



The ABC of LabVIEW (@XIOS)

XIOS Introduction

>> Introduction to XIOS Hogeschool Limburg

>> What is XIOS doing with LabVIEW?

>> From children towards phd's

>> Workshops for children and teachers, future teachers

>> XIOS internal use

>> LabVIEW academy

>> Phd's

>> PWO FPDA-1 FPDA-2 MSD



XIOS University College

Campus Hasselt

Department of Commercial and Business Management Studies
(HWB)

Department of Teacher Training (LEO)

Department of Social Studies (SAW)

Campus Diepenbeek

Technology Campus

N-Tech

TIW (Technology and Industrial Sciences)



XIOS

CAMPUS DIEPENBEEK



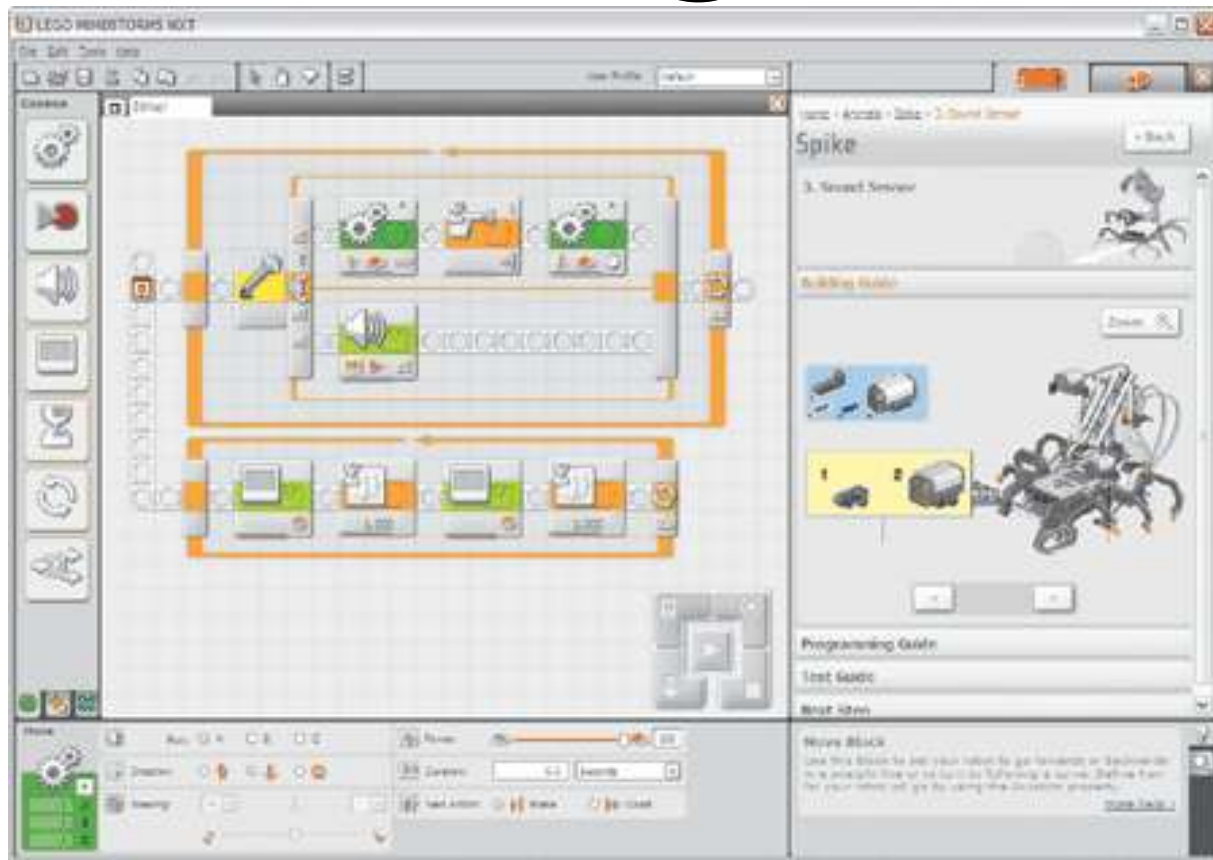
Children G-Programming

LabVIEW to get children involved and interested in Technology

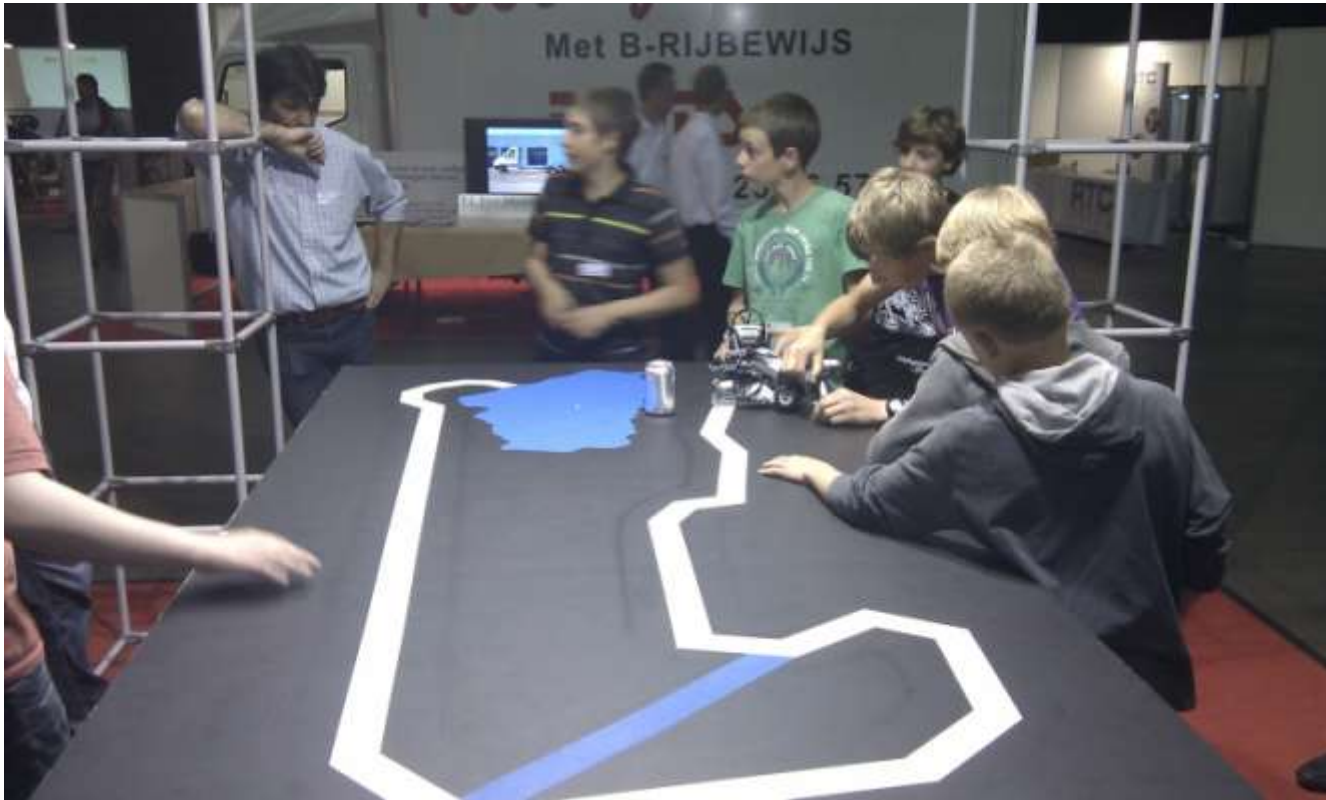
- >> WETENSCHAPSWEEK
- >> DAG van de technologie
- >> MINDSTORMS NXT
- >> RTC LIMBURG
- >> ROBOCUPJUNIOR



Children G-Programming



Children G-Programming



Teachers Education

XIOS INTERNAL TECHNOLOGY EDUCATION FOR
FUTURE TEACHERS OF OTHER DEPARTMENTS

RTC LIMBURG COURSES FOR TEACHERS OF
SECONDARY SCHOOLS



Bachelor Students LabVIEW Academy

>> 6-hours introduction to LabVIEW

Additional chapters on state machines,
event driven programming, call library
function node,... and extra exercises

>> Communication with electronic circuits
(sensors, motors, DAQ, ...) dll driver (LabJACK),
ActiveX,...

>> Communication with Measurement
Instruments (Tektronix)

>> LabVIEW FPGA on Xilinx Spartan3E starter
boards

>> LabVIEW Academy (CLAD exam)



Bachelor Students LabVIEW Academy



Bachelor Students Project Example



Wireless temperature measurement with
LabVIEW FPGA and Spartan3E



Bachelor Students LabVIEW FPGA

>> Spartan3E @XIOS

Embedded Systems (VHDL, ISE, EDK and XMK)

LabVIEW

>> LabVIEW FPGA on Xilinx Spartan3E starter boards

Boolean Logic

Serial Communication

Embedding VHDL code

1-wire protocol

>> Final Projects for students

KUKA robot interaction with Vision System

Automation of lab,...



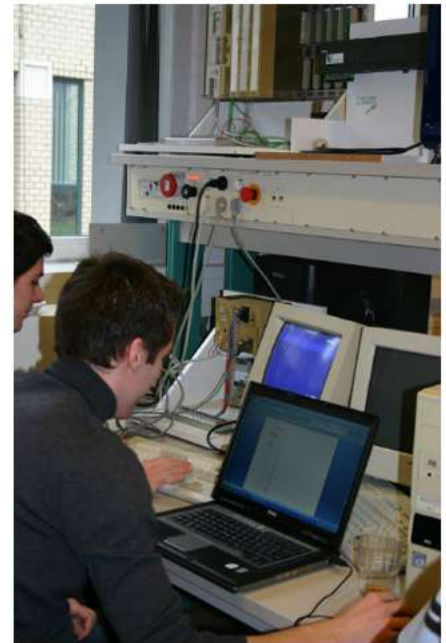
Master Students

Electronics/Electromechanics Engineering

- Introduction in LabVIEW (16h)
- Advanced functions in LabVIEW (14h)

The courses are based on project based learning.

introduction → hands-on training → project

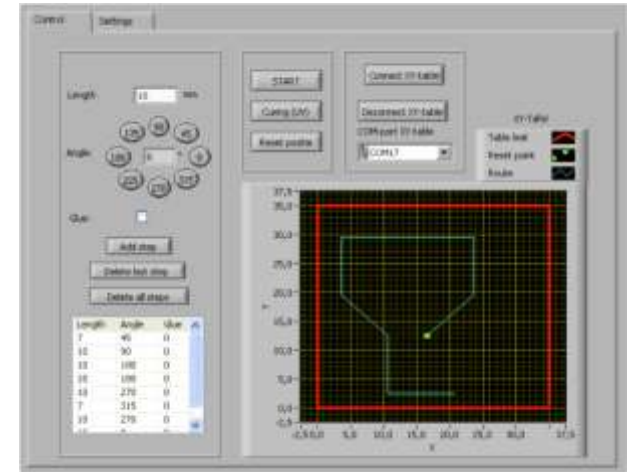
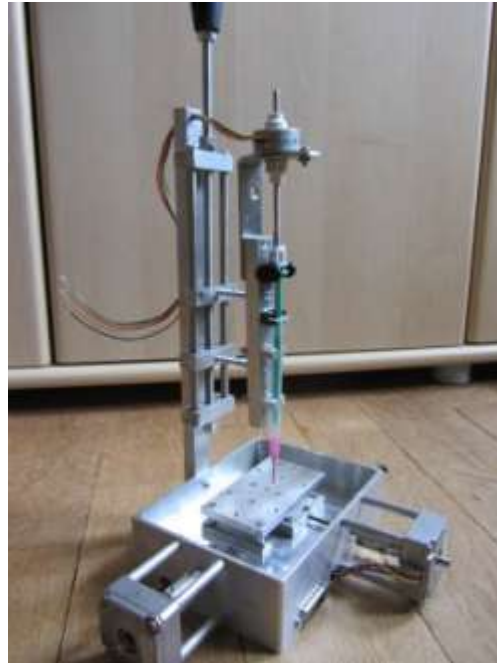


Master Students

Academic Research oriented



MULTISIM /
ULTIBOARD

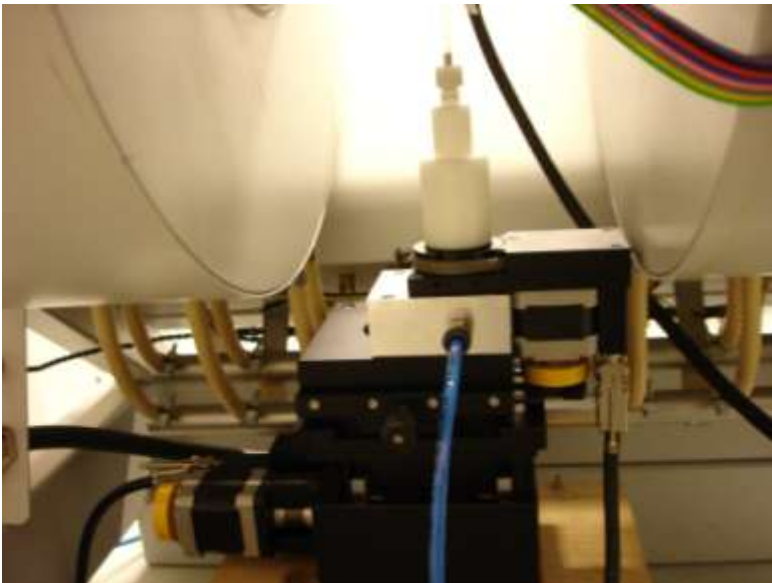


BIOSENSORS



Master Students

Academic Research oriented



NUTEC



Phd Students

Academic Research



LabVIEW used for:

- Signal input and signal output
- Data collection through various DAQ systems (current, voltage, optical, calorimetric sensors)
- Data management
- Data processing
- ...

- Biosensors
- Renewable energy
- Functional diamond coatings



Phd Students

Academic Research



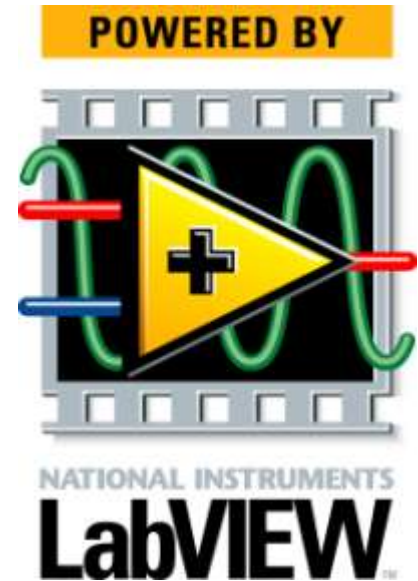
Example:

“handheld impedance analyzer
for biosensors readout”

- Biosensors
- Renewable energy
- Functional diamond coatings



- B. Vangrinsven et al., Customized impedance spectroscopy device as possible sensor platform for biosensor applications, PSS (a), 2010, 207 (4), 919-923
- J. Broeders et al., Miniaturized impedance based sensor platform for biosensor applications, PSS (a), 2010, accepted
- B. Vangrinsven et al., Rapid assessment of the stability of DNA duplexes by impedimetric real-time monitoring of chemically induced denaturation, Lab-on-a-Chip, 2011, in preparation



Phd Students

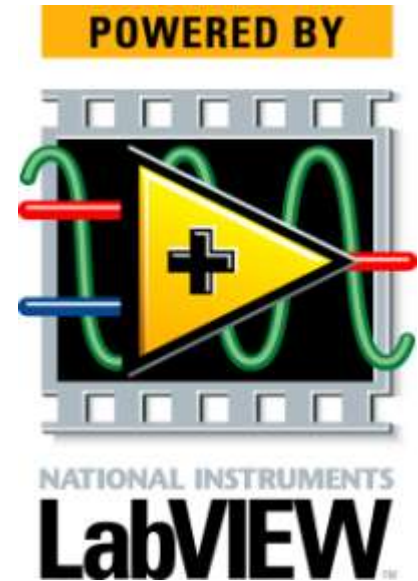
Academic Research



Example:

“Physical and electronical
characterisation of thin film solarcells
and organice LEDs”

- Biosensors
- Renewable energy
- Functional diamond coatings



Practical Research

Learning for lecturers, including me 😊

FPDA-1 (2005 – 2008) FPGA Platform with DSP capabilities for industrial and educational Applications -1

Xilinx EDK

Xilinx ISE

LabVIEW FPGA

CompactRIO

Spartan3E

FPDA-2

NEW: MSD



Practical Research

Learning for lecturers, including me 😊

FPDA-2 (2008 – 2011)

FPGA Platform with DATA-I/O capabilities for industrial and educational Applications -2

Focus on data I/O

LabVIEW FPGA (Spartan3E)

Xilinx EDK, Operating Systems,...

LabVIEW

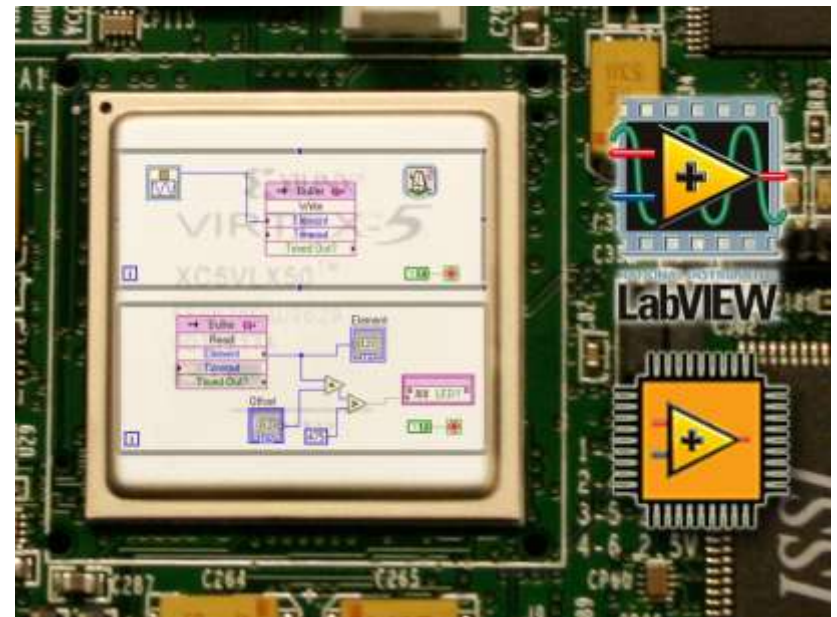
CompactRIO (LV FPGA)

Spartan 3E (LV FPGA)

PDA (LV Mobile)

LV Touchscreen

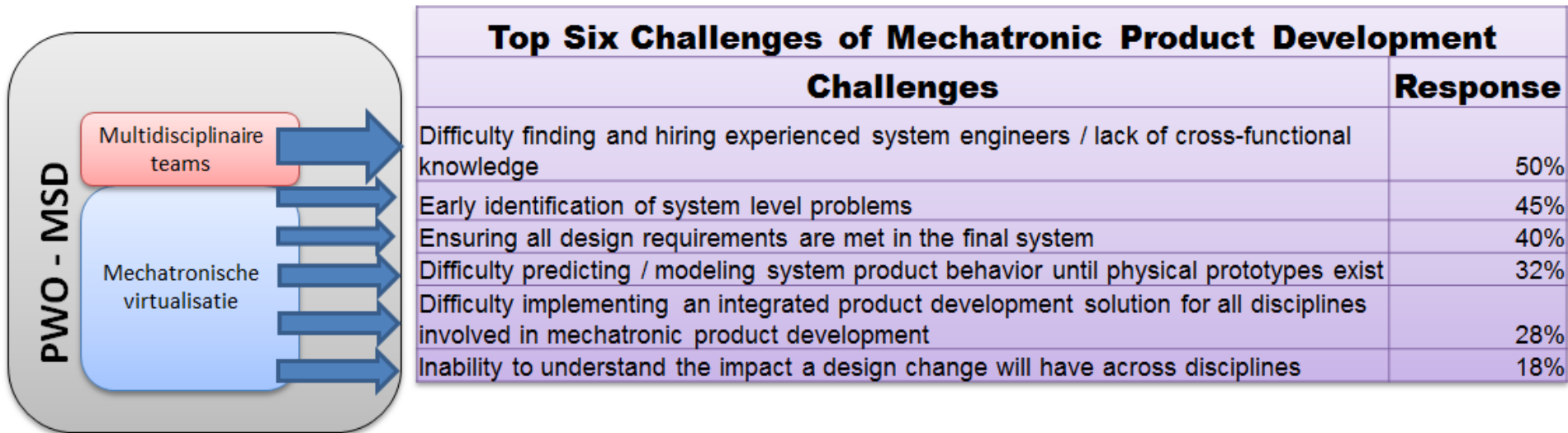
DAQ



MSD

NEW, Looking for partners

Mechatronic System Design



LabVIEW for Mechatronics



Contact Details



Technologiepool: Projects for companies



XIOS Hogeschool Limburg

Vincent Claes

vincent.claes@xios.be

+32 478 35 38 49



@claesvincent

