

## PFC a Empreses (Tardor 2008-09)



### Empreses on pots fer el PFC

#### Empreses i Institucions que ofereixen projectes a l'ETSETB i que gestiona l'escola Última actualització: 03 Març 2008

Quan demaneu una plaça mitjançant l'Intranet, ho haureu de fer en referència al codi que surt a la taula.

ATENCIÓ: hi ha empreses que continuament estan ofertant projectes. Un dels requisits és que els has de sol·licitar pel teu compte, però pots demanar-nos qualsevol document que et sol·licitin i tingui a veure amb l'escola. Consulta aquí quines són.

NEC

EPFL

NOKIA SIEMENS

DLR

PHILIPS

SIEMENS

TILAB

ERICSSON

TriaGnoSys GmbH, Wessling-Oberpfaffenhofen, Germany

ROBERT BOSCH GmbH, Corporate Research, Hildesheim, Germany

NXP Semiconductors / Corporate I&T / Research

### NEC

#### NEC (Alemanya-Heidelberg)

Codi	D NEC Hei-1
Data d'entrada	14/02/08
Tipus d'estada	PFC
Descripció	<b>3G/WiFi Mobile Phones Project</b> 3G mobile terminals are including Wireless LAN capabilities due to its popularity and the success of this technology in offering high data rates at a low cost. Currently there are two main IEEE specifications considered for future 3G/WiFi mobile phones, 802.11e and 802.11n, which define mechanisms to improve the Quality of Service, bandwidth capacity and power saving of the current WiFi chipsets. However, the proper configuration of these mechanisms as well as the design of some of the algorithms that are left open to implementors is required for delivering the desired services. The student will get involved in a project which pursues to design and configure proprietary algorithms for product differentiation of NEC's 3G/WiFi phones. The project will be performed in the framework of the development of the next generation of NEC's 3G/WiFi mobile phone N902iL.
Durada	Starting time: as soon as possible Duration: 6-9 months
Requisits	<ul style="list-style-type: none"><li>- Analytical skills.</li><li>- Fluent English.</li><li>- Previous experience with network simulators and/or knowledge of the 802.11 technology will be valued.</li><li>- C/C++/Matlab coding knowledge</li></ul>
Nombre de places	1
Codi	D NEC Hei-2
Data d'entrada	14/02/08
Tipus d'estada	PFC
Descripció	<b>WiMAX</b> The IEEE 802.16 technology (WiMAX) is a promising alternative to 3G or wireless LAN for providing last-mile connectivity by radio link due to its large coverage area, low cost of deployment and high speed data rates. However, in order to compete with already well-established wireless technologies, WiMAX has to show that it outperforms legacy wireless technologies significantly. The student will get involved in a project which contributes to the development of NEC's WiMAX products. The main goals of the project are the design and evaluation of proprietary algorithms and research on future technology enhancements (e.g., 802.16 multi-hop relay).
Durada	Starting time: as soon as possible Duration: 6-9 months

Requisits	<ul style="list-style-type: none"> <li>- Analytical skills.</li> <li>- Fluent English.</li> <li>- Previous experience with network simulators and/or knowledge of the 802.16 technology will be valued.</li> <li>- C/C++/Matlab coding knowledge.</li> </ul>
Nombre de places	1
Codi	D NEC Hei-3
Data d'entrada	20/02/08
Tipus d'estada	PFC
Descripció	<p><b>A Middleware for Wireless Sensor and Actuator Networks</b></p> <p>NEC Heidelberg has developed scalable information gathering and management architecture. Next step is the integration with Wireless Sensor and Actuator Networks (WS&amp;AN) to handle large scale information/context sources. The goal of the thesis is to integrate wireless sensor nodes into an existing information gathering architecture and implement a small scale demonstrator. An important part of the thesis will be to work on the design of an architecture for wireless sensor nodes. The main implementation will be on an embedded wireless sensor node platform.</p>
Durada	Starting Time: February or March 2008 Duration: 6-9 months
Requisits	<p>Prior experiences in working with wireless sensor such platforms or general knowledge about microprocessors and electrical engineering for this topic would be helpful but not required. At least the student should have strong interest and curiosity in working with such embedded systems.</p> <ul style="list-style-type: none"> <li>- Internet protocols</li> <li>- Knowledge in telecommunication and computer networks</li> <li>- Context awareness</li> <li>- Service and Session management</li> <li>- Ontologies and Ontology languages</li> <li>- Good English (required!)</li> <li>- The working environment is in English, and so, good knowledge in the language is necessary.</li> <li>- Basic German knowledge is helpful, but not required.</li> </ul>
Nombre de places	1
Codi	D NEC Hei-4
Data d'entrada	20/02/08
Tipus d'estada	PFC
Descripció	<p><b>Context Awareness with Public Displays</b></p> <p>NEC Heidelberg has developed scalable context and information gathering and management architecture. The goal of this thesis is to extend this architecture towards heterogeneous public displays. The general idea is to make public displays context-aware and programmable, i.e. recognize and react to nearby people. The student will develop an architecture for context-aware displays and implement a prototype involving different kinds and sizes of displays.</p>
Durada	Starting Time: February or March 2008 Duration: 6-9 months
Requisits	<ul style="list-style-type: none"> <li>- Internet protocols</li> <li>- Knowledge in telecommunication and computer networks</li> <li>- Context awareness</li> <li>- Service and Session management</li> <li>- Ontologies and Ontology languages</li> <li>- Good English (required!)</li> <li>- The working environment is in English, and so, good knowledge in the language is necessary.</li> <li>- Basic German knowledge is helpful, but not required.</li> </ul>
Nombre de places	1
Codi	D NEC Hei-5
Data d'entrada	20/02/08
Tipus d'estada	PFC
Descripció	<p><b>Ensuring privacy in context aware environments</b></p> <p>Collecting and providing context information tackles the very sensitive area of user privacy. The wish for keeping the users privacy contradicts with his wish of getting a service provided, which needs his personal context information. Different solutions</p>

	for this dilemma are possible, like, e.g., to anonymize the service access by applying virtual (anonymous) user identifications, by introducing a mediating instance which separates context related from user related service processing or by blurring the preciseness/correctness of the provided context information (a weather service does not require the accurate position of a user). This thesis shall investigate in such privacy enabling technologies, and as a prototype implementation will complement an existing context management framework with them.
Durada	Starting Time: February or March 2008 Duration: 6-9 months
Requisits	<ul style="list-style-type: none"> <li>- Internet protocols</li> <li>- Knowledge in telecommunication and computer networks</li> <li>- Context awareness</li> <li>- Service and Session management</li> <li>- Ontologies and Ontology languages</li> <li>- Good English (required!)</li> <li>- The working environment is in English, and so, good knowledge in the language is necessary.</li> <li>- Basic German knowledge is helpful, but not required.</li> <li>- Privacy issues</li> </ul>
Nombre de places	1
Codi	D NEC Hei-6
Data d'entrada	20/02/08
Tipus d'estada	PFC
Descripció	<p><b>Mobile Social Networking Services (SNS)</b></p> <p>Facebook or MySpace have popularized social networks and their associated services. This trend, however, has yet to permeate the mobile market. The objective of this thesis is to further investigate the possibilities of Mobile Social Networks, exploiting parameters such as physical friend proximity or, on a broader scope, the user's contextual information. The envisioned client would work on a high-end mobile phone, and stress the use of available peripherals and sensors, communicating over WiFi, Bluetooth and NFC technologies, to enable friends to interact with their social network in real-time, rather than the current maintenance/digest approaches. The thesis should be completed with the implementation of a proof-of-concept demonstrator.</p>
Durada	Starting Time: February or March 2008 Duration: 6-9 months
Requisits	<ul style="list-style-type: none"> <li>- Internet protocols</li> <li>- Knowledge in telecommunication and computer networks</li> <li>- Context awareness</li> <li>- Service and Session management</li> <li>- Ontologies and Ontology languages</li> <li>- Good English (required!)</li> <li>- The working environment is in English, and so, good knowledge in the language is necessary.</li> <li>- Basic German knowledge is helpful, but not required.</li> </ul>
Nombre de places	1
Codi	D NEC Hei-7
Data d'entrada	03/02/08
Tipus d'estada	PFC
Descripció	<p><b>IP-TV in Broadband networks</b></p> <p>Broadband access networks need to support an increasing number of demanding services such as IPTV and video on demand. To guarantee a good quality of the experience for the viewers it is necessary to provide control functionality that makes sure that there are sufficient resources available when starting a new stream. IPTV also changes the possibilities to provide emergency information in case of disasters or accidents.</p> <p>This project targets design and proof-of-concept implementation of functionality to support resource control for both broadcast IPTV and video on demand, including functionalities such as time-shift, emergency services, and network based personal video recorders.</p>
Durada	Starting time: as soon as possible Duration: 6-9 months
Requisits	<ul style="list-style-type: none"> <li>- Fluent English.</li> <li>- Students should have a good understanding in IP network technology and multimedia protocols.</li> </ul>
Nombre de places	1

**EPFL (Suisse-Lausanne)**

Codi	CH EPFL Lau-1
Data d'entrada	18/02/08
Tipus d'estada	PFC
Descripció	<p><b>Multi-view omnidireccional image and video coding</b></p> <p>Three-dimensional television (3DTV) and free-viewpoint television (FTV) are nowadays among the most popular emerging technologies for the next generation television systems. They allow the viewer to enjoy a 3D view of the media content with a 3D display, or just simply to navigate through different viewpoints using a classical TV set. The data acquisition in 3DTV is realized with a network of cameras distributed around or within the filmed scene.</p> <p>Since the amount of images increases with the number of cameras, one of the main challenges in 3DTV represents efficient compression that meets the bandwidth constraints. Fortunately, the acquired multi-view images are usually highly correlated, thus allowing high compression ratios. This project aims at developing a joint multi-view image coding scheme, where a subset of images would be predicted from the other images. In particular, omnidirectional images will be considered, due to their wide field of view. We will explore novel predictive models adapted to the correlation structure of multiple views, beyond block-based motion estimation techniques. Finally, the scheme will be extended to multi-view video coding.</p>
Durada	Starting time: as soon as possible Duration: 6-9 months
Requisits	- image processing - data compression basics - programming skills.
Nombre de places	1
Codi	CH EPFL Lau-2
Data d'entrada	18/02/08
Tipus d'estada	PFC
Descripció	<p><b>Calibration of Omnidirectional Images with 3D range scanner data</b></p> <p>3d laser range scanners are used in extraction of the 3d data in a scene. Main application areas are architecture, archeology and city planning. Those 3d data are merged with image intensity values to get textured 3D model of the scene. For this, multiple images from standard cameras are taken by placing them on the scanner by manual calibration. However, it requires many images due to limited field of view of the cameras and some setup to perform the calibration. Omnidirectional cameras are widely used in surveillance and robotics applications with their ability to view large scenes at once without any need of rotation and they are convenient to be used together with the 3d scanners. This project aims to develop methods to efficiently calibrate the omnidirectional cameras and the 3D laser range scanner and register the images with the 3D data.</p>
Durada	Starting time: as soon as possible Duration: 6-9 months
Requisits	- image processing - data compression basics - programming skills.
Nombre de places	1
Codi	CH EPFL Lau-3
Data d'entrada	18/02/08
Tipus d'estada	PFC
Descripció	<p><b>Depth Estimation with Catadioptric Omnidirectional Cameras</b></p> <p>A Catadioptric Omnidirectional Camera consists of a mirror system and a lens mounted on a camera to provide full 360 degrees field of view. Such a camera presents the advantage to offer a large field of view, such that a small number of cameras are generally sufficient to cover a full 3D scene.</p> <p>Such a camera system has however specific parameters that depend mainly on the type of mirror; these parameters have to be estimated carefully for a precise mapping between the pixels and 3D points in a scene. The first part of the project therefore addresses the calibration of systems of omnidirectional cameras. The performance of the calibration method will be evaluated in 3D depth estimation scenarios. In a second part of the project, the depth estimation results obtained by careful calibration will be compared to other methods based on direct mapping and processing of omnidirectional images on the sphere.</p>

Durada	Starting time: as soon as possible Duration: 6-9 months
Requisits	- Matlab - C/C++ Programming - basic knowledge of Computer - Vision and Image processing
Nombre de places	1

Codi	CH EPFL Lau-4
Data d'entrada	18/02/08
Tipus d'estada	PFC

Descripció	<p><b>Optical flow estimation from spherical images</b></p> <p>Optical flow is the distribution of apparent velocities of movement of brightness patterns in an image. Optical flow can arise from relative motion of objects and the viewer. Consequently, optical flow can give important information about the spatial arrangement of the objects viewed and the rate of change of this arrangement.</p> <p>In the literature there is plenty of algorithms for optical flow estimation, but all of them are developed for planar camera images. The project aims to extend already existing techniques to be used with video sequences coming from spherical cameras. The project will be articulated in two parts:</p> <ol style="list-style-type: none"> <li>1. Development and implementation of optical flow algorithms for spherical images</li> <li>2. Comparative evaluation of performances for the developed algorithms</li> </ol>
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Durada	Starting time: as soon as possible Duration: 6-9 months
Requisits	- Matlab - C/C++ Programming - basic knowledge of Computer Vision and Image processing
Nombre de places	1

Other proposals can be found on this website <http://lts4www.epfl.ch/>

#### EPFL (Suïssa-Lausanne)

Codi	CH EPFL Lau-5
Data d'entrada	20/02/08
Tipus d'estada	PFC

Descripció	<p><b>Face detection and tracking in omnidirectional images</b></p> <p>Face detection is a classical task in image analysis and computer vision. Fast and robust algorithm, based on simple features and classifiers implemented in a cascade architecture, allow face detection in video sequences in real time.</p> <p>In this project, we want to extend this kind of algorithm to images captured by omnidirectional cameras, i.e. video cameras equipped with a special lens (e.g. parabolic or hyperbolic), that give a 360° view of the scene. Those images can be modeled as images living on a sphere centered at the focal point of the camera. This project aims at studying how to efficiently extract features on images with this geometry, and to implement a fast face detector and tracker.</p>
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Durada	Starting time: as soon as possible Duration: 6-9 months
Requisits	- Image processing skills - C++
Nombre de places	1

Codi	CH EPFL Lau-6
Data d'entrada	20/02/08
Tipus d'estada	PFC

Descripció	<p><b>Object detection in omnidirectional images</b></p> <p>Object detection aims at finding in an image an object based on a template (an example) given in another image. Classical techniques involve the extraction of silent points, like the SIFT descriptors (Scale-Invariant Feature Transform), and to match the descriptors extracted from the image with those extracted from the template.</p>
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	omnidirectional cameras, i.e. video cameras equipped with a special lens (e.g. parabolic or hyperbolic), that give a 360° view of the scene. Those images can be modeled as images living on a sphere centered at the focal point of the camera. This project aims at studying how to extend the classical SIFT descriptor, defined for planar images, to spherical images, and to implement an object recognition system based on these descriptors.
Durada	Starting time: as soon as possible Duration: 6-9 months
Requisits	- Image processing skills - C++ - Matlab
Nombre de places	1

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## NOKIA SIEMENS

### NOKIA SIEMENS (Dinamarca-Aalborg)

Codi	DK NSN Aal-1
Data d'entrada	19/02/08
Tipus d'estada	PFC
Descripció	<p><b>LTE Handover Optimisation from an E2E point of view</b></p> <p><b>Background</b></p> <p>LTE is providing transition from the circuit and packet switched UMTS architecture to a pure packet based architecture with a reduced number of nodes. This transition means reduced cost and latency compared to more conventional systems like WCDMA and GERAN. The LTE architecture can be seen in the Figure below.</p> <p>In LTE, the active mode mobility management is distributed, i.e. the evolved Node B's (eNB's) are making the handover decisions autonomously without involving the Mobility Management Entity (MME) Gateway in the Evolved Packet Core (EPC). The necessary handover (HO) information is exchanged between the eNBs via the X2 interface. The MME Gateway is notified with a handover complete message after the new connection is established between UE and target eNB. Upon reception of this message, the MME Gateway performs path switching. There is a time (detach time) during which the UE is not connected to the system. The solution requires temporary forwarding of user data from source eNB to target eNB, since there is no temporary buffering at the MME Gateway.</p> <p>The detach time will have an impact on the Quality of Service (QoS) of the service during handover. Typical gap lengths of 20 ms can be found in literature but they depend on several factors, which can mean that the gap is longer than 20 ms.</p> <p><b>Objectives</b></p> <p>Goal of this project is to study the impact of the LTE handover on the E2E performance of different applications (WWW, FTP, VoIP, GoIP, etc.) including the effect of the detach time and scheduling/admission control issues. Also the load on the transport network needs to be considered.</p> <p><b>Tools available</b></p> <p>Matlab will be available for this study.</p>
Durada	Starting time: as soon as possible Duration: 6 months
Requisits	For the study, a good background in mobile communications is required. This includes knowledge about cellular systems, services and application.
Nombre de places	1

Codi	DK NSN Aal-2
Data d'entrada	19/02/08
Tipus d'estada	PFC
Descripció	<p><b>Uplink Downlink Resource Split Optimisation for the LTE/TDD System</b></p> <p><b>Background</b></p> <p>Vodafone and China Mobile have announced to trial the Time Division Duplex (TDD) version of LTE, which has increased the interest in the TDD version. An inherent gain mechanism of TDD mode is that the system may make uneven allocations to uplink and downlink traffic within a given deployment bandwidth. E.g. if a network is heavily downlink oriented, more of the system resources can be allocated to the downlink. When the system is optimized for 100% utilization in both uplink and downlink, less spectrum is needed to carry a certain load compared to e.g. static and even uplink/downlink partition in e.g. LTE FDD.</p>

	<p>However due to the obvious interference issues, the downlink/uplink resource split needs to be the same for cells, which interfere each other, so the optimal downlink/uplink resource split is not obvious.</p> <p><b>Objectives</b></p> <p>The main objective of this project is to investigate the performance of optimisation of the downlink/uplink resource split for LTE TDD:</p> <p>What is the potential gain under different traffic distribution assumptions?  How can this be achieved?  What kind of measurements, commands and algorithms can be used?  How much performance gain, in terms of delay, capacity and coverage, can be achieved compared to a fixed resource distribution?  What is the overhead of the proposed solutions (signalling overhead, complexity, etc...)?</p> <p><b>Tools available</b></p> <p>Matlab will be available and we will try to get input from some internet providers on traffic distributions.</p>
Durada	Starting time: as soon as possible Duration: 6 months
Requisits	For the study, a good background in mobile communications is required. This includes knowledge about cellular systems and traffic modelling. Furthermore, an experience in developing/using simulators (based on Matlab or c/c++) is beneficial.
Nombre de places	1
Open positions	

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## DLR

### DLR (Alemanya-Wessling)

Codi	D DLR Dres-1
Data d'entrada	19/02/08
Tipus d'estada	PFC
Descripció	<p><b>Algorithms for the Prediction of Trajectories of Mobile Partners in Free Space Optical Communication Systems</b></p> <p>The precise pointing in mobile free space optical communication systems is, due to the very small divergence angles, a sophisticated task. To achieve it, the current position of the corresponding communication partner must be known with high accuracy.</p> <p>Typically, a low data rate RF link is used to exchange link relevant data between the partners. However, the update rate of these systems is not sufficient if one or both of the communication partners move at a high speed, as it is the case for airborne scenarios. Therefore, a prediction of the partner's current position based on known position information has to be accomplished.</p> <p>In the scope of this thesis, the investigation and test of prediction algorithms shall be accomplished in Matlab/Simulink. The most promising algorithms shall be implemented in C/C++ and verified with available trajectory data as well as with measurements utilizing a measurement van equipped with a position signalling system.</p>
Durada	Starting time: as soon as possible Duration: 6-8 months
Requisits	<ul style="list-style-type: none"> <li>- Basic Background of Communications Systems</li> <li>- Fluency in English</li> <li>- Background in Digital Signal Processing</li> <li>- Experience with Matlab/Simulink and C/C++</li> </ul>
Nombre de places	1
Codi	D DLR Dres-2
Data d'entrada	19/02/08
Tipus d'estada	PFC
Descripció	<p><b>Beam Steering Assembly Development for Optical Freespace Communications</b></p> <p>For beam-pointing and -tracking in high-speed freespace optical communications systems a precise optomechanical assembly is required for optimum system performance. Based on existing predevelopments, a fast and very precise tracking system shall be designed, build and tested in a labtestbed and possibly in a freespace communications scenario. This work is part of an ongoing science project at DLR.</p>
Durada	Starting time: as soon as possible Duration: 6-8 months

Requisits	- Basic background of communications systems - Fluency in English - Experience with DSPs, MatLab, and LabView
Nombre de places	1
Codi	D DLR Dres-3
Data d'entrada	19/02/08
Tipus d'estada	PFC
Descripció	<b>Mobile Satellite Systems</b>  The Mobile Satellite System Research Group is active in most of the fields related to satellite communications for mobile services, from mobile personal communications, to broadband internet access for mobile collective terminals. The design of novel systems, the realisation of trials and demonstrations, and the development of innovative technical solutions are the key activities of the group. In particular, we develop mobile broadband access technologies, supporting interactive and multimedia services for collective terminals on-board high speed trains and aircraft, we demonstrate and develop satellite-based solutions for mobile multimedia broadcast services to 3G handsets and vehicular terminals, and we design satellite based solutions to be integrated within the next generation of air traffic management communications systems.
Durada	Starting time: as soon as possible Duration: 6-8 months
Requisits	<ul style="list-style-type: none"> <li>• Propagation Channel Characterisation, Measurements and Modelling for Mobile Satellite Communications</li> <li>• QoS Support and Radio Resource Management / Scheduling Algorithms</li> <li>• Fade Mitigation Techniques and Advanced Coding Strategies for Mobile Satellite Systems</li> </ul>
Nombre de places	1

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## PHILIPS

### PHILIPS (Holanda-Eindhoven)

Codi	NL PHILIPS Ein-1
Data d'entrada	19/02/08
Tipus d'estada	PFC
Descripció	The interns will work on projects related to computer vision (for example, people localization & tracking, person identification, human motion analysis, gesture recognition, facial expression recognition, event detection, activity analysis, camera network, etc). Different focus options are possible depending on the strengths of the candidates. The work of the internship is expected to be written as a technical report. Publication at top conferences is highly encouraged.
Durada	Starting time: as soon as possible Duration: 9 months
Requisits	<ul style="list-style-type: none"> <li>- Proven background in related areas Computer Vision, Pattern Recognition, Machine Learning, Image / Video Processing are highly desired</li> <li>- Excellent programming skills – Matlab and C/C++</li> <li>- Proficiency in English</li> </ul>
Nombre de places	2-4

Open positions in the area of Distributed Sensors Systems at the High Tech Campus in Eindhoven

### PHILIPS (Alemania-Aachen)

Codi	D PHILIPS Aac-1
Data d'entrada	19/02/08
Tipus d'estada	PFC
Descripció	<b>ISO/IEEE 11073 Personal Health Sensors - Connectivity &amp; Interoperability</b>  Personal health systems consist of measurement devices or sensors that transmit a person's health status or vital sign information (e.g. body mass, blood pressure, etc.) using wired or wireless interfaces to a managing-application hosting device or gateway for further processing or store and forward application. In order to ensure a correct interpretation of the medical data at the receiving site, interoperability of the various measurement sensors/devices with the application hosting devices has to be established. Therefore, it is not sufficient to facilitate the exchange of medical data, only. Furthermore, the receiving site must be able to understand the format and content of the messages being transmitted. This is of particular importance if sensors/devices from different manufacturers are involved. At our laboratory we are actively

	<p>participating in the development of new standards within the family of ISO/IEEE 11073 standards for medical device communications, that have the purpose to establish personal health device interoperability.</p> <p>Presently we have a prototype featuring an application hosting device with a wireless measurement device (a weighing scale) being connected to it, that implements parts of the current version of the standard. Currently, the implementation comprises a single measurement device and is limited to a sub-set of the overall standard.</p> <p>Your task will be to realize an efficient software implementation of the full base standard and to extend the prototype by additional personal health devices with an embedded implementation of the standardized protocol on ZigBee enabled radio modules.</p>
Durada	<p>Starting time: as soon as possible</p> <p>Duration: 6-9 months</p>
Requisits	<ul style="list-style-type: none"> <li>- Languages: Fluent English in speaking and writing.</li> <li>- Good knowledge and practical skills in C-programming.</li> <li>- Experience in programming resource-constrained systems (e.g. programming of Atmel microcontroller in C, AVR Studio or IAR Embedded Workbench).</li> <li>- Background in communication networks (ISO/OSI Layer model, Application Layer)</li> <li>- Background in wireless communications (e.g. IEEE 802.15.4, ZigBee).</li> <li>- Interest in sensor networks, embedded systems and their application to the medical domain.</li> </ul>
Nombre de places	1

Open positions

### Philips Electronic Modules, Aachen, Germany

Codi	D PHILIPS Aac-2
Data d'entrada	20/02/08
Tipus d'estada	PFC
Descripció	<p><b>Colour control of LED lamps</b></p> <p>The light of coloured light emitting diodes (LEDs) can be mixed to provide light sources with adjustable colour, including both saturated colours and white. However, reproducibility and stability issues require using feedback control schemes to meet colour accuracy requirements.</p> <p>Using custom in-house developed driver and sensor boards, we have set up a MATLAB / Simulink / dSPACE based rapid control prototyping environment for investigating colour control concepts. In conjunction with this, control algorithms have to be implemented and driver and sensor electronics has to be developed.</p>
Durada	<p>Starting time: Starting at 1 August would be fine, our school holidays are almost over then. 1 September would also be ok with us. A later begin would have to be discussed.</p> <p>Duration: 6 months</p>
Requisits	<ul style="list-style-type: none"> <li>- basic knowledge in control, power electronics and sensors</li> <li>- familiar with MATLAB and Simulink</li> <li>- practical skills to measure and to set up circuits</li> <li>- high motivation and good English skills</li> </ul>
Nombre de places	1

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### SIEMENS

#### SIEMENS (Alemanya-Lindau)

Open positions

Required: Excellent skills in measuring and control technology. The candidate should speak English and German

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### TILAB

#### TILAB (Itàlia-Torino)

Open positions

Fall 2008

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### ERICSSON

#### ERICSSON (Alemania-Aachen)

Open positions in these research areas: IP Networks, Wireless Areas Networks, Mobile Multimedia

Other areas of interest: Long Term Evolution of 3GPP networks, Network virtualisation, Networking of Information, Multimedia Broadcast and Multicast.

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**TriaGnoSys GmbH, Wessling-Oberpfaffenhofen,Germany**

Open positions in navigation and air traffic control

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Open positions

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Codi	NL NXP Ein-1
Data d'entrada	05/03/08
Tipus d'estada	PFC
Descripció	<p><b>Evaluation Methodology for Frame-Rate Conversion</b></p> <p><b>Introduction:</b></p> <p>In order to reduce the motion blur typically associated with LCD's, the latest generation of LCD televisions is being driven at frame rates of 100/120Hz. In principal, this also requires the video content to be shot at 100/120Hz.</p> <p>However, most video content is still being shot at either 24/25 (film) or 50/60Hz (video), and therefore, so-called Frame-Rate Conversion (FRC) algorithms are being used to up-convert the input video material to the output frame-rate of 100/120Hz.</p> <p>In recent years, a number of commercial products incorporating FRC have appeared on the market. Ad-hoc evaluations have shown so far that the performance of these products varies greatly. However, no systematic benchmark or evaluation methodology for FRC exist up-to now to <i>objectively</i> quantify a products' performance.</p> <p><b>Assignment:</b></p> <p>The assignment will therefore focus on the design of a systematic and objective evaluation methodology for evaluating the performance of FRC methods, taking into account all the relevant aspects (e.g. quality, robustness). An additional requirement is that the realization is easy-to-use, e.g. in the form of natural/synthetic test sequences.</p> <p>As part of this assignment, you will be able to develop a thorough understanding of the principles and current state-of-the-art in FRC algorithms. A next step is then to identify the limitations and artifacts associated with FRC. Based on these insights, the main work will focus on developing test-sequences to evaluate FRC in all relevant aspects</p> <p><b>Location:</b> NXP Research, Eindhoven, The Netherlands</p> <p>The student will have the opportunity to gain valuable work experience while working in the Systems and Architectures group within NXP Research Laboratories, a world-class research environment.</p>
Durada	Starting time: April 2008 (alternative starting dates possible) Duration: Preferably 6-9 months
Requisits	-Experience in signal processing is highly desirable. -Experience in video/image processing is desirable, but not required -Inventive, creative, willing to take initiative
Nombre de places	1

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