Nomadic Systems

Energy management

- Power-autonumous systems
- Management and optimization of the consumption
- Software techniques for low power consumption

Implementation

- Architectures for portable devices
- Selection and effective allocation of functions
- Ergonomic human-machine interfaces

Data processing and storage

- Micro-archiving systems
- Data compression
- Data encryption

Communication

- Robust fieldbuses for limited resources
- Radio transmission
- Ad hoc protocols

A project to submit, an analysis to conduct, a solution to find?

Your contact:

François Corthay, professor HES

françois.corthay@hevs.ch • Tel. 027 606 87 57

ISYS
Network of excellence
Integration and Systems

The HES-SO “Integration and Systems” network of excellence consists of over 150 engineers with recognized expertise in the fields of micro-systems, embedded systems, mechatronics and signal processing.

Five different thematic clusters have been created to gather the best competences of the network, independently from the location of engaged resources:

- Optical systems
- Sensors, actuators and conditioning
- Mechatronics and control software
- Nomadic systems
- High performance embedded systems

Looking for more information?

www.isys.hes-so.ch

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Hes·so
Haute Ecole Spécialisée de Suisse occidentale
Fachhochschule Westschweiz
University of Applied Sciences Western Switzerland

Nomadic Systems

8 professors and their team ready
to face new challenges with you

ISYS
Network of excellence
Integration Systems

Your needs Our skills

Your needs

- Applied research and development (aR&D)
- Consulting, preliminary studies and expert reports
- Prototyping for assess technological risks
- Continuing education courses

Our skills

- Architecture of small-sized systems
- Micro-power energy sources
- Onboard energy management
- Energy conversion electronics
- Sensor interfacing
- Low-power microcontrollers
- Programmable digital circuits
- Wireless communication
- Ad hoc protocols
- Real-time microkernel
- Data microstorage
- Optimization and integration of a nomadic system

Recent projects

Labcard

Ultraportable instrumentation of the size of a credit card, measuring the level of sugar in liguids and transmitting this information to a server via Bluetooth and a mobile phone

ePower

Generic architectures for charging systems, retreiving energy from an optical fiber, a photovoltaic cell or a Li-Ion Li-Polymer battery

Control circuit for a toy helicopter

Design of a small-sized electronic system with very low power consumption to be placed on a toy helicopter in order to implement an interactive game

Microphone for electric bass

Development of a microphone and its associated electronics for a swiss guitar maker

Long-life portable ECG recorder

Development and implementation of ECG recorder to be worn without interruption

Recorder cork

Development of a cork for plastic bottles with an electronic system recording the openings and closings

Soft real-time kernel

Preemptive multitasking kernel managing the energy consumption for microcontrollers with little memory capacity

Inductive position sensor

Development of a small size and low-power microsystem for inductive position measurement

Our engineers at your service

Thanks to a pro-active technological survey, our professors and their collaborators are positioned at the leading edge of their specialties. They will bring advanced skills to design new solutions to suit your needs.

René Beuchat

Embedded Systems on FPGA with softcore processor and specialized interfaces

François Corthay

Implementation of digital functions with the aim to consume as little resources as possible

Claude Evéquoz

Real-time, low-power embedded software

Eric Fragnière

Low-power analog and mixed signal integrated circuits for vision and hearing

Bertrand Hochet

Sensor networks with radio communication

Gérald Huguenin

Integration of analog functions in digital systems

Pierre Pompili

Architecture of small-size systems, management and optimization of the available energy

François Salchli

Simulations and development of microsystems