

# CEMIS

Centre for Measurement and Information Systems



## *Sports technology - CEMIS solutions for Sports Industry, Research and Testing*

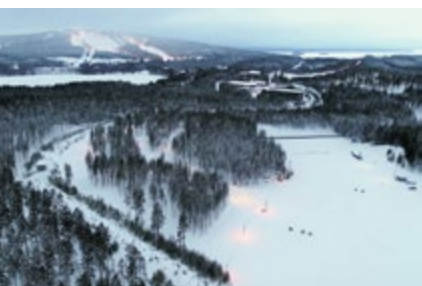
CEMIS - the Centre for Measurement and Information Systems is a contract based joint centre of the Universities of Oulu and Jyväskylä, Kajaani University of Applied Sciences, VTT Technical Research Centre of Finland and CSC - IT Centre for Science. CEMIS specializes in research and training in the field of measurement and information systems.

### *CEMIS - Sports Technology*

The role of sports technology is to find solutions to combine technological expertise with sport or elite sport, exercise and health promotion.

CEMIS recognizes the growing importance of the sports technology sector and aims to help companies or other organizations to create profitable business by improving their processes, efficiency and skills through innovative measurement and information systems for various needs. Our advantage is in the possibility to create novel solutions by combining the expertise of the various research or technology development units of CEMIS.

The Sports Technology Unit of the University of Jyväskylä located in Vuokatti - about 35 km distance from the town of Kajaani - coordinates the Sport technology expertise actions in CEMIS.



Vuokatti offers exceptional conditions for both winter and summer training and all year round services for athlete testing, research, coaching and training.

### *CEMIS Sports Technology funders:*



European Union  
European Regional  
Development Fund

Leverage from  
the EU  
2014-2020



Kainuu

## Sports technology know-how and services

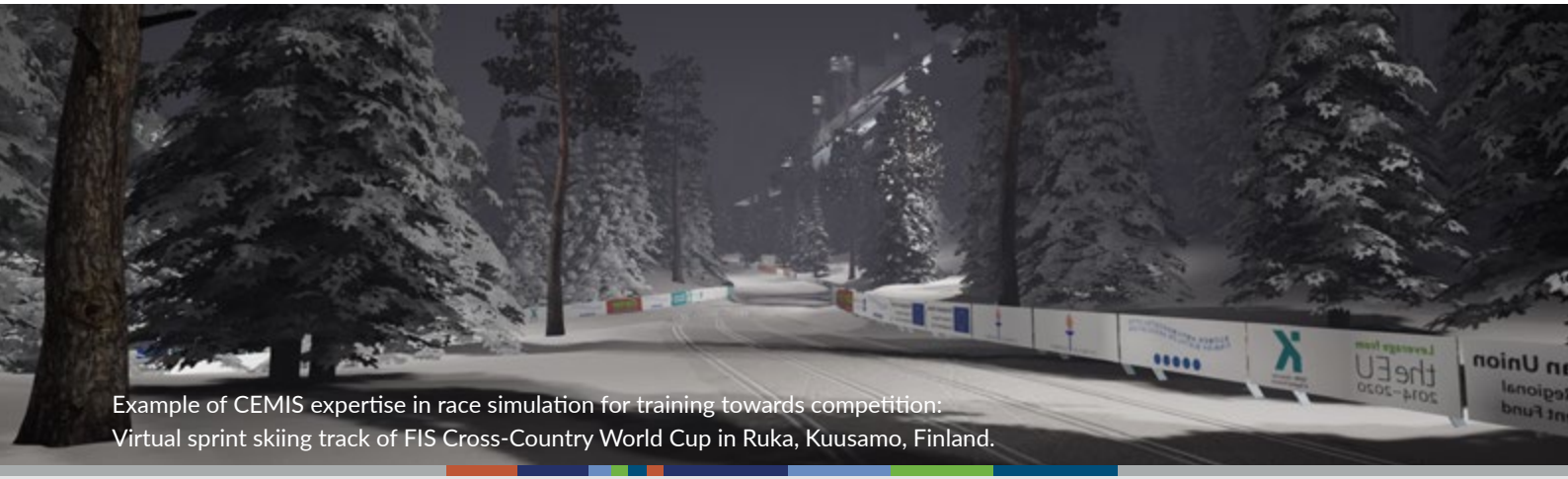
- Top-level research in the field of Sport Science
  - Biomechanics
  - Exercise Physiology
  - Science of Sport Coaching and Fitness Testing
- Sports technology know-how
  - Athlete testing services
    - > Wireless measurements
    - > Miniature sensor integrations
    - > Race simulator environments for sports
  - Snow sport equipment testing
  - Prototype development
    - > Validation against “golden standards”
    - > Extensive testing and calibration services – especially force measurement
- Training and consultation
  - For business, research and national sport associations
- Education
  - Sports technology Masters’ and Doctors’ programmes

## Premises, test laboratories and training facilities

The premises of the Sports Technology Unit are located in the Snowpolis technology park in the heart of the Vuokatti Sport campus area. In the area operates also the Vuokatti Sport Olympic Training Center and the Vuokatti-Ruka Sports Academy. The campus area offers versatile operational environment for Nordic sports testing, research and training which all are located within 500 meters;

- Skiing laboratory with a large treadmill
- Laboratories of Physiology and Biomechanics
- Ski testing laboratory
- Biathlon shooting range
- Vuokatti ski tunnel
- Ski jumping hills (HS14/HS35/HS54/HS100)
- In addition, versatile cross-country skiing tracks start from the campus area and the Vuokatti Slopes are about 1 km distance from the area.

For more information on our services, please contact:  
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Example of CEMIS expertise in race simulation for training towards competition:  
Virtual sprint skiing track of FIS Cross-Country World Cup in Ruka, Kuusamo, Finland.

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CEMIS employs around 100 measurement and information system experts. The centre's annual funding is over € 11 million.

CEMIS offers a wide range of services to companies and research institutes, including research and development, analysis and testing, device development and business development.

## The strategic focus areas of CEMIS are:

ON-LINE MEASUREMENTS FOR CLEANTECH AND BIOTECH	SPORTS, WELLBEING AND HEALTHCARE MEASUREMENTS	INTERNATIONAL TECHNOLOGY BUSINESS DEVELOPMENT
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