

# KONČAR – Electrical Engineering Institute

---

Reliable partner in the areas of electrical engineering,  
rail vehicles and infrastructure, laboratory testing,  
diagnostics, and certification

**KONČAR**  
ELECTRICAL ENGINEERING  
INSTITUTE

# The part of....

## PARENT COMPANY

### KONČAR – ELECTRICAL INDUSTRY

#### BUSINESS SEGMENTS

POWER GENERATION	POWER TRANSMISSION AND DISTRIBUTION	RAIL SOLUTIONS AND INFRASTRUCTURE	DIGITAL SOLUTIONS AND PLATFORMS
------------------	-------------------------------------	-----------------------------------	---------------------------------

#### COMPANIES

SWITCHGEAR
DALEKOVOD
DIGITAL
DISTRIBUTION AND SPECIAL TRANSFORMERS
ELECTRIC VEHICLES
ELECTRONICS AND INFORMATICS
GENERATORS AND MOTORS
<b>ELECTRICAL ENGINEERING INSTITUTE</b>
ENGINEERING CO.
MOTORS AND ELECTRICAL SYSTEMS
METAL STRUCTURES
INSTRUMENT TRANSFORMERS
RENEWABLE SOURCES

#### AFFILIATED COMPANY

POWER TRANSFORMERS

#### JOINT SERVICE CENTER

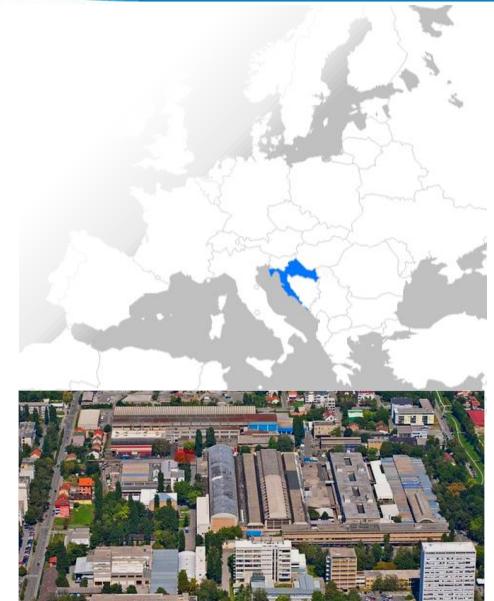
INFRASTRUCTURE AND SERVICES

**KONČAR**  
ELECTRICAL ENGINEERING  
INSTITUTE

# Who we are...

- Established in 1961, reorganized in 1991
- Based in Zagreb, Croatia
- Independent company within KONČAR Group

<b>19,18</b>		<b>1</b>
mil. € operating income in 2024		Laboratory Center
<b>220</b>	<b>78%</b>	<b>750</b>
employees	employees with high or higher education	accredited test methods



**KONČAR**  
ELECTRICAL ENGINEERING  
INSTITUTE

# KONČAR – Institute has...

## Integrated Management System:

Quality Management System

ISO 9001  
HRN EN ISO/IEC 17025  
HRN EN ISO/IEC 17065

Environmental Management System

ISO 14001

Occupational Health and Safety Management System

ISO 45001



# Accreditation and Certificates



## Accreditation in accordance with **HRN EN ISO/IEC 17025:**

- » for the scope of testing specified in Accreditation Certificate No. 1035
- » for the scope of calibration specified Accreditation Certificate No. 2057

## Accreditation in accordance with **HRN EN ISO/IEC 17065:**

- » for the scope of certification specified in Accreditation Certificate No. 3169

## Accreditation in accordance with **HRN EN ISO/IEC 17020:**

- » for the scope of inspection specified in Accreditation Certificate No. 6544



# Certification body for products

NB 2494 | The Institute is a Notified Body of the European Commission:

- Low-voltage electric equipment
- High-voltage electric equipment
- Machinery
- Gas appliances
- Electromagnetic compatibility
- Radio and telecommunication terminal equipment
- Rail equipment
- Welding procedures
- Noise emission
- Corrosion protection
- IP and IK degree of protection
- Environmental conformity assessment
- ...

**KONČAR-Institut za elektrotehniku d.d.**  
Fallerovo šetalište 22, p.p. 202  
10002 Zagreb  
Country : Croatia

Phone : 00 385 1 3655 277  
Fax : 00 385 1 3655 277

Email : [scert@koncar-Institut.hr](mailto:scert@koncar-Institut.hr)  
Website : [www.koncar-institut.hr](http://www.koncar-institut.hr)

Notified Body number : 2494

Last approval date : 01/07/2013

## Legislations

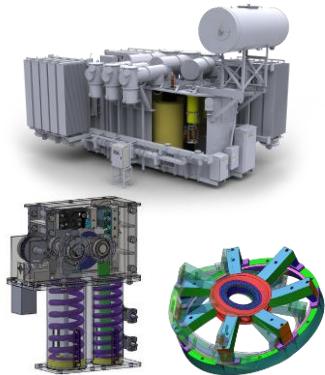
- 2014/53/EU Radio equipment
- 2014/68/EU Pressure equipment
- 2000/14/EC Noise emission in the environment by equipment for use outdoors
- 2014/30/EU Electromagnetic compatibility
- Regulation (EU) 2016/426 Appliances burning gaseous fuels

The Institute helps manufacturers in assessing the conformity of their products with the European directives and standards before labeling CE marking and placing on the EU market

**KONČAR**  
ELECTRICAL ENGINEERING  
INSTITUTE

# Key activities:

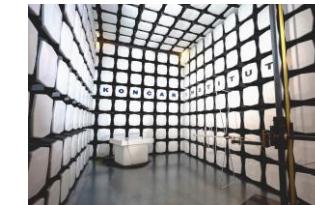
Power Engineering and  
Railway



Research and development



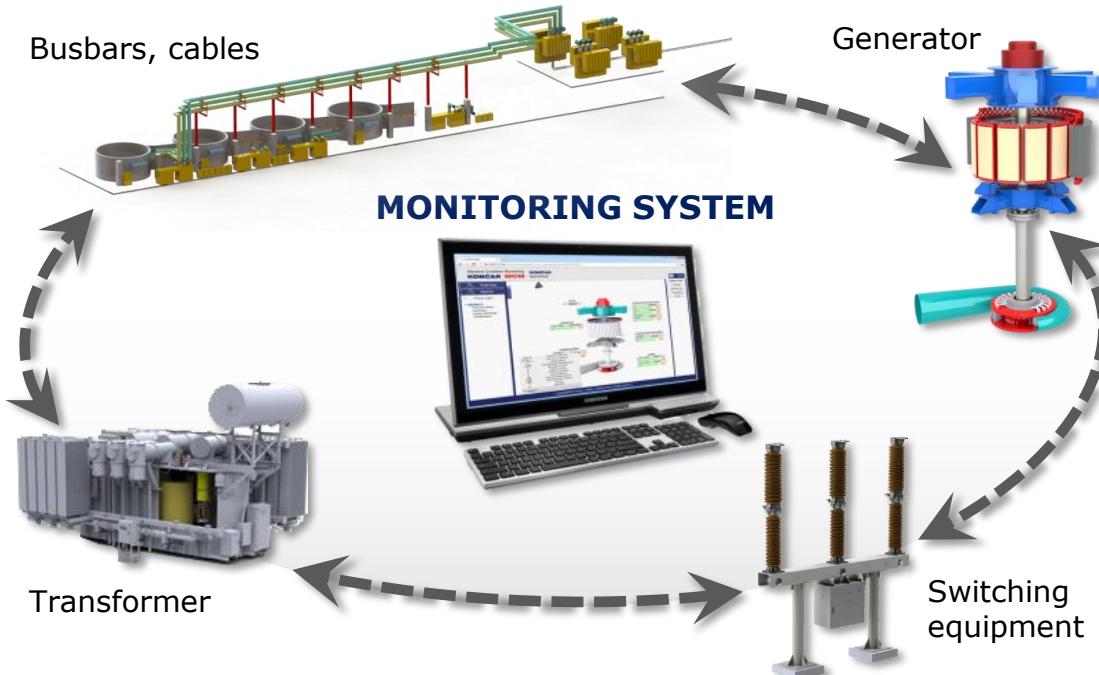
Monitoring and control  
solutions



On-site (field) and laboratory  
testing  
Certification of electrical products

**KONCAR**  
ELECTRICAL ENGINEERING  
INSTITUTE

# Integration of transformer, machine and bay monitoring system



# Transformers and bushings monitoring system

**KONČAR TMS**

Fr/Mar 18 2011 12:16:45 GMT+0100 (Central European Standard Time) Logout

OVERVIEW    TRENDS    ALARMS    ANALYSIS    REPORTS    DOCUMENTATION

SUBSTATION

T401

Active Part  
Tap Changer  
Bushings  
Cooling System  
Dissolved Gases in Oil Analysis  
Monitoring System

T402

NAPONI

Phase 1U	0 kV
Phase 1V	0 kV
Phase 1W	0 kV
Phase 2U	0 kV
Phase 2V	0 kV
Phase 2W	0 kV
Phase 3U	0 kV
Phase 3V	0 kV
Phase 3W	0 kV

STANJE

Transformer Operation	0
Apparent Power*	0 MVA
Load Factor*	0

TEMPERATURE

Hot Spot	0 °C
Tank Packet Oil	0 °C
Ambient	0 °C
Bottom Oil	0 °C
OLTC tank U-transformer tank*	0 K
OLTC tank V-transformer tank*	0 K
OLTC tank W-transformer tank*	0 K

ANALIZE

Moisture in Oil	0 ppm
Gas in Oil	0 ppm
Oil Level MAX	0
Oil Level MIN	0



Copyright©2010 Koncar - Institut za Elektrotehnika. All rights reserved.



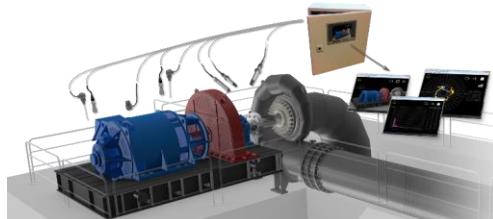
**KONČAR**  
ELECTRICAL ENGINEERING  
INSTITUTE

# Rotating machines monitoring system

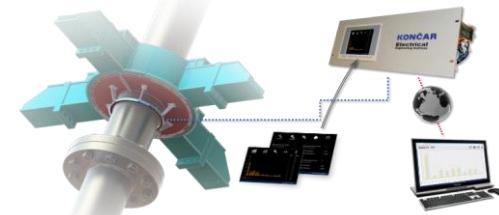
LARGE HYDRO POWER PLANTS



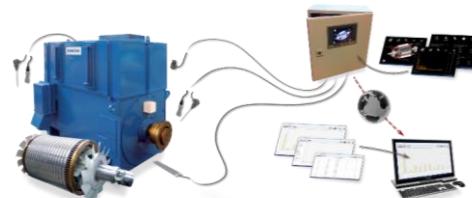
SMALL HYDRO POWER PLANTS



HYDRO AND TURBO GENERATORS



INDUCTION MOTORS



**KONCAR**  
ELECTRICAL ENGINEERING  
INSTITUTE

# Embedded control system

HW/SW components and platforms



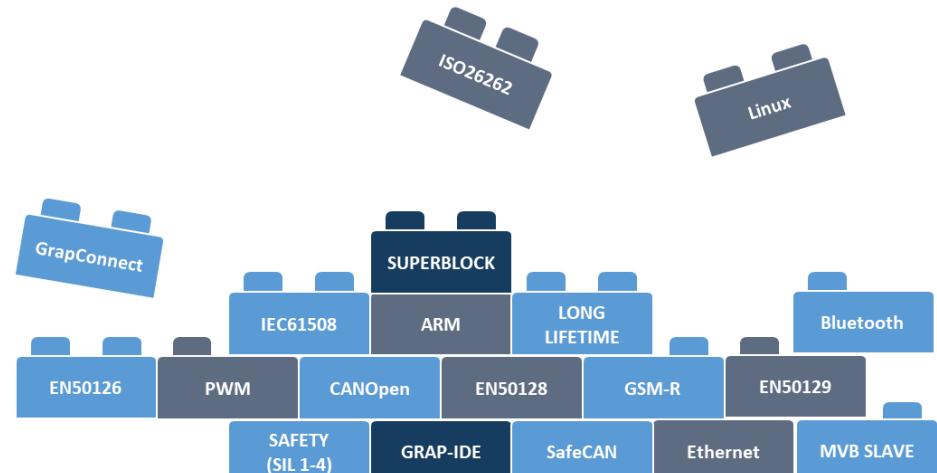
**KONCAR**  
ELECTRICAL ENGINEERING  
INSTITUTE

# Development of systems with functional safety requirements

For almost three decades we are helping our clients in solving challenges related to embedded control solutions.

Our approach:

- Customers are our partners
- Experienced, highly competent and creative associates
- Harmonisation of customer's requirements with the LCC, RAMS and CENELEC
- Philosophy like LEGO's: **develop once - use multiple times**
- Proprietary software development environment - **Grap IDE**



# Compliance with highest safety requirements

We have specialized ourselves in providing solutions which fulfils functional safety requirements – **EN 50126/8/9 up to SIL4**

## FUNCTIONAL SAFETY IN DIFFERENT AREAS

Domain	Domain-Specific Safety Levels				
Railway (CENELEC 50126/128/129)	-	SIL-1	SIL-2	SIL-3	SIL-4
General (IEC-61508)	-	SIL-1	SIL-2	SIL-3	SIL-4
Automotive (ISO 26262)	QM	ASIL-A	ASIL-B/C	ASIL-D	-
Aviation (DO-178/254)	DAL-E	DAL-D	DAL-C	DAL-B	DAL-A

Some of the references:



# Testing facilities



High Voltage  
Laboratory



High Power  
Laboratory



Laboratory for  
EMC and Safety



Environmental  
Laboratory



Laboratory for Power  
Systems and Drives



Laboratory for  
Mechanical and  
Technological Testing



Laboratory for  
Rotating Machines  
and Electrical Drives



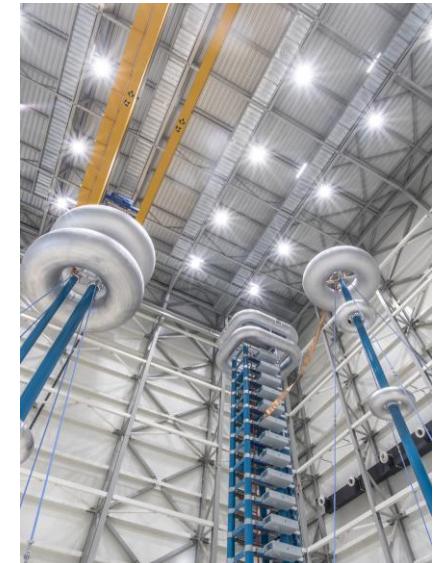
Calibration  
Laboratory



Laboratory for  
Physical and  
Chemical Testing

# Approvals

- Laboratory Center is approved for testing by Abu Dhabi Transmission and Despatch Company - **TRANSCO**, a subsidiary of Abu Dhabi National Energy Company (TAQA), and Saudi Electricity Company - **SEC**
- Laboratory Center is approved by Dubai Electricity and Water Authority - **DEWA** to perform type tests for the following power equipment:
  - » MV Power Cables
  - » LV Power Cables
  - » Oil Distribution Transformers (type and special tests)
  - » Cast Resin Distribution Transformers (type and special tests)
  - » RMU and SWGR
  - » Prefabricated Substation
  - » Current Transformers
  - » Voltage Transformers
  - » MV Cable Accessories
  - » Metallic Connectors
  - » MV Capacitors and reactors



# One-stop testing and calibration services



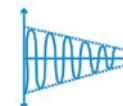
High-voltage and low-voltage power equipment



Material properties



Environmental impact



Electromagnetic compatibility



Electrical safety



Radio equipment



Sources of electromagnetic fields



Acoustics (noise)



Low-voltage electrical installations and lightning protection systems



Testing the physical-chemical properties of materials



Calibration of measuring and test equipment

# Field tests and diagnostics

Power and measuring  
transformers



Generators  
and motors



Switchgear  
equipment



Energy  
efficiency



Electromagnetic  
compatibility



Electromagnetic  
fields

# Contact us

---



[info@koncar-institut.hr](mailto:info@koncar-institut.hr)



[www.koncar-institut.hr/en](http://www.koncar-institut.hr/en)



KONČAR - Electrical Engineering Institute