DaRT Project
Transfer – Contracts - Funding - Publications - Training
Scientific transfers and event organizations

Teaching
- 1000 hours / year at USTL
  - RTOS, Hardware, SoC, SystemC, UML, MDE, HPC
- More than 10 practice training / year contribute to DaRT development
- 10 PhD students + 7 defended thesis (average of 3 / year)
- Summer/winter schools

Scientific event organizations
- FDL 04  http://www.ecsi-association.org/ecsi/fdl/fdl04/home.htm
- IDM 06  http://planetmde.org/idm06/
- RTLWS 05 http://www2.lifl.fr/~marquet/rtlws05/
- MSR 05 in Autrans

Program Committee 5 to 6 / year

Review ~60 to 70 papers / year
National and international community

ECSI executive committee
http://www.ecsi.org/

GDR ARP/ASR and SoC-SiP
http://www.lirmm.fr/soc_sip/
http://asr.cnrs.fr/
Pôle System@tic Ter@ops

- Develop an hardware platform and the associated development framework for computation intensive applications. This project has just started in December 2006.
- Arteris, Cea List - Saclay, Cri - Centre De Recherches En Informatique (Ensm, Armines), Dassault Aviation, Eads Astrium, Ensta, Esterel Technologie, Etis - Equipes Traitement Des Images Et Du Signal (Cnrs, Ensea, Université De Cergy-Pontoise), Freescale Semiconductor, Ief-Institut D'Electronique Fondamentale (Cnrs, Universite Paris-Sud 11), Inria, Jaluna, M2000, Mbda, Mnd, Prism – Laboratoire Parall’elisme, Reseaux, Syst’emes, Mod´elisation (Cnrs, Mod´elisation), RATP, Renault, Thales Optronique, Thales TRT, Thomson, Valeo

RNTL plateforme OpenembeDD

- Develop under Eclipse an engineering model driven open-source platform for real time and embedded systems. The provided platform is based on the Marte profile and uses state of the art tools developed by some of our partners
- Valley. Anyware Technologies, CEA, CS SI, France Telecom, INRIA, LAAS (CNRS), Thales Aerospace, Thales R&D, Verimag. The project has link with three competitiveness poles: Minalogic, System@tic, Aerospace Valley.
The Carroll projects

Carroll PROTES

- Initiate a OMG RFP for the standardization of a UML profile for embedded and real time systems. The answer has taken the form of the MARTE profile proposal
- CEA, Thales, INRIA (AOSTE, DaRT, ESPRESSO).

Carroll CORTESS

- Continuation of the Carrol PROTES project. To finish the standardization of the MARTE profile to the OMG.
- CEA, Thales, INRIA (AOSTE, DaRT, ESPRESSO)

Carroll PEAMS

- Evaluate different architecture options in order to set up the Ter@ops project. PEAMS will concentrate on data streaming dominated applications.
- CEA, Thales, INRIA (ALCHEMY, AOSTE, DaRT)
Euroregion contracts

Interreg III A F/GB ModEasy

- The ModEasy project develops software tools and techniques in order to facilitate the development of reliable microprocessor-based electronic (embedded) systems using advanced development and verification systems. The defined tools will be evaluated in practical domains such as automotive.
- University of Kent, IEMN (Institut Electronique Microelectronique Nanotechnologies)

CNRT Futurelec Operation IV (USTL)

- Fit Gaspard for high performance computing and meta-computing.
- Integration in the Gaspard tool-set and test on finite element code for electric alternator simulator developed by Valeo and L2EP.
- Valeo, EDF, L2EP
Future Project Proposals

STREP: FASTER

• **Objective**: Modeling and automatic generation of dynamically reconfigurable architectures for radio applications.
• **Partners**: INRIA DaRT, THALES, Xilinx, PoLiMi, Imperial College, ...

ANR: Future architectures

• **Objective**: Provide an open library of SystemC IPs at several abstraction levels integrating performances and power estimation parameters.
• **Partners**: INRIA DaRT, Lester, I3S, Valenciennes, ...

ANR: Future architectures

• **Objective**: Study clock semantics for multidimensional applications
• **Partners**: INRIA DaRT, THALES RT, LRI Demons

INTERREG: HP FPGA

• **Objective**: Develop configurable platforms implementing HP SIMD systems on FPGAs.
• **Partners**: INRIA DaRT, Kent (C. Mc Donald), FPMS (C. Valderama), IEMN (A. Rivencq)
## External funding (apart from INRIA Futurs)

<table>
<thead>
<tr>
<th>Source</th>
<th>Duration/Details</th>
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<tr>
<td>Interreg F/GB Modeasy</td>
<td>440 k€ over 3 years</td>
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<td>RNTL openembeDD</td>
<td>24 mm + k€s</td>
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<tr>
<td>RNTL Ter@ops Pole System@tic</td>
<td>18 mm + k€s</td>
</tr>
<tr>
<td>CNRT Futurelec</td>
<td>24 mm + 35 k€</td>
</tr>
<tr>
<td>Valeo</td>
<td>5 k€ / year</td>
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<tr>
<td>Carroll : Peams + prote + cortess</td>
<td>19 mm + k€s</td>
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<tr>
<td>DRI INRIA Tunisie &amp; USA</td>
<td>~15 k€</td>
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<tr>
<td>PhD funding</td>
<td>~540 k€ (30 k€ x 3 x average of 6)</td>
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<tr>
<td>USTL &amp; CNRS salaries…..</td>
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~ 1.3M€ + permanent salaries
## Publications

<table>
<thead>
<tr>
<th>Type</th>
<th>2004 (dec.)</th>
<th>2005</th>
<th>2006</th>
<th>2007 (jan.-apr.)</th>
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<td>H.D.R (*)</td>
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<td>Journal</td>
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<td>Conference proceedings (**)</td>
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(*) HDR Habilitation `a diriger des recherches  
(**) Conference with a selection
Major publications in recent years


Current position of former project-team members
(including PhD students during the (December 2004– April 2007) period)

Eric Rutten (ex-CR1 INRIA), CR1 in Pop-Art project team, INRIA Rhone-Alpes, France

- Emmanuel Renaud (ex-post-doc), assistant professor, Telecom Lille1, Lille, France
- Luc Charest (ex-post-doc), post-doc, universities de Montréal, Canada
- Anouar Dziri (ex-ATER), Engineer, ARES, Lille
- Ahmad-Chadi Aljundi (ex-PhD student July 04), assistant professor, Syria
- Lossan Bonde (ex-PhD student), assistant professor, Cameroun
- Arnaud Cuccuru (ex-PhD student), temporary researcher, CEA, Saclay, France
- Philippe Dumont (ex-PhD student), post-doc, NXP, Eindhoven, The Netherlands
- Ouassila Labbani (ex-PhD student), post-doc, Compsys Team, INRIA Rhone-Alpes
- Ashish Meena (ex-PhD student), research assistant, Queen’s University Belfast, UK
- Mickael Samyn (ex-PhD student), engineer, L4-logistics, Buc, France

Joel Vennin (ex-PhD student), researcher, Societe Generale Asset Management, Paris, France

Stephane Akhoun (ex-temporary engineer), engineer, THALES, France