Renesas Technology Europe
Promotion Programs
Andrea Nuyken / Francesco Anwander

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Facts about Renesas

‘Everywhere you imagine’

- support the world of ubiquitous networking and make life easier for people - everywhere
- Established 2003 as joint venture of Hitachi and Mitsubishi Electric
- 26,000 employees worldwide
- Renesas is the No 1 MCU and No 1 Flash MCU Supplier W/W.
- Renesas has more than 23% MCU market share W/W.
- Renesas has more than 12 Years Flash MCU Production experience.
- Renesas manufacture over 20 Million Flash MCU’s per month.
- Total shipment reaches 2 Billion by 2008 devices worldwide.
- Highly reliable Flash MCU proven into major Automotive makers.
Goals of Renesas University Program

- Support university professors and teachers to setup labs & teach courses with Renesas microcontrollers across Europe.

- Enable students’ education close to the industrial environment by providing free of charge development tools - Renesas Starter Kits - and the benefits from a worldwide Renesas support infrastructure.

- Focus on universities with best in class engineering reputation teaching microcontroller architectures and programming.

- Provide universities contacts to global companies, design houses and of course other European universities working with Renesas products.

- Renesas‘ target is to increase its share-of-mind amongst the European engineering community and to be a positive member of this community.
Renesas’ Partner Universities in EMEA
The Renesas Europe (RTE) University Program

- The RTE University Program was launched in February 2007
- It has achieved its target of partnerships with 30 universities across Europe within only 16 months.
- More than 3000 students have been familiarised with Renesas MCU.
- All Renesas product families like SuperH, H8S(X) and M16C are engaged in lecturing, labs and students‘ work
- University projects show a wide application portfolio: Robotics, motor control, Zigbee, environmental care, instrumentation, medical tools
**Enhanced education**

- Renesas sponsors starter kits for students thesis, final year projects and university labs.

- This investments directly enhances the quality of the students education as they use state-of-the-art tools and MCU.

- The students will be better prepared for their professional career due to the hands-on experience.

Renesas FAE Claire Steed introduces an M16C Starter kit to a student at Strathclyde University, UK.
Renesas Interactive – the training website for Renesas products

http://www.renesasinteractive.com,

Welcome to RenesasInteractive!

Learn.

RenesasInteractive is the premier online training website for Renesas products. Always free and online 24/7 you can gain in depth technical knowledge on a wide range of Renesas microcontrollers through our Flash based and self paced learning courses. In addition to product knowledge, you can develop a vast understanding of the Renesas toolchain HEW, and enrich yourself with any of our non product technology courses such as CAN and EMI.

Work.

Renesas Virtualabs allow you to experience Renesas development tools as if they were sitting on the desk next to you. When you enter a Virtualab, you gain control of REAL hardware and software. During your session, no one else can access the same setup. Virtuallabs differ in their setup not only for different MCUs, but from basic dev kits to high end emulators allowing you to experience a range of tool options. Virtualabs let you “try before you buy” or use tools in place of purchasing them. With Virtualabs, you can truly Work Smarter, Work Anywhere.
Renesas Interactive - Virtual Lab

- Free Access to Registered Users
- Available Online 24/7
- Easily accessed from your PC using only a Web Browser
- A full suite of Audio Visual Training Courses covering all Renesas MCU Families and application related information
- A “Virtual Lab” Development Environment which allows as User to run actual Renesas Hardware & Software over the Web and is not a simulation
- Global Certification Program for Distributor FAEs
Renesas‘ expectations on Partner Universities

- Universities within the RTE University Program are expected to provide yearly reports to review the outcome reached with the provided tools.
- Universities are continuously informing Renesas about the ongoing projects.
- Those are recorded and implemented into the daily business and PR.
- Under this worldwide initiative, students and teaching staff of leading engineering schools receive access to products, application notes, course material and software.
- Additionally, Renesas offers academic staff support in publishing articles and writing books that cover Renesas products.
APPENDIX:
Renesas University Program and Project examples
 Ranked among the top universities of Science and Technology in Europe

 INSA sees a great benefits to teach their students on the Renesas 16-bit & 32-bit architectures

 INSA Lyon effectively prepares their students to work for international companies and have about 1000 industry contacts.
INSA Lyon Robot run on the M32C/83 device took place at the Eurobot competition and won the 3rd place amongst the competition of 200 teams from 22 different countries over Europe.

Eurobot Recycling Rally Contest

Waste, Sort & Win! The robot which sorts the most waste into correct bins will be the winner.
University meets industry... 

Students of the INSA University demonstrated during 3 days their Robot based on M32C at “Embedded World 2008”

Their waste recycling robot inspires many visitors.
Up to 200 hours practical work per year in Polytech Clermont-Ferrand Lab based on M32C + real-time kernel to drive a specific simulation car game on PC
Motor Control developments:
with Renesas SH Tiny

Direct Torque Control (DTC) for a Permanent Magnet Synchronous Motor (PMSM)

by
Romain Gaudillard GE3 CET POLYTECH CLERMONT
Christian Jury GE3 CET POLYTECH CLERMONT
Cedric Renault GE3 STICC POLYTECH CLERMONT

Contents

1. Command rules
   - Status
   - Issues and Problems
   - Solutions chosen
   - Hardware and software
   - Future (Next steps for the oncoming weeks)

2. Power card
   - Description
   - Status
   - Issues and Problems
   - Future (Next steps for the oncoming weeks)
   - The cost

Locating algorithms for positioning system on ZigBee

GE2 Placement report 2007-2008
from 1st May to 31st July 2008
REINESAS TECHNOLOGY Ratingen

30/07/2008

Supervisor: M. SMOLINSKI Daniel
Teacher: M. JAMES Michel
Trainee and author: Miss ABRAHAMSE Fanny

During her 3 month placement in Renesas
Miss Fanny ABRAHAMSE from Polytech Clermont Ferrand was focusing on Location Algorithms for a positioning system on ZigBee
University of Applied Sciences Vaasa

- 2007 Vaasa started teaching M16C Renesas family and equipped their laboratories with Renesas RSK starter kits running training projects and supporting student thesis on Renesas technology.

- Vaasa also plans to use Renesas processor TBD) as a platform for their RoboCup team. (more at www.puv.fi and http://robotics.puv.fi)
Various R&D activities with support of Renesas:

- Wireless sensor networks with Zigbee
- Realtime visualization of Zigbee sensor data
- New antenna solutions to increase the range of Zigbee applications
Renesas contact Prof. Sturm, has been awarded as one of 10 best professors in Germany.

Under guidance of Prof. Sturm an international team of students has developed and installed an M16C based radio amateur beacon on top of the Memorial to the Battle of the Nations, Leipzig.
The professional lab of university “UPC Sarti” in Vilanova, Cataluna: Renesas M32C/87 and R8C/25 RSK´s and E8 to be connected to the PC and used by the students.
TUSUR is one of the leading universities of the Russian Federation, training highly qualified specialists in a wide range of engineering specialties. The university provides training of approximately 15,000 students in 36 specialties including different branches of economics and information technologies, electronics and computer engineering, programming, automation and control systems, etc. The University Faculty staff comprises 430 lecturers, many of whom are recognized for their achievements.

TUSUR are the 1-st Russian University that started the Renesas education program followed by MIEM Moscow and St. Petersburg Politechnical University.

In Renesas Laboratory at the Department of electronic systems TUSUR formed a group of 14 students of the 3rd year who began study the SuperH platform. The next group of the 3/4 year students will be formed this September 2008.

Department of electronic systems are going to start a lecture and lab course for Master's program on M16C and SH. Some student are already developing a project of PC Oscilloscope and mobile robot based on RSK7201.
Institute of Energy Conversion Technology

Prof. Herzog and his team investigate solutions to improve the design and optimization process of electrical drives in mechatronic systems

Students' work from TU Munich
Global Renesas University Program
Singapore

NANYANG TECHNOLOGICAL UNIVERSITY

One of the Lab – Computer Engineering

Various Interesting Projects

Detection of different exhalations (H8S/2377 MCU) (Final Year Student project)

Testing of hearing capability (H8S/2377 MCU) (Final Year Student project)

Final Year Student project Sensor network using SLP

Moving Robot picking up color balls Using H8S/2377 MCU (Final Year Student project)

2nd Year Projects using SLP CPU Board – Java Programming in PC, controlling Obstacle-avoidance moving robot
Use of H8/38086 SLP MCU

Amazing Projects

Undergraduate Final Year Project - 1 person Output

2nd Year Lab lesson
- Creation of general application on training board

Text Editor
Lift simulator
Function Generator
Printer control
DC Motor – PID controller
Tetris Game
Anna University
MCU Subject : R8C
Students : about 350 per year

Started in Year 2006

Renesas Lab
Engage into having Renesas Tool and Lab in 4 main university
1. Malang (BCS Computer)
2. Surabaya (STTS, Mr. Budhy)
3. Jakarta (Trisakti University)
4. Semarang (Diponegoro University)

Main Activity: Conducting Courses

Started in Year 2005

Local Partner:

Renesas
Promo
Indonesir
Tinggi Teknologi Maju Bangraku