

The Control Systems Integrator

COSYLAB

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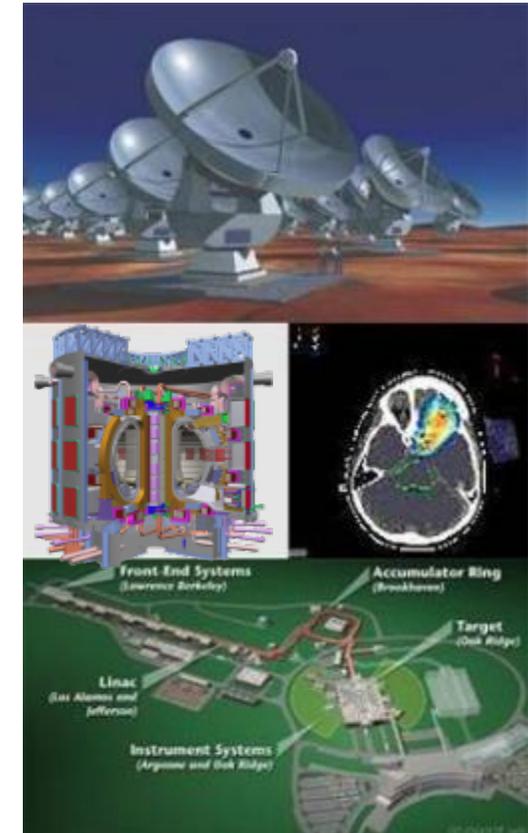
Your **TRUSTED** Control System Partner



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The Company Cosylab

- ❑ Worldwide leader for control system integration of nuclear accelerators and large physics facilities, **chosen by the majority of projects**
- We offer services and develop products where **expert knowledge** is required.
- We know how to use and develop **state-of-the-art electronics and software**.
- We **integrate** them into mankind's most complex systems.



1.2 Time

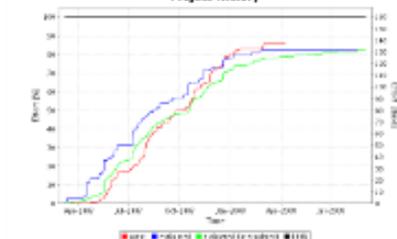
COSYLAB Data

Project size: 80,000 to 150,000 € (1.800m)
Time spent: 1M to 21.5M man-hours (80%)
Throughput: 9800/years

Progress: 100%

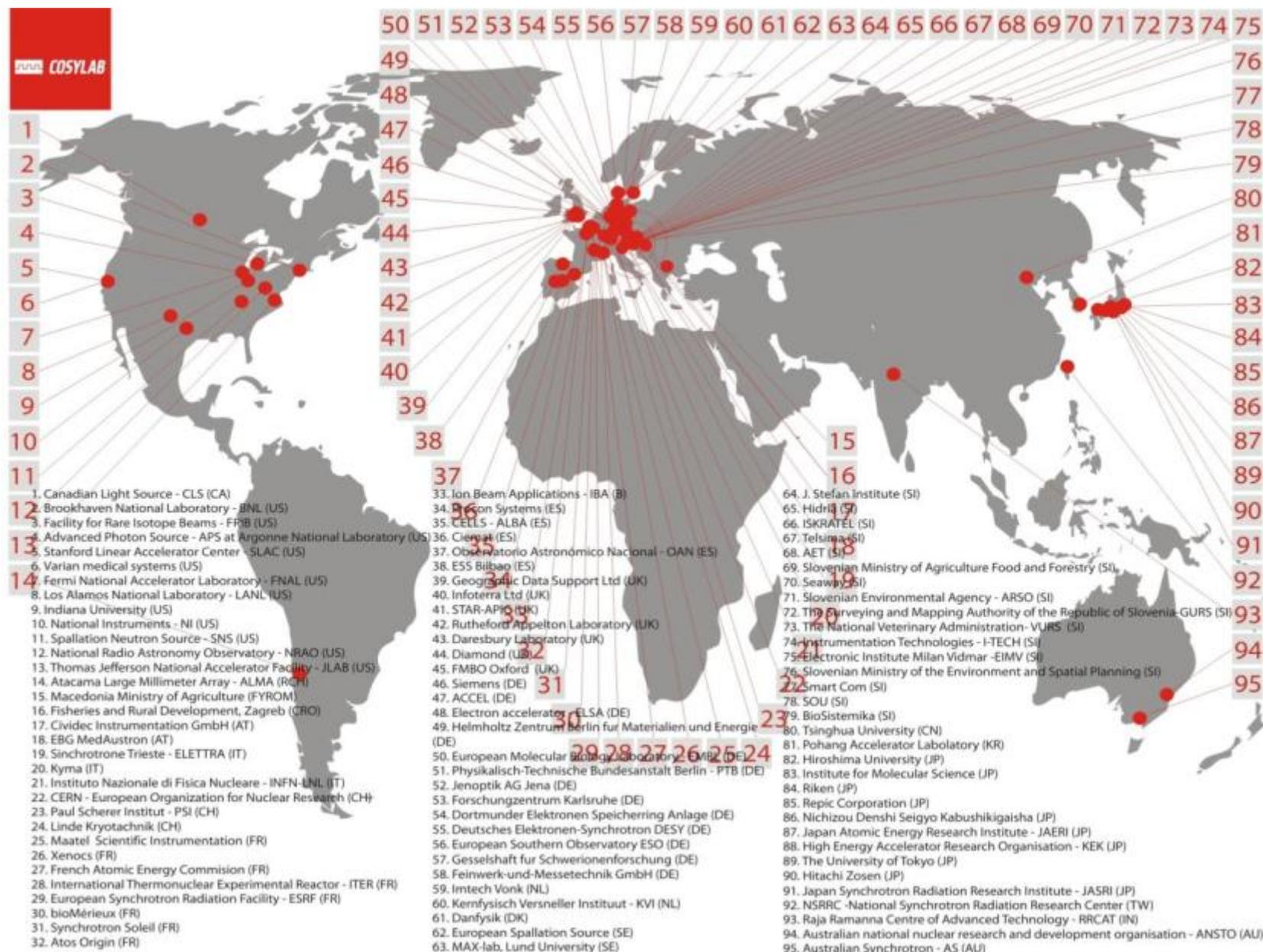
Projected time to finish: 1.300m (1.27 m)

Project History



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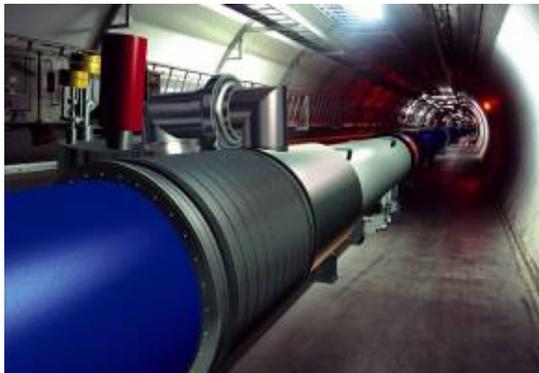
Customers From Nearly All Major Labs Worldwide



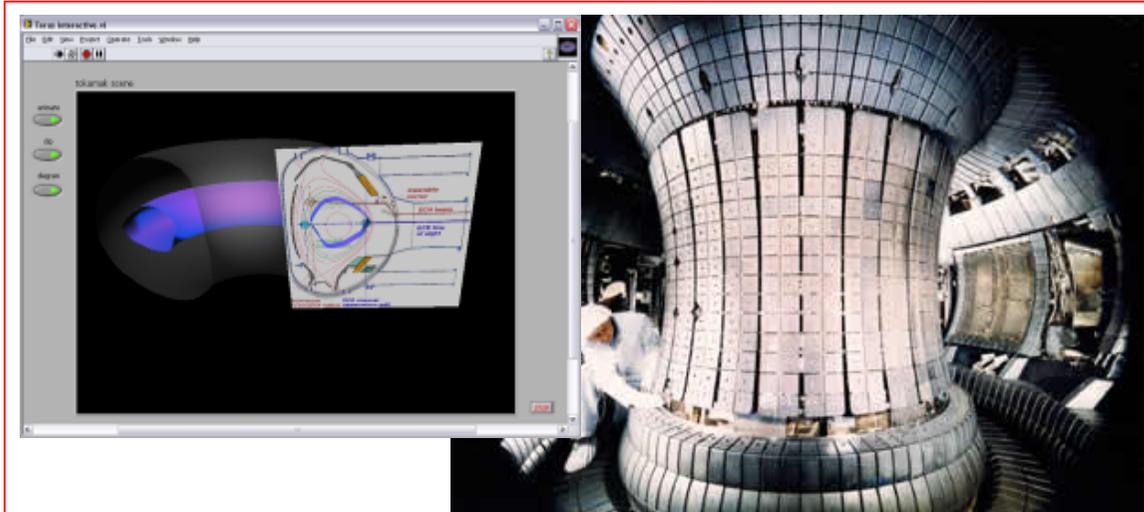
We Participate at 6 of the 10 Largest Big Physics International Projects



- Radiotelescope: ALMA (Munich, Atacama Desert)
- Neutron source: SNS (Oak Ridge), ESS (Lund)
- Nuclear physics: FAIR (Darmstadt), LHC (CERN)
- Fusion: ITER (Cadarache)



CERN Large Hadron
Collider
*“the most powerful
instrument on earth”*



ITER
*“one of the most challenging and innovative
scientific projects in the world today”*

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Who are we?

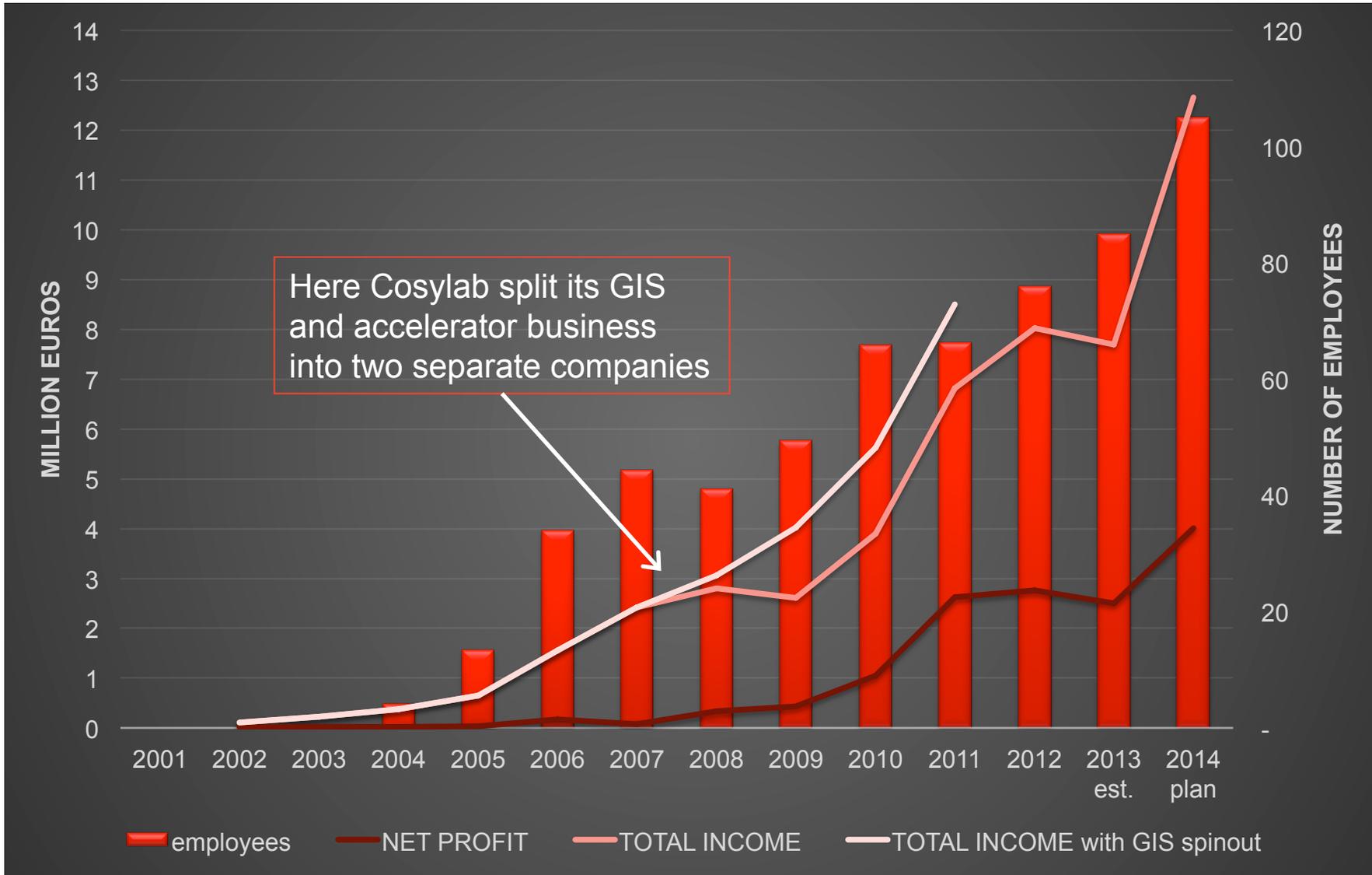


- ❑ 85 employees
 - 70 „production“ FTEs effectively
 - additional ~30 students in the pipeline
- ❑ Branches in Sweden, the USA, Japan and China



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Sustained Growth



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Kyma: a Company to produce Undulators



- ❑ Joint Venture between Cosylab and Sincrotrone Trieste (Italy)
- ❑ production of undulators for FELs and electron storage rings
- ❑ complete solution with CS integration
- ❑ Example customers: FERMI@Elettra, Canadian Light Source, BNL, ...

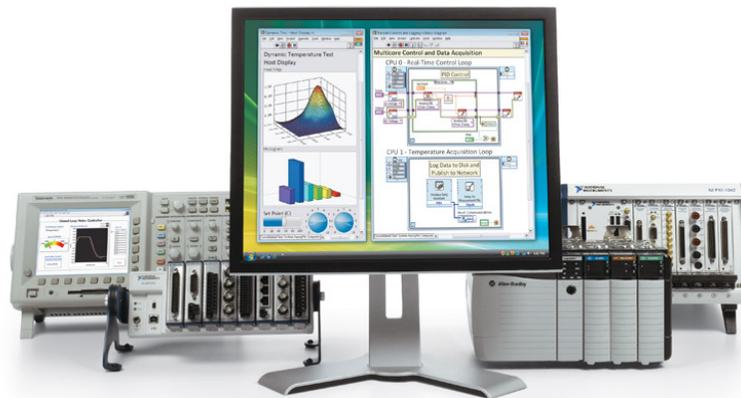


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Kontrolni Sistemi d.o.o.



- Cosylab group company
- Business innovation centre @ Sežana
- stronger local presence
 - close collaboration with Elettra and University of Nova Gorica
- Project partner of SLO-ITA CITIUS project
 - responsible for control system device integration



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Example of CITIUS control system

Monochromator control
version 1.0.2

Mode: Scanning Mode

MOTOR IS MOVING
STOP MOTORS

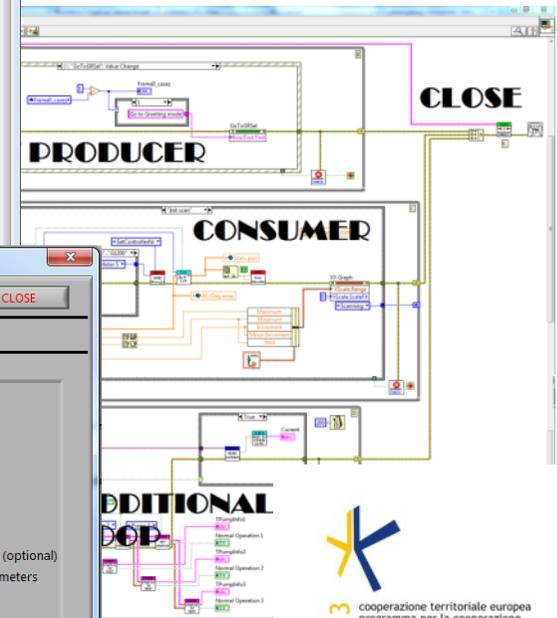
Lin. Select. of OPG	Lin. Select. of CG	Toroidal mirr.	Rotation OPG	Rotation CG	Recombination mirr.	Roll Refoc. mirr.	Pitch Refoc. mirr.
0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000	0,000000

MORE PUMP INFO

PUMP 1	PUMP 2	PUMP 3
Status word 1 <input type="checkbox"/> Ready to switch on <input type="checkbox"/> Ignore <input type="checkbox"/> Operation enabled <input type="checkbox"/> Fault condition is active <input type="checkbox"/> Pump speed is increasing <input type="checkbox"/> Pump speed is decreasing <input type="checkbox"/> Switch on lock <input type="checkbox"/> Warning temperature (optional) <input type="checkbox"/> Cooling water temperature failure (optional) <input type="checkbox"/> Frequency converter accepts parameters <input type="checkbox"/> Normal operation <input type="checkbox"/> Pump is revolving <input type="checkbox"/> Converter dependant warning 1 <input type="checkbox"/> Converter dependant warning 2 <input type="checkbox"/> Converter dependant warning 3 <input type="checkbox"/> Remote has been activated	Status word 2 <input type="checkbox"/> Ready to switch on <input type="checkbox"/> Ignore <input type="checkbox"/> Operation enabled <input type="checkbox"/> Fault condition is active <input type="checkbox"/> Pump speed is increasing <input type="checkbox"/> Pump speed is decreasing <input type="checkbox"/> Switch on lock <input type="checkbox"/> Warning temperature (optional) <input type="checkbox"/> Cooling water temperature failure (optional) <input type="checkbox"/> Frequency converter accepts parameters <input type="checkbox"/> Normal operation <input type="checkbox"/> Pump is revolving <input type="checkbox"/> Converter dependant warning 1 <input type="checkbox"/> Converter dependant warning 2 <input type="checkbox"/> Converter dependant warning 3 <input type="checkbox"/> Remote has been activated	Status word 3 <input type="checkbox"/> Ready to switch on <input type="checkbox"/> Ignore <input type="checkbox"/> Operation enabled <input type="checkbox"/> Fault condition is active <input type="checkbox"/> Pump speed is increasing <input type="checkbox"/> Pump speed is decreasing <input type="checkbox"/> Switch on lock <input type="checkbox"/> Warning temperature (optional) <input type="checkbox"/> Cooling water temperature failure (optional) <input type="checkbox"/> Frequency converter accepts parameters <input type="checkbox"/> Normal operation <input type="checkbox"/> Pump is revolving <input type="checkbox"/> Converter dependant warning 1 <input type="checkbox"/> Converter dependant warning 2 <input type="checkbox"/> Converter dependant warning 3 <input type="checkbox"/> Remote has been activated
Status values 1 Actual stator frequency [Hz]: 0 Converter temperature [°C]: 0 Motor current [A]: 0 Magnetic bearing temperature [°C]: 0 Intermediate circuit voltage Uz _k [V]: 0	Status values 2 Actual stator frequency [Hz]: 0 Converter temperature [°C]: 0 Motor current [A]: 0 Magnetic bearing temperature [°C]: 0 Intermediate circuit voltage Uz _k [V]: 0	Status values 3 Actual stator frequency [Hz]: 0 Converter temperature [°C]: 0 Motor current [A]: 0 Magnetic bearing temperature [°C]: 0 Intermediate circuit voltage Uz _k [V]: 0



Pocket Desktop, 2 axes application



2007-2013
 cooperazione territoriale europea
 programma per la cooperazione
 transfrontaliera
Italia-Slovenia
 evropsko teritorialno sodelovanje
 program čezmejnega sodelovanja
Slovenija-Italija



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 Projekt sofinancira Evropski sklad
 za regionalni razvoj



Control

Letrika Sol d.o.o.



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Micro Inverters for Solar Plants

- Joint venture Letrika and Cosylab



- 1 DC-AC convertor per panel



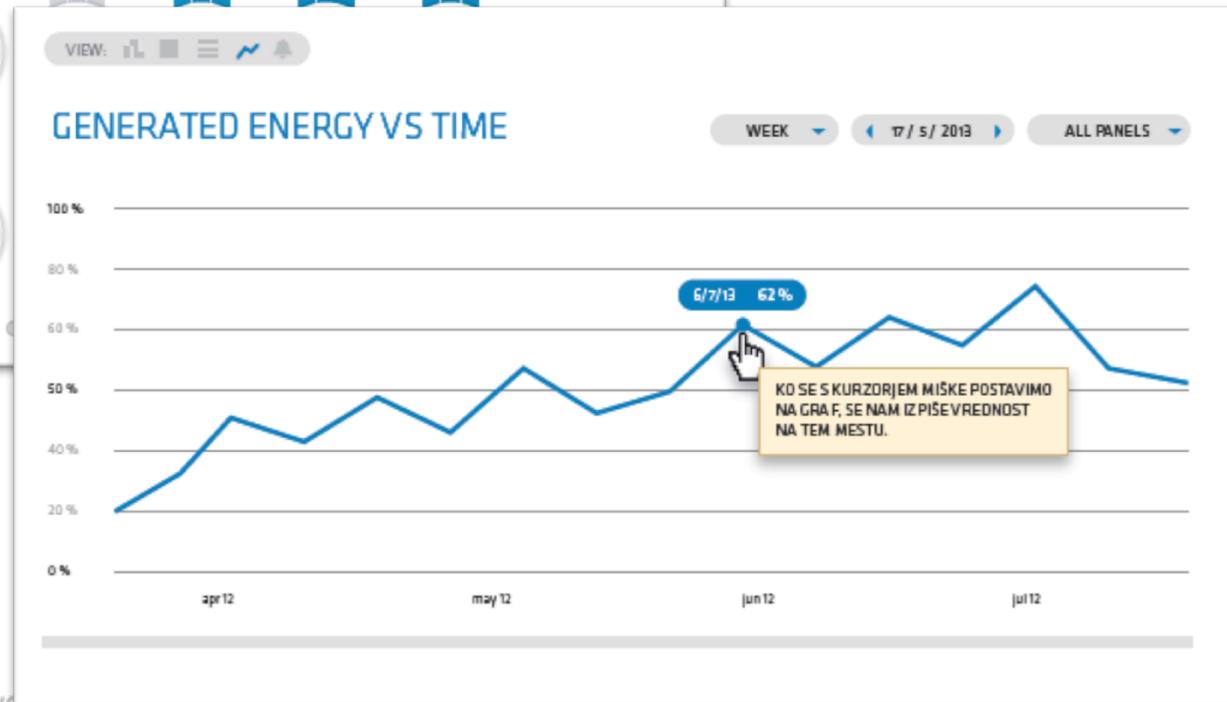
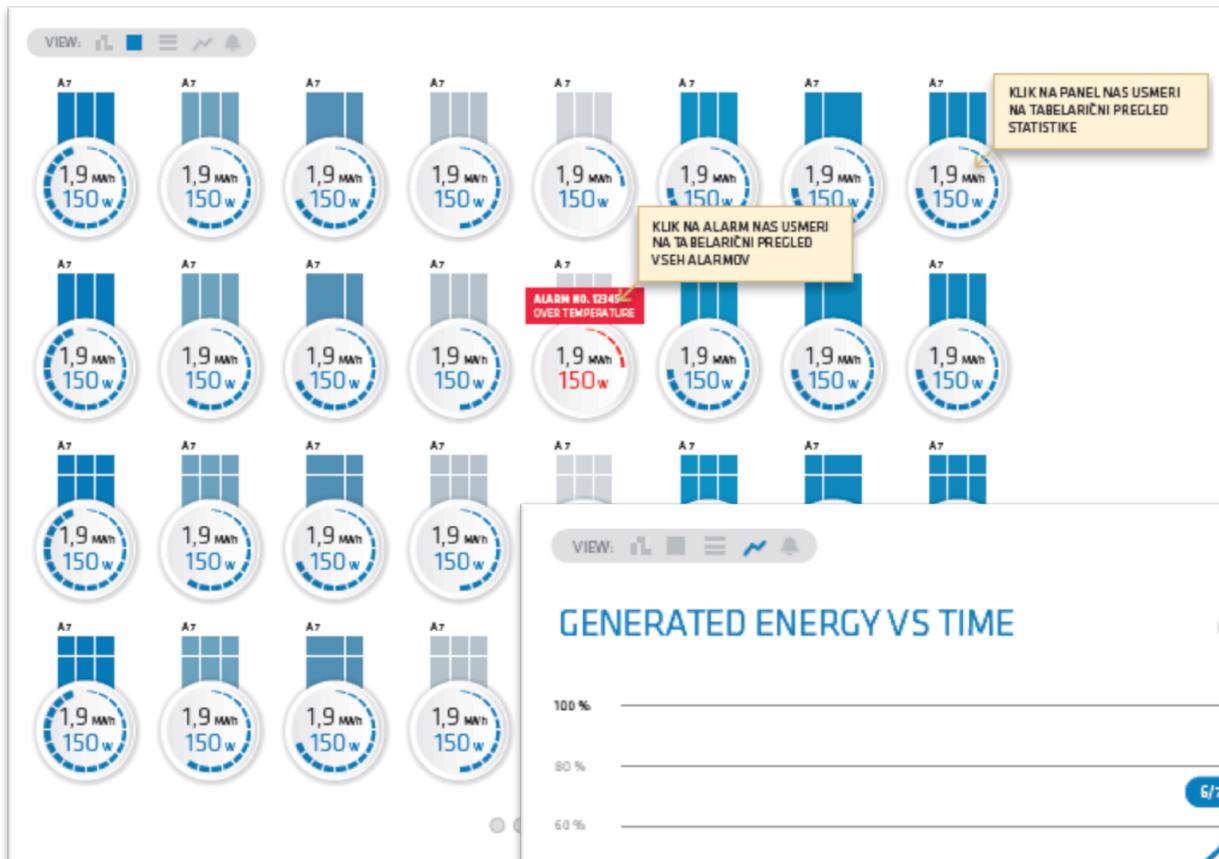
- Central RF Communication Gateway



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Letrika Sol Micro Inverter App

11 Screenshots



THANK YOU!

Frank Amand

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