



Project Acronym: DIGINOVA

Project full title: " Innovation for Digital Fabrication "

Grant agreement no: 290559

NMP3-CA-2012-290559

Funding scheme: Coordination and support action

Coordination (or networking) action

Deliverable 3.4: Network Event

Work Package: 3

Task: 3.2

Dissemination level: CO PU PP RE

Author: Alireza Parandian & Ed van den Kieboom (InnovationFab), Cathleen Thiele (Fraunhofer ENAS)

Date: 27/02/2014

Diginova Network Event

The final Network Event of Diginova project was orchestrated and organized in alignment with RapidPro 2014. The RapidPro conference and trade show took place on 26-27 February 2014 in Veldhoven, The Netherlands. During two consequent days RapidPro 2014 attracted more than 5000 visitors. The collaboration between the Diginova project and RapidPro 2014 was highly opportune in terms of timing but more importantly because the event attracted key stakeholders of Digital Fabrication:

- The most important suppliers of professional 3D printers for home and industrial purposes
- High-tech service providers for making products and prototypes fast and efficiently
- Suppliers of services or equipment for high quality scanning, measuring and digitising
- Material developers
- Suppliers of software and materials
- Product developers
- Knowledge institutes

Rapid Pro 2014 was in fact a convention featuring national and international speakers who provided overview stories and in-depth field-specific lectures on how digital revolution in manufacturing needs to be anticipated, understood and supported.

The Diginova project contributed significantly to the conference program through dissemination of the key findings of the project that resulted in the first EU Digital Fabrication Roadmap. The Diginova dedicated session was highly appreciated and visited by more than 160 participants.



Program of the Diginova dedicated session at Rapid Pro 2014

RAPIDPRO 2014
 26 & 27 februari 2014, Koningshof, Veldhoven



	Keynote: Diginova Roadmap – Innovation for Digital Fabrication
13.30	Marcel Slot , Océ-Technologies BV, Director Technology Planning & Partnerships and Diginova Project Leader, The Netherlands
	Anticipating the emergence of the Digital Fabrication industry
14.15	Dr. Alireza Parandian , Innovation Fab, Co-Founder & Business, Development Manager, The Netherlands
	Key Technology Challenges & Business Drivers in DF
14.30	Dr. Martin Baumers , Research Fellow, The University of Nottingham, UK
14.45	<i>Coffee break</i>
	Digital Fabrication: A new manufacturing concept
15.00	Prof. Dr. Reinhard R. Baumann , Fraunhofer ENAS, Head of Department Printed Functionalities, Germany
	Biomedical Applications for Digital Fabrication
15.10	Dr. Jon Helliwell , Center for Process Innovation Ltd. (CPI), Director of Printable Electronics, United Kingdom
	Digital Fabrication – Increasing Market Penetration
15.20	Tim Phillips , Xennia Technology Ltd., Marketing & Business Development Manager, UK
	Panel Discussion: The Future of Digital Fabrication
15.30	Moderator: Marcel Slot , Océ-Technologies BV, The Netherlands
16.30	Exhibition/Demos
17.00	Drinks reception
18.00	Networking Dinner (Diginova Workshop Speakers invited)
20.00	

Abstracts and Biography of the Diginova Speakers at RapidPro 2014 13.30 – 14.15 “Diginova Roadmap - Innovation for Digital Fabrication”



Marcel Slot, Director Technology Planning & Partnerships, Océ-Technologies BV, Diginova Project Leader, The Netherlands

Abstract: The objective of the EU funded Diginova project has been to assess and promote the potential of Digital Fabrication for the future of manufacturing and materials research in Europe. We have mapped the most promising application and material innovation domains, identified business drivers, key technology challenges and new business opportunities. We have also identified, connected to and involved a wide range of stakeholders across the value chain to create a roadmap for Digital Fabrication with the potential for wide acknowledgement and support. The roadmap and the underlying vision on Digital Fabrication provide guidance for innovation in Digital Fabrication technologies, materials and applications and clarifies how Digital Fabrication is envisioned to lead to a radical paradigm shift in manufacturing. This presentation will highlight the vision and key findings of the Diginova project and will serve as an introduction for the other Diginova presentations that will follow during this session.

Bio: Marcel Slot is currently director technology planning & partnerships at Océ, which is now part of Canon. He studied Physics at Twente University of Technology in the Netherlands and joined Océ in 1990. During the first 14 years of his career, he was involved in technology and product development as a project leader. His focus has been on electrophotography as well as inkjet printing technology, imaging science, and material science. During the past 7 years, he held various management positions, including department manager of research and vice president of development. In his current position Marcel focuses on inkjet technology, technology roadmaps, partnerships and open innovation. Marcel was the initiator and is now coordinator of the Diginova EU FP7 project focussing on Digital Fabrication and its impact on manufacturing in Europe.

“Anticipating the emergence of the Digital Fabrication industry”



Dr. Alireza Parandian, Innovation Fab, Co-Founder & Business, Development Manager, The Netherlands

Abstract: The promise of massive societal benefits stemming from digital fabrication technologies has led to high interest and much speculation about technology trajectories, stimulating investments into technological R&D. However, amidst an evolving industrial landscape, what sort of impacts could, or should, digital fabrication make? Which are the key areas? And for which industrial context? These were guiding questions that brought together a European consortium of digital fabrication R&D centres and innovation actors, in the context of the EU funded Diginova project, to further articulate the potential application opportunities of digital fabrication and key technological challenges that have to be addressed, particularly in the European context. This presentation first describes how consensus on the most pressing and high potential domains and applications in digital fabrication was reached in a consortium based approach. Furthermore, stakeholder engagement formed an integral part of the Diginova project, enabling interaction with the

context as it were. The stakeholder engagement activities of Diginova project allowed for a two-way dialogue between the project consortium and relevant stakeholders of digital fabrication in such a way that both parties could learn from the experience and knowledge of the other. The presentation also describes the process and outcomes of the stakeholder engagement activities that have been carried out in the Diginova project. The findings are presented as a resource for decision makers in firms or public agencies and policy makers to assist strategy articulation and further future-oriented assessment activities.

Bio: Dr. Ir. Alireza Parandian is Co-founder and Manager New Business Development of Innovationfab, a business service organization working at the crossroads of three industry sectors: electronics, photonics and information technology.

As the Business Development Manager of InnovationFab his activities are geared towards supporting brand owners and OEM's in finding suitable technological solutions to innovate their existing/new products. In doing so, he has developed and implemented an approach that has proven to be effective in supporting clients to articulate demand and elucidate their exact requirements. At the same time he maintains extensive knowledge of state of the art technologies at the cross roads of photonics, electronics and IT industries. This allows him to match my clinets needs to the best that the technology market has to offer. In the EU funded COLEA project he has done more than 60 interviews with brand owners and organizes workshops about the commercialization of organic large area electronics.

“Key Technology Challenges & Business Drivers in DF”

Dr. Martin Baumers, Research Fellow, The University of Nottingham, UK



Abstract: A valid and complete identification of the Key Technology Challenges (KTCs), business drivers and barriers for 2D and 3D digital fabrication technology will contribute to the success of European Union towards the exploitation of novel manufacturing approaches in an increasingly competitive global manufacturing sector. An overview of the current state of the art and outlook will be presented.

Bio: Martin is a Research Fellow at the Additive Manufacturing and 3D Printing Research Group at the University of Nottingham. Upon completion of his PhD in 2012 at Loughborough University on the economics of Additive Manufacturing, he has written several academic and non-academic papers on the topic and contributed to Additive Manufacturing projects in aerospace, automotive, industrial machinery and the medical and retail sectors. His main areas of interest are the financial cost and energy consumption of the various additive processes as well as the benefits that can be derived from adopting the technology.

14.45 Coffee break

“Digital Fabrication – State-of-the-art in Chemnitz”



Prof. Dr. Reinhard R. Baumann, Fraunhofer ENAS, Head of Department Printed Functionalities, Germany

Abstract: Up to this day, traditional printing technologies are mainly dedicated to graphic arts. This talk will showcase how printing can also be

beneficial for applying functional materials beyond color. For example as an alternative to standard planar dipole antennas (manufactured employing etching but no printing technologies) for state of the art radio frequency identification (RFID) and enhanced printed packages for logistic applications. These and other printed smart objects have a different technology chain compared to traditional printing products, which is why a new hybrid manufacturing system scalable to industrial level with reliable roll-to-product production is needed, and was successfully realized together with industry partners.

Bio: Since 2007 Reinhard R. Baumann is head of the department Printed Functionalities as well as head of the business unit Green and Wireless at the Fraunhofer Institute for Electronic Nanosystems ENAS, Chemnitz. Since 2006 he also has a Full Professorship (W3), Digital Printing and Imaging Technology, at Chemnitz University of Technology. He studied physics in Leipzig and completed a doctorate on laser-induced polymerization for the production of printing plates. From 1999 to 2006 he represented the development of industrial solutions for Printing Beyond Color in the field of printed electronics at manroland Druckmaschinen AG Augsburg. At the same time he ran various business units across the group. In addition, he is in leading functions involved in the organization of international conferences (oe -a: LOPE -C , IS & T Digital Fabrication DF and NIP , Printing Future Days / TU Chemnitz). Since 2004 he is part of the Executive Board of the Organic Electronics Association oe-a and since 2011 Vice President of the International Society for Imaging Science and Technology IS&T.

Biomedical Applications for Digital Fabrication



Dr. Jon Helliwell, Center for Process Innovation Ltd. (CPI), Director of Printable Electronics, UK

The presentation presents a review of the findings of the Diginova workshop on Biomedical Applications for Digital Fabrication. The workshop demonstrated the real benefits that Digital Fabrication can provide for a diverse range of Biomedical applications, from Tissue Engineering through functionalised Orthotics and Prosthetics through to Sensor applications and Lab/Organ on chip devices. The presentation also reviews the organisations that attended the workshop, giving an insight into the wide interest generated by this application of Digital Fabrication technology.

Bio: Dr. Jon Helliwell, a chemist by training, is the Business Unit Director for CPI Printable Electronics. He is also CEO of one of the CPI spin out companies, Primary Dispersions Limited.

He has spent most of his career in the ceramic and mineral processing industries, becoming the Technical Director for Cookson Matthey's global Zircon business. He then became the Technical Director for Johnson Matthey's Structural Ceramics business, where he was responsible for its Research and Development portfolio. He joined CPI in 2005, managing the Low Carbon Energy Development Centre in CPI, prior to joining the CPI Printable Electronics team.

Jon has a proven record in new product introduction, business representation and business development and possesses extensive team skills and management experience at all levels. He sits on the Advisory Board of the Centre for Sustainable Chemical Processes at Durham

University and he was an Advisory Group member on the EPSRC Delivery of Sustainable Hydrogen Supergen projects.

“Digital Fabrication – Increasing Market Penetration”

**Mr. Tim Phillips, Xennia Technology Ltd., Marketing & Business Development
Manager, UK**



Digital fabrication offers a compelling solution for the decoration of surfaces, printing functionalities as well as coatings and structures. Xennia’s talk will look at the markets where digital technology has been adopted and the potential for other key industrial applications.

Bio:

- Since 2007 with Xennia
- Before that he worked as Business Dev. Manager for Goodfellow Cambridge Ltd., a specialist materials company, and as Business Stream Manager/Technical Applications Manager for QinetiQ
- After graduating from University of Cambridge he got his Phd at University of Bristol and an Executive MBA with Distinction from University of Warwick.
- In the 9 years after he worked in a variety of technology areas, including liquid crystal physics, infra red detectors and fast transistors as Senior Scientist at DERA.