



# Program

## 10th Conference of Open Innovations Association FRUCT

Tampere, Finland  
7-11 November 2011



This project is co-funded by the European Union, the Russian Federation and the Republic of Finland.



**NOKIA**  
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Networks



GAUDEAMUS IGITUR,  
JUVENES DUM SUMUS!  
POST JUCUNDAM JUVENTUTEM,  
POST MOLESTAM SENECTUTEM  
NOS HABEBIT HUMUS.

UBI SUNT, QUI ANTE NOS  
IN MUNDO FUERE?  
VADITE AD SUPEROS,  
TRANSITE AD INFEROS,  
UBI JAM FUERE.

VITA NOSTRA BREVIS EST,  
BREVI FINIETUR,  
VENIT MORS VELOCITER,  
RAPIT NOS ATROCITER,  
NEMINI PARCETUR.

VIVAT ACADEMIA,  
VIVANT PROFESSORES!  
VIVAT MEMBRUM QUODLIBET,  
VIVANT MEMBRA QUAE LIBET!  
SEMPER SINT IN FLORE!

VIVANT OMNES VIRGINES  
FACILES, FORMOSAE!  
VIVANT ET MULIERES,  
TENERAE, AMABILES,  
BONAE, LABORIOSAE!

VIVAT ET RESPUBLICA,  
ET QUI ILLAM REGIT!  
VIVAT NOSTRA CIVITAS,  
MAECENATUM CARITAS,  
QUAE NOS HIC PROTEGIT

PEREAT TRISTITIA,  
PEREANT DOLORES,  
PEREAT DIABOLUS,  
QUIVIS ANTIBURSCHIUS,  
ATQUE IRRISORES!



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# Organization Committee of the 10th Conference of Open Innovations Association FRUCT

General Chair: Sergey Balandin  
Local Co-Chairs: Yevgeni Koucheryavy, Timofey Turenko, Karen Egiazarian  
Conference Secretaries: Alexander Pyattaev, Ekaterina Dashkova

## Program Committee

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# The program of 10<sup>th</sup> FRUCT conference in Tampere

November 7-11, 2011 Tampere, Finland

All events are free of charge, but all participants must be registered at [www.fruct.org/conference10](http://www.fruct.org/conference10)

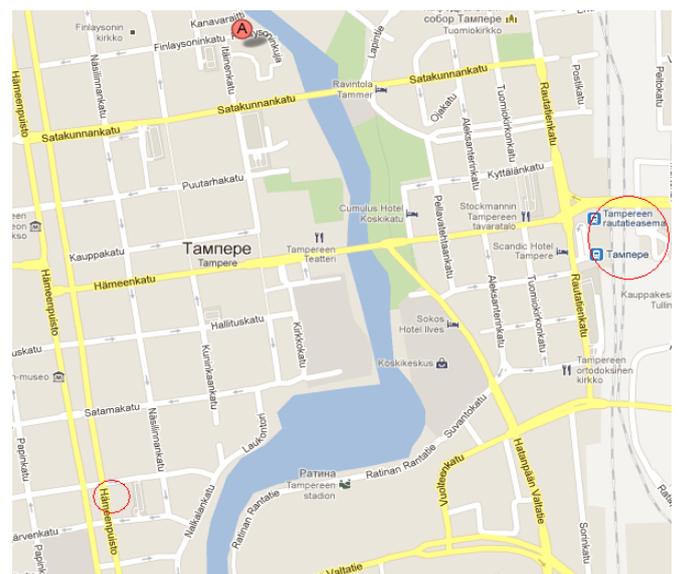
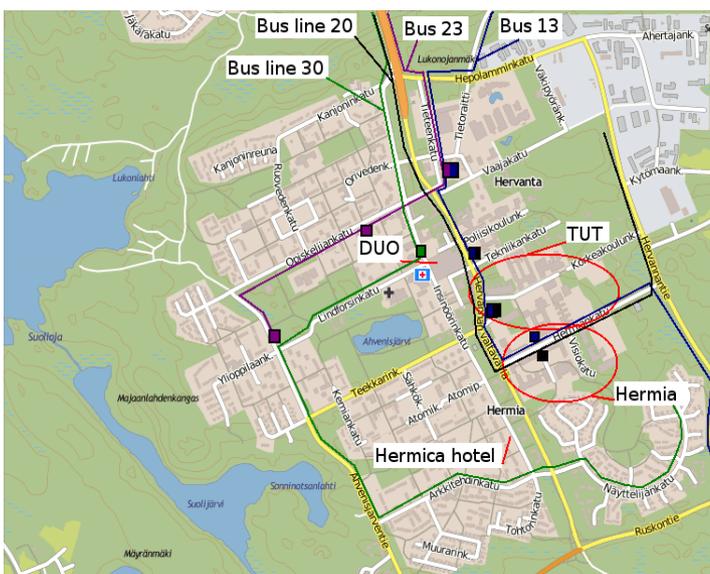
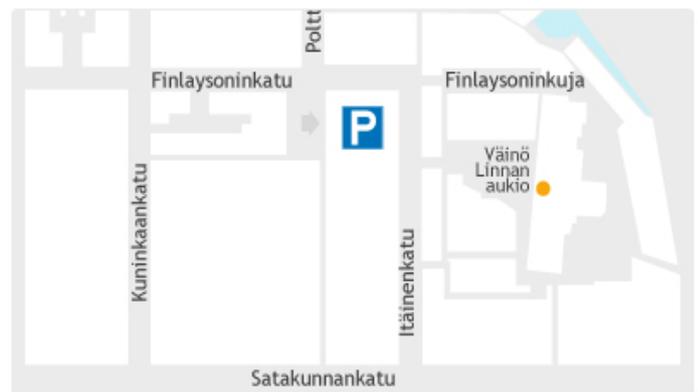
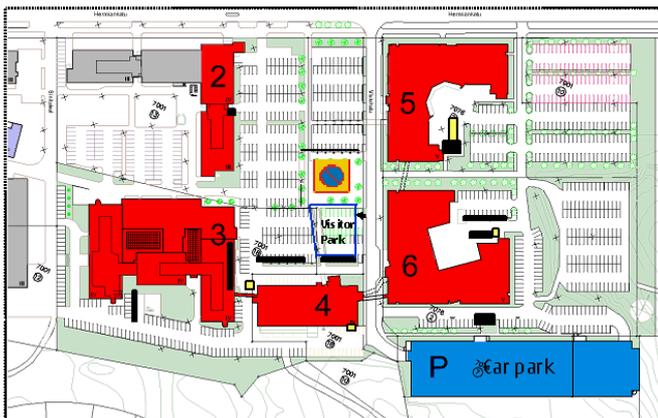
Nokia offices Hermia 4 and 5, Visiokatu 1, Hervanta, Tampere

DATE	TIME	PROGRAM	
07.11.11	09.00-18.00	Informal internal meetings of the FRUCT working groups	
08.11.11	09.00-13.00	Platform Security Seminar, Auditorium A156	Qt training by Tony Torp, PC-Class B112
	13.00-14.00	Lunch break	
	14.00-18.00	Platform Security Seminar (cont.): Security training by Jan-Erik Ekberg, Auditorium A156	Ubiq Mobile training by Valentin Onossovski, PC-Class B112
09.11.11	09.00-12.00	Smart-M3 training by Jukka Honkola, Nokia office Hermia 5, Auditorium A156	Registration to 10 <sup>th</sup> FRUCT conference, Hermia 5, main hall near Auditorium A156
	12.00-14.00	Opening of 10 <sup>th</sup> FRUCT conference, Auditorium A156 Keynote talk: Qt contributions in many shapes and forms, Yrvin Knut, Nokia	
	14.00-14.30	Coffee break (main hall near Auditorium A156)	
	14.30-16.00	Mobile Linux session, Hermia 5, Auditorium A156	
	16.00-16.30	Coffee break (main hall near Auditorium A156)	
	16.30-18.00	FRUCT info session - status, news and Web WG meeting, Hermia 5, Auditorium A156	
10.11.11	09.00-10.00	Mobile Solutions I session, Hermia 5, Auditorium A156	Training on Basics of H.264/AVC Video Compression by Vinod Kumar Malamal Vadakital, Hermia 4, Universum 172
	10.00-10.30	Coffee break (main hall near Auditorium A156)	
	10.30-12.30	Mobile Healthcare session, Hermia 5, Auditorium A156	Training on Basics of H.264/AVC Video Compression (cont.) by Vinod Kumar Malamal Vadakital, Universum 172
	12.30-13.30	Lunch break	
	13.30-15.20	From Science to Business session, Hermia 5, Auditorium A156 Keynote talk: From Science to R&D Business, Dmitry Petrov, Magister Solutions	
	15.20-15.50	Coffee break (main hall near Auditorium A156)	
	15.50-16.50	Network Technologies session, Hermia 5, Auditorium A156	Mobile Linux WG meeting, PC-Class B112
	16.50-18.30		Smart Spaces WG meeting, PC-Class B112
19.00-22.00	Demo Session and Social Event, Demola, Väinö Linnan aukio 15, 3 <sup>rd</sup> floor		
11.11.11	09.30-11.30	Smart Space Applications session, Hermia 5, Auditorium A156	On the Edge of Wireless Evolution training by Dmitry Petrov, Hermia 4, Universum 172
	11.30-12.00	Coffee break (main hall near Auditorium A156)	
	12.00-13.30	Smart-M3 Platform session, Hermia 5, Auditorium A156	On the Edge of Wireless Evolution training (cont.) by Dmitry Petrov, Hermia 4, Universum 172
	13.30-14.30	Lunch break	
	14.30-15.50	Mobile Video session, Hermia 5, Auditorium A156	Mobile Healthcare WG meeting, Hermia 5, PC-Class B112
	15.50-16.20	Coffee break (main hall near Auditorium A156)	
	16.20-17.20	Mobile Solutions II session, Hermia 5, Auditorium A156	
17.20-17.30	Official closing of 10 <sup>th</sup> FRUCT conference, Hermia 5, Auditorium A156		

## How to find us

All regular sessions and trainings of the 10<sup>th</sup> FRUCT conference will be held in Nokia offices Hermia 5 (the main conference building – conference rooms Auditorium A156 and PC-Class B112) and Hermia 4 (conference room Universum 172), street address: Visiokatu 1, Tampere. The scheme of Nokia Hermia campus is illustrated in the provided below scheme. The conference buildings are marked by “5” and “4”. Behind building 5 (on the right side of the scheme) you can find large open parking space. Under the scheme you can find map of Hervanta district of Tampere city. Tampere University of Technology (there is another university in Tampere, so make sure you mention “technology” if you asking for directions) and Nokia Hermia office are illustrated by two red bubbles: Tampere University of Technology (upper bubble) and Nokia Hermia (lower bubble), plus in the bottom of the map you can find pointer to Hermica hotel. In addition, another notable point in Hervanta suburb is shopping center DUO. You will most likely not see directions there on signs, but you will see the green DUO label from far away. Most of shops and places to eat are located within 100 meters from DUO or inside it. More practical information on travelling in Tampere and facilities available at the conference can be found on page 17 (Practical information).

The conference social event and demo session will be held in Demola, address: Väinö Linnan aukio 15, 3<sup>rd</sup> floor (city center). The Demola place is shown by the yellow pointer at the scheme below. On the map of Tampere city center (right side map), location of Demola is shown by “A” pointer. Also on this map you can see location of the main railway station (red bubble at the right side) and location of Hotel Cumulus (Hämeenpuisto 47) red bubble at the bottom-left corner.



Note that Nokia buildings have high level of security. In order to get access to the conference you **must register** at the conference web [www.fruct.org/conference10](http://www.fruct.org/conference10) (registration is free of charge). For your convenience, inside Nokia buildings there will be signs to help find conference rooms, places for coffee breaks, lunch place and other facilities.



# The program of 10<sup>th</sup> FRUCT conference in Tampere

November 7-11, 2011 Tampere, Finland

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**November 8 (Tuesday)**

**Nokia office Hermia 5, Visiokatu 1, Tampere**

<b>08:30</b>	30m	<b>Registration (main hall near Auditorium A156)</b>	
<b>Session:</b> Platform Security Seminar		<b>Training:</b> Qt Quick for Mobile Development	
<b>Room:</b> Auditorium A156      Chairman: Jan-Erik Ekberg		<b>Room:</b> PC-Class B112      Trainer: Tony Torp	
<b>09:00</b>	2h 20m	Overview of OnBoardCredentials Platform, Jan-Erik Ekberg, Nokia Research Center, Finland	Intro to Qt Nokia developer offering, Qt SDK
<b>11:20</b>	30m	Accountability and host identities, Seppo Heikkine, Tampere University of Technology, Finland	The first Qt application Intro to QML programming language
<b>11:50</b>	30m	MeeGo 1.2 (Harmattan) OS Platform Security Architecture, Timofey Turenko, FRUCT, Finland	QML Mobility APIs, example hands on with maps and GPS
<b>12:20</b>	20m	The Security Aspects of Cirrostratus Private Cloud Storage, Vitaly Petrov, Tampere University of Technology, Finland	Signing and deploying
<b>12:40</b>	20m	Detection and Notification of Additional Actions of Signed Java Applets, Roman Zharinov, State University of Aerospace Instrumentation, Russia	Publishing apps in Nokia store
<b>13:00</b>	1h	<b>Lunch break</b>	
<b>Session:</b> Platform Security Seminar: hands-on training		<b>Training:</b> Ubiq Mobile training	
<b>Room:</b> Auditorium A156      Chairman: Jan-Erik Ekberg		<b>Room:</b> PC-Class B112      Trainer: Valentin Onossovski	
<b>14:00</b>	30m	OnBoardCredentials hands-on training, Jan-Erik Ekberg, Nokia Research Center, Vitaly Petrov, Tampere University of Technology, Finland	Overview of Ubiq Mobile concepts, program models and development environment
<b>14:30</b>	1h		Overview of QReal concepts, modeling and generation tools
<b>15:30</b>	1h		Creation of sample webcam application using Ubiq Mobile .NET API
<b>16:30</b>	1h		Creation of the same application using DSL
<b>17:30</b>	30m		Demos of Ubiq Mobile applications on mobile devices
<b>18:00</b>		<b>Closing of Day 1</b>	



**November 9 (Wednesday)**

**Nokia office Hermia 5, Visiokatu 1, Tampere**

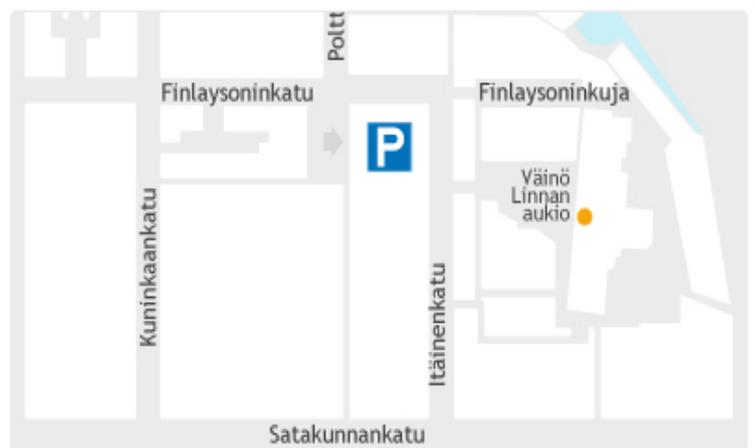
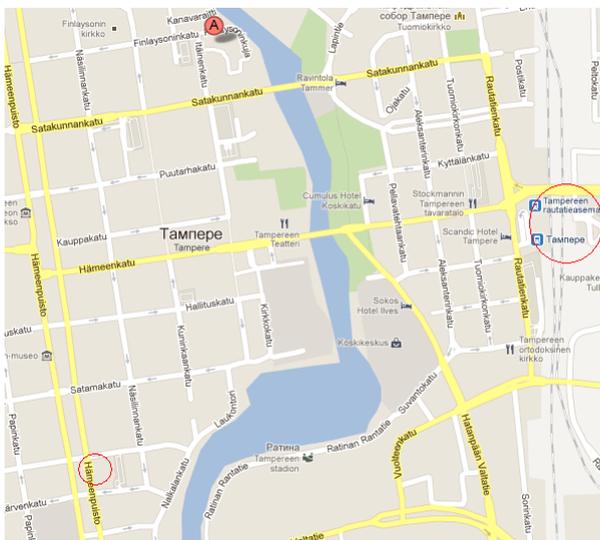
<b>08:30</b>	30m	<b>Registration (main hall near Auditorium A156)</b>	
<b>Training:</b> Smart-M3 hands-on			
<b>Room:</b> Auditorium A156		Trainer: Jukka Honkola	
<b>09:00</b>	45m	Show M3 python API in detail, overview of other APIs	
<b>09:45</b>	45m	Different abstraction levels: SSAP vs. using an ontology library	
<b>10:30</b>	45m	Hello world example	
<b>11:15</b>	30m	Hands-on exercise / detailed demo	
<b>11:45</b>		<b>Registration (main hall near Auditorium A156)</b>	
<b>Session:</b> Official opening of 10 <sup>th</sup> FRUCT conference			
<b>Room:</b> Auditorium A156		Chairman: Sergey Balandin	
<b>12:00</b>	10m	Opening of the 10 <sup>th</sup> FRUCT conference and welcome words	
<b>12:10</b>	20m	Welcome words from Trade Representation of the Russian Federation in Finland, Valery Shlyamin	
<b>12:30</b>	45m	Keynote talk: Qt contributions in many shapes and forms, Knut Yrvin, Nokia, Norway	
<b>13:15</b>	45m	Invited talk: The Future of Telecommunications: a look at the technology evolution that will shape the telecom bi in the last part of this decade, Roberto Saracco, Telecom Italia Lab, Italy	
<b>14:00</b>	30m	<b>Coffee-break (main hall near Auditorium A156)</b>	
<b>Session:</b> Mobile Linux			
<b>Room:</b> Auditorium A156		Chairman: Knut Yrvin	
<b>14:30</b>	30m	Gaming Freedom, Laszlo Papp, KDE Community, Finland	
<b>15:00</b>	20m	MySocials: Client for Social Network Services on Maemo 5 Fremantle and MeeGo 1.2 Harmattan, Kirill Kulakov, Konstantin Kirpichenok, Petrozavodsk State University, Russia	
<b>15:20</b>	20m	Overview of possible architectural solutions for MeeGo cloud player, Oleksandr Kachur, Vladimir Sayenko, KTURE, Ukraine	
<b>15:40</b>	20m	The Cross-Platform Implementation of Game Draughts, Valery Kirkizh, Evgeny Linsky, State University of Aerospace Instrumentation, Russia	
<b>16:00</b>	30m	<b>Coffee-break (main hall near Auditorium A156)</b>	
<b>Session:</b> FRUCT info session - status, news and Web WG meeting			
<b>Room:</b> Auditorium A156		Chairman: Sergey Balandin	
<b>16:30</b>	30m	Overview of the FRUCT program, current status and latest updates	
<b>17:00</b>	30m	Distributed Social Network Services for the FRUCT Community, Vitaly Petrov, Tampere University of Technology, Finland, Valery Kirkizh, State University of Aerospace Instrumentation, Russia, Ekaterina Dashkova, University of Oulu, Finland	
<b>17:30</b>	30m	Panel discussion on the FRUCT program future and Web WG discussion	
<b>18:00</b>		<b>Closing of Day 2 followed by the meeting of FRUCT Advisory Board</b>	

**November 10 (Thursday)**

**Nokia office Hermia 5, Visiokatu 1, Tampere**

<b>08:30</b>	<b>30m</b>	<b>Registration and Day Agenda (Auditorium A156)</b>	
<b>Session:</b> Mobile Solutions I		<b>Training:</b> Basics of H.264/AVC Video Compression	
<b>Room:</b> Auditorium A156		Trainer: Vinod Kumar Malamal Vadakital	
		<b>Room:</b> Hermia 4, Universum 172	
<b>09:00</b>	20m	Signal Strength-Based Approach for 3G/WLAN Handover on Nokia N900 Devices, Nickolay Amelichev, Kirill Krinkin, St-Petersburg Electrotechnical University, Russia, S.P. Shiva Prakash, TN Nagabhushan, Sri Jayachamarajendra College of Engineering, India	Introduction to the concept and principles of video compression
<b>09:20</b>	20m	Development of Kannada Keyboard Interface and Crop Management on Nokia N900 device, TN Nagabhushan, S.P.Shiva Prakash, Sri Jayachamarajendra College of Engineering, India, Suresh Chande, Nokia, Finland	
<b>09:40</b>	20m	Ubiq Mobile+QReal – a technology for development of distributed mobile services, Timofey Bryksin, Yurii Litvinov, Valentin Onossovski, Andrey Terekhov, St.-Petersburg State University, Russia	Introduction to the H.264/AVC video codec blocks
<b>10:00</b>	<b>30m</b>	<b>Coffee-break (main hall near Auditorium A156)</b>	
<b>Session:</b> Mobile Healthcare		<b>Chairman:</b> Alexander Sayenko	
<b>Room:</b> Auditorium A156			
<b>10:30</b>	40m	Mobile monitoring of vital parameters: aims, instruments and current state of implementation of mHealth projects worldwide and in Russia, Oleg Medvedev, Maxim Yatskovskiy, Moscow State University, Russia	Brief description of the workings of the different building blocks of the video codec
<b>11:10</b>	40m	Privacy and security in older adults independent living assistance platform, Pekka Jäppinen, Lappeenranta University of Technology, Finland	
<b>11:50</b>	20m	CardioZip: an ECG Compression Library for Mobile HealthCare, Aleksandr Borodin, Petrozavodsk State University, Russia	
<b>12:10</b>	20m	Using Bluetooth on Android Platform for mHealth Development, Evgeny Stankevich, Ilya Paramonov, Yaroslavl State University, Russia	Understanding of the different compression concepts using practical experimentation
<b>12:30</b>	<b>1h</b>	<b>Lunch break</b>	
<b>Session:</b> From Science to Business		<b>Chairman:</b> Yevgeni Koucheryav	
<b>Room:</b> Auditorium A156			
<b>13:30</b>	45m	Keynote: From Science to R&D Business, Dmitry Petrov, Kari Aho, Magister Solutions Ltd, Finland	
<b>14:15</b>	30m	ICT ecosystem of Oulu region, Janne Mustonen, Business Oulu, Finland	
<b>14:45</b>	20m	R&D cooperation of NSN in Russia in the field of standardization, Alexander Sayenko, Nokia Siemens Networks, Finland	
<b>15:05</b>	15m	Activity-oriented Approach in Modeling Adaptive Business Process, Irina Brusakova, Maria Kossukhina, Saint Petersburg State University of Engineering and Economics, Russia	
<b>15:20</b>	<b>30m</b>	<b>Coffee-break (main hall near Auditorium A156)</b>	

<b>Session: Network Technologies</b>			<b>FRUCT WG meeting: Mobile Linux WG</b> <b>Room: PC-Class B112</b> Chairman: Timofey Turenko
<b>Room: Auditorium A156</b>		Chairman: Pekka Jäppinen	
<b>15:50</b>	20m	Operational challenges for emerging cognitive radio technologies - Wireless Devices Utilizing TV White Spaces, Jarkko Paavola, Turku University of Applied Sciences, Finland	
<b>16:10</b>	20m	Overview of Congestion Control Mechanisms for Wireless Sensor Networks, Ekaterina Dashkova, Andrei Gurtov, University of Oulu, Finland	
<b>16:30</b>	20m	Influence of browser type on HTTP Traffic parameters, Vladimir Deart, Ivan Kozhuhov, Moscow Technical University of Communications and Informatics, Russia	
<b>16:50</b>	20m	Applications for Distributed Beamforming, Tero Hurnanen, Graduate School in Electronics, Telecommunications and Automation (GETA), Jarkko Paavola, Turku University of Applied Sciences, Jari Tissari, Jussi Poikonen, BID Technology, University of Turku, Finland	
<b>17:10</b>	20m	Methods and tools for system on chip retargetable parallel programming, Alexey Syschikov, Boris Sedov, State University of Aerospace Instrumentation, Russia	<b>FRUCT WG meeting: Smart Spaces WG</b> <b>Room: PC-Class B112</b> Chairman: Sergey Balandin
<b>17:30</b>	20m	Integrated development environment for visual parallel programming, Sedov Boris, Alexey Syschikov, Vera Ivanova, State University of Aerospace Instrumentation, Russia	
<b>17:50</b>	40m	Internet of Things, Yevgeni Koucheryavy, Mikhail Gerasimenko, Tampere University of Technology, Finland (supported by grant of Nokia Siemens Networks/Russia to Mikhail Gerasimenko for studies abroad)	
<b>18:30</b>	30m	<b>Free time and transportation to Demola (Väinö Linnan aukio 15, 3<sup>rd</sup> floor)</b>	
<b>Session: Presentation of demos in Pecha Kucha format</b>			
<b>Room: Demola, 3<sup>rd</sup> floor</b>		Chairman: Ilya Paramonov	
<b>19:00</b>	3h	<b>Demo Session and Social Event, Demola, Väinö Linnan aukio 15, 3<sup>rd</sup> floor</b>	





**November 11 (Friday)**

**Nokia office Hermia 5, Visiokatu 1, Tampere**

<b>09:00</b>	<b>30m</b>	<b>Registration and Day Agenda (Auditorium A156)</b>	
<b>Session:</b> Smart Space Applications <b>Room:</b> Auditorium A156		Chairman: Alexey Kashevnik <b>Training:</b> On the Edge of Wireless Evolution Trainer: Dmitry Petrov <b>Room:</b> Hermia 4, Universum 172	
<b>09:30</b>	<b>20m</b>	Smart Conference Services at 10th FRUCT Conference, Alexey Kashevnik, SPIIRAS; Dmitry Korzun, Ivan Galov, Petrozavodsk State University, Russia	General introduction: Technologies HSPA vs. LTE, Radio interface, Architecture, Performance (data rates, latencies) Current and upcoming market situation
<b>09:50</b>	<b>20m</b>	Compositions of Personal Smart Spaces in Multi-Blogging, Ivan Galov, Dmitry Korzun, Petrozavodsk State University, Russia	Challenges for mobile networks HSPA Evolution: - Energy efficiency
<b>10:10</b>	<b>20m</b>	SmartScribo Blog Processor for Multi-Blogging in Smart Spaces, Rustam Kadirov, Dmitriy Korzun, Petrozavodsk State University, Russia	HSPA Evolution: - Indoor coverage extension with Femtocells - Going beyond 5 MHz in HSPA uplink and downlink
<b>10:30</b>	<b>20m</b>	Mind Mapping in Smart Conference System, Andrew Vasilev, Ilya Paramonov, Oleg Kandaurov, Eldar Mamedov, Yaroslavl State University, Russia	Coordinated Multi-point transmissions (COMP) in HSPA: Single frequency aggregation and switching concepts
<b>10:50</b>	<b>20m</b>	Pecha Kucha Support for Smart Conference System, Ilya Paramonov, Andrew Vasilev, Yaroslavl State University, Russia	COMP in HSPA: Dual frequency aggregation and switching concepts, Single frequency network (HS-SFN), Discontinuous data transmission
<b>11:10</b>	<b>20m</b>	Presentations management system, Pavel Smirnov, Yuriy Katkov, Irina Pochinok, Dmitry Mouromtsev, St-Petersburg National Research University of Information Technologies, Mechanics and Optics, Russia	Uplink and downlink MIMO enhancements: - Open and closed loop beamforming and switched antenna transmit diversity in uplink - 4 Tx downlink MIMO
<b>11:30</b>	<b>30m</b>	<b>Coffee-break (main hall near Auditorium A156)</b>	
<b>Session:</b> Smart-M3 Platform <b>Room:</b> Auditorium A156		Chairman: Alexey Kashevnik <b>Training:</b> On the Edge of Wireless Evolution (cont.) Trainer: Dmitry Petrov <b>Room:</b> Hermia 4, Universum 172	
<b>12:00</b>	<b>30m</b>	Smart-M3 based applications, Petri Liuha, Nokia Research Center, Finland	Enhancements for LTE: Energy efficiency, Heterogeneous networks (Hetnet), Carrier aggregation, MIMO enhancements
<b>12:30</b>	<b>20m</b>	Subscription Operation in Smart-M3, Aleksandr Lomov, Dmitry Korzun, Petrozavodsk State University, Russia	LTE network fault detection and management: - Self Organizing/Optimizing Networks (SON)
<b>12:50</b>	<b>20m</b>	Porting Smart-M3 platform to MeeGo operation system, Kirill Yudenok, St-Petersburg Electrotechnical University, Russia	LTE network fault detection and management: - Minimization of drive tests (MDT)
<b>13:10</b>	<b>20m</b>	A tag-based recommendation system for Smart-M3, Diana Zaiceva, Dmitry Korzun, Petrozavodsk State University, Russia	Conclusion and wrap-up
<b>13:30</b>	<b>1h</b>	<b>Lunch break</b>	
<b>Session:</b> Mobile Video <b>Room:</b> Auditorium A156		Chairman: Karen Egiazarian	
<b>14:30</b>	<b>20m</b>	Rate-distortion Oriented Joint Video Pre-filtering and Compression, Junsheng Fu, Evgeny Belyaev, Karen Egiazarian, Tampere University of Technology, Finland	<b>FRUCT WG meeting:</b> Mobile Healthcare WG <b>Room:</b> PC-Class B112 Chairman: Oleg Medvedev



14:50	20m	Recognition of panorama parts using OpenCV, Ekaterina Polishchuk, St-Petersburg Academic University – Nanotechnology Research and Education Centre RAS, Russia	<b>FRUCT WG meeting: Mobile Healthcare WG</b> <b>Room: PC-Class B112</b> Chairman: Oleg Medvedev
15:10	20m	Gaze estimation for near-eye display based on fusion of starburst algorithm and FERN natural features, Peter Bazanov, Toni Järvenpää, Nokia Research Center, Finland	
15:30	20m	Reversible q-ary Generalized Data Hiding, Tatiana Efimushkina, Karen Egiazarian, Tampere University of Technology, Finland	
15:50	30m	<b>Coffee-break (main hall near Auditorium A156)</b>	
<b>Session: Mobile Solutions II</b> <b>Room: Auditorium A156</b>			Chairman: Sergey Balandin
16:20	20m	Simulator of a “Weather” Cloud, Ksenia Khramenkova, State University of Aerospace Instrumentation, Russia, Olivier Hermant, Renaud Pawlak, Institut Supérieur d'Electronique de Paris, France	
16:40	20m	Synchronization with External Task Systems in Octotask Application, Denis Laure, Yury Krupin, Alexander Abdulloev, Ilya Paramonov, Andrey Vasilev, Yaroslavl State University, Russia	
17:00	20m	Test Bench Development for IEEE 802.11-based WLAN Performance Evaluation and Measurements, Vitaly Petrov, Sergey Andreev, State University of Aerospace Instrumentation, Russia	
17:20	10m	<b>Official closing of 10<sup>th</sup> FRUCT conference, Hermia 5, Auditorium A156</b>	



# Platform Security Seminar

Seminar date: 8 November 2011

Place: Nokia office Hermia 5, Visiokatu 1, Tampere

## Overview

During the session current approaches in mobile security and privacy are going to be presented. The keynote lecture by Jan-Erik Ekberg (Nokia Research Center) about OnBoardCredentials security platform is to be supported by presentations in the area of mobile OS security, cloud security aspects and web applications verification.

In this hands-on training session we will explore the development environment and coding language for making credential programs in the OnBoardCredentials context, and further to provision them to the platform. The participants get to write their own small authentication credential that is provisioned and run in an emulated instance of ObC (ASSEMBLER and BASIC languages).

## Program of the Seminar

**November 8 (Tuesday)**

**Nokia office Hermia 5, Visiokatu 1, Tampere**

<b>Session:</b> Platform Security Seminar		
<b>Room:</b> Auditorium A156		Chairman: Jan-Erik Ekberg
<b>09:00</b>	2h 20m	Overview of OnBoardCredentials Platform, Jan-Erik Ekberg, Nokia Research Center, Finland
<b>11:20</b>	30m	Accountability and host identities, Seppo Heikkine, Tampere University of Technology, Finland
<b>11:50</b>	30m	MeeGo 1.2 (Harmattan) OS Platform Security Architecture, Timofey Turenko, FRUCT, Finland
<b>12:20</b>	20m	The Security Aspects of Cirrostratus Private Cloud Storage, Vitaly Petrov, Tampere University of Technology, Finland
<b>12:40</b>	20m	Detection and Notification of Additional Actions of Signed Java Applets, Roman Zharinov, State University of Aerospace Instrumentation, Russia
<b>13:00</b>	1h	<b>Lunch break</b>
<b>Session:</b> Platform Security Seminar: hands-on training		
<b>Room:</b> Auditorium A156		Chairman: Jan-Erik Ekberg
<b>14:00</b>	4h	OnBoardCredentials hands-on training, Jan-Erik Ekberg, Nokia Research Center, Vitaly Petrov, Tampere University of Technology, Finland
<b>18:00</b>		<b>Closing of the Seminar</b>

## Prerequisites

Training participants are supposed to carry a laptop with Linux OS installed and have some programming skills with any language. No ASSEMBLER or BASIC background is required.

Don't forget that in order to participate in the seminar you have to make separate registration at <http://fruct.org/node/286203>



# Qt Quick for Mobile Development Training

Training date: 8 November 2011

Place: Nokia office Hermia 5, Visiokatu 1, Tampere

## Target audience

- Qt programmers who have the following skills:
- Understanding Qt meta object architecture;
- Good C++ knowledge, including solid understanding of inheritance, polymorphism, virtual functions concepts;
- Some practical experience of development in Linux environment;
- Understanding gnu/make and .pro file formats

## The main goals of training

- to improve solid understanding Qt architecture;
- to acquire knowledge about QML declarative language in Qt;
- to improve knowledge about Qt mobility;
- to get practical experience for Qt development and publishing in OVI.

## Program of the Training

**November 8 (Tuesday)**

**Nokia office Hermia 5, Visiokatu 1, Tampere**

**Training:** Qt Quick for Mobile Development

**Room:** PC-Class B112

Trainer: Tony Torp

<b>09:00</b>	2h 30m	Intro to Qt Nokia developer offering, Qt SDK
<b>11:30</b>	30m	The first Qt application Intro to QML programming language
<b>12:00</b>	30m	QML Mobility APIs, example hands on with maps and GPS Signing and deploying
<b>12:30</b>	30m	Publishing apps in Nokia store
<b>13:00</b>		Closing of the Training

## Prerequisites

- Good skills in Object oriented programming (C++ or Java)
- Laptop with installed Qt SDK 1.1.3 or newer. It can be downloaded from <http://www.developer.nokia.com/Develop/Qt/Tools/>.

Don't forget that in order to participate in the seminar you have to make separate registration at <http://fruct.org/node/286202>

# Ubiq Mobile Training

Training date: 8 November 2011

Place: Nokia office Hermia 5, Visiokatu 1, Tampere

## Overview

Ubiq Mobile is a universal platform for developing distributed mobile applications and services. It is primarily targeted for creation of applications with non-trivial server-side logic that are able to work efficiently in different mobile networks, including slow and relatively unstable ones. Ubiq Mobile supports various mobile platforms, including Symbian S60, Java ME for different models of phones, Android and some other platforms.

Ubiq Mobile development environment includes set of server-side APIs for development of distributed applications and set of standardized clients for supported mobile platforms. Server-side components are working under Microsoft.NET and for their development and debugging Microsoft Visual Studio can be used.

As an additional option, it's possible to build Ubiq Mobile distributed applications using graphical domain-specific languages (DSLs). There are set of DSLs focused on different classes of applications. For automatic generation of Ubiq Mobile code, an original visual modeling technology called QReal is used.

The purpose of the training is to familiarize participants with Ubiq Mobile and QReal technologies and give them "a live feeling" of practical work with the technologies through the step-by-step development of sample application - webcam surveillance service.

## Program of the Training

**November 8 (Tuesday)**

**Nokia office Hermia 5, Visiokatu 1, Tampere**

**Training:** Ubiq Mobile training

**Room:** PC-Class B112

**Trainer:** Valentin Onossovski

<b>14:00</b>	30m	Overview of Ubiq Mobile concepts, program models and development environment
<b>14:30</b>	1h	Overview of QReal concepts, modeling and generation tools
<b>15:30</b>	1h	Creation of sample webcam application using Ubiq Mobile .NET API
<b>16:30</b>	1h	Creation of the same application using DSL
<b>17:30</b>	30m	Demos of Ubiq Mobile applications on mobile devices
<b>18:00</b>		Closing of the Training

## Prerequisites

We expect the training participants have the following software installed on their laptops:

- Microsoft Visual Studio (2008 or 2010) with C# support;
- Microsoft.NET 3.5
- Carbide C++ IDE v 2.7  
([http://www.developer.nokia.com/Resources/Tools\\_and\\_downloads/Other/Carbide.c++/](http://www.developer.nokia.com/Resources/Tools_and_downloads/Other/Carbide.c++/))
- S60 SDK 3rd Edition  
([http://www.developer.nokia.com/Resources/Tools\\_and\\_downloads/Other/Symbian\\_SDKs/](http://www.developer.nokia.com/Resources/Tools_and_downloads/Other/Symbian_SDKs/))

The platform-related software will be available for downloading closer to the training.

Training participants are supposed to have C# programming skills and Microsoft.NET development experience.

**Don't forget that in order to participate in the seminar you have to make separate registration at <http://fruct.org/node/267559>**



# Smart-M3 hands-on Training

Training date: 9 November 2011

Place: Nokia office Hermia 5, Visiokatu 1, Tampere

## Overview

The training session gives an overview of different available APIs for the Smart-M3 platform and the possible programming models. We study different available APIs for the Smart-M3 platform and simple programming models for Smart-M3 applications. There is also a hands-on component where a simple application written in python is extended.

Smart-M3 is an interoperability platform that provides mechanisms to share information expressed using RDF. The platform consists of a Semantic Information Broker (SIB) that stores the information, and Knowledge Processors (KP) that can insert, remove, query and subscribe to information. The information is stored in Smart-M3 according to standardized or otherwise agreed ontologies. Information sharing helps the participating KPs to gather relevant context information which leads to more efficient operation and innovative multi-device use cases. For more information about Smart-M3 please check <http://en.wikipedia.org/wiki/Smart-M3> and <http://fruct.org/m3>.

The Smart-M3 open source release contains KP APIs for GLib/C, Python, and Qt/C++. The KPs can connect to the SIB by using either TCP/IP or NoTA H\_IN protocol. There are also ontology library generators for GLib/C, Python and ANSI-C APIs that allow developers to program using ontology concepts instead of using Smart-M3 basic operations and RDF. The release will be improved with new features such as conditional update and a set of generic KPs helping to process context information.

## Program of the Training

**November 9 (Wednesday)**

**Nokia office Hermia 5, Visiokatu 1, Tampere**

<b>Training:</b> Smart-M3 hands-on		<b>Trainer:</b> Jukka Honkola
<b>Room:</b> Auditorium A156		
<b>09:00</b>	45m	Show M3 python API in detail, overview of other APIs
<b>09:45</b>	45m	Different abstraction levels: SSAP vs. using an ontology library
<b>10:30</b>	45m	Hello world example
<b>11:15</b>	30m	Hands-on exercise / detailed demo
<b>11:45</b>		Closing of the Training

## Prerequisites

The training attendees have a choice to follow the training in lecturer-driven mode or take part in hands-on, which assumes the following pre-requirements from the corresponding attendees:

- You should bring own laptop with working installation of Smart-M3. Smart-M3 will available to all developers under open license. To learn more about Smart-M3 installation visit: <http://sourceforge.net/projects/smart-m3/>
- You should have basic knowledge of Python language

**Don't forget that in order to participate in the seminar you have to make separate registration at <http://fruct.org/node/270185>**

# Basics of H.264/AVC Video Compression Training

Training date: 10 November 2011

Place: Nokia office Hermia 4, Visiokatu 1, Tampere

## Overview

The visual stream forms an important part of any multimedia content. However, the visual stream in its uncompressed form is made up of such large amount of data that it is beyond the capacity of any current transmission or storage device. Therefore, compression schemes are essential, and have been standardised. Most of these compression schemes use known human perceptual qualities along with efficient binary data coding schemes to reduce redundant information, remove irrelevant information, and perform compression. H.264/AVC, a joint video standard by the ITU and ISO, is among the popular video compressor that has been standardized. It has been shown to provide superior compression efficiency compared to any other earlier standards.

In this training, the participants are first introduced to the principles used to compress video data, and then a brief description on the workings of the various building blocks of a H.264/AVC video compressor. The training is divided into two sessions. In the first session, the theory is presented. In the second session the participants will use the reference JM coder and Matlab scripts to get a hands-on experience for video encoding and decoding. Selected features of the H.264/AVC coder will be evaluated using rate-distortion plots.

## Program of the Training

**November 10 (Thursday)**

**Nokia office Hermia 4, Visiokatu 1, Tampere**

**Training:** Basics of H.264/AVC Video Compression

**Room:** Hermia 4, Universum 172

**Trainer:** Vinod Kumar Malamal Vadakital

<b>09:00</b>	45m	Introduction to the concept and principles of video compression
<b>09:45</b>	45m	Introduction to the H.264/AVC video codec blocks
<b>10:30</b>	30m	Brief description of the workings of the different building blocks of the video codec
<b>11:00</b>	30m	Understanding of the different compression concepts using practical experimentation
<b>11:30</b>		Closing of the Training

## Prerequisites

The JM reference software is available for free from <http://iphome.hhi.de/suehring/tml/download/>. This software is written in C, and the latest version is JM18.0. Download the file jm18.0.zip and uncompress it. It contains, apart from the source code and documentation, Makefiles for a Linux platform, and MS visual C++ project files for a Windows platform. The participants must be able to download, compile, and produce an executable of this software. Matlab is also required for running the scripts. The participants should have some basic knowledge of Matlab and C.

Don't forget that in order to participate in the seminar you have to make separate registration at <http://fruct.org/node/286204>



# On the Edge of Wireless Evolution – Latest 3G and 4G developments and trends in 3GPP Training

Training date: 11 November 2011

Place: Nokia office Hermia 4, Visiokatu 1, Tampere

## Overview

The training session gives an overview of the latest 3G and 4G developments and trends in 3GPP. Paradigm of being always connected is starting to be reality in industrial countries but the trend is also emerging in developing countries such as India where 3G licenses were auctioned during 2010. World-wide forecast for the amount of mobile data by the year 2014 is tenfold when compared to the current situation. This increased demand and growing requirements for mobile communications technologies sets wide range of challenges to be covered by network and device vendors as well as operators. This tutorial provides an overview how these challenges are addressed in Third Generation Partnership Project (3GPP) responsible of standardizing 3rd generation (i.e. High Speed Packet Access) and 4th generation (Long Term Evolution (LTE) and LTE-Advanced) technologies. The focus is in the most recent trends and enhancements related to both 3G and 4G technologies which include energy efficiency, heterogeneous networks and multiple antenna technologies to name a few. The basic principles of newly added features are presented and their benefits are quantified by means of simulations modeling real behavior of 3G/4G networks.

## Program of the Training

**November 11 (Friday)**

**Nokia office Hermia 4, Visiokatu 1, Tampere**

**Training:** On the Edge of Wireless Evolution

**Room:** Hermia 4, Universum 172

**Trainer:** Dmitry Petrov

<b>09:30</b>	30m	<p>General introduction</p> <ul style="list-style-type: none"> <li>• Technologies HSPA vs. LTE <ul style="list-style-type: none"> <li>○ Radio interface</li> <li>○ Architecture</li> <li>○ Performance (data rates, latencies)</li> </ul> </li> <li>• Current and upcoming market situation</li> <li>• Challenges for mobile networks <ul style="list-style-type: none"> <li>○ Energy efficient solutions</li> <li>○ Higher data rates</li> <li>○ Subscriber and mobile data growth</li> <li>○ Heterogeneous networks</li> <li>○ Indoor coverage</li> <li>○ Network fault detection and management</li> </ul> </li> </ul>
<b>10:00</b>	90m	<p>HSPA Evolution</p> <ul style="list-style-type: none"> <li>• Energy efficiency <ul style="list-style-type: none"> <li>○ Reduced control channel overhead (HS-SCCH less)</li> <li>○ Reduced power consumption at the terminal by discontinuous reception and transmission</li> </ul> </li> <li>• Indoor coverage extension with Femtocells</li> <li>• Going beyond 5 MHz in HSPA uplink and downlink</li> <li>• Coordinated Multi-point transmissions (COMP) in HSPA <ul style="list-style-type: none"> <li>○ Single frequency aggregation and switching concepts</li> <li>○ Dual frequency aggregation and switching concepts</li> <li>○ Single frequency network (HS-SFN)</li> <li>○ Discontinuous data transmission (HS-DDTX)</li> </ul> </li> <li>• Uplink and downlink MIMO enhancements <ul style="list-style-type: none"> <li>○ Open and closed loop beamforming and switched antenna transmit diversity in uplink</li> <li>○ 4 Tx downlink MIMO</li> </ul> </li> </ul>



<b>11:30</b>	10m	Break
<b>11:40</b>	90m	<p>Enhancements for LTE</p> <ul style="list-style-type: none"> <li>• Energy efficiency <ul style="list-style-type: none"> <li>○ Adaptive discontinuous reception</li> <li>○ eNode-B power savings</li> <li>○ Enhancements for diverse data applications</li> </ul> </li> <li>• Heterogeneous networks (Hetnet) <ul style="list-style-type: none"> <li>○ Closed and open subscriber groups (CSG / OSG)</li> <li>○ Interference Coordination Interference Cancellation between macro and indoor cells</li> <li>○ Mobility enhancements between macro and indoor cells</li> </ul> </li> <li>• Carrier aggregation</li> <li>• MIMO enhancements <ul style="list-style-type: none"> <li>○ 8-by-8 MIMO</li> <li>○ Single and multiuser MIMO</li> </ul> </li> <li>• LTE network fault detection and management <ul style="list-style-type: none"> <li>○ Self Organizing/Optimizing Networks (SON)</li> <li>○ Minimization of drive tests (MDT)</li> </ul> </li> </ul>
<b>13:10</b>	20m	Conclusion and wrap-up
<b>13:30</b>		Closing of the Training

Don't forget that in order to participate in the seminar you have to make separate registration at <http://fruct.org/node/273831>

## Practical Information

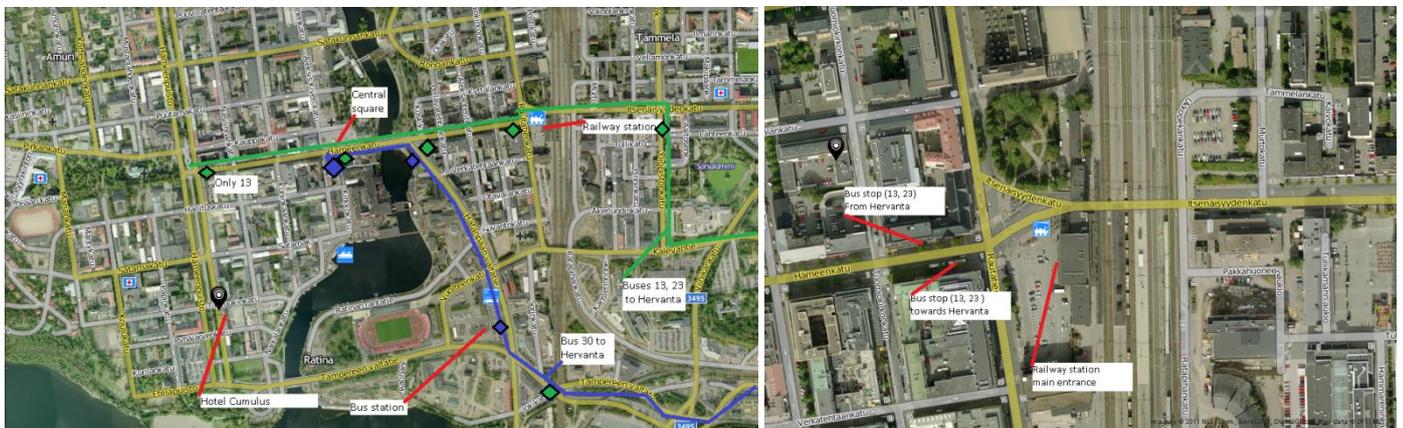
### Public transport in Tampere area

There are only buses. Bus fare is 2.50 EUR. At night (00:00 - 04:40) you will be charged extra night 2.50 EUR. Bus ticket allows you to board any bus line for 1 hour after you have bought it. If you are waiting for a bus, raise your hand to make it stop, otherwise driver will think that you are waiting for another bus. Inside a bus, if you want to leave press STOP button. Most buses leave every 15 minutes, but during the night intervals can reach 40 minutes.

It takes approximately 30 minutes to reach city center from Hervanta on buses 23 and 13, and 15 minutes on buses 20 and 30. There are timetables at most bus stops showing all bus lines stopping at this particular stop. There are always 3 timetables: workdays (gray), Saturdays (yellow) and Sundays (red).

If you lost, there are 3 most notable points in Tampere: Bus station (Linja-autoasema), Central Square (Keskustori/Centrum), and railway station (Rautatieasema). Most local buses have a stop at the central square bus station. Long distance buses leave from the bus station.

If you arrive by train, there is a Go-Tampere tourist info point inside the train station. There you can get free city maps of a really high quality, and also get answers on whatever questions you might have (i.e. restaurants and such).



### **Railway station → Hervanta (Bus line 13 or 23):**

From railway station you can board bus 23 or 13. To get out at the right spot, look to the RIGHT window for the large DUO sign. Then wait for the bus to turn LEFT and press stop. It will get you out in the Hermia research center.

### **Railway station → Hotel Cumulus Hameenpuisto 47:**

Easiest way is to go on foot. Follow Hameenkatu street until the end. Turn left, and your destination will be on the left hand side. You can take bus 13 that goes along Hameenkatu street, but usually waiting for the bus takes longer.

**Hotel Cumulus Hameenpuisto 47 → Hermia:** Nearest bus stop is bus 13 at Hameenkatu.

Tampere journey planner <http://reittiopas.tampere.fi/en>; real-time bus position monitor <http://lissu.tampere.fi/?lang=en>.

### **Smart Conference User Client Installation Guide**

#### **Installation instructions for SmartConference client (N900, Maemo 5)**

- 1) Connect to Extras-Devel repository. To install Extras-Devel repository open applications manager and create catalog: catalogue name: Extras-Devel; web address: <http://repository.maemo.org/extras-devel/>; distribution: fremantle; components: free non-free.
- 2) Find the SmartConference package and install it (if you get questions read p. 178 in the 10<sup>th</sup> FRUCT proceedings).
- 3) At the start of application you need to set IP address, port, and SIB name provided by conference organizers.

#### **Installation instructions for SmartScribo client (N900, Maemo 5)**

- 1) After installing SmartConference client, download SmartScribo deb-package: <http://gitorious.org/smart-scribo/smart-scribo/trees/master/BlogClient/maemo5/package>.
- 2) Install the package and launch SmartScribo client. At the first launch the client creates config file: `~/smartscribo/config`; edit IP address of the smart conference SIB provided by conference organizers.
- 3) Launch SmartScribo client. Choose in the dropdown list "LJ SmartConference" and click OK.

To switch between SmartConference and SmartScribo: choose **Switch on Scribo** in SmartConference client; in the SmartScribo client menu choose **Switch on SCS**.

Read more about SmartConference: <https://sourceforge.net/projects/smartconference/files/Documentation>.

The SmartScribo user guidelines: <http://gitorious.org/smart-scribo/smart-scribo/blobs/master/UserGuide.pdf>.



FOR NOTES



FOR NOTES



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# The 10<sup>th</sup> Conference of Open Innovations Association FRUCT

## Program

Tampere, Finland  
November 7-11, 2011

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# CALL FOR PARTICIPATION

## 11<sup>th</sup> Conference of Open Innovations

### Association FRUCT

#### St-Petersburg, Russia, 23-27 April 2012



#### Overview

FRUCT is the largest regional cooperation framework between academia and industry in form of open innovations. FRUCT conferences are attended by the representatives of 20 FRUCT member universities from Russia, Finland, Denmark, Italy, Ukraine, industrial experts from Nokia, Nokia Siemens Networks, Intel, Magister Solutions Oy and a number of guests from other companies and universities.

The conference is an R&D forum for the most active students, academic experts, industrial researchers and influential representatives of business and government. The conference invites the world-class academic and industrial researcher to give lectures on the most relevant topics, provides an opportunity for student teams to present progress and results of their R&D projects, meet new interesting people and form new R&D teams. The conference program consists of 3 to 5 intensive (½ or full day) trainings on the most promising technologies, plus 3 days of the main conference.

We warmly welcome all university research teams to participate in the conference, present your research and join the FRUCT Program. Thanks to our sponsors, all participants can enjoy free of charge registration to the event, but the online registration must be done by everyone before the conference.

#### Background and motivation

The distinctive feature of modern IT and Telecommunications industries is in dramatic shortening of the period when technology remains commercially viable. On the one hand, this is due to the competition between key market players that are pushing all manufacturers to accelerate innovations; on the other hand, this is due to technological progress speed up caused by the growing expansion of intellectual resource invested into R&D and design activities. This trend is an important call and challenge for the leading educational and research institutions around the globe. In the FRUCT we believe that it is crucial to combine forces of EU and Russia to follow up the competition in adopting university education to the new industrial trends. The first step is to strength a bridge between Russian and Finnish academic worlds, increase visibility of involved research teams and set direct personal contacts between academic and industrial experts. More information about FRUCT is available at [www.fruct.org](http://www.fruct.org).

#### Call for papers and presentations

Submit your full papers (up to 12 pages) and extended abstracts (min 200 words, max 2 pages) for project in progress and poster/demo by **February 20, 2012**. All submitted papers will be peer reviewed by the technical committee. Please follow provided paper templates. The list of conference topics is as follows:

- Mobile-Health, fitness and medical mobile solutions
- Smart spaces, new services, context analysis and data mining
- Cross-platform development and improvement of Qt platform
- Open source cross-platform development, Mobile Linux, solutions in MeeGo and Android
- Technology proofing, modeling, verification, validation, testing techniques
- Software and services for mobile devices, future applications design, UIs
- Mobile device security, management of personal and business privacy
- Design and optimization of emerging wireless network technologies
- Energy management, new sources of energy, green technologies
- Energy efficient design of sensors, integration of peripherals
- Modern network architectures, air interfaces and protocols
- Inter-device connectivity, embedded networks, co-design
- Mobile multimedia and video services and solutions

All conference papers and abstracts will be published in FRUCT proceeding and selected papers will be recommended for IEEE publication. The paper templates, conference news and updates, information on accommodation and all other details can be found from web page <http://www.fruct.org/conference11>.