Experience with coordination of EU funded projects

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WBCInno Workshop
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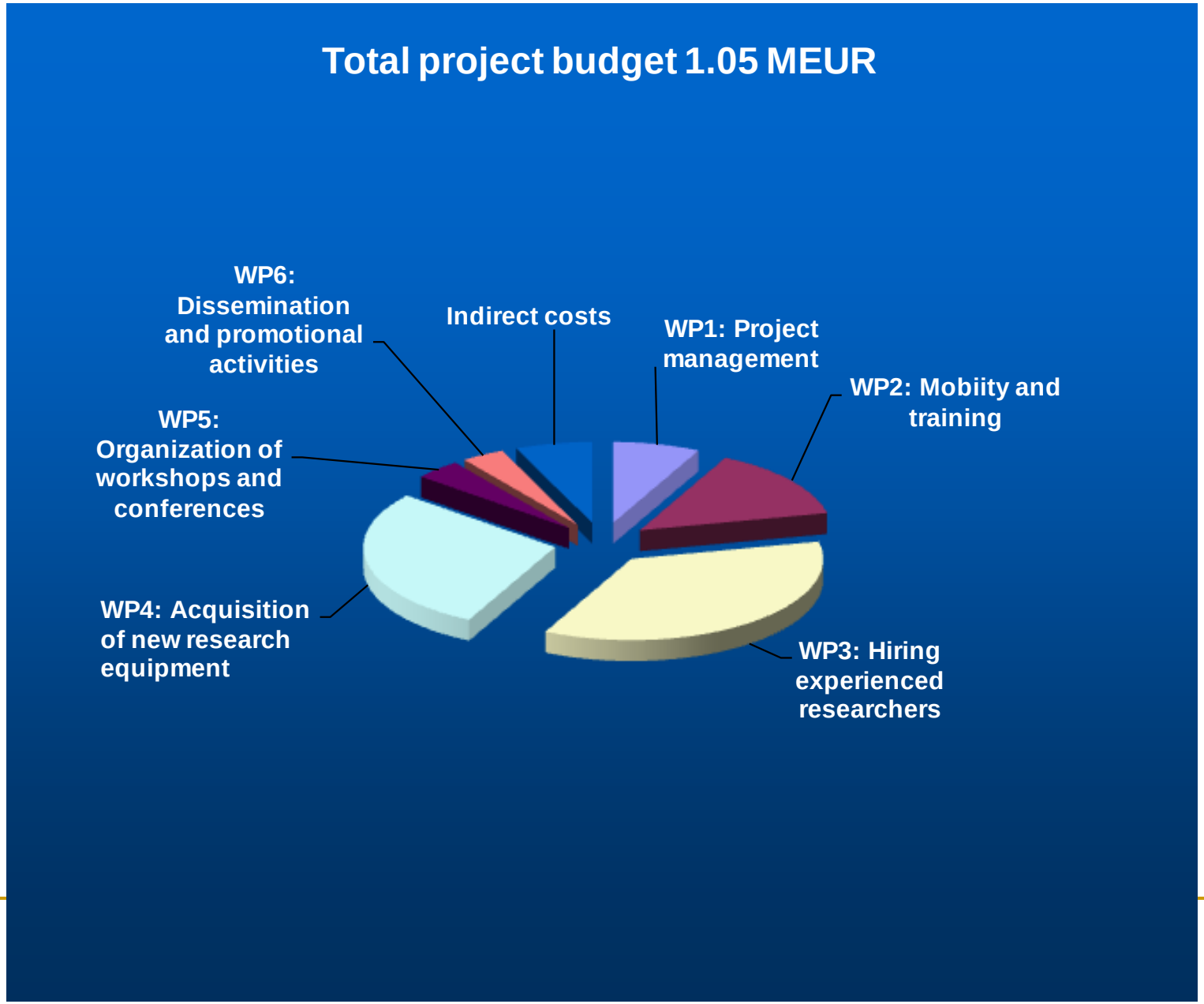
Novi Sad, Serbia

Successful proposals – examples & experience

Project budget – APOSTILLE (REGPOT)



Flexible electronics finds form

Professor Goran Stojanović explains how research into organic printed electronics has advanced, some of the potential applications of the new technology and the value of collaboration to the APOSTILLE project

To begin, what is your background and how did you come to occupy the position of coordinator of APOSTILLE?

I have a strong background in the field of electronics and microelectronics and am Associate Professor at the Faculty of Technical Sciences, University of Novi Sad, Serbia. I am an author or co-author of over 105 scientific papers including 25 peer-reviewed journal papers, as well as two books. It was my experience in participating in and managing several international and national projects that showed I had the qualities to coordinate the APOSTILLE project.

The applications of flexible printed electronics seem vast. Do you have one or two examples of these applications that you and your team are working on that you could highlight?

The development of new passive sensors is one of our main research interests. We are working on the development of new sensors with conductors printed on flexible substrates, where we try to take advantage of the flexibility of the substrate to obtain new structures and geometric shapes, which are then employed to produce simple and highly sensitive sensors. For example, we are developing capacitive sensors that detect chemical substances, such as certain kinds of pollutants, or position sensors that can be used in valves and other similar devices.

Can you also give some details of the 'active shelf' that you envision could be used in supermarkets?

The active shelf is a prototype lab system whose main purpose is to detect the number of products on shelves at supermarkets or stores. The basis of the system is an interdigitated printed capacitor. One electrode is placed on the shelf and another one on the packaging of the product. When a product is removed from the shelf, the total capacitance of the interdigitated capacitor – that is, the structure of capacitors connected in parallel – is reduced, and can be measured by a small electronic circuit positioned under the platform, which then indicates on a display a decrease in the number of products on the shelf.

Could mainstream inkjet printers or magazine printing facilities be used to produce flexible electronics in the future?

Deposition material inkjet printers can be used to produce flexible electronic components. These printers are like mainstream inkjet printers, but they print functional materials. Organic/flexible electronics differs from 'classical' electronics with regard to changes in substrate, as well as different materials applied to the substrate. Instead of printed circuit boards (PCBs) assembled with analogue or digital components, circuits can now be printed on flexible plastic, paper or textiles, eg. sheets, rolls, folio, fabric, etc. As a printing material, one can use different organic 'electronic inks', such as liquid polymers, as well as inorganic materials, such as metals and alloys.

Printed electronics has no ambition to replace classical semiconductor-silicon-based electronics, due to reduced speed and sometimes lower circuit reliability. However, this new technology has significant advantages such as its range of applications and low production costs.

Have you used different materials for substrates and electronic inks in your printed circuits?

We have fabricated and tested a number of different printed circuits using different substrate/ink combinations, silver conductive lines of different width on polyethylene terephthalate (PET) flexible substrates, flexible capacitive/inductive/angular position sensors on Kapton film, TiO_2 structures on PET, Kapton film or glass, as well as flexible Sierpinski carpet fractal antenna on a Hilbert slot patterned ground. Our current research is orientated towards combining conductive and magnetic materials in ink form to be printed on flexible substrates.

Who are the main protagonists in APOSTILLE?

The project management board of the APOSTILLE project is composed of the Project Coordinator (me) and Work Package Leaders Professors Veljko Malbaša, Ivan Mezei, Stanisa Dautović, Ladislav Novak, Stevan Stankovski and Rastislav Struhark. In addition to this, experienced researchers returning from abroad are Dr Mirko Smiljanić, Dr Veljko Napijalo, Dr Nikola Jerance and Slobodan Nedic.

What are the key advantages of partnering for the APOSTILLE project?

Within APOSTILLE, two-way mobility – long-term two-way research staff secondments and short-term stays – is intended to promote the circulation of expertise between our team members and carefully selected, knowledgeable and experienced networking partners. It is very important, especially for our young researchers, to have the opportunity to visit our respected collaborative institutions. For some of them, this is the first time they have had the opportunity to stay at partnering institutions for a long period of time. This will create links for future cooperation and for new joint projects in the near future.

Printing gadgets

Encouraging advancement in the context of a young, ambitious department committed to putting themselves on the map, the APOSTILLE project, currently underway at the University of Novi Sad in Serbia, is driving the progress of flexible and nano electronics

DEVELOPED PROTOTYPES

ACTIVE SHELF

THE PROGRESS OF electronics is one of the defining technological advancements of the modern age. The invention of the transistor circuit has revolutionised almost all aspects of our lives, from the ever-increasing complexity of televisions, to the miniaturisation and developing abilities of mobile phones. But growth of electronics is far from reaching its peak, and an entirely new wave of R&D promises to provide novel inventions and ingenuity that will soon filter into our lives.

It is this new wave of technological advancement which a team from the Faculty of Technical Sciences in the University of Novi Sad in Serbia is attempting to both ride and contribute to. The group is led by Professor Goran Stojanovic and is part of an ambitious project named APOSTILLE. This large research programme is focused on two up and coming areas of electronics research – organic and nano electronics.

ORGANIC ELECTRONICS

Conventional electronics consists of solid circuit boards on which metallic conductors are fixed or welded. These circuit boards have become progressively smaller and more complex but, for the most part, have remained firm and inflexible. In contrast, organic electronics – one of APOSTILLE's most promising research directions – offers much greater flexibility. In its simplest form, organic electronics is the replacement of the firm circuit board with a flexible substrate. This technology, also known as flexible or printed electronics, has a vast range of potential applications which utilise such flexibility.

DIMATIX INKJET PRINTER

The pliable substrates are layered with electronic 'ink', which acts in the same way as the traditional metallic conductive component in a normal circuit. The end product is a small, ultra-thin and flexible component which has a number of advantages over its predecessors. Organic electronic components are extremely cheap to produce, lightweight and flexible – characteristics which have led to the idea that they could act as 'throwaway electronics'.

Market research has suggested that this area of manufacturing is ready to explode, with exponential growth expected in the coming years. Stojanovic suggests possible uses for the new technology: "Given the low price, we are talking about disposable electronics – products such as sensors and logic circuits printed on food or medicine packaging".

Empowered by their notable success, the team has gone on to develop prototype forms of organic, flexible electronics: "We are working on the development of new sensors with conductors printed on flexible substrates," explains Stojanovic. These sensors can be manufactured and designed with extremely high sensitivity, suggesting their potential future use as pollutant detectors. Printed onto food or medical packaging, these circuits could add significant value to the trust and quality of manufacturer's products.

NANO ELECTRONICS

Despite commendable success in the field of organic electronics, the APOSTILLE investigators have not solely focused on this area. Their second research focus is nano electronics. This field of science is now yielding important and socially valuable products

WIRE 2012

Week of Innovative Regions In Europe

4-5 June 2012
Kraków, Poland

Honorary Patronage

Organisers

Speakers

The WIRE 2012 will gather distinguished guests and speakers from many European institutions, national and regional authorities, representatives of regions, scientists and industry. The European Commission will be represented by the Commissioner for Research, Innovation and Science Ms. Marie Geoghegan-Quinn (tbc) and the Commissioner for Regional Policy Mr. Johannes Hahn (tbc). The list of invited speakers also includes some high level representatives of the European Parliament and the Committee of Regions.

WIRE 2012 will be a place where several governmental and ministerial representatives of the EU Member States will meet. The regional policy-makers will also be expected to participate in the event. The host region will be represented by the Marshall of the Malopolska Region Mr. Marek Sowa (tbc).

A detailed list of speakers of the WIRE2012 will soon be made available.

BARBARA KUDRYCKA

Barbara Kudrycka is a professor of the Administrative Law and Public Administration Science (2003). In 1978 she graduated in Law from the University of Warsaw, Poland. In 1985 she obtained a PhD Degree in Law and in 1995 became assistant professor at the Department of Law and Administration at University of Warsaw. From March 1998 to August 2007, for

News

* Video

* Photogallery:

Pictures from the Conference are available in the Photogallery section.

* Publication:

* Presentations:

- Welcome
- Session 1
- Session 2
- Session 3
- Session 4
- Session 5
- Session 6
- Session 7
- Session 8
- Session 9
- Closing session

Side Event

JOHANNES HAHN

EU Commissioner for Regional Policy Graduated with a Doctorate in philosophy from the University of Vienna, Johannes Hahn was sworn in as Austrian Federal Minister for Science and Research on 11 January 2007 (and acting Federal Minister for Justice from December 2008 to January 2009). In November 2009 he was nominated by the Austrian Federal Government as member of the European Commission. President Barroso appointed him European Commissioner for Regional Policy.

STEFAN WEIERS

Dr. Stefan Weiers is the programme co-ordinator for Regions of Knowledge and Research Potential with the Directorate General for Research and Innovation in charge of managing the whole programme cycle from work programme design, evaluation exercises and overseeing the project portfolio etc.. Furthermore, he is involved as a policy officer in developing the regional dimension of innovation and enhancing the synergies between the FP7 / Horizon2020 and the activities carried out under the Cohesion Policy (e.g. Structural Funds) and Innovation Policy. In his previous position in the Commission as a scientific officer he was involved in the management of the research programme at the benefit of SMEs within FP6. Before joining the Commission in 2003 he was a senior research scientist with the German Aerospace Center (DLR).

GORAN STOJANOVIĆ

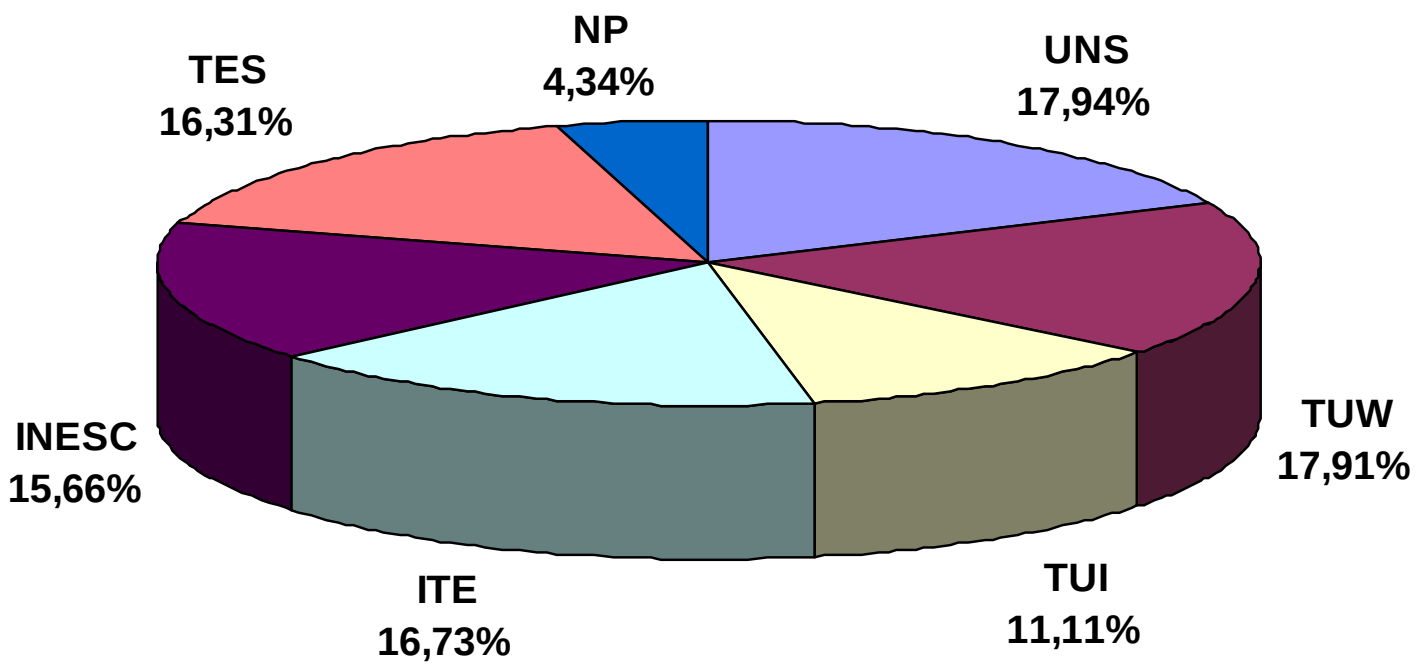
Goran Stojanović, Ph.D. is an associate professor at the Faculty of Technical Sciences (FTS), University of Novi Sad, Novi Sad, Republic of Serbia. He received a BSc from FTS in 1996, an MSc from the FTS in 2003, and a PhD degree from FTS in 2005, all in electrical engineering. Currently, Prof. Stojanović is a leader of the Laboratory for Microelectronics. He is an author or co-author of 99 scientific papers including 22 articles in leading international peer-reviewed journals (with impact factors). His research interest includes organic/flexible electronics, nanoelectronics and application of advanced nano structured materials. He is a member of Jury at the biggest regional festival of innovation and patents “Tesla Fest”, which is annually held in Novi Sad, Serbia. His charge is also an organization of the Festivals of Science, held in Novi Sad every year. Prof. Stojanović is a reviewer of 6 leading international journals. He has experience in participation and management in several international (FP7, EUREKA, bilateral collaborative projects) and national projects. Currently, he is coordinator of two FP7 projects (APOSTILLE and SENSEIVER) and one EUREKA project (E!4570).

About SENSEIVER project

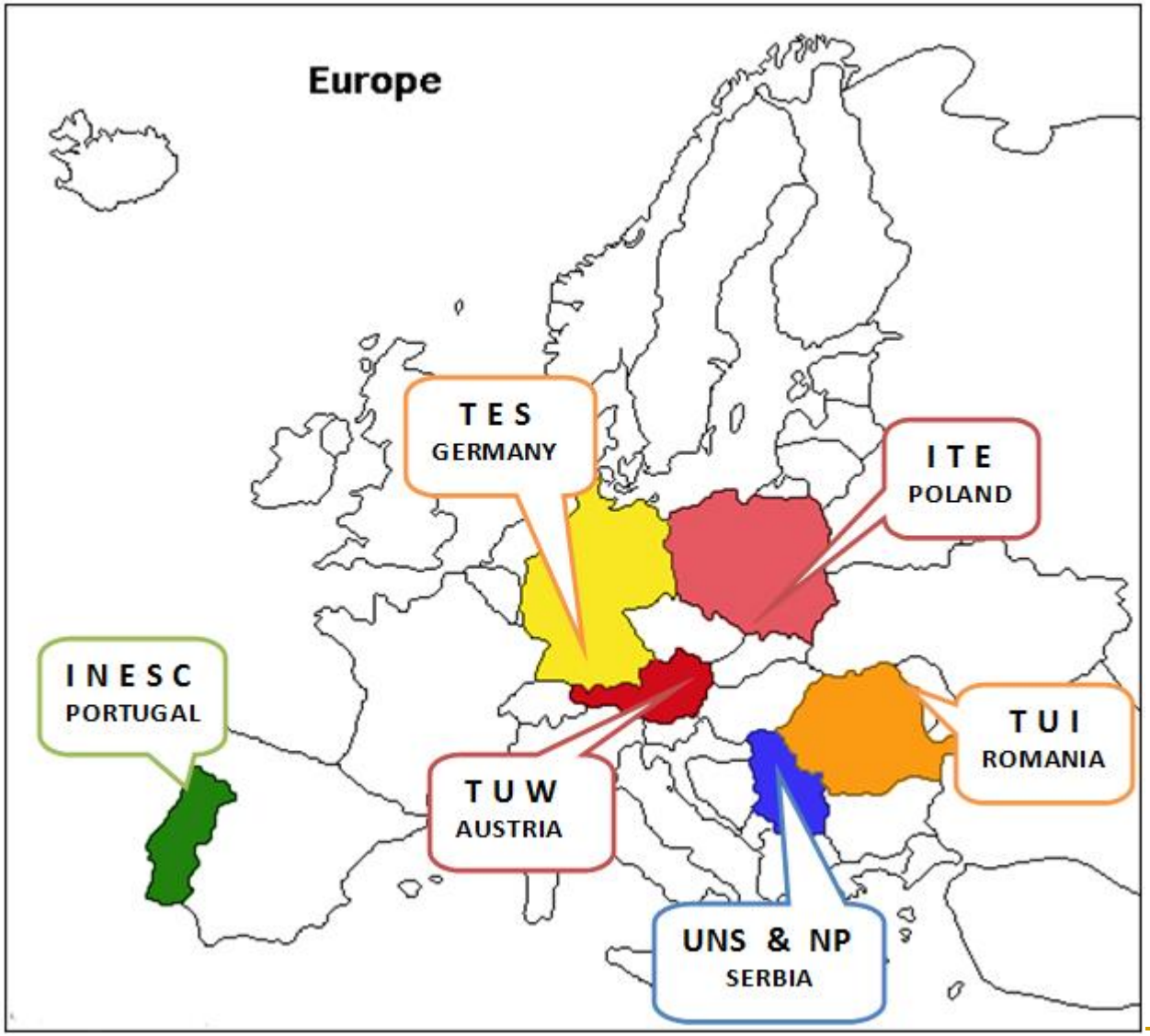
- The multi-site network has been formed to provide excellent training opportunities to young researchers in the field of wireless sensors and transceivers for application in environmental parameters monitoring
- The SENSEIVER initial training network is composed of 3 Universities, 2 Institutes, 2 SMEs and 3 associated partners
- Duration: 4 years
- Budget: 3.01 MEUR
- The general goals of this ITN:
  - improving career perspectives of ESRs and ERs
  - structuring initial research training at the EU level
  - spreading knowledge and skills in the field of innovative sensors, materials, transceivers and data acquisition systems

Project budget – SENSEIVER (ITN)

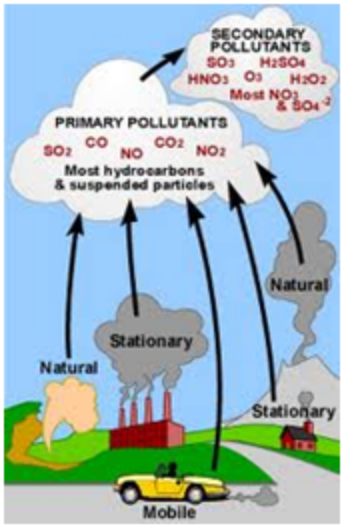
- Total project budget = 3.012.055,00 EUR



Project partners - beneficiaries



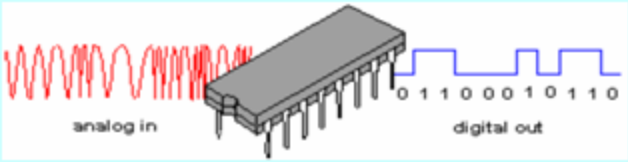
Project concept



Sensitive coatings

LTCC sensor with analogue interface

ADC for reading sensor data



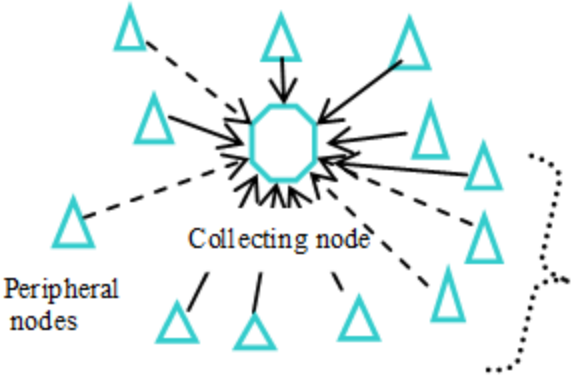
LDR UWB Pulse Generator Low power TX

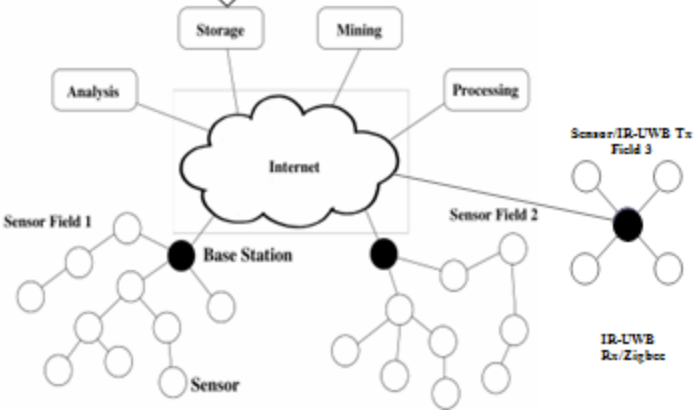
Battery

Simple MAC setting and controlling

IR-UWB Transmitter & Antenna

SENSEIVER sub-network





The main project objectives

- Development of innovative and cost-effective sensors and their fabrication in LTCC (**L**ow-**T**emperature **C**o-fired **C**eramics) process
- Development of new sensitive materials as coating layers for unique LTCC microsensors platform
- Design and testing of highly energy efficient IR-UWB (**I**mpulse **R**adio based **U**ltra **W**ide**B**and) transceivers compatible with LTCC sensors
- Development of intelligent systems for acquisition, processing and displaying data relevant to soil, air and water quality

Project management in practice

Questions/Dilemmas

- *How you put together the FP7 ITN project proposal? (identifying the sequence of events that you went through)*
- *What are the greatest challenges/concerns in putting the proposal together ?*
- *How did you put together your consortium of partners ?*
- *What criteria did you use to include them ?*
- *Did you already know all of them, or did you have to go searching for any of them through CORDIS, EEN, or another route ?*

Call : FP7-PEOPLE-2011-ITN

Funding Scheme : MC-ITN Initial Training Networks (ITN)

Proposal number : 289481

Proposal acronym : SENSEIVER

Duration (month) : 48

Proposal title : Low-cost and energy-efficient LTCC sensor/IR-UWB transceiver solutions for sustainable healthy environment

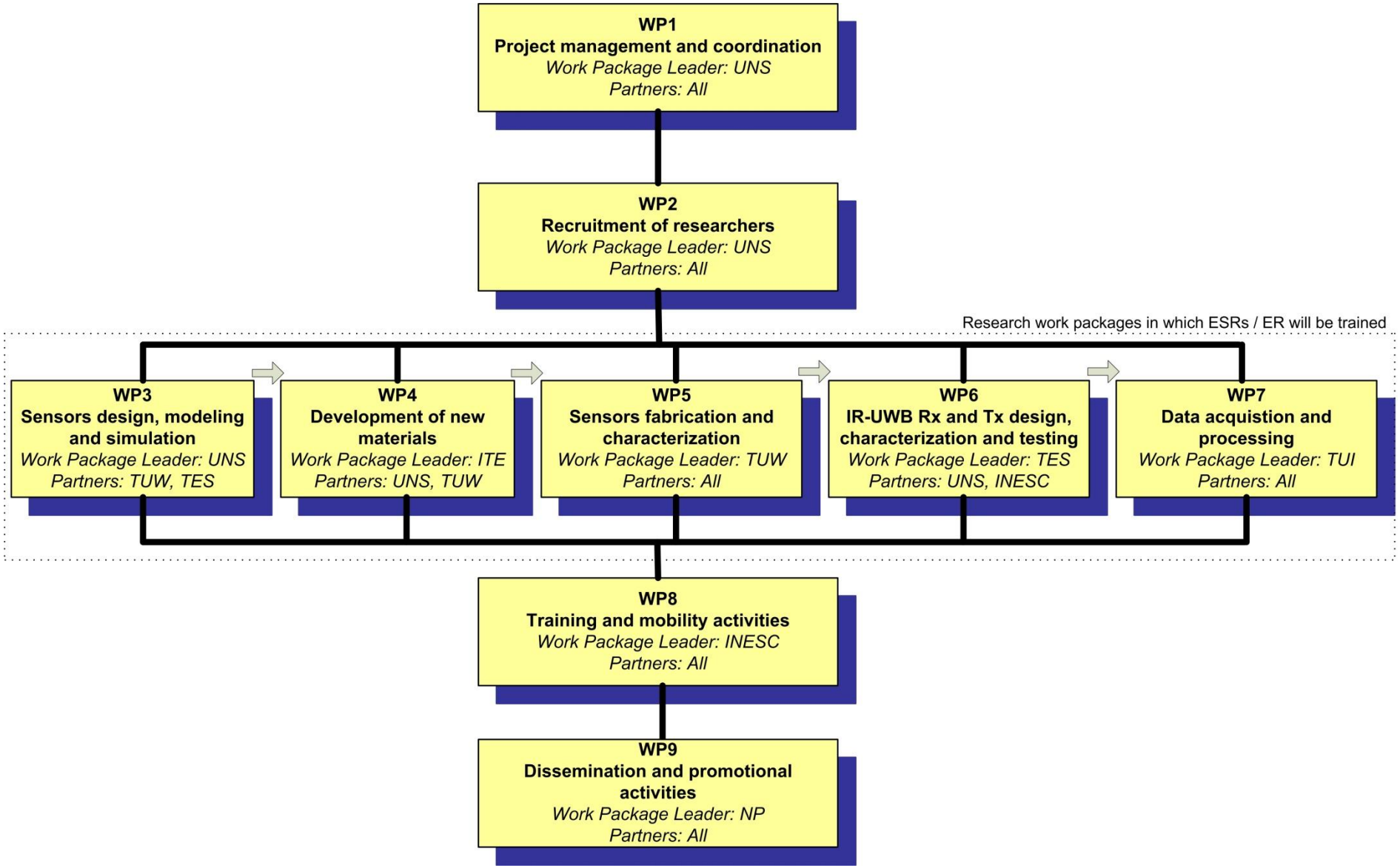
N.	Proposer name	Country	Type	Total cost (€)	%	Grant requested (€)	%
1	UNIVERZITET U NOVOM SADU FAKULTET TEHNICKIH NAUKA	RS					
2	TECHNISCHE UNIVERSITAET WIEN	AT					
3	TECHNICAL UNIVERSITY 'GHEORGHE ASACHI' OF IASI	RO					
4	INSTYTUT TECHNOLOGII ELEKTRONOWEJ	PL					
5	INESC PORTO - INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES DO PORTO	PT					
6	TES ELECTRONIC SOLUTIONS GMBH	DE					
7	SC INTELECTRO IASI SRL	RO					
8	North Point Ltd.	RS					
			Total :				

collaborations in terms of
research training.
-Where appropriate, mutual recognition by all partners of the training acquired, including training periods in the private sector.

TOTAL **(Threshold 70.00/100.00)**

Total: 91.40

Project work packages



Questions/Dilemmas

- *Experiences as coordinator of various FP7 projects*
- *The biggest challenges and obstacles to overcome, and the points for advices of participants to be particularly aware of/careful with if or when one get to coordinate own international projects*
- *What would I do differently with the coordination of next project(s)*

Šta je vazno

- DOBRA IDEJA
- NAĆI PRAVI (OTVORENI) POZIV
- OD PROJEKTA BENEFITE TREBA DA IMA ŠIRA DRUŠTVENA ZAJEDNICA
- UPORAN TRUD I RAD – DO USPEHA

Osnovni delovi predloga projekta

- Concept and objectives
- Work (action) plan
- Work package list
- Deliverables List
- List of milestones
- Description of each work package
- Summary of staff effort
- Gant chart, Pert chart
- Management structure and procedures
- Budget
- Impacts

Strong expertise

Needs for reinforcement

Our vision:

"High position among the best in EU"

Embedded systems, wireless sensors networks

Microelectronics and CAD of ICs

Applied electronics, sensors, robotics, mechatronics

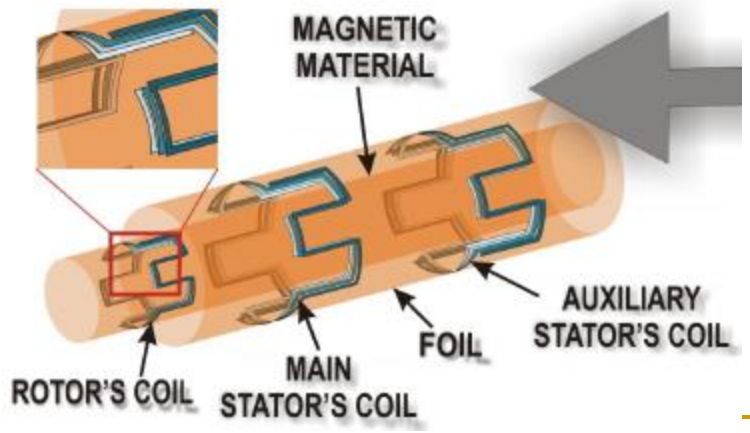
Applied physics, electronic materials

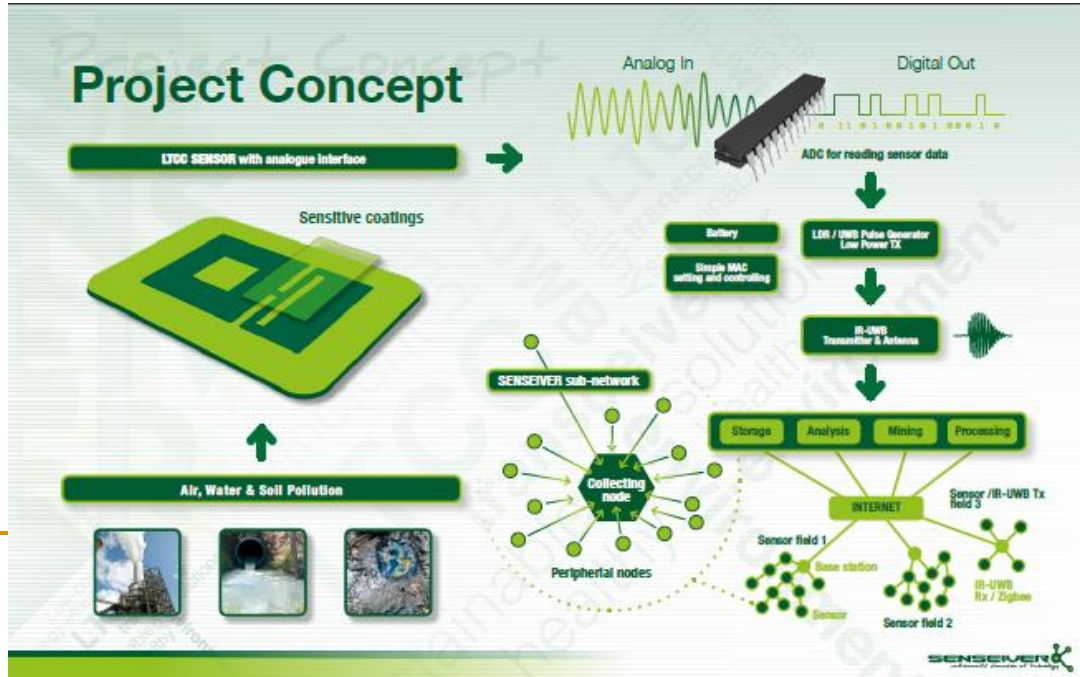
Nanomaterials & Nanoelectronics

Organic/Flexible/ Plastic electronics

APPLICATIONS

- Food industry
- Smart packaging
- Consumer good tracking
- Robots
- Nanocircuits based on graphene
- Nanofluidics
- etc.





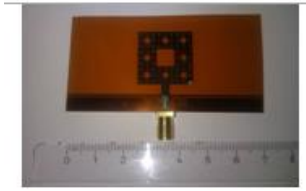
Predstaviti projektni tim

Flexible Force Sensing Resistor

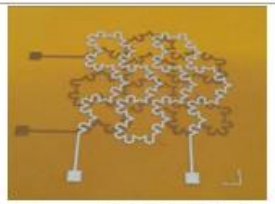
Ink-Jet Printed Eddy Current Position Sensor

Capacitive Position Sensor

Capacitive Angular Sensor



Flexible Sierpinski Carpet Fractal Antenna



Transformer with Koch fractal silver lines

Our very recent references (in peer-reviewed journals in previous two years) in the field of flexible electronics and materials for these applications are (selected 20):

1. D. Krklješ, D. Vasiljević, G. Stojanović, "A Capacitive Angular Sensor with Flexible Digitated Electrodes", *Sensor Review* (IF: 0.595), 2013, ISSN: 0260-2288, in press.
2. G. Stojanović, V. Mandić, M. Ćurčić, D. Vasiljević, M. Kisić, N. Radosavljević, "Combining rapid prototyping techniques in mechanical engineering and electronics for realization of a variable capacitor", *Rapid Prototyping Journal* (IF: 1.023), 2013, ISSN: 1355-2546, in press.
3. N. Jeranče, N. Bednar, G. Stojanović, "An Ink-Jet Printed Eddy Current Position Sensor", *Sensors* (IF: 1.739), vol. 13, pp. 5205-5219, doi:10.3390/s1304052052013, ISSN 1424-8220.
4. K. Cvejin, B. Mojić, N. Samardžić, V. V. Srdić, G. M. Stojanović, "Dielectric studies of barium bismuth titanate as a material for application in temperature sensors", *Journal of Materials Science: Materials in Electronics* (IF: 1.076), vol. 24, pp. 1243-1249, 2013, ISSN: 0957-4522.
5. I. Mezei, M. Lukić, V. Malbaša. I. Stojmenović, "Auction and iMesh based task assignment in wireless sensor and actuator networks", *Computer Communications* (IF: 1.044), 2013. ISSN: 0140-3664, http://dx.doi.org/10.1016/j.comcom.2012.11.003.
6. A. Menićanin, Lj. Živanov, M. Damnjanović, A. Marić, "Low-Cost CPW Meander Inductors Utilizing Ink-jet Printing on Flexible Substrate for High Frequency Applications", *IEEE Transactions on Electron Device* (2.318), vol. 60, no. 2, pp. 827-832, 2013.
7. N. Bednar, G. Stojanović, "An Organic Electronics Laboratory Course for Graduate Students in Electrical Engineering", *IEEE Transactions on Education* (IF: 1.021), 2013, ISSN: 0018-9359.
8. N. Jeranče, G. Stojanović, Nataša Samardžić, Daniel Kesler, "Parallel computing applied to inductance calculation for flexible inductors", *COMPEL* (IF: 0.301), vol. 32, no. 3, pp. 1067-1081, 2013, ISSN: 0332-1649.
9. G. Stojanović, G. Kitić, S.M. Savić, V. Crnojević-Bengin, "Electrical Characterization of Nickel Manganite Powders in High-Frequency Range", *Journal of Alloys and Compounds* (IF: 2.289), vol. 554, pp. 264-270, 2013, ISSN: 0925-8388.
10. M. Maksimović, G. Stojanović, M Radovanović, M. Malešev, V. Radonjanin, G. Radosavljević, W. Smetana, "Application of a LTCC sensor for measuring moisture content of building materials", *Construction and*

International Projects (in progress or submitted) in the field of electronics, sensors, wireless networks:

- FP7-REGPOT project: "*Reinforcement of Research Potentials of the Faculty of Technical Sciences in the Field of Post Silicon Electronics*" (APOSTILLE - no. 256615), 2010-2013.
- FP7-PEOPLE-2011-ITN - "Low-cost and energy-efficient LTCC sensor/IR-UWB transceiver solutions for sustainable healthy environment", SENSEIVER (3.05 MEUR, 2011-2015).
- FP7 ICT - "Enhanced Multicarrier Techniques for Professional Ad-hoc and Cell-based Networks", EMPhAtiC (2.91 MEUR, 2012-2015).
- FP7 FET Open Xtrack - "Handheld Multifunctional Radio System for Guidance of Blind and Visually Impaired People in an Outdoor Environment", WAVESTICK – (submitted).
- FP7-ICT-2013-11 – "Printed Hybrid Light Sources for Transport Interior Lighting", POLITE – (submitted)
- FP7 FET Open – "Full-Duplex Radio", FUDURA – (in preparation phase),

National projects:

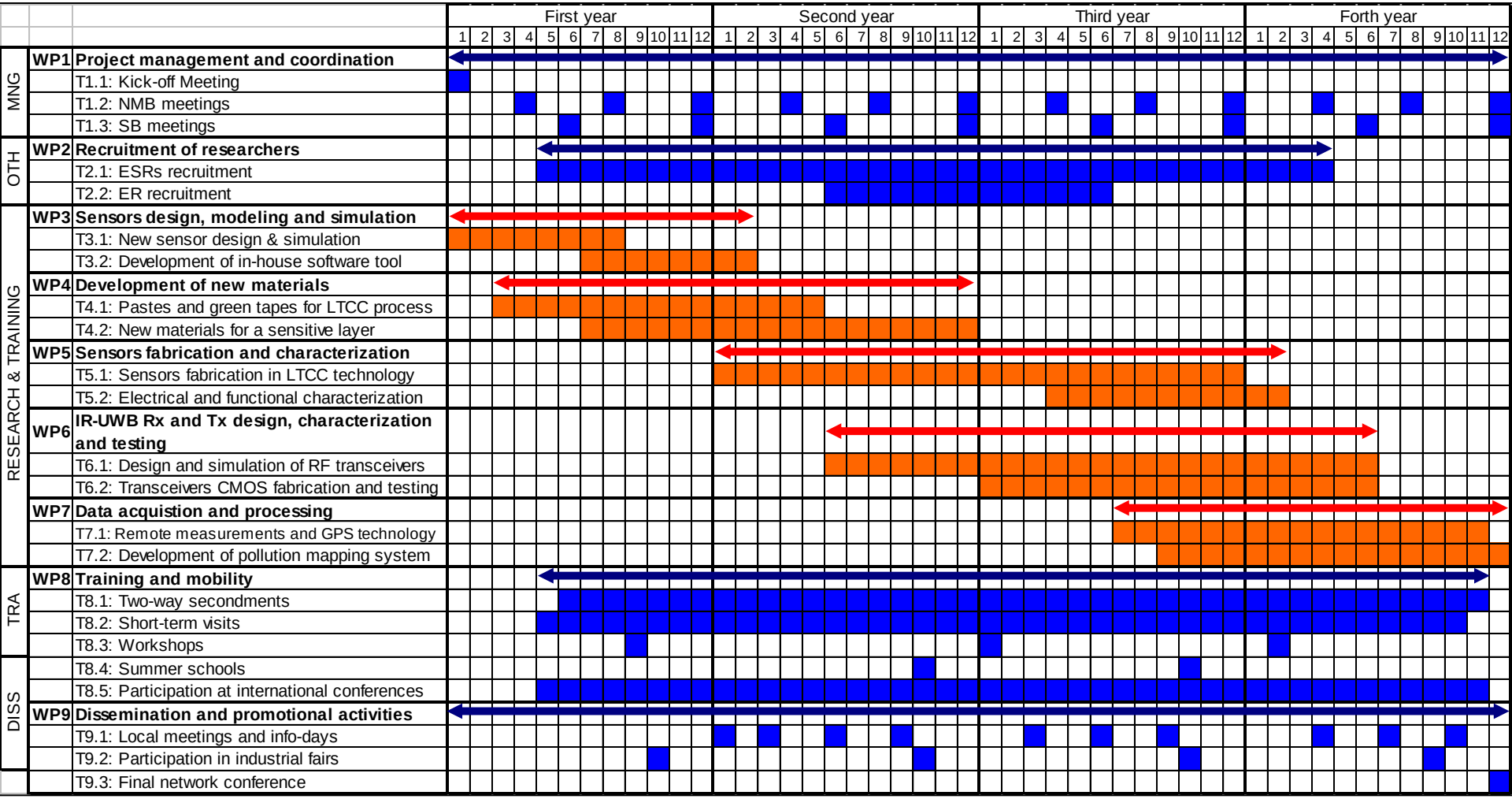
1. TR32016 - Innovative electronics components and systems based on organic and nonorganic technologies embedded into mass market goods and products.
2. III43008 - Development of methods, sensors and systems for quality of water, air and soil monitoring.
3. III45021 - Synthesis of nanopowders and processing of ceramics and nanocomposites with specific electric and magnetic properties for application in integrated passive components.

Event-Activity	Number
Organization of conference	8
Workshops	12
Info Days	16
Secondments SRB → EU	13
Secondments EU → SRB	12
Invited lectures	9
Patents	2
Students contests	4

Work package list

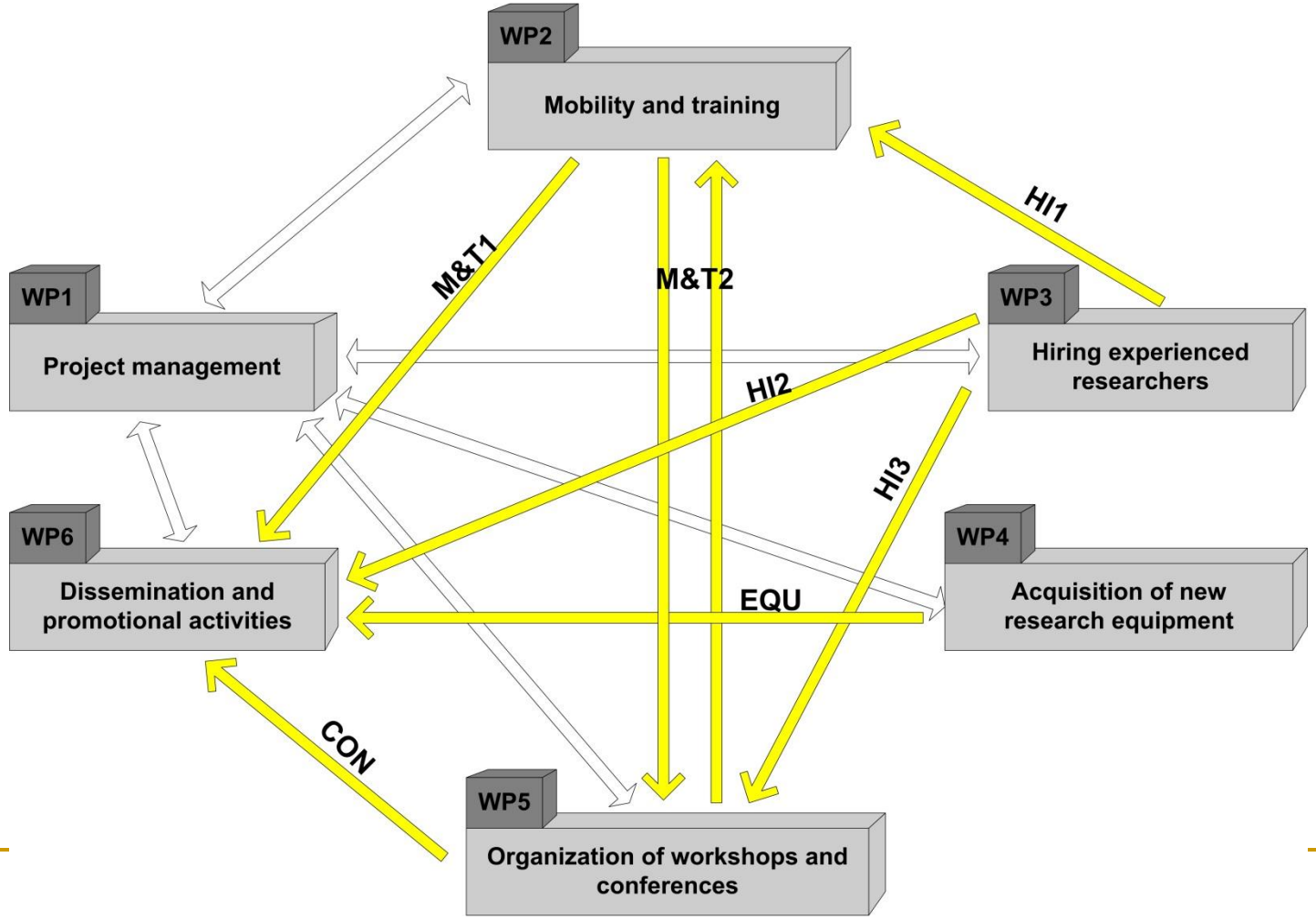
Work package No[1]	Work package title	Type of activity[2] (e.g: research, training, dissemination, etc.)*	Lead beneficiary No[3]	Lead beneficiary short name	Person-months[4] (only ESR, ER)	Start month[5]	End month
WP1	Project management and coordination	MNG	1	UNS	24	1	48
WP2	Recruitment of researchers	OTH	7	IEL	10	5	40
WP3	Sensors design, modeling and simulation	RES	1	UNS	75	1	14
WP4	Development of new materials	RES	4	ITE	77	3	24
WP5	Sensors fabrication and characterization	RES	2	TUW	82	13	38
WP6	IR-UWB Rx and Tx design, characterization and testing	RES	6	TES	59	18	42
WP7	Data acquisition and processing	RES	5	TUI	58	31	48
WP8	Training and mobility activities	TRA	3	INESC	65	5	47
WP9	Dissemination and promotional activities	DISS	8	NP	51	1	48
(MNG – management, OTH – other, RES – research, TRA – training, DISS – dissemination)				TOTAL:	**501**		

Gant chart


First year
Second year
Third year
Forth year
1 2 3 4 5 6 7 8 9 10 11 12
MNG
OTH
RESEARCH & TRAINING
TRA
DISS
WP1 Project management and coordination
T1.1: Kick-off Meeting
T1.2: NMB meetings
T1.3: SB meetings
WP2 Recruitment of researchers
T2.1: ESRs recruitment
T2.2: ER recruitment
WP3 Sensors design, modeling and simulation
T3.1: New sensor design & simulation
T3.2: Development of in-house software tool
WP4 Development of new materials
T4.1: Pastes and green tapes for LTCC process
T4.2: New materials for a sensitive layer
WP5 Sensors fabrication and characterization
T5.1: Sensors fabrication in LTCC technology
T5.2: Electrical and functional characterization
WP6 IR-UWB Rx and Tx design, characterization and testing
T6.1: Design and simulation of RF transceivers
T6.2: Transceivers CMOS fabrication and testing
WP7 Data acquistion and processing
T7.1: Remote measurements and GPS technology
T7.2: Development of pollution mapping system
WP8 Training and mobility
T8.1: Two-way secondments
T8.2: Short-term visits
T8.3: Workshops
T8.4: Summer schools
T8.5: Participation at international conferences
WP9 Dissemination and promotional activities
T9.1: Local meetings and info-days
T9.2: Participation in industrial fairs
T9.3: Final network conference

Pert chart

- The main Project components and their interdependencies are depicted in the Pert diagram



Deliverables

Del. no.	Deliverable Title	WP no.	Person months (ESR/ER/V R)	Nature	Dissemination level	Delivery date (month)
D1.1	Kick-off meeting Minutes	WP1	0	R	PU	2
D1.2	Network management board meeting reports	WP1	4	R	RE	quarterly
D1.3	Supervisory Board meeting reports	WP1	4	R	RE	every six months
D1.4	Annual and Final Project reports	WP1	16	R	PU	12, 24, 36, 48
D2.1	Recruitment report for ESRs starting in the 1st year	WP2	0	R	PU	5
D2.2	Recruitment report for ESRs and ER starting in the 2nd year	WP2	0	R	PU	15
D2.3	Annual reports on research activities by new hired researchers	WP2	10	R	RE	12, 24, 36, 48
D3.1	Report on optimal design of sensors for environmental monitoring	WP3	75	R	RE	14
D4.1	Report on new pastes and tapes for sensors fabrication in LTCC process	WP4	77	R	RE	24

Milestones

Milestone number	Milestone name	Work package(s) involved	Lead beneficiary	Expected date (month)	Comments
M1.1	All Project Management bodies established	WP1	UNS	2	Formation of NMB and SB. Undisturbed Project implementation
M1.2	The Network Management Board meetings held	WP1	UNS	quarterly	Minutes completed; Annual reports submitted
M1.3	Supervisory Board meetings held	WP1	UNS	every six months	Minutes completed; Reports submitted
M2.1	Legal hiring procedure started	WP2, WP1	IEL	3	Job openings advertised. ESRs and ER interviewed
M2.2	ESRs and ERs selected and employed	WP2, WP1	TUI	5	Contracts
M3.1	Novel design of sensors for environmental monitoring proposed and reported	WP3	TES	6	Performed comparison with open literature in the field
M3.2	Sensors electrical model developed	WP3	UNS	12	Model verified against experimental data
M3.3	Important sensors parameters simulated	WP3	UNS	14	Sensors characteristics determined
M4.1	New materials for sensitive layer of sensors synthesized	WP4	ITE	12	Obtained materials with better performances
M4.2	New materials characterized and tested	WP4	ITE	18	Structural, electrical and mechanical parameters of materials determined
M4.3	Novel materials implemented as a sensitive layer on capacitive part	WP4	ITE	24	Capacitive part of sensors with higher sensitivity
M5.1	First prototypes of sensors fabricated and delivered	WP5	TUW	24	Laboratory prototype completed. Report documented functionality

Tabela za opis work package

Work package number	WP4	Start date or starting event:				M1	
Work package title	Acquisition of new research equipment						
Activity type	SUPP						
Participant number	1						
Participant short name	FTS						
Person-months per participant	14						

Objectives

The objectives of this work package are:

- improving the Faculty of Technical Sciences infrastructure and research capabilities through acquisition of new research equipment,
- training personnel and researchers in use of the new equipment,
- opening new opportunities for research staff from the Faculty of Technical Sciences to have an access to pieces of modern equipment for fabrication in the field of organic/plastic/flexible electronics as well as equipment for characterization in the field of nanoelectronics and for design, simulation and verification of complex electronic structures,
- in long term, establishing the Faculty of Technical Sciences as a "center of gravity" for all demands (from industry and research institutes) for design, fabrication and characterization of products in the field of post silicon electronics.

Description of work

List of Tasks

T4.1 Legal and public acquisition procedure

T4.2 Purchase of new research equipment

T4.3 Installation of purchased equipment and short trainings

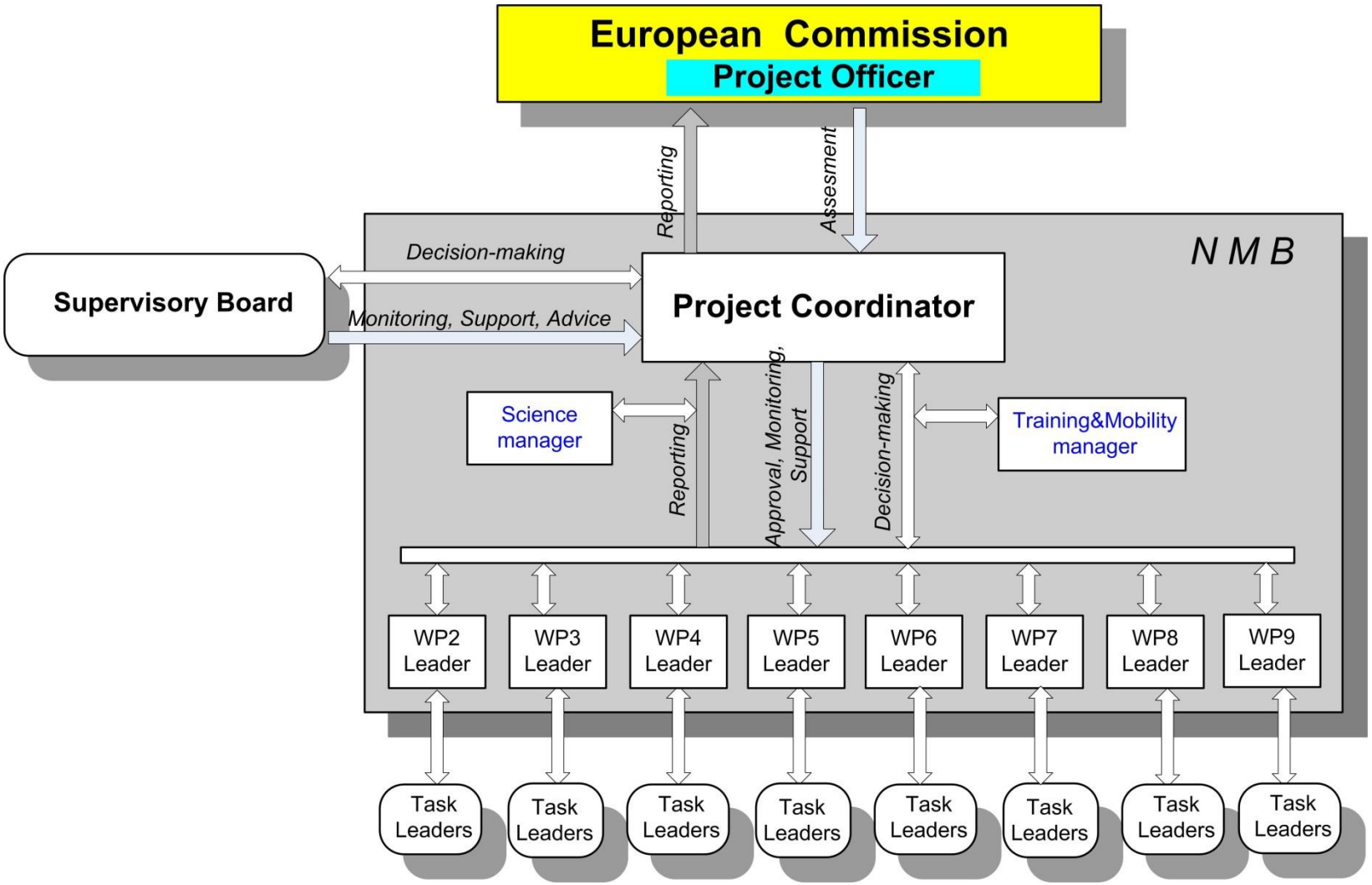
Risks and contingency plan

Risk	***Possibility*** *High/Medium/Low*	***Influence*** *High/Medium/Low*	***Contingency plan***
Extra costs in the process of purchasing equipment	*Medium*	*High*	If additional funds are needed for purchasing equipment, they will be provided from the other sources, i.e. from Serbian Ministry of Science or Provincial Secretary for Science and Technological Development.
Obstacles in the installation phase of new equipment	*Medium*	*Medium*	To overcome the problems that may arise during equipment installation, equipment suppliers will be strictly bound by contracts defining these issues. EU networking partners, if needed, could help to overcome the potential equipment installation and usage problems.
Incoming experienced researchers leave the FTS after the end of the Project	*Low*	*Medium*	Providing new projects, ensuring growth and sustainability of our research activities after the Project end. Cultivation of team work and friendly interpersonal relationships. Adequate financial motivation.
"Brain drain" of FTS's young researchers during the Project	*Low*	*Medium*	During the Project, give them clear perspective about their carrier development. Continual mentorship in professional work and beyond. Providing additional financial means and better working conditions.

Summary of staff effort

Particip ant no.	Participant short name	WP1	WP2	WP3	WP4	WP5	WP6	Total person months
1	FTS	18	22	138	14	16	16	224
Total		18	22	138	14	16	16	224

Management structure



Budget

BREAKDOWN OF THE BUDGET FOR THE PROJECT, ACCORDING TO WORK PACKAGES

Work packages	Amount	Percentage of the whole budget
WP1: Project management	89700 €	6.99 %
WP2: Mobility and training	197550 €	15.40 %
WP3: Hiring experienced researchers	442200 €	34.47 %
WP4: Acquisition of new research equipment	365000 €	28.45 %
WP5: Organization of workshops and conferences	47360 €	3.69 %
WP6: Dissemination and promotional activities	52200 €	4.06 %
Overheads [8]	88990 €	6.94 %
TOTAL PROJECT VALUE	**1283000 €**	**100 %**

ESR – Evaluation summary report

1. Scientific and/or technological excellence (relevant to the topics addressed by the call) (Threshold 3.00/5.00)

Mark: 5.00

Report generated on 04-12-2009 19:18:00

Evaluation Summary Report

Call :	FP7-REGPOT-2010-5
Funding scheme :	
Proposal number :	256615
Proposal acronym :	APOSTILLE
Proposal title :	Reinforcement of Research Potentials of the Faculty of Technical Sciences in the Field of Post Silicon Electronics

ESR – Evaluation summary report

2. Quality and efficiency of the implementation and the management (1)	(Threshold 3.00/5.00)
	Mark: 4.50
	Weight: 1.00

The coordinator has a lot of experience in management of EU projects.

The management structure is adequate for this type of project. Besides the project coordinator, it includes a project management team and a steering committee for the strategic development of the project. Suitable links to the national contact point are also foreseen, which sustains a coherent management structure.

Deliverables and milestones have been suitably defined to support the follow-up of the project by the overall management.

The description of the applicant together with the impressive list of publications gives evidence that FTS and the participating researchers have the necessary skills and that they are a centre of excellence in their region.

The partnering organisations from academia and industry have experience in the addressed fields and the senior researchers' CVs show that the individuals have a lot of experience in their respective research areas. Their selection is appropriate and their involvement to overcome the individual weaknesses is well thought out. Letters of support are available.

The allocation of resources and the requested budget for the activities are well described and globally justified. The new equipment (about 30% of the total budget) is very well described and justified. However, a few points need to be adjusted (see recommendations)

Four experienced researchers (three of them from outside of Serbia and with a considerable relevant experience), are to be hired as part of the human capacity strengthening.

- Appropriateness of the management structure and procedures
- Quality and relevant experience of the individual participants
- Appropriateness of the allocation and justification of the resources to be committed (budget, staff, equipment)

Faza pregovaranja

- Najčešće ultimativna
- Moguće i izbacivanje nekih partnera
- Smanjenje budžeta
- Zna da potraje i par meseci
- Odlazak u Brisel
- ...

- Ako sve dobro prođe dobijate ugovor da potpišete i stiže prva uplata i projekat počinje...

Realizacija (implementacija) projekta

Ref. N° / Task leader	Activities (as indicated in the LFM)	Sub Activity	Project Month: 1	2	3	4	5	6	7
			15.10.12	22.10.12	29.10.12	05.11.12	12.11.12	19.11.12	26.11.12	03.12.12	10.12.12	17.12.12	24.12.12	31.12.12	07.01.13	14.01.13	21.01.13	28.01.13	04.02.13	11.02.13	18.02.13	25.02.13	04.03.13	11.03.13	18.03.13	25.03.13	01.04.13	08.04.13	15.04.13	22.04.13	29.04.13	06.05.13	13.05.13
3.1 UNS	Forming of Regional Programme Committee for Business Incubators (BI) and Science Technology Parks (STP) development - RDS-PC (UNS)	**Activity 3.1**														X	X	X	X	X	X	X	X									
		3.1.1 Preparing selection criteria and monitor PCs' activities															completed															
		3.1.2 Delegeting 16 competent members from academia, business and student organizations																		completed												
		3.1.3 Forming Regional PC for BI/STP																				completed										
		3.1.4 Making Decision on the Forming of WBCInno Regional Programme Committee for BI/STP																					completed									
		3.1.5 Preparing Annual progress reports to university management by RDS-PC																														
3.2	Elaboration of Regional Development Strategy - RDS (TUG)	**Activity 3.2**																													X	X
		3.2.1 Collecting and analyzing EU good practice models of RDS for BI/STP																													dela	
		3.2.2 Analysis of curent state and available resources (financial, human, etc.) of WBC BIs/STPs																														
		3.2.3 Creating scheme of BI/STP structures																														
		3.2.4 Creating BIs/STPs interconnections and list of roles																														
		3.2.5 Making list of services for tenants																														
		3.2.6 Creating marketing and internationalization requirements of BIs/STPs																														

Realizacija (implementacija) projekta

Ref. N° / Task leader	Activities (as indicated in the LFM)	Sub Activity	Project Month: 6	7				8				9				10				11				12			
			08.04.13	15.04.13	22.04.13	29.04.13	06.05.13	13.05.13	20.05.13	27.05.13	03.06.13	10.06.13	17.06.13	24.06.13	01.07.13	08.07.13	15.07.13	22.07.13	29.07.13	05.08.13	12.08.13	19.08.13	26.08.13	02.09.13	09.09.13	16.09.13	23.09.13	30.09.13	07.10.13
3.2 TUG	Elaboration of Regional Development Strategy - RDS (TUG)	**Activity 3.2**					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		3.2.1 Collecting and analyzing EU good practice models of RDS for BI/STP					delay																					
		3.2.2 Analysis of curent state and available resources (financial, human, etc.) of WBC BIs/STPs							delay																			
		3.2.3 Creating scheme of BI/STP structures																										
		3.2.4 Creating BIs/STPs interconnections and list of roles																										
		3.2.5 Making list of services for tenants																										
		3.2.6 Creating marketing and internationalization requirements of BIs/STPs																										
		3.2.7 Analyzing financial framework and financial means for BIs/STPs																										
		3.2.8 Analyzing usage of joint resources with university																										
		3.2.9 Preparing the draft version of the Regional Development Strategy for BIs/STPs based on above-mentioned analysis and documents																										
		3.2.10 Finalising of the Regional Development Strategy for BIs/STPs based on partners' comments																										
		3.2.11 Release and Printing of the Regional Development Strategy for BIs/STPs																										

Reports and Deliverables

Contact information

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Thank you

for your attention !