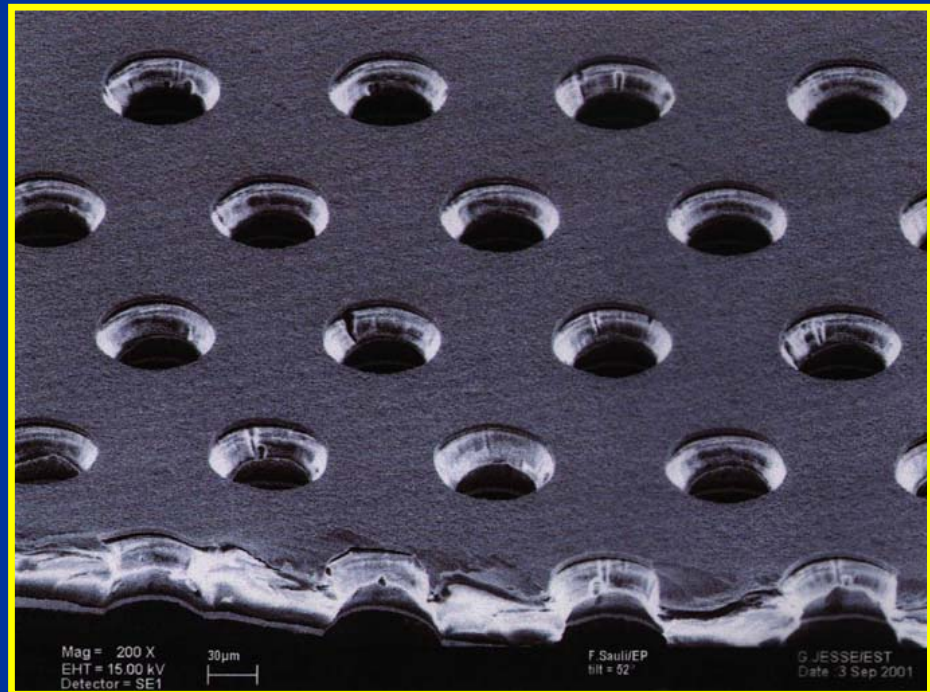


# Spin-off and Industry

## „Use of GEM Technology“ licence (2004)



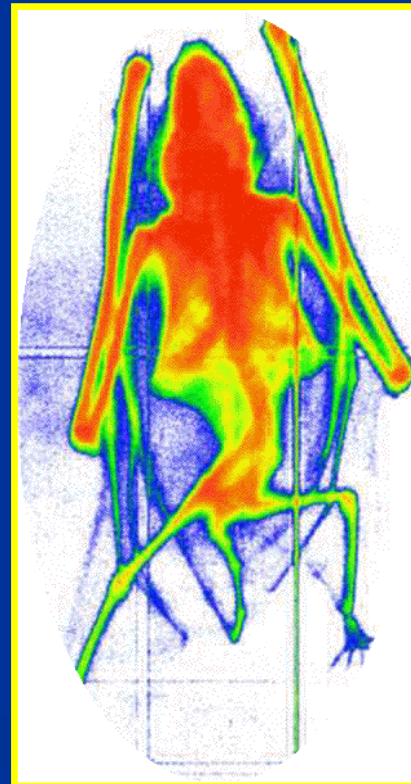
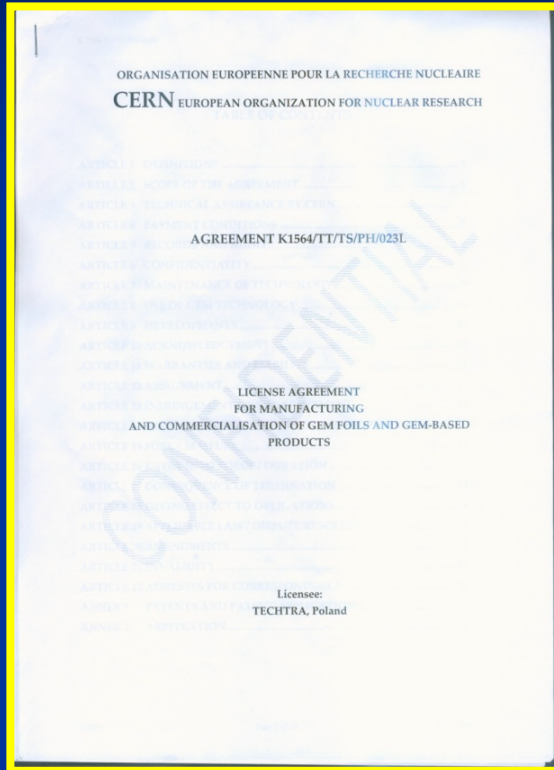
**TECHTRA**  
TECHNOLOGY TRANSFER AGENCY



GEM foil, CERN.

# Spin-off and Industry

„Manufacturing and commercialization of GEM and GEM-Based products” (2009)



GEM radiograph, CERN

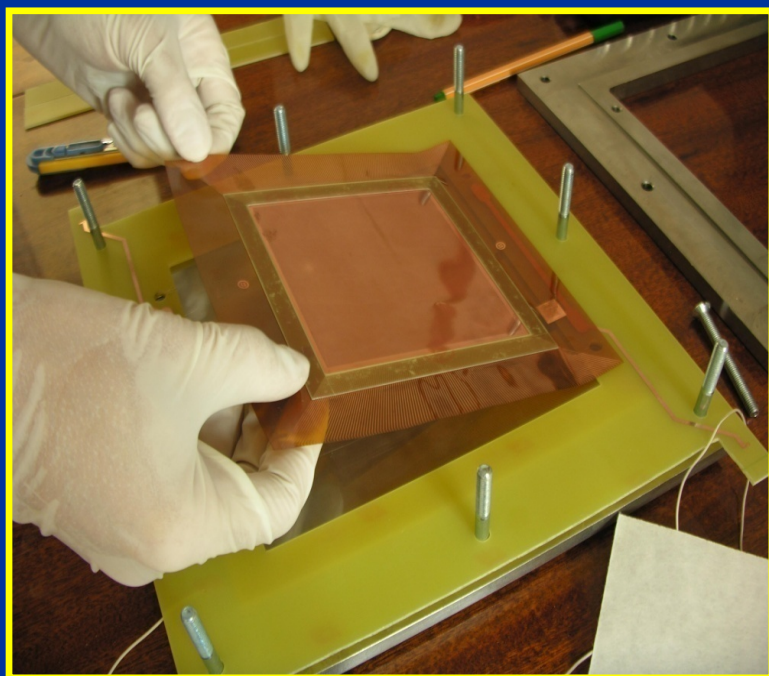
**TECHTRA**  
TECHNOLOGY TRANSFER AGENCY

# Spin-off and Industry

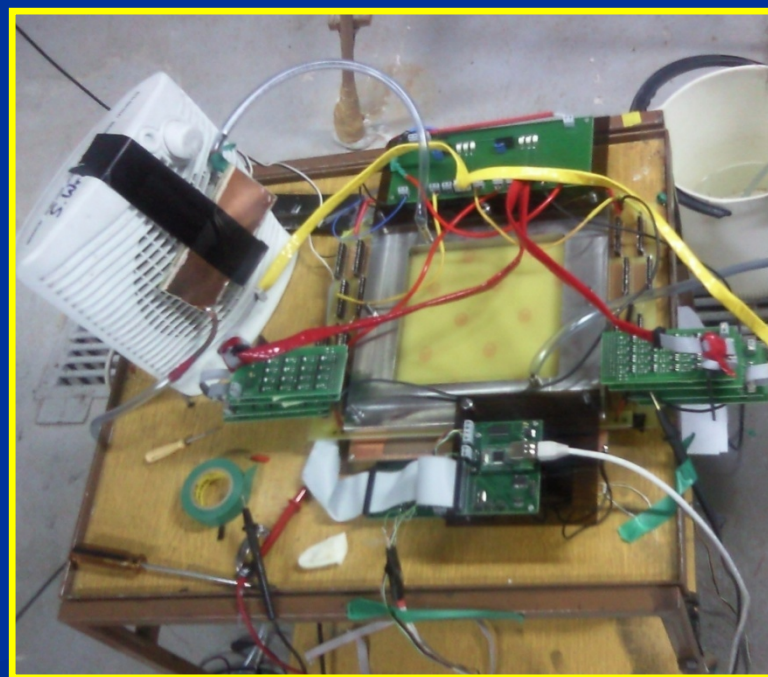


NATIONAL CENTRE for  
NUCLEAR RESEARCH  
Świerk

## Towards the „GEM-View” detector



GEM implementation



The very first prototype



# Spin-off and Industry



NATIONAL CENTRE for  
NUCLEAR RESEARCH  
Świerk

## GEM-VIEW: Direct Data Radiodetector dedicated to Non-Destructive Testing



Commercially available: GEM-VIEW DDR detector, TTA Techtra.  
Patent Pending.

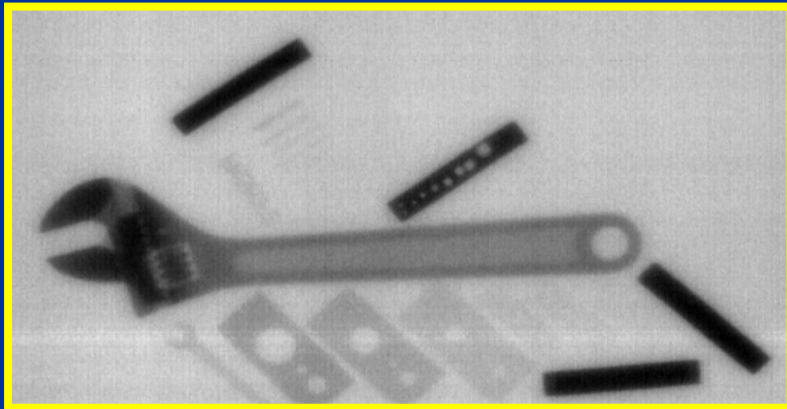


# Spin-off and Industry



NATIONAL CENTRE for  
NUCLEAR RESEARCH  
Świerk

## Radiographs made with GEM-VIEW



# Spin-off and Industry

## Wroclaw Technology Park



New „Big Science”  
Project aiming at  
promote Lower Silesia  
Companies into „Big  
Science” organization  
like CERN, ITER, XFEL.



Joint conferences organized by CERN and  
WPT aimed at promotion of CERN in Poland.

11<sup>th</sup> May, 2012, RECFA

# Spin-off and Industry

## Conclusions:

- Polish industry has demonstrated flexibility and ability for selforganization - active Industrial Liaison Office, consortium, two exhibitions Poland@CERN.
- Poland was a balanced country in the years 1998 - 1999 thanks to the „division through zero“ effect.
- Polish industrial contribution to the LHC construction has been at the level of **40%** with respect to the balance target.
- Possibility of technology transfer from CERN into Polish industry.
- Wroclaw Technology Park has become an efficient CERN Industrial Liaison Office, the companies are assisted while entering the CERN market.