



Technology Transfer in Computing Systems

D2.4: Report on TETRACOM Main Workshop

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Introduction

This deliverable describes Task 2.5 and its outcome of the TETRACOM main workshop, led and organized by the partners RWTH and UGENT, which is the lead of the work package 2 on Technology Transfer Infrastructure (TTI).

In order to reach the widest possible European academia and industry community with the TTI offering, TETRACOM leverages the well-established HiPEAC Network of Excellence, in which various TETRACOM contractors play leading roles. Therefore, the TETRACOM main workshop was organized by the UGENT partner within the HiPEAC computing systems event in Milano on September 23, 2015. It used the large-scale HiPEAC media and conference participants to spread out TETRACOM's concept and results at large.

Task 2.5: TETRACOM main workshop

Lead partner UGENT

On top of the semi-annual TT workshops a single, public large-scale workshop was organized as a full-day event during the project. It featured keynotes and discussion of general project results, as well as highlights from selected individual TTPs.

Title: TETRACOM Workshop
Time: Wednesday 23 September 2015 at the HiPEAC Autumn Computing Systems Week in Milano/IT
Organizers: Rainer Leupers and Koen De Bosschere

Motivation and objectives:

This TETRACOM workshop presented some of the highlights of the TETRACOM project. The mission of the TETRACOM Coordination Action is to boost European academia-to-industry technology transfer (TT) in all domains of Computing Systems. While many other European and national initiatives focus on training of entrepreneurs and support for start-up companies, the key differentiator of TETRACOM is an instrument called Technology Transfer Project (TTP). TTPs help to lower the barrier for researchers to make the first steps towards commercialization of their research results.

TTPs are designed to provide incentives for TT at small to medium scale via partial funding of dedicated, well-defined, and short term academia-industry collaborations that bring concrete R&D results into industrial use. This is implemented via competitive calls for TTPs, whose coordination, prioritization, evaluation, and management are the major actions of TETRACOM. The academic partner of the TTP proposals can be any public research institutions (e.g. universities, research centers, etc.) eligible for FP7 funding. At the moment this workshop took place, 31 TTPs had been funded by TETRACOM (on a total of 80+ submitted). Some of them presented their outcome at the workshop.

Audience: Tentative participating groups and/or projects and their contribution: All CSW participants from academia and industry interested in Technology Transfer. In total, 136 people attended the HiPEAC Computing Systems Week in Milano and 56 participants from 35 institutions in 14 countries joined the TETRACOM workshop.

Agenda: The workshop consisted of three keynotes and eight presentations about successful TTPs.

- *Keynote:* The iMinds Flipped Knowledge Transfer Model: Giving startups access to research capacity (Frank Gielen, iMinds)

Summary: Start-ups are major engines of economic development, yet they often lack research capacity to solve their key technical innovation challenges. Through ‘flipping’ the traditional research approach, iMinds puts digital entrepreneurs – like you – in the driver seat when collaborating with researchers. It arms you with the “R” in the R&D equation, providing you with knowledge and means to turn your innovative ideas into market-ready solutions.

- *Keynote:* Making a long term evolution real bringing 4G LTE to the market. What are the learnings for 5G? (Matthias Weiss, Intel Mobile Communications Technology)

Summary: Initially the 3GPP 4G standard was setup as a long term evolution. Given the deployment rate and still seeing a strong innovation push, this evolution is now in a full swing. At Intel there are now 3 platform generations in the market that embrace several research topics conducted in academia. By using examples from these academia to industry transfers an outlook for 5G was given.

- *Invited talk:* ICT innovation measures in H2020 (Sandro D'Elia, Complex Systems and Advanced Computing, DG CONNECT)

Summary: Europe's future is digital. The EC strategy for digitising European industry is based on the concept of "digital innovation hubs" and on leadership in digital platforms for industry. The framework programme H2020 provides several measures designed to support and foster innovation, e.g. in digital manufacturing processes and in integrating ICT inside products and services.

- *Invited talk:* [TTP] Practical Implementation Of Diffused Sensing Elements For Microwave Reflectometry-Based Monitoring Of Rising Damp In Building Structures (Egidio De Benedetto, University of Salento)
- *Invited talk:* [TTP] With Adaptive Resource Sharing Mechanisms to a Timing-predictable L4-Runtime Environment (Kai Lampka, Uppsala University & Adam Lackorzynski, Kernkonzept)
- *Invited talk:* [TTP] ENRICH and Community Detection Hub, two TTPs in the area of graph management (Joan Guisado and Arnau Prat, Universitat Politecnica de Catalunya)
- *Invited talk:* [TTP] 3DAP-TIME: 3D Acoustic Processing To Inspect Manufactured Electronics (Dave Harvey, Liverpool John Moores University)
- *Invited talk:* [TTP] Hardware architectures for real-time sonification of movements for medical rehabilitation (Daniel Pfefferkorn, Leibniz Universität Hannover)
- *Invited talk:* [TTP] Low power miniaturized contact-less BIOimpedance Measurement Device (Marko Pavlin and Franc Novak (Jozef Stefan Institute)
- *Invited talk:* [TTP] Lightweight support for semantic intelligence applications on GP-GPUs (Paolo Burgio, University of Modena)
- *Invited talk:* [TTP] Technology Transfer Enables New Analytics Business (Christian Weis, University of Kaiserslautern)

The workshop started with a presentation by Frank Gielen from the iminds institute (Belgium) promoting the Flipped Knowledge Transfer model followed by a presentation by Matthias Weiss from Intel Mobile Communications Technology on technology transfer in the business of wireless communications and a

presentation by Sandro d'Elia from the European Commission on the innovation measures in Horizon 2020.

The second part of the workshop showcased the results of eight successful TTPs on a variety of topics: sensor networks, acoustic processing, technical solution for medical rehabilitation, contactless measurements, business analytics, GPU acceleration, graph management, adaptive resource sharing. From these cases, we learned that the technology transfer actually happened, and that in some cases the technology will be integrated in existing products or services or lead to new products and services and additional employment.

Evaluation: Of the participants that filled out the survey, 73% rated the workshop of high quality.

Conclusion: The workshop demonstrated that small scale Technology Transfer Projects or TTPs as pioneered by the TETRACOM project actually work and can boost European academia-to-industry technology transfer in all domains of Computing Systems. TTPs do so by lowering the barrier for researchers to make their first steps towards commercialization of their research results, not by creating a startup company, but by transferring the technology to an existing company. TTPs provide incentives for technology transfer at small to medium scale via partial funding of dedicated, well-defined, and short term academia-industry collaborations that bring concrete R&D results into industrial use.

