

EURO-DOTS: an ICT - CSA Action



European Doctoral Training Support in Micro/Nano-electronics-2

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Report 2 on Identification of new needs from industry

Deliverable D1.5

Work Package 1 – EURO-DOTS platform operation and course portfolio management

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Keyword: Needs from industry

Abstract:

In this Deliverable the working list with expressed needs from industry is provided which will be used in the remainder of EURO-DOTS-2 and also already in preparation of a EURO-DOTS-3 proposal.

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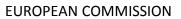
1.	INTRODUCTION
2.	IDENTIFIED NEEDS

1. Introduction

We refer to Deliverable D1.2 for the full list of topics resulting from the inquiry among industry and academic groups. That list was used in a second round to extract the topics of high priority that were then selected for the 1st Call for Courses that was launched early November 2014. The results of this second round of discussions and the outcome of a third round in which among the course topics already those topics dealing with Smart System Integration were identified, are all included in the Table in section 2. This is the working list for the year 2014 and already a first attempt towards the project proposal EURO-DOTS-3 that the consortium intends to submit in ICT 2 -2014 and that will focusing on Smart System Integration.

2. Identified needs

In the Table all topics that were already discussed in Deliverable D1.2 are grouped in 3 categories: the first topics have been selected for the 1st Call for Courses, the second group contains all already identified topics of high priority that are linked to Smart System Integration. This list will be extended in the further course of EURO-DOTS-2 in preparation of the EURO-DOTS-3 proposal. Finally the Table also includes the other identified topics of which a number were also partly treated in one of the already orgabnized EURO-DOTS courses.





Call for Courses 1 : 1 November 2013	Comment
Biomedical electronics & biosensors	Topic in Call 1 (Nov. 2013)
Energy harvesting and autonomous applications	Topic in Call 1/Smart System Integration
High-frequency and mm-wave IC design	Topic in Call 1 (Nov. 2013)
Integrated high-voltage, high-power design & technology (GaN, SiC)	Topic in Call 1 (Nov. 2013)
IP management, innovation and valorization (for PhD students)	Topic in Call 1 (Nov. 2013)
MEMS for RF applications	Topic in Call 1/Smart System Integration
Nanotechnology for Health	Topic in Call 1 (Nov. 2013)
Organic electronics: technology and design	Topic in Call 1 (Nov. 2013)
3D integration : technology and design	Topic in Call 1/Smart System Integration
Ultra Low-power techniques of IC design	Topic in Call 1/Smart System Integration
Variability effects and their mitigation in advanced technologies	Topic in Call 1 (Nov. 2013)
Smart System Integration	Comment
Advanced sensors and smart sensor systems	Smart system integration
Advanced signal processing for electronic systems	Smart system integration
Design for short-range applications (WSN, BAN)	Smart system integration
Electronic system design flow; design of embedded systems & software	Smart system integration
Hardware and embedded software co-design	Smart system integration
Robust design	Smart system integration
Smart system integration	Smart system integration
Statistical modeling and simulation methodology	Smart system integration
Other topics of high importance	Comment
Advanced microprocessor architectures	
Basic elements of biology	Partly covered in previous course(s)
Basic high-voltage IC design techniques	Partly covered in previous course(s)
Broad knowledge of electronics (not just the subject of the thesis)	, , , , , , , , , , , , , , , , , , , ,
Characterization techniques: RBS, SIMS, TEM,	
CMOS operation, CMOS scaling (advanced)	Partly covered in previous course(s)
CMOS processing: MBE, CVD, ALD, etch, litho	Partly covered in previous course(s)
Design for high robustness (6 sigma, corner variations, rough environments)	i ai ily corolea ili proticao coalecto,
Design for testability (in a production environment with automated testers)	
Emerging materials and devices (advanced)	Partly covered in previous course(s)
Fundamental physics	Partly covered in previous course(s)
High-voltage devices	Partly covered in previous course(s)
	raitly covered in previous course(s)
Math skills, like statistics	Postly covered in provious covereds)
Power electronics Reliability and testing of ICs	Partly covered in previous course(s)
Reliability and testing of ICs	Partly covered in previous course(s)
Security and dependability in electronic systems	Partly covered in previous course(s)
Safe state machine (hardware and software) design, formal proof	Parith account in the state of
Technology, processes to build devices	Partly covered in previous course(s)
Wide technical knowledge : e.g. system, process and modeling for designers	Partly covered in previous course(s)
Wide market knowledge: market analysis, societal analysis	