The Control Systems Integrator

COSYLAB

Open Innovation in Companies and Businesses

Andreja Smole
3.4.2019

Your TRUSTED Control System Partner

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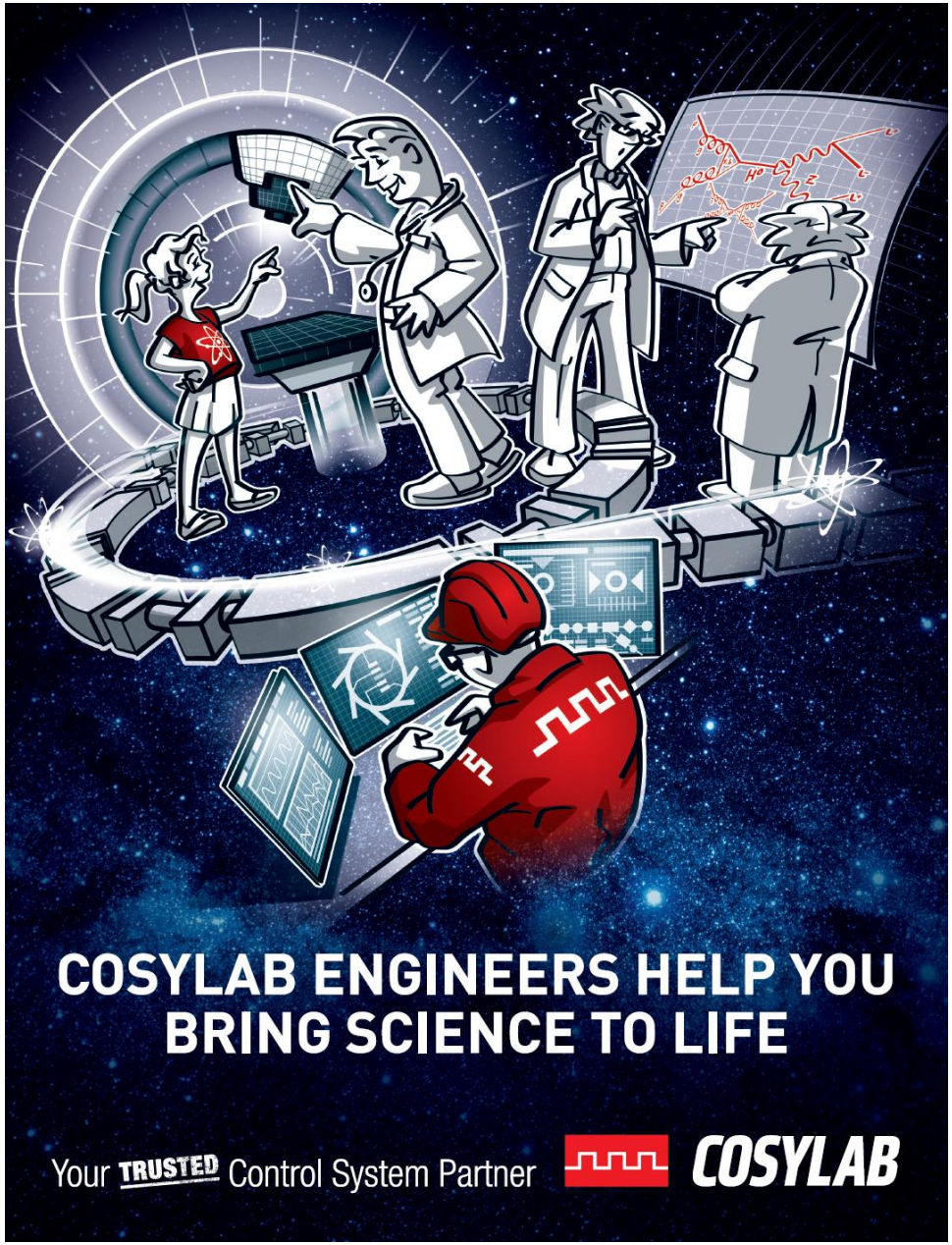
COSYLAB ENGINEERS HELP YOU
BRING SCIENCE TO LIFE
Your TRUSTED Control System Partner
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CERN (Geneva, Switzerland)

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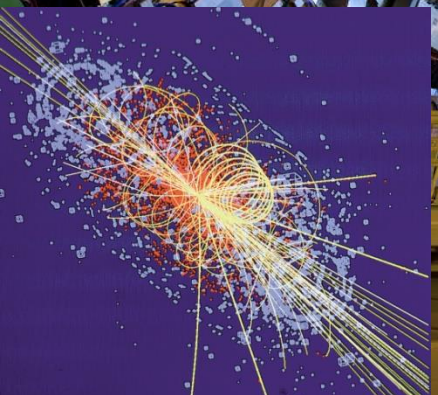
- CERN (Geneva, Switzerland)
- Is the largest, the most expensive and highest performing particle physics laboratory in the world
- The investment: ~4GEUR za LHC, + experiments before the discovery of the Higgs boson10,2 GEUR
- Cosylab:
  - Integration of the hardware into the control sistem
  - Development of the drivers for the hardware



"the most powerful instrument on earth"

CERN

ITER – International Thermonuclear Experimental Reactor (Cadarache, France)

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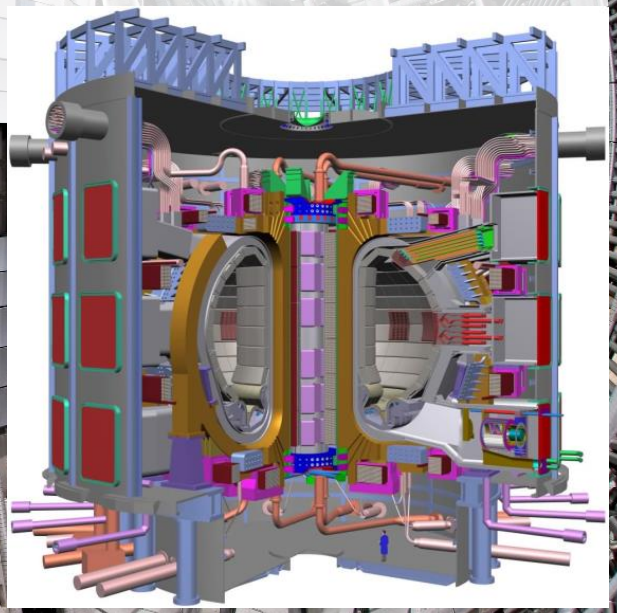
- We are creating the sun on the earth.
  - ITER is an international nuclear fusion research and engineering megaproject.
  - The ITER project aims to make the long-awaited transition from experimental studies of plasma physics to full-scale electricity-producing fusion power plants.
  - We are part of the control grupe
  - On-site work in Cadarashu
  - The duration of the project: 2010 →
  - CODAC control sistem for Tokamak

iter
china eu india japan korea russia usa



"one of the most challenging and innovative scientific projects in the world today"

We are building the pyramids and look into the space

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- ALMA (Atacama Large Millimeter/submillimeter Array), (Chile)
  - The largest, most complex and most expensive astronomical project
  - astronomical interferometer of the radio telescopes
  - Investment: 1GEUR
  - Kompleks of 66 12-meters radio telescopes in Atacama desert
  - Cosylab – developed the core of kontrol sistem
  - ALMA is an international partnership among Europe, the United States, Canada, East Asia and the Republic of Chile

ALMA

EGS-CC BUS ADAPTATION

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- ESOC (European Space Operations Centre)

esa
European Space Agency
Agence spatiale européenne

- The main objectives of proposed activity with the Title "**EGS-CC Bus Adaptation**" are to analyse buses commonly used in the space domain (three proposed by ESA), identify possible applications of their use within the EGS-CC, and assess the impact on the current EGS-CC status of implementing such bus interfaces. Consequently, propose to ESA one bus for the implementation of a proof of concept demonstrator and, upon approval by ESA, design, implement, and verify the proof of concept demonstrator by showing the ability of EGS-CC to interact with a controlled system through the selected bus in a test to be executed at ESTEC.

The cancer therapy

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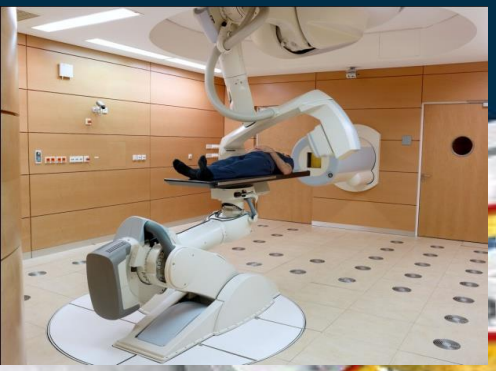
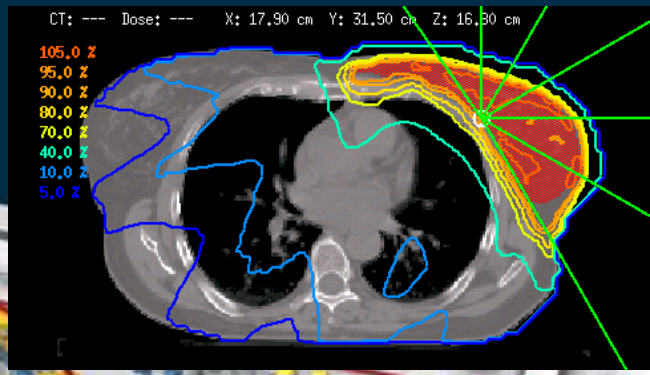
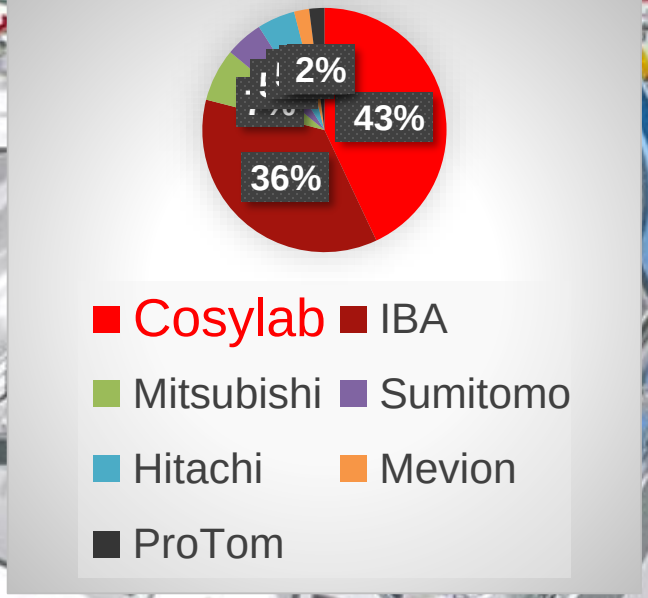
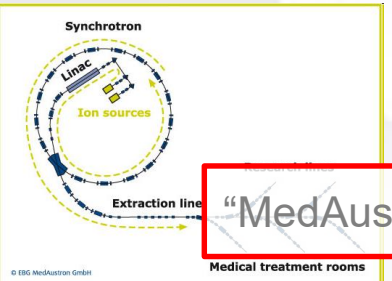




- MedAustron - Cancer therapy and research center (Wiener Neustadt, Austria)
  - Ion Beam Therapy: Cancer treatment with Carbon
  - Wiener Neustadt, Austria
  - First patient treatment in 2018
  - The investment: ~200MEUR





"MedAustron will give cancer patients and their families' reason to hope."


Canadian Light Source - CLS
Brookhaven National Laboratory - BNL
Facility for Rare Isotope Beams - FRIB
Advanced Photon Source - APS at Argonne National Laboratory
Stanford Linear Accelerator Center - SLAC
Fermi National Accelerator Laboratory - FNAL
Varian medical systems
Los Alamos National Laboratory - LANL
Indiana University
National Instruments - NI
Spallation Neutron Source - SNS
National Radio Astronomy Observatory - NRAO
Thomas Jefferson National Accelerator Facility - JLAB
Brazilian Synchrotron Light Laboratory
Atacama Large Millimeter Array - ALMA
Japan Synchrotron Radiation Research Institute - JASRI
Hitachi Zosen
The University of Tokyo
High Energy Accelerator Research Organisation - KEK
Japan Atomic Energy Research Institute
Nichizou Denshi Seigyo Kabushikigaisha
Repic Corporation
Riken
Institute for Molecular Science
Hiroshima University
NSRRC National Synchrotron Radiation Research Center
Pohang Accelerator Labolatory
Shanghai Institute of Applied Physics, Chinese Academy of Sciences
Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou
Tsinghua University
Southwestern Institute of Physics - SWIP, Chengdu
Raja Ramanna Centre for Advanced Technology - RRCAT
Australian national nuclear research and development organisation - ANSTO
Australian Synchrotron - AS

Customers

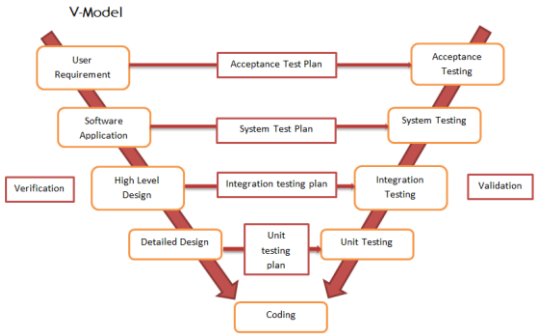

ideas
vision
Inspire
concept
growth
conceptual
motivate
incentive
CREATIVITY
achievement
project
goal
solution
ideas
planning
strategy
teamwork

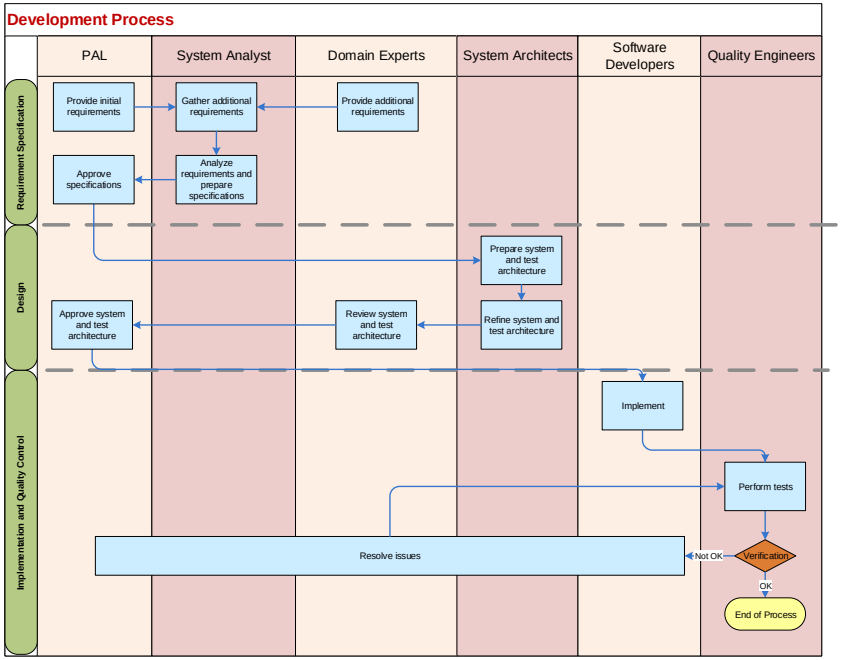
PROCESSES

PROCESS

- Standards:
  ISO9001, ISO13485,
  ISO14971, IEC62304

- Development process tailored to accelerator and medical control system development





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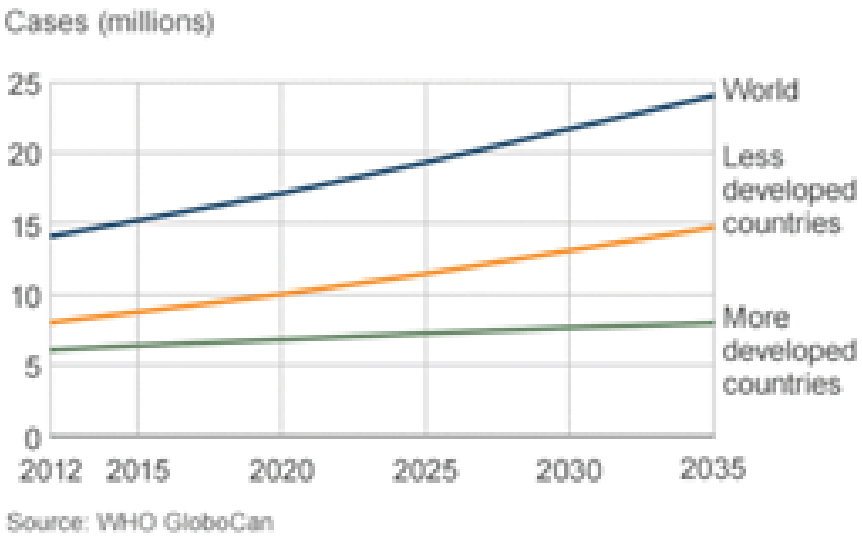
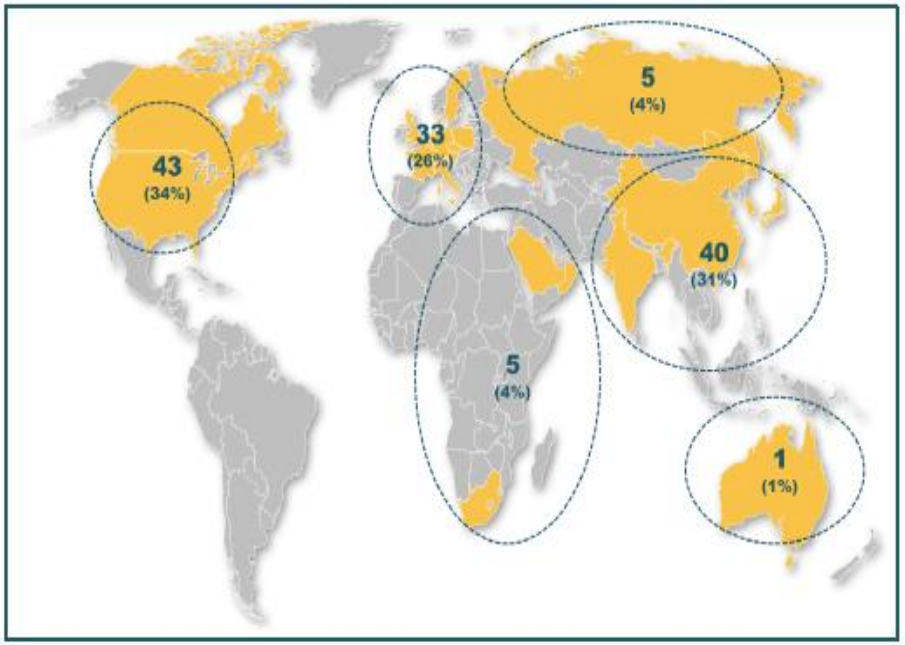
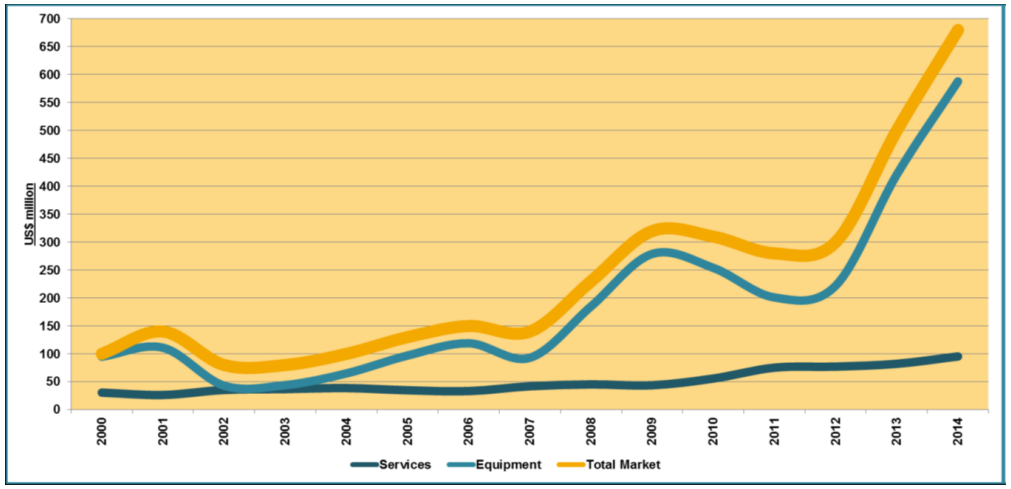
MARKET AND CUSTOMERS NEEDS

Proton therapy?



Source: WHO GloboCan





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COOPERATION WITH RESEARCHERS

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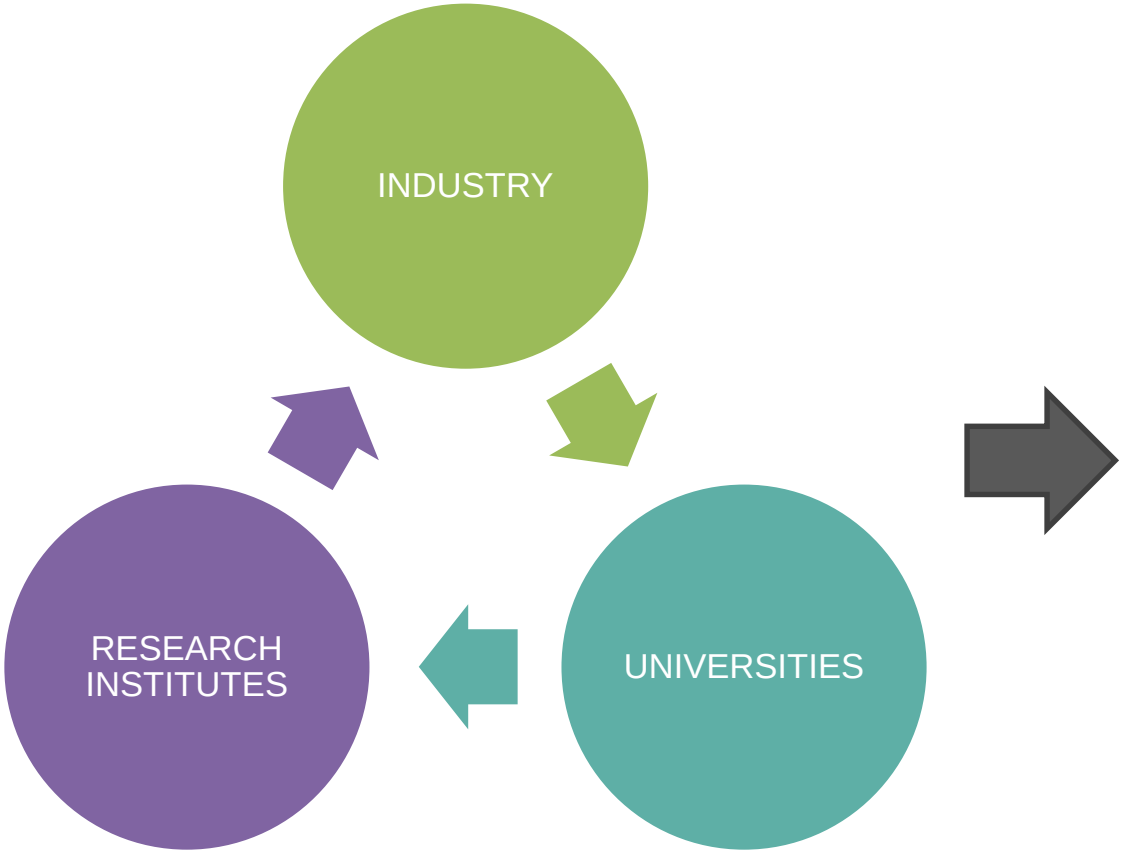

NEW

Solutions & Services


ideas
vision
Inspire
concept
growth
conceptual
motivate
incentive
CREATIVITY
achievement
project
goal
solution
ideas
planning
strategy
teamwork

PEOPLE


WinCC OA
MPS
ORACLE
FESA
LabVIEW
TANGO
Timing System
ACS
EPICS
MTCA.4
mySQL
cPCI
xTCA
TINE
VME
PVSS
PXIe
FPGA programming

Who are we?

Culture


work
great
interesting
working
company
challenging
projects
things
atmosphere
travel
firm
like
people
young
time
spirit
flexible
good
colleagues
lots
nice
dynamic
scientific
team
lot
year
opportunities
ambitious
possibilities
profit
challenges
satisfying
opportunity
improvements
potentials
rewarding
sleep
optimistic
positive
smart
something
Physics
large
philosophy
developing
innovative
fun
perfection
find
Big
cool
rarely
participate
conditions
driven
ready
take
Great
always
going
achieve
perspective!
Good
top
win-win
high-tech
better
best
promising
open
really
learning
climate
growing
somewhere
humanity
positions
meaningful
sports
co-workers
night
excel
stuff
seek
morning
friendly
grow
world
stems
Young
employees
ordinary
hi-tech
related
new
big

Thank you!

Andreja Smole

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Cosylab, laboratorij za kontrolne sisteme, d.d.

www.cosylab.com