

Technology Transfer in Computing Systems

D2.1: TTI Report 1

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Introduction

Without additional support activities, the more experienced TT players are likely to be favored by the TTP program. Therefore, several dedicated TTIs will be maintained, intended to help in setting up a new academia-industry "TT marketplace" and to encourage first-time actors to get engaged in TTPs. TETRACOM will implement the following TTIs:

- TT workshops (Task 2.1: lead partner TUD)
- Individual consultation service (Task 2.2: lead partner IMC)
- TETRACOM website (Task 2.3: lead partner UPISA)
- Newsletter (Task 2.4: lead partner UGENT)
- TETRACOM main workshop (Task 2.5: lead partner UGENT)

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. On one hand this concerns utilization of large-scale HiPEAC media like the newsletter or mailing lists. Moreover, several TTIs can be organized together with regular HiPEAC community events.

Task 2.1: TT workshops

Lead partner: TUD

Organization of semi-annual workshops with invited high-profile speakers from various domains relevant to TT (such as market analysts, consultants, VC representatives, company founders, industry managers with significant R&D background, experienced academic TT actors). The goal of TT workshops is to inform academic and industrial participants about TT basics such as creating opportunities, success stories, legal frameworks, market analysis, funding sources etc. The workshops will be organized as half-day events at various central European locations, possibly collocated with HiPEAC events. They will be open to the Computing Systems research community at large. Based on experiences with HiPEAC meetings, typical TT workshops are expected to attract around 50 participants. Each workshop will produce informal handouts to be distributed via the TETRACOM web site.

Thematic Session during the HiPEAC Computing Systems Week in Tallinn

Title: Technology Transfer in Computing Systems: The TETRACOM Approach

Time: Tuesday 8 October 2013, at the HiPEAC Tallinn CSW Organizers: Rainer Leupers, Koen De Bosschere and Koen Bertels

Motivation and objectives:

This session introduced the new TETRACOM FP7 Project, which is tightly related to HiPEAC and is of interest to the entire HiPEAC community. It featured a project overview

as well as examples of successful Technology Transfer.

Audience: Tentative participating groups and/or projects and their contribution: All HiPEAC

members from academia and industry interested in Technology Transfer. In total, 136

people attended the HiPEAC Computing Systems Week in Tallinn.

Agenda:

- TETRACOM project overview (Rainer Leupers, RWTH Aachen)
- TTP example 1: "An ultra-fast just-in-time-simulator" (Mike O'Boyle, University of Edinburgh)
- TTP example 2: "From the FP6 Hartes project to BlueBee" (Koen Bertels, TU Delft)
- TTP example 3: "CoScale: from PhD to Product" (F. Ryckbosch, CoScale)
- Industry viewpoint:" MPPA: what it takes to create and market a manycore processor" (Laurent Julliard, Kalray)
- Q&A

Workshop during the HiPEAC Conference in Vienna

Title: Second Workshop on Transfer to Industry and Start-Ups (TISU)

Time: Tuesday 21 January 2014 at the HiPEAC 2014 in Vienna Organizers: Rainer Leupers, Koen De Bosschere and Koen Bertels

Motivation and objectives:

This workshop aimed at discussing means and ways to improve both the industry transfer as well as stimulating people to transfer their knowledge in business ideas and startups. Therefore, the workshop focused on two main topics:

- Transfer to industry: How can we improve the transfer of EU research results to industry? Are the existing schemes and organizations (Artemisia, Eniac, FP8) efficient and effective enough? What kind of research project organisations do we need? Etc.
- Start-ups: Why is the number of successful Start-ups in Europe not so high? When should one seriously consider going for start-up? What does it take to start a company? How do I start doing it? How can I minimize risks?

Audience:

Tentative participating groups and/or projects and their contribution: All conference participants from academia and industry interested in Technology Transfer. In total, 530 people attended the HiPEAC Conference in Vienna.

Agenda:

- Introduction (Said Hamdiou, Delft University of Technology)
- The FP7 Tetracom project : Goals and objectives (Rainer Leupers, RWT Aachen University)
- Survey on Transfer to Industry: results and recommendations (Koen Bertels and Said Hamdioui)
- Transfer to Industry: A view from ARM on DOs and DON'Ts (Anton Lokhmoto, ARM)
- QuickCheck: from invention to product portfolio (Thomas Arts, Quvig)
- From excellence in university research to start up cluster, a journey (Colin Adams, School of Informatics Edinburgh and Director of Informatics Ventures)
- Tales from Silicon Valley and How They Can Apply to Europe (Sean Halle, ERCIM fellow, CWI Amsterdam)
- Can a successful (bio)informatics service become profitable? (Toni Espinosa, Universitat Autonoma de Barcelona Spain)
- The BOPS experience (Nikos Pitsianis, Aristotle University of Thessaloniki, Greece)
- Concluding discussion

Session at DATE2014

Title: Technology Transfer towards Horizon 2020

Time: Tuesday 25 March 2014 at the DATE Conference in Dresden

Organizers: Rainer Leupers, Norbert Wehn

Motivation and objectives:

European research projects produce many excellent results, and the quality of research papers at DATE and other major European conferences is often outstanding. But how many academic research results in computing technologies and EDA actually make it into industrial practice? In the context of the transition into the Horizon 2020 framework program, the European research community is currently investigating novel ways of stimulating additional academia-industry technology transfer. This special session contributed by discussing concrete transfer experiences and new concepts. Furthermore it exemplified several success stories from both academic and industrial perspectives.

Audience:

Tentative participating groups and/or projects and their contribution: All DATE participants from academia and industry interested in Technology Transfer.

Agenda:

- The TETRACOM approach to technology transfer (Rainer Leupers, RWTH Aachen University)
- Leveraging European research to create value (Marco Roodzant, ACE Associated Compiler Experts)
- Successful technology transfer sharing of expertise (Johannes Stahl, Synopsys, Inc.)
- From research to market: case studies in the field of innovative integrated architectures (Luca Fanucci, University of Pisa)
- Open source technology transfer: scenarios and value creation (Albert Cohen, INRIA)
- Supporting international technology transfer: objectives and obstacles (Bernd Janson, consultant)

Task 2.2: Individual consultation service

Lead partner: IMC

This service will complement the TT workshops in those cases, where highly specific or confidential TT issues need to be discussed among individuals. TETRACOM will utilize its network to allocate voluntary experts (either from inside the consortium or external) that can give limited, yet appropriate case-by-case advice (technical, managerial, and partially legal) wherever possible.

As a first step towards the implementation of this service, a website with database (preliminarily hosted at https://tetracom-service.doc.ic.ac.uk) has been developed to manage the interaction between:

- experts with relevant expertise and experience who volunteer to support this service, and
- **users** seeking consultation with appropriate experts.

As of early April 2014, there are 27 registered users, 22 of whom are experts. The current system is implemented using Ruby On Rails.

To use this service, one first needs to "Create a new account". Name, email address and password must be entered. By default no personal information is disclosed to registered users. Information such as name, email address and phone number can be made visible by ticking the appropriate checkbox next to the word "Public". If the "Expertise" box is filled in, then the user is an Expert and the corresponding contact details and description of expertise will be shown to all registered users. Otherwise user details will not be displayed. Experts can also contact other experts.

After signing in, the user's profile can be accessed via "My profile". The list of experts and their contact information are accessible through the menu option "Users list". Users can search for a target list of experts by typing in keywords, which can be a name or words describing expertise. Users can then contact appropriate experts based on the contact information and their expertise description. Personal information can be updated at "Account"-"Edit my profile".

We shall soon:

- advertise this service to HiPEAC and to other groups which may be interested in or benefit from this service,
- improve and extend the facilities in this service, such as providing a way for users and experts to communicate directly within this system, and to provide suggestions to improve this service.

Task 2.3: TETRACOM WWW

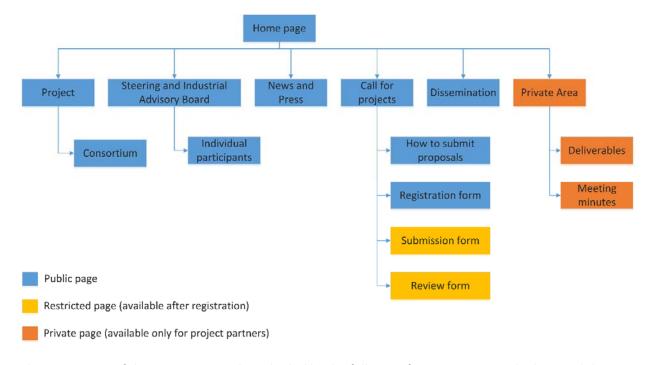
Lead partner: UPISA

A lean, focused web portal is maintained, serving two major purposes: First, to provide information about TETRACOM itself, and to manage its TTP Eol's, current TTI events, and internal documents. Second, to act as a TT broker that allows for posting concrete academic offerings and industrial requests within a centralized place, and matching supply and demand in a partially automated way. For this purpose, the web site will feature an online exchange forum.

The TETRACOM website (www.tetracom.eu) is hosted in a Linux webserver located at the Department of Information Engineering of the University of Pisa (UPISA). The website is conceived to represent the main point of dissemination about the TETRACOM project and its initiatives, but also it allows the managing of the call for proposals that will be issued during the project duration (i.e. proposer registration, proposal submission, reviewer selection and review submission) in semi-automated way. Moreover, it implements a general means of sharing private documents and deliverables among project partners.

The website is frequently updated with news, downloadable dissemination material and general information in order to spread the awareness about the TETRACOM project.

The general structure of the website is shown in the following figure, where the different access level of each page is also visible.



The *Home* page of the TETRACOM website looks like the following figure. It contains the logo and the name of the project and a general description about the TETRACOM mission. At the bottom, the visualization of the last news is present, while the right column includes the login form and the integration with the Twitter account in order to visualize the last tweets.



The *Project* page and the *Consortium* page describe more in details the objectives and methods of the TETRACOM project as well as the composition of the projects consortium.

The *Steering and Industrial Advisory Board* page and its child page present the steering committee and the Industrial advisory board composition and tasks.

The *News* and the *Dissemination* pages provides the users updated news about the project and public downloadable material like brochures, presentations, etc.

The *Call for Project* page gives the information about the call for proposals (status, total budget, etc.). The child pages provides firstly the instructions on how to submit the proposal and the evaluation algorithm, then provide the possibility for user to register into the website, and finally, if the call is open, the possibility for registered users to submit a proposal. The last child page is visible only with a reviewer accounts and lists the assigned project to be reviewed, allowing the reviewer to submit the grade.

The *private area* is visible only with a project partner account and allows the consultation and upload of documents into two main folders that are meeting minutes and deliverables.

The management and release of reviewer and partners accounts is done directly by the website administrator.

Task 2.4: Newsletter and press releases

Lead partner: UGENT

This task has been implemented in a more dynamic way than described in the description of work. We want to promote the results of the project, and technology transfer in general, as widely as possible, and through multiple channels.

- 1. Publishing articles in the HiPEAC newsletter
- 2. The TETRACOM newsletter
- 3. TETRACOM on Facebook
- 4. TETRACOM on Twitter
- 5. TETRACOM Press release
- 6. TETRACOM covered in the press

Article in the HiPEAC Newsletter: "TETRACOM: Technology Transfer made easy"

The HiPEAC newsletter HiPEACInfo 36 was sent out to more than 1000 subscribers and was handed out to the 136 participants of the HiPEAC Computing Systems Week in Tallinn in October 2013.

TETRACOM: TECHNOLOGY TRANSFER MADE EASY

A new FP7 Coordination Action specifically focused on academia-industry technology transfer



TETRACOM (Technology Transfer in Computing Systems) is a new FP7 Coordination Action specifically focused on academia-industry technology transfer (TT). Starting in September 2013, it will stimulate European TT over the duration of 36 months. At the same time, it serves as a pilot project for possible new TT instruments in Horizon 2020. The total project volume is two million Euros. TETRACOM is open to the entire HiPEAC community, and the eight founding partners cordially invite you to participate!

Generally, European academia-to-industry TT in Computing Systems is considered insufficient today. While great scientific results are generated, in particular within EU funded collaborative projects, and impressive TT activities do happen, there is no systematic way of stimulating TT so far at a small to medium scale. Occasionally, outstanding R&D results are commercialized via start-up companies. However, the effort in setting up a company, including all legal and financial matters, is often experienced as a major hurdle. In addition, the majority of promising individual solutions for highly specific problems, which do not justify a start-up on their own, rarely make it into industrial practice. Reasons for this include the following:

- Academic researchers are seldom well connected to relevant industries or they are inexperienced in academia-industry TT scenarios, thereby missing opportunities.
- · There is too much complexity and bureaucracy involved in legal negotiations between universities and companies

· There is insufficient time or budget to bridge the wide gap between a research demonstrator and a real-life industrial product or design flow.

TETRACOM provides a new key instrument to improve this situation, called Technology Transfer Projects (TTPs). TTPs provide a novel and systematic incentive for small to medium scale TT at the European level. As an important support measure, the TTPs will be backed by Technology Transfer Infrastructures (TTIs), such as regular workshops, trainings, and $\ensuremath{\mathsf{TT}}$ consultation services by experts, which will be widely announced. For instance, one of the first events will happen during the HiPEAC CSW on October 8 in Tallinn.

All HiPEAC community members can apply for TTP funding in TETRACOM using an efficient proposal scheme. In short, the "TTP algorithm" works as follows:

1. All TTPs are based on bilateral academiaindustry TT partnerships. One academic partner A teams up with one industry partner B, who is interested in taking up a specific technology or IP developed by A for internal use, evaluation, or productization

- 2. The total volume of the intended TTP is between 10k-200k Euros, and the total TTP duration is between 3 and 12
- 3. Partner A, assisted by B, submits a lightweight three-page TTP proposal to TETRACOM, which will be efficiently evaluated by experts according to several well-defined and public criteria.
- 4. Following a positive evaluation, TETRACOM can provide funding of up to 50% of the total TTP volume. This funding will be received only by partner A, but it will indirectly also benefit partner B, of course.

Three calls for TTP proposals will be issued in TETRACOM over the project duration. On top of this, a lot of exciting TTI events will be organized. Please make sure to add www.tetracom.eu to your bookmarks and stay tuned for the first call for TTP proposals to appear in early 2014. In case of questions, please do not hesitate to contact the project coordinator at leupers@ice.rwth-aachen.de.

Rainer Leupers, RWTH Aachen University, Germany



Tetracom founding partners

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TETRACOM Newsletter February 2014

The first TETRACOM Newsletter was sent out in February 2014 to over 1500 subscribers of the HiPEAC mailing list.

View this email in your browser



TETRACOM news February 2014

Dear all

following its kickoff in Sep 2013, TETRACOM has already launched a number of preparation activities to stimulate more technology transfer in Computing Systems. Now, it's time for TETRACOM's "IPO": The upcoming first call for TTP proposals, worth around 300.000€. The call is open to all of you. A granted TTP can be used to co-finance your academia-industry transfer activities, thereby generating a piece of added value for Europe. The application procedure is simple, the response time is fast. Anyway, don't hesitate to contact me in case of questions. The TETRACOM team is looking forward to your proposals!



Yours, Rainer Leupers RWTH Aachen University











The first call for Technology Transfer Projects (TTP's) will be launched on 15 February 2014. Submit your TTP Proposals before 31 March 2014! A TTP helps lower the barrier for researchers to make the first step towards commercialization of their research results. TTP's 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. For more information and submission of projects, visit http://www.tetracom.eu/.



The TETRACOM Kick Off Meeting took place on 23 September 2013. TETRACOM is a new fp7 Coordination and Support Action especially focused on academia-industry technology transfer. TETRACOM will stimulate European TT over a period of 36 months and serves as a pilot project for possible new TT instruments in Horizon2020.



The TETRACOM Project has 8 partners but is open to the entire European community:

- RWTH Aachen
- Imperial College London
- Ghent University
- TU Delft
- University of Edinburgh
- INRIA
- Tampere University of Technology
- University of Pisa



On Tuesday 8 October the first TETRACOM workshop on Technology Transfer in Computing Systems was organized at the HiPEAC Computing Systems Week in Tallinn, Estonia:

http://www.hipeac.net/add/res/98/458.



The following people have been invited as members of the TETRACOM Advisory Board:

- Martijn Rutten, Vector Fabrics
- Matthias Weiss, Intel
- Tero Rissa, Nokia

We look forward to working with them!



A second TETRACOM workshop was organized on Tuesday 21 January 2014 at HiPEAC2014 in Vienna. Prof. Koen Bertels of TU Delft talked about Transfer to Industry and Start-Ups.

More info on the conference website.



TETRACOM in the press: New initiative to boost academia-industry technology transfer in computing



TETRACOM on Facebook

A TETRACOM account on Facebook was created in October 2013. So far, there are very few likes, but we expect to generate more traffic on social media once the first call for TTP's has been closed and selections have been finalized.

Link to the TETRACOM Facebook page:

https://www.facebook.com/pages/Tetracom/211804222327602?ref=stream



TETRACOM on Twitter

A TETRACOM account on Twitter was created in October 2013.



Nine messages have been sent out so far:

- The TETRACOM fp7 project was officially launched in September 2013. Check out our website on http://www.tetracom.eu/!
- TETRACOM is 1 of 3 new initiatives with a total investment of 80 M€ to support TT & innovation in computing systems: http://www.hipeac.net/node/6361
- Check out the 1st Call for Technology Transfer Project Proposals (total budget of 300.000€) on the TETRACOM website: http://www.tetracom.eu/!
- Attending #HiPEAC2014? We will be there with a poster explaining the newly launched call for TTP's! Register now on http://www.hipeac.net/conference/vienna/!

- TETRACOM press release on Alphagalileo: New initiative to boost academia-industry technology transfer in computing: http://www.tetracom.eu
- Check out the new TETRACOM press release: Taking European expertise in computing to market on http://cordis.europa.eu/news/rcn/36379 en.html
- TETRACOM now calls for 300k€ worth of Tech Transfer Projects. Be the first one to submit: http://es.iet.unipi.it/tetracom/content/index.php/call-for-projects_@hipeac
- Taking European Expertise in Computing to Market http://technews.acm.org/archives.cfm?fo=2014-02-feb/feb-24-2014.html#708281 @TheOfficialACM @cordiseurope @hipeac
- Join the TETRACOM session 'Technology Transfer towards Horizon 2020' at DATE in Dresden on 25 March 2014: http://www.date-conference.com/conference/session/2.8 @hipeac

TETRACOM press release

See D2.5.

TETRACOM covered in the press

See D2.5

Task 2.5: TETRACOM main workshop

Lead partner UGENT

On top of the semi-annual TT workshops a single, public large-scale workshop will be organized as a full-day event during the project. It will feature keynotes and discussion of general project results, as well as highlights from selected individual TTPs. While by default a main workshop could also be placed at end of the project, it is foreseen to actually schedule it as an intermediate event in month 24. The advantage is that (1) workshop results can still influence the remainder of the project and (2) the HiPEAC3 network would still be operational and could provide infrastructure and synergies. Instead of a formal end-of-project meeting event, TETRACOM will deliver a new public White Paper (deliverable D1.5).

So far, no binding decisions have been taken w.r.t. to this workshop.