



**SEVENTH FRAMEWORK PROGRAMME**  
**THEME**  
**FET proactive 1: Concurrent Tera-Device Computing (ICT-2009.8.1)**



**PROJECT NUMBER: 249013**



**Exploiting dataflow parallelism in Teradevice Computing**

**D1.2 – Dissemination Plan**

Due date of deliverable: June 30th, 2010  
Actual Submission: June 30th, 2010

Start date of the project: June 1<sup>st</sup>, 2010

Duration: 48 months

**Lead contractor for the deliverable: UNISI**

**Revision:** See file name in document footer.

<b>Project co-founded by the European Commission within the SEVENTH FRAMEWORK PROGRAMME (2007-2013)</b>	
<b>Dissemination Level: RE</b>	
<b>PU</b>	Public
<b>PP</b>	Restricted to other programs participant (including the Commission Services)
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)

### Change Control

Version#	Date	Author	Organization	Change History
<b>0.1</b>	<b>01.06.2010</b>	<b>Gabriel Cecchetti, Roberto Giorgi</b>	<b>UNISI</b>	<b>Initial version</b>
<b>1.0</b>	<b>30.06.2010</b>	<b>Gabriel Cecchetti, Roberto Giorgi</b>	<b>UNISI</b>	<b>Final version</b>

### Release Approval

Name	Role	Date
<b>Gabriele Cecchetti</b>	<b>Originator</b>	<b>30.06.2010</b>
<b>Roberto Giorgi</b>	<b>WP Leader</b>	<b>30.06.2010</b>
<b>Roberto Giorgi</b>	<b>Project Coordinator for formal deliverable</b>	<b>30.06.2010</b>

## TABLE OF CONTENTS

<b>GLOSSARY</b> .....	<b>7</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>8</b>
<b>1 INTRODUCTION</b> .....	<b>9</b>
1.1 DOCUMENT STRUCTURE .....	9
1.2 RELATION TO OTHER DELIVERABLES.....	9
1.3 ACTIVITIES REFERRED BY THIS DELIVERABLE .....	10
<b>2 TARGET GROUPS – POTENTIAL USERS</b> .....	<b>11</b>
<b>3 GRAPHIC IDENTITY</b> .....	<b>12</b>
3.1 TERAFLUX LOGO .....	12
3.2 TERAFLUX LAYOUTS .....	12
3.3 FP7 LOGO .....	12
3.4 FET LOGO .....	13
3.5 FET BANNER.....	13
<b>4 DISSEMINATION ACTIVITIES</b> .....	<b>14</b>
4.1 APPROACH TO THE DISSEMINATION.....	14
4.2 EVENTS .....	15
4.3 SCIENTIFIC (PEER REVIEWED) PAPERS.....	15
4.3.1 <i>Conferences</i> .....	15
4.3.2 <i>Journals</i> .....	17
4.3.3 <i>Internal Approval process of scientific publications</i> .....	17
4.3.4 <i>Tracking of publications</i> .....	17
4.4 INDUSTRIAL ADVISORY BOARD AND OTHER INDUSTRIAL CUSTOMERS .....	17
<b>5 DISSEMINATION MATERIAL AND TOOLS</b> .....	<b>19</b>
5.1 PUBLIC SECTION OF THE PROJECT WEBSITE.....	19
5.2 PUBLIC DELIVERABLES .....	19
5.3 DELIVERABLES RESTRICTED TO OTHER PROGRAMME PARTICIPANTS .....	20
5.4 FLYER .....	20
5.5 POSTER.....	23
5.6 PRESS RELEASES .....	24
5.7 OTHER DISSEMINATION MATERIAL .....	24
<b>6 INTERNAL DISSEMINATION: MATERIAL AND TOOLS FOR CONSORTIUM USE ONLY</b> .....	<b>25</b>
6.1 RESTRICTED DELIVERABLES .....	25
6.2 CONFIDENTIAL DELIVERABLES.....	25
6.3 INTRANET WEB SITE – WIKI.....	26
6.4 MAILING LISTS.....	26
6.5 MEETINGS AND CONFERENCE CALLS .....	27
<b>7 SYNERGY AND INTERACTIONS WITH OTHER PROJECTS AND SCIENTIFIC PROGRAMS</b> .....	<b>28</b>
7.1 INTERACTIONS WITH NETWORKS OF EXCELLENCE.....	28
7.2 SYNERGY WITH OTHER TERACOMP FET INITIATIVES .....	28
<b>8 COMMUNICATION POLICY</b> .....	<b>29</b>
8.1 EXTERNAL COMMUNICATION .....	29

8.2	INTERNAL COMMUNICATION.....	29
<b>9</b>	<b>CONCLUSIONS .....</b>	<b>30</b>

#### LIST OF FIGURES

FIGURE 1 - PAGE 1 OF 2 OF THE FLYER .....	21
FIGURE 2 - PAGE 2 OF 2 OF THE FLYER.....	22
FIGURE 3 - EDINBURGH POSTER (A4 AND A0 FORMATS AVAILABLE) .....	23
FIGURE 4 – WIKI.TERAFLUX.EU MAIN PAGE .....	26

#### LIST OF TABLES

TABLE 1 - DISSEMINATION ACTIVITIES AND TOOLS .....	15
TABLE 2 - CONFERENCES LIST .....	16
TABLE 3 - JOURNAL LIST .....	17
TABLE 4 - PUBLIC DELIVERABLES. ....	20
TABLE 5- DELIVERABLE RESTRICTED TO OTHER PROGRAMME PARTICIPANTS. ....	20
TABLE 6 - RESTRICTED DELIVERABLES. ....	25
TABLE 7 - CONFIDENTIAL DELIVERABLES. ....	25

The following list of authors will be updated to reflect the list of contributors to the writing of the document.

**Gabriele Cecchetti, Roberto Giorgi**  
Dipartimento di Ingegneria dell'Informazione  
Università di Siena  
Siena, Italy

© 2009 TERAFLUX Consortium, All Rights Reserved.

Document marked as PU (Public) is published in Italy, for the TERAFLUX Consortium, on the [www.teraflux.eu](http://www.teraflux.eu) web site and can be distributed to the Public.

All other trademarks and copyrights are the property of their respective owners.

The list of author does not imply any claim of ownership on the Intellectual Properties described in this document.

The authors and the publishers make no expressed or implied warranty of any kind and assume no responsibilities for errors or omissions. No liability is assumed for incidental or consequential damages in connection with or arising out of the use of the information contained in this document.

This document is furnished under the terms of the TERAFLUX License Agreement (the "License") and may only be used or copied in accordance with the terms of the License. The information in this document is a work in progress, jointly developed by the members of TERAFLUX Consortium ("TERAFLUX") and is provided for informational use only.

The technology disclosed herein may be protected by one or more patents, copyrights, trademarks and/or trade secrets owned by or licensed to TERAFLUX Partners. The partners reserve all rights with respect to such technology and related materials. Any use of the protected technology and related material beyond the terms of the License without the prior written consent of TERAFLUX is prohibited. This document contains material that is confidential to TERAFLUX and its members and licensors. Until publication, the user should assume that all materials contained and/or referenced in this document are confidential and proprietary unless otherwise indicated or apparent from the nature of such materials (for example, references to publicly available forms or documents).

Disclosure or use of this document or any material contained herein, other than as expressly permitted, is prohibited without the prior written consent of TERAFLUX or such other party that may grant permission to use its proprietary material. The trademarks, logos, and service marks displayed in this document are the registered and unregistered trademarks of TERAFLUX, its members and its licensors. The copyright and trademarks owned by TERAFLUX, whether registered or unregistered, may not be used in connection with any product or service that is not owned, approved or distributed by TERAFLUX, and may not be used in any manner that is likely to cause customer confusion or that disparages TERAFLUX. Nothing contained in this document should be construed as granting by implication, estoppel, or otherwise, any license or right to use any copyright without the express written consent of TERAFLUX, its licensors or a third party owner of any such trademark.

*Printed in Siena, Italy, Europe.*

Part number: *please refer to the File name in the document footer.*

**DISCLAIMER:**

EXCEPT AS OTHERWISE EXPRESSLY PROVIDED, THE TERAFLUX SPECIFICATION IS PROVIDED BY TERAFLUX TO MEMBERS "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS.

TERAFLUX SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER (INCLUDING, WITHOUT LIMITATION, ANY DAMAGES ARISING FROM LOSS OF USE OR

Project: **TERAFLUX** - Exploiting dataflow parallelism in Teradevice Computing

Grant Agreement Number: **249013**

Call: FET proactive 1: Concurrent Tera-device Computing (ICT-2009.8.1)

---

LOST BUSINESS, REVENUE, PROFITS, DATA OR GOODWILL) ARISING IN CONNECTION WITH ANY INFRINGEMENT CLAIMS BY THIRD PARTIES OR THE SPECIFICATION, WHETHER IN AN ACTION IN CONTRACT, TORT, STRICT LIABILITY, NEGLIGENCE, OR ANY OTHER THEORY, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

---

Deliverable number: **D1.2**

Deliverable name: **Dissemination Plan (UNISI)**

File name: TERAFLUX-D1.2-R1\_v1.doc Page 6 of 30

## Glossary

DoW	Description of Work
EU	Europe
FP	Framework Programme
FP7	Seven Framework Programme
IST	Information Society Technology
RTD	Research and Technological Development
SME	Small and Medium Enterprise
SW	Software
WP	Work Package

## Executive summary

The dissemination plan is the document, which describe how the outcomes and ideas generated by the project will be spread among the community. In particular it describes the dissemination activity that are going to be carried out during the project, the dissemination tools, the interaction with similar projects, and the policy used to disseminate the results.

This document describes the plan for the dissemination of the objectives and of the results of the TERAFLUX Project.

The plan intends to raise awareness and interest on the developed technologies and solutions among the target groups such as the users, the scientific community, the Governmental Institutions, the involved industry and the general public.

Dissemination and exploitation are key activities for this project. The strong presence of universities ensures wider dissemination potential through scientific channels, and the industrial partners will focus more on the exploitation activities.

The major focus is to ensure that the project's research and outcomes are widely disseminated to the appropriate target communities, at appropriate times, via appropriate methods.

Most of the results will be published via academic and industrial channels by submitting scientific papers into the appropriate conferences and journals, and by organizing workshops, courses and tutorials related to the new technology.

Other tools for external and internal dissemination will be used too: press release, project web site, wiki web site and mailing lists.



# 1 Introduction

This deliverable describes the dissemination activities that will be carried out during the TERAFLUX project by the TERAFLUX consortium and outlines the actions that will be undertaken in order to make the project results available for the widest audience.

A multi-dimensional dissemination approach with different communication tools adapted to the respective target groups is therefore needed to disseminate project concept and results and attract interest and necessary feedback/involvement from them.

In addition to this, the sharing of knowledge must be facilitated inside the Consortium to foster working efficiency and horizontal consistency of the project's outputs. This document outlines the different actions to be taken to reach the above mentioned goals.

## 1.1 Document structure

In this document we will describe the [teraflux.eu](http://teraflux.eu) website. In particular:

- section 1 depicts the potential audience of the TERAFLUX project which will be the target of the dissemination actions;
- section 2 illustrates the graphic identity used for the TERAFLUX project;
- section 3 illustrates the dissemination activities;
- section 4 describe dissemination material and tools used for the dissemination activities;
- section 5 describe the internal dissemination actions, focusing the attention on the material and tools used by the TERAFLUX consortium;
- section 6 illustrates the interactions with other projects and scientific programs with particular attention to related network of excellence and similar FET projects;
- section 7 illustrates the policy adopted for communications;
- section 8 describes the quality indicators used to make assessments about the dissemination activity;
- section **Error! Reference source not found.** makes the conclusion about this dissemination plan;
- section 9 yields the conclusion of this deliverable.

At the end of this document a glossary is provided to help out with some acronyms and terms used in this deliverable.

## 1.2 Relation to other deliverables

This deliverable has a relation with D1.1 deliverable, regarding project web site, because the communication infrastructure is built also on Internet and Intranet means. Of course this deliverable covers other dissemination aspects not limited to the web diffusion.

### **1.3 Activities referred by this deliverable**

One of the objectives of this work package is:

- to enhance the visibility of the project and support the partners for dissemination purposes.

This objective has been reached by carrying out several activities belonging to Task 1.4, during the period lasting from month 1 until month 6.

The purpose of this task is to enhance the visibility of the project, to support the partners for dissemination purposes and to provide collaboration with similar FET projects.

A dissemination plan is outlined in section 4.3 for scientific papers. During the project, brochures and press releases will be created and published in order to increase the visibility of the project, and to introduce the technologies that will be developed. This will include the publicity launch of the community supported effort related to the TERAFLUX simulation platform.

Collaboration with similar FET projects will be established where appropriate, and will include diverse activities, such as joint events, creation of strategies and roadmaps and organization and participation in international events. Details on possible collaborations are given in section 7.

## 2 Target groups – Potential users

This section lists the target groups of the TERAFLUX project. In particular this project should be able to attract the attention of the following groups:

- TERAFLUX consortium (through intranet web site and deliverables);
- scientific community involved in topics related to the project (through scientific publications),
- TERACOMP projects (through direct collaboration and yearly workshops);
- other related European projects (through project website, meetings and workshops);
- Industrial Advisory Board (yearly invited at TERAFLUX workshops);
- computer Industries (through industrial partners and IAB);
- small and medium enterprises (e.g., through CAPS);
- general public (through press releases and events);

For each targeted group, specific dissemination activities and tools have been identified and described in the next sections from 4 to 7.

### 3 Graphic identity

A common graphic identity in all dissemination tasks allows for better visibility and recognition as well as branding of the project.

All dissemination tools and activities must refer to the name of the project, to the project's website URL (<http://teraflux.eu/>) and to the graphic elements described in this chapter.

#### 3.1 TERAFLUX Logo

A project logo was created when TERAFLUX project was still at proposal stage. The logo was presented to and approved by the TERAFLUX partners as the official logo of the TERAFLUX Project during the EB meeting on March 17, 2010. It became effective since March 2010.

The logo includes the name of the project TERAFLUX.

It can be in two different flavors:

- the *name style*" (e.g., TERAFLUX with the superscript F, to highlight the TERAFLUX "difference") – it can be obtained as the following HTML/CSS code:

```
<P STYLE="font-family:Tahoma, sans-serif;font-weight:bold;font-size:50px">TERA<span style="vertical-align:0.33em">F</span>LUX</P>
```

- the *image style*" (white on dark blue background)

The logo consists of the word "TERAFLUX" in a bold, sans-serif font. The letter 'F' is significantly larger than the other letters and is positioned between 'TERA' and 'LUX'.The logo consists of the word "TERAFLUX" in white, bold, sans-serif font, centered on a dark blue rectangular background. The letter 'F' is significantly larger than the other letters and is positioned between 'TERA' and 'LUX'.

The TERAFLUX logo will be used for any (internal or external) deliverable, report and dissemination tools.

#### 3.2 TERAFLUX Layouts

Common/similar layouts are needed for TERAFLUX Dissemination materials (including leaflets, posters and website and PowerPoint presentations).

They were made available during the first six months of the project before the submission of this deliverable: updated versions are released when required to improve their efficacy.

#### 3.3 FP7 Logo

The TERAFLUX Project is funded by the European Commission Seventh Framework Programme for Research and Technological Development (FP7).

This is the EU's main instrument for funding research in Europe running from 2007-2013. The FP7 logo will be used for any (internal or external) deliverable, report and dissemination tool.

In particular, The FP7 cooperation logo was used on the web site as requested by the "FET FP7 projects Quick Communication Guidelines" available online at the following address: [ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/fet-proactive/press-19\\_en](ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/fet-proactive/press-19_en).



On the website and in documents, this logo is linked to the web address: <http://cordis.europa.eu/fp7/ict/>.

### **3.4 FET Logo**

The TERAFLUX Project is a Future Emerging Technologies (FET) INTEGRATED PROJECT (IP) granted by the European Commission's FP7 IST programme's FET Proactive initiative.

Being a FET project the FET logo has been used on website and on the documentation.

As requested by the "FET FP7 projects Quick Communication Guidelines", when placed on the website and in the documents, it has been linked to the web address: <http://cordis.europa.eu/fet-proactive/>.



### **3.5 FET Banner**

As requested by the Project Officer Dr. Wesley VAN-DESSEL on January 13, 2010 we put the following banner to emphasize the FET initiative used to fund the TERAFLUX Project. This banner is present in the website and the documents, and it has been linked to the web address: [http://cordis.europa.eu/fp7/ict/fet-proactive/calls\\_en.html](http://cordis.europa.eu/fp7/ict/fet-proactive/calls_en.html) .



**FUNDING OPPORTUNITIES** from the

**FUTURE & EMERGING TECHNOLOGIES** scheme



## 4 Dissemination activities

This section describes the dissemination activities, what they are, how they are planned.

### 4.1 Approach to the dissemination

In order to provide a clear dissemination strategy and enable each partner to work towards promoting the project in the most effective and efficient manner we have defined three groups of dissemination activities:

(G1) Community dissemination activities: activities for the dissemination of project results to the general telecom audience and public.

(G2) Scientific dissemination activities: activities for the dissemination of the developed project knowledge and results to the research and scientific groups – universities, research institutes, R&D in industry

(G3) Clustering dissemination activities: Activities for the dissemination of the developed project knowledge and results to related ICT projects in networking area – FET FP7 and FP7 projects and clusters.

Activities in each group will be supported by specific dissemination tools the TERAFLUX project is going use in order to promote its results and knowledge to the concerned target audience. The following table presents the identified dissemination tools needed for the group of activities to develop the framework for the TERAFLUX dissemination plan.

<b>Id</b>	<b>Activity/Tool name</b>	<b>Activity/Tool Description</b>	<b>G1</b>	<b>G2</b>	<b>G3</b>
T1	Project logo	Project logo	v	v	v
T2	Project external website	Official public web site with promotional content	v	v	v
T3	Project internal website	Project restricted website administered by project administrator		v	v
T4	Workshops, conferences and supporting materials	Public events sorted according to their relevance	v	v	v
T5	Project leaflet	Leaflet containing key project ideas and features	v		v
T6	Project factsheet	Objectives, partners, contacts and contractual information			v
T7	Promotional poster	Needed in some events		v	v
T8	Project deliverables	Public project deliverables available for wide audience	v	v	v
T9	White papers	General papers describing specific project research areas	v	v	v
T10	Information for different interest groups	Specific information packages developed for focused interest groups – standardization, marketing, R&D		v	
T11	Project press releases	Project information for media and press	v		
T12	Project video presentation	Video presentation of important project aspects for public	v		
T13	Project showcases	Project presentation of the developed results		v	v
T14	European bodies networking	Contacts and information exchange with important European platforms and related projects			v

T15	Dissemination plan	Detailed roadmap of the ETNA dissemination activities	v	v	v
T16	Other publications	General papers describing ETNA research areas submitted for publishing	v	v	v

**Table 1 - Dissemination activities and tools**

## 4.2 Events

The industrial partners will be involved in the dissemination process by exhibiting the developed technology in suitable events (e.g. tradeshow), and using suitable channels (e.g. company reports, magazines etc.).

Such events will be published in advance on the project website in the News section (<http://teraflux.eu/News>) and their outcome will be published in the Media/Press section (<http://teraflux.eu/Media>).

## 4.3 Scientific (peer reviewed) papers

The main conferences or exhibitions in which the project results are expected to be presented at are the following:

### 4.3.1 Conferences

The main conferences related to the project are listed in the following table:

Acronym	Title	Past or Next Date
ASPLOS	Conference on Architectural Support for Programming Languages and Operating Systems - <a href="http://www.ece.cmu.edu/CALCM/asplos10/doku.php">http://www.ece.cmu.edu/CALCM/asplos10/doku.php</a>	Usually in Mar.; past: Mar. 13~17, 2010
CF	ACM International Conference on Computing Frontiers <a href="http://www.computingfrontiers.org/">http://www.computingfrontiers.org/</a>	Usually in May; past: May 17-19, 2010
DATE	Design Automation and Test in Europe - <a href="http://www.date-conference.com/">http://www.date-conference.com/</a>	Usually in Mar.; next: Mar. 14-18, 2011
Euro-PAR	Euro-Par 2010 conference - <a href="http://www.europar2010.org/">http://www.europar2010.org/</a>	Usually at Sep.; next: Aug. 31 - Sep. 3, 2010
HiPC	High Performance Computing conference - <a href="http://www.hipc.org/">http://www.hipc.org/</a>	Usually at Dec.; next: Dec. 19 - 22, 2010
HiPEAC	High Performance Embedded Architecture and Compiler Conference - <a href="http://www.hipeac.net/HiPEAC_conferences">http://www.hipeac.net/HiPEAC_conferences</a>	Usually in Jan.; next: Jan. 24- 26, 2011
HPCA	IEEE International Symposium on High-Performance Computer Architecture - <a href="http://www.hpcaconf.org/">http://www.hpcaconf.org/</a>	Usually in Feb.; next: Feb. 12-16, 2011

ICPP	International Conference on Parallel Processing - <a href="http://www.cse.ohio-state.edu/icpp2010/">http://www.cse.ohio-state.edu/icpp2010/</a>	Usually in Sep.; next: Sep. 13-16, 2010
ICS	International Conference on Supercomputing - <a href="http://ics11.cs.arizona.edu/">http://ics11.cs.arizona.edu/</a>	Usually in June; next: June 1-4, 2011
IISWC	IEEE International Symposium on Workload Characterization - <a href="http://www.iiswc.org">http://www.iiswc.org</a>	Usually in Dec.; next: Dec. 2-4, 2010
IPDPS	IEEE International Parallel & Distributed Processing Symposium - <a href="http://www.ipdps.org/">http://www.ipdps.org/</a>	Usually in May; next: May 16-20, 2011
ISCA	IEEE/ACM International Symposium on Computer Architecture - <a href="http://isca2010.inria.fr/">http://isca2010.inria.fr/</a>	Usually in June; next: Jun 19 -23, 2010
ISPASS	IEEE International Symposium on Performance Analysis of Systems and Software - <a href="http://ispass.org/">http://ispass.org/</a>	Usually in Mar.; past: Mar. 28-30, 2010
Micro	IEEE/ACM International Symposium on Microarchitecture - <a href="http://www.microarch.org/">http://www.microarch.org/</a>	Usually in Ma; next: May 25, 2010
PACT	International Conference on Parallel Architectures and Compilation Techniques - <a href="http://www.pactconf.org/">http://www.pactconf.org/</a>	Usually in Sep.; next: Sept. 11-15, 2010
PLDI	ACM Conf. on Programming Language Design and Implementation - <a href="http://www.cs.stanford.edu/pldi10/">http://www.cs.stanford.edu/pldi10/</a>	Usually in June; past: Jun. 5-10, 2010
POPL	ACM Symp. on Principles of Programming Languages - <a href="http://www.cse.psu.edu/popl/11/">http://www.cse.psu.edu/popl/11/</a>	Usually in Jan.; past: Jan. 26-28, 2010
SAMOS	International Conference on Embedded Computer Systems: Architectures, Modeling and Simulation - <a href="http://samos.et.tudelft.nl/">http://samos.et.tudelft.nl/</a>	Usually in Jul.; next: July 19-22, 2010
SC	International Conference for High Performance Computing, Networking, Storage, and Analysis - <a href="http://www.supercomp.org/">http://www.supercomp.org/</a>	Usually in Nov.; next: Nov. 13-19, 2010
SIGMETRICS	ACM SIGMETRICS conference -- <a href="http://www.sigmetrics.org/">http://www.sigmetrics.org/</a>	Usually in June; past: Jun. 14-18, 2010

Table 2 - Conferences list

TERAFLUX project budgeted two, three conference presentations per partner per year, with an estimated total of 89 conference presentations distributed among partners.



### 4.3.2 Journals

Results will be also submitted to principal journals of the area, including those listed in the following table:

Journal name	URL
Transactions on HiPEAC	<a href="http://www.hipeac.net/journal">http://www.hipeac.net/journal</a>
IEEE Transactions on Computers (TC)	<a href="http://www.computer.org/tc/">http://www.computer.org/tc/</a>
IEEE Micro	<a href="http://www.computer.org/portal/web/micro/home">http://www.computer.org/portal/web/micro/home</a>
ACM Transactions on Architecture and Code Optimization (TACO)	<a href="http://taco.acm.org/">http://taco.acm.org/</a>
ACM Transactions on Programming Languages and Systems (TOPLAS)	<a href="http://www.acm.org/toplas/">http://www.acm.org/toplas/</a>

Table 3 - Journal list

### 4.3.3 Internal Approval process of scientific publications

As written in TERAFLUX Consortium Agreement at paragraph 8.3.1.1:

*Dissemination activities including but not restricted to publications and presentations shall be governed by the procedure of Article II.30.3 of the EC-GA subject to the following provisions. Prior notice of any planned publication shall be made 30 days before the publication. Any objection to the planned publication shall be made in accordance with the GA in writing to the Coordinator and to any Party concerned within 15 days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.*

So the implementation approval process has been implemented as follows:

1. Insert the publication(s)/presentation(s) into the wiki site
2. Send email with deadline at least 30 days before the publication.
3. If no objection within the deadline of 15 days after the receipt of the notice, the publication(s)/presentation(s) is approved.

### 4.3.4 Tracking of publications

The list of published papers and submitted ones will be tracked.

## 4.4 Industrial Advisory Board and other Industrial customers

The members of the IAB will implement the results of TERAFLUX project in their companies whenever possible, and will provide channels for further dissemination of the project results.

One of the main reasons for setting up an IAB is to provide a clear path to exploitation through IAB members and their networks.

We expect the interaction with the IAB to allow for effective transfer of TERAFLUX results outside the consortium, disseminating design approaches and tools.

Project: **TERAFLUX** - Exploiting dataflow parallelism in Teradevice Computing

Grant Agreement Number: **249013**

Call: FET proactive 1: Concurrent Tera-device Computing (ICT-2009.8.1)

---

The TERAFLUX Consortium counts one SME (CAPS) that disseminates the technology developed in TERAFLUX to industrial customers.

## 5 Dissemination material and tools

In this section we present the dissemination material and tools used for dissemination activities.

### 5.1 *Public section of the project website*

A web site of the project has been established one month before the starting of the project.

It will serve as a main point for others to make enquiries about the project, and it provides download of public knowledge and tools generated in the project.

Its internet address is [teraflux.eu](http://teraflux.eu) but other aliases are [www.teraflux.eu](http://www.teraflux.eu) and [teraflux.org](http://teraflux.org) may be used to reach the same page.

The home page gives the visitor an overview of the project. In particular it has been developed to be useful for non technical audience as well the Computer Architecture community. By using real world terminology, the home page tells “what is TERAFLUX about”, “the TERAFLUX stack”, “who is TERAFLUX”, and then it gives a brief introduction to the TERAFLUX. The visitor can retrieve more information about the TERAFLUX project following the “read more” link, where “main objectives” of the project are described. It shows the “expected impact” and the “technical approach and key issues”.

The website uses the following pages for dissemination purpose:

- NEWS, this page contains continuously updated news list about the project;
- MEDIA/PRESS, this page contains a continuously updated list of multimedia materials and press release related to the project.
- DELIVERABLES, this page contains the list of the published deliverables open to public;
- PUBLICATIONS, this page contains a continuously updated list of the scientific publications produced by this project;
- LINKS, this page contains the list of links to the European websites related to the European projects and to other TERACOMP projects like EURETILE, SOOS, and TRAMS.

More information on the public website structure can be found on D1.1 deliverable, named “The Project Website”.

### 5.2 *Public deliverables*

Table 4 shows the list of the deliverables that can be displayed to the public.

For each deliverable the following information is reported: deliverable number, deliverable name, WP involved, the lead beneficiary who is responsible for that deliverable, the nature (**R**eport or **O**ther) and the delivery date.

Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature1	Delivery date3
D2.1	Report on the reference set of applications chosen, and initial characterization of the applications	WP2	BSC	R	12
D2.2	Final report on the characterization and modeling of the reference applications	WP2	BSC	R	24
D2.3	Initial report on applications already ported to the new dataflow based programming model	WP2	BSC	R	36
D2.4	Final report, including the set of reference applications ported to the TERAFLUX platform.	WP2	BSC	P	48
D3.3	Report on the Lessons learned about the interaction of Programming Models with the Applications, Compiler and Architecture (T3.1, T3.2 & T3.3)	WP3	UNIMAN	R	24
D3.4	Initial Report comparing and contrasting the developed models (T3.4)	WP3	UNIMAN	R	36
D3.5	Final Report comparing and contrasting the developed models (T3.4)	WP3	UNIMAN	R	48
D4.2	Design of the unified intermediate representation	WP4	INRIA	R	12
D4.3	First version of the compilation tools targeted to the TERAFLUX architecture	WP4	INRIA	P	12
D4.5	Optimized version of the compilation tools, with the invitation of third-party contributors	WP4	INRIA	P	24
D4.6	Thorough evaluation of the compilation tools, productivity and performance portability	WP4	INRIA	R	36
D4.7	Advanced version of the compilation tools	WP4	INRIA	P	48
D5.1	Design Exploration of FDUs and Core-Internal Fault-Detection	WP5	UAU	R	12
D5.2	Development of Inter-Cluster Fault-Detection Mechanisms and Core-Internal HW and SW Protection	WP5	UAU	R	24
D5.3	Development of Intra-Cluster Fault-Detection and Recovery Mechanisms and Dynamic Adaption	WP5	UAU	RP	36
D5.4	System Integration Analysis, Measurement and Tuning of the Reliability System	WP5	UAU	RP	48
D6.2	Advanced TERAFLUX Architecture	WP6	UCY	R	24
D6.4	Evaluation of the TERAFLUX Abstraction Layer and finetuned model	WP6	UCY	R	48
D7.2	Definition of ISA extensions and custom devices and External COTSon API extensions	WP7	UNISI	O	12
D7.3	Power and Thermal Modeling and Fault-injection support	WP7	UNISI	O	24
D7.4	Report on knowledge transfer and training	WP7	UNISI	R	36
D7.5	Final report and documentation	WP7	UNISI	R	48

Table 4 - Public deliverables.

### 5.3 Deliverables restricted to other programme participants

The Table 5 shows the list of the deliverables restricted to other programme participants.

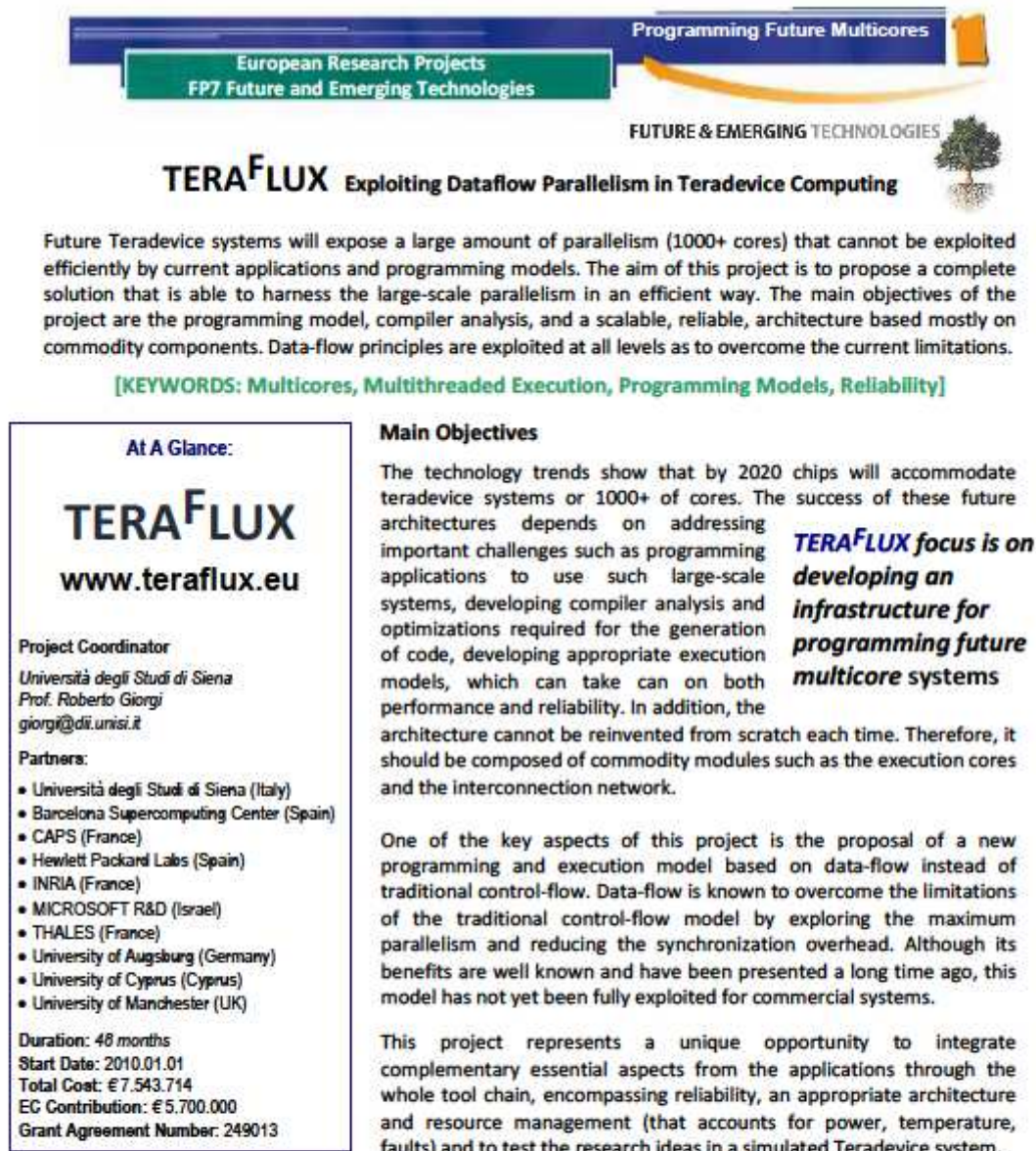
For each deliverable the following information is reported: deliverable number, deliverable name, WP involved, the lead beneficiary who is responsible for that deliverable, the nature (**R**eport or **O**ther) and the delivery date.

Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature1	Delivery date3
D6.1	Basic TERAFLUX Architecture and Basic Execution Model	WP6	UCY	O	12
D6.3	Fine-tuned TERAFLUX Execution Model	WP6	UCY	O	36

Table 5- Deliverable restricted to other programme participants.

### 5.4 Flyer

The Figure 1 shows the flyer that was prepared at month 3. This flyer will be distributed at conferences, workshops and meetings related to the project by any person belonging to the project which will attend such events.



The flyer features a header with 'Programming Future Multicores' and 'European Research Projects FP7 Future and Emerging Technologies'. The main title is 'TERAFLUX Exploiting Dataflow Parallelism in Teradevice Computing'. A tree icon is on the right. The text describes the project's goal to harness large-scale parallelism in future teradevice systems. It lists keywords: Multicores, Multithreaded Execution, Programming Models, Reliability. A 'Main Objectives' section explains the need for new programming models and infrastructure. A 'Partners' list includes institutions from Italy, Spain, France, Israel, Germany, Cyprus, and the UK. A box on the left provides contact info for Prof. Roberto Giorgi and project details like duration (48 months) and cost (€7,543,714 total). Logos for 'SCALES FOR DATAFLOW PARALLELISM' and 'CONVERGENCE' are at the bottom left, and the European Commission logo is at the bottom right.

Programming Future Multicores

European Research Projects  
FP7 Future and Emerging Technologies

FUTURE & EMERGING TECHNOLOGIES

# TERAFLUX

 Exploiting Dataflow Parallelism in Teradevice Computing

Future Teradevice systems will expose a large amount of parallelism (1000+ cores) that cannot be exploited efficiently by current applications and programming models. The aim of this project is to propose a complete solution that is able to harness the large-scale parallelism in an efficient way. The main objectives of the project are the programming model, compiler analysis, and a scalable, reliable, architecture based mostly on commodity components. Data-flow principles are exploited at all levels as to overcome the current limitations.

**[KEYWORDS: Multicores, Multithreaded Execution, Programming Models, Reliability]**

**At A Glance:**

## TERAFLUX

[www.teraflux.eu](http://www.teraflux.eu)

Project Coordinator  
Università degli Studi di Siena  
Prof. Roberto Giorgi  
[giorgi@dii.unisi.it](mailto:giorgi@dii.unisi.it)

Partners:

- Università degli Studi di Siena (Italy)
- Barcelona Supercomputing Center (Spain)
- CAPS (France)
- Hewlett Packard Labs (Spain)
- INRIA (France)
- MICROSOFT R&D (Israel)
- THALES (France)
- University of Augsburg (Germany)
- University of Cyprus (Cyprus)
- University of Manchester (UK)

Duration: 48 months  
Start Date: 2010.01.01  
Total Cost: € 7.543.714  
EC Contribution: € 5.700.000  
Grant Agreement Number: 249013

### Main Objectives

The technology trends show that by 2020 chips will accommodate teradevice systems or 1000+ of cores. The success of these future architectures depends on addressing important challenges such as programming applications to use such large-scale systems, developing compiler analysis and optimizations required for the generation of code, developing appropriate execution models, which can take care on both performance and reliability. In addition, the architecture cannot be reinvented from scratch each time. Therefore, it should be composed of commodity modules such as the execution cores and the interconnection network.

**TERAFLUX focus is on developing an infrastructure for programming future multicore systems**

One of the key aspects of this project is the proposal of a new programming and execution model based on data-flow instead of traditional control-flow. Data-flow is known to overcome the limitations of the traditional control-flow model by exploring the maximum parallelism and reducing the synchronization overhead. Although its benefits are well known and have been presented a long time ago, this model has not yet been fully exploited for commercial systems.

This project represents a unique opportunity to integrate complementary essential aspects from the applications through the whole tool chain, encompassing reliability, an appropriate architecture and resource management (that accounts for power, temperature, faults) and to test the research ideas in a simulated Teradevice system.

### Expected Impact

We expect to develop a coarse grain dataflow model (or fine grain multithreaded model) that will encompass fine grain transactional isolation, scalable to many cores and distributed memory, with built-in application-unaware resilience, with novel hardware support structures as needed. Moreover we will provide an open evaluation platform based on an x86 simulator based on COTSon by TERAFLUX partner HPLabs ( <http://cotson.sourceforge.net/> ) that enables leveraging the large software body out there (OS, middleware, libraries, applications).




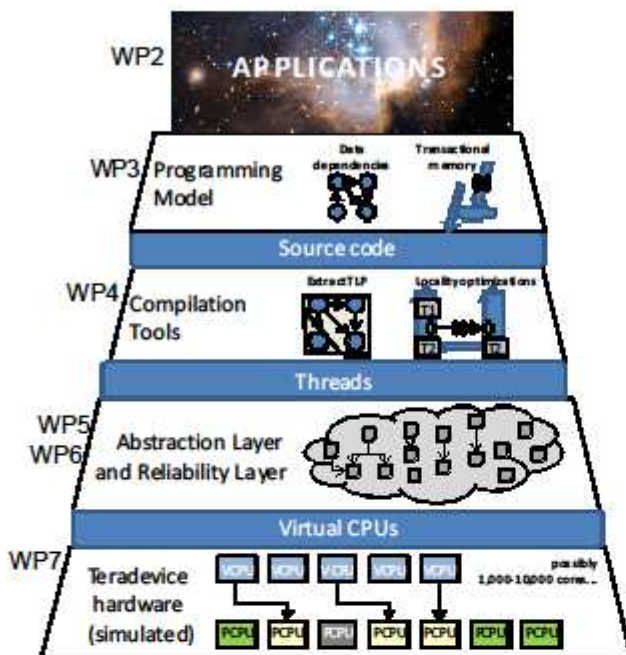


Figure 1 - Page 1 of 2 of the Flyer



Technical Approach & Key Issues



- Applications are becoming more and more complex, demand for higher degrees of accuracy, and process larger amounts of data. As such, in this project we will look at current and emerging demanding applications to be executed on the Teradevice systems. Their evaluation will allow us to study the limits of such large-scale future systems.

- The programming challenge is how to make the parallel resources easily available to the programmers for such large-scale systems. In TERAFLUX, we propose a two-level parallel programming (efficient programming + performance programming) approach. In TERAFLUX, we explore programming models that combine the benefits of data-flow with transactional memory principles.

- Compiler optimizations are required to coarsen the grain of concurrency, allocate memory statically, convert streams into shared memory buffers, overlap communications and computations, instrument the code with resource and power management probes/actions.
- In modern architectures reliability is a major aspect for system designers and users. New process technology exposes us to new challenges such as aging, process variability, soft errors. Defects and errors will dramatically increase in the near future. Therefore, building a reliable system out of unreliable components becomes a major problem for future systems and needs special attention
- Simple technology improvements will allow for the scaling of the current designs to 1000+ of cores on the same chip. One concern is to keep the system within the required power budget. In order to satisfy that goal and at the same time provide a large degree of parallelism, the TERAFLUX architecture will be composed of heterogeneous multi-cores supporting the same instruction set. Simpler more power efficient cores will provide the parallelism while more complex and less power efficient cores will be used to execute codes requiring Instruction Level Parallelism (ILP).
- An existing infrastructure for full system simulation (COTSon by HP labs) current supported as MIT license has been chosen as the simulation infrastructure able to provide fast and accurate evaluation of current and future computing systems, covering the full software stack and complete hardware models.

Figure 2 - Page 2 of 2 of the Flyer

## 5.5 Poster

In Figure 3 we show the poster (A0 size) used to present the TERAFLUX project at HiPEAC innovation Event at Edinburgh on May 3<sup>rd</sup> – 5<sup>th</sup>, 2010.

**TERAFLUX**

**What is about**

- 1000 Billion- or 1 TERA- device computing platform poses new challenges:
  - (at least) programmability, complexity of design, reliability
- TERAFLUX context:
  - High performance computing and applications (not necessarily embedded)
- TERAFLUX scope:
  - Exploiting a new exploited path (DATAFLOW) at each level of abstraction
    - Applications (WPA)
    - Programming model (WPA)
    - Compilation tool (WPA)
    - Reliability (WPS)
    - Architecture (WPA)
    - Consortium Platform (WPP)

**Integration Platform (WPP)**

- Goals:
  - provide an OPEN-SOURCE common platform that models a teradevice system
  - integrate work package results (if in practice are contributing)
- Close to 4-1000 Billion device cores as modelled in the WP COTD in platform:
  - Already established and utilized (e.g. COSMA paper at SC10-2009)\*\*
  - Already model for 3000 complex cores running SPECintg benchmarks\*\*
  - PROPOSAL work has to be reviewed/validated
- Workpackages will plug-in their own results to the platform and test/validate them:
  - The new concepts will expand the platform toward an open programmable, i.e. compiling, more reliable reconfigurable system

**Reliability (WPS) and Architecture (WPA)**

- Goals:
  - Creating a substrate of five grain threads that will "float" the architecture (WPA) with less pressure, e.g., to the memory subsystem
  - lowering the number of faults by 50% compared to the same overall multi-many-core processor with reliability techniques (WPS)

**Programmability (WPS) and Compilation Tools (WPA)**

- Goals:
  - Advancing a more scalable implementation of given applications
  - More efficient code
- Integration of applications written in several programming styles:
  - Productivity programmer (90% of cases)
  - Efficiency programmer
  - AI- or dataflow programming
- Integration of dataflow and the Transactional Memory:
  - Providing a more efficient implementation
- Advanced dataflow optimizations in the code:
  - Aggressively loading the CODE of an application

**Applications (WPA)**

- Goals:
  - Choose and characterize representative applications
  - Port applications to the new programming model
- E.G. MAMD models in molecular dynamics in inlets of ions:
  - Used in biomedical research and pharmaceutical industry (drug design)
  - 3D space is modeled as grid of cells
- TERAFLUX can avoid highly inefficient Message Passing (tested on 832-core ABIS supercomputer) or Shared Memory (tested on a 128-node ABIS)
- Scalability is an important issue on previous machines: dataflow scheduling (e.g. DMA-assisted data communication and hardware thread scheduling) will manage more parallelism, more performance, more complex block structures
- TERAFLUX will exploit inter-cell dependencies to exploit thread-level dataflow parallelism, schedule computation and communication, thus offering higher performance

**FET joint activities**

- Joint Workshop:
  - A yearly (December) TERA-COM F focused work shop
  - Increase the potential of formation (e.g. HiPEAC, ARTIST, ...) consortiums (High Performance, Complexities, Embedded, ...)
- Joint strategy and roadmapping:
  - Integration with IAR super tier
- Joint strategy and roadmapping:
  - Seeking for more international cooperation, e.g., with NSF
  - Seeking for interaction with HiPEAC companies and members

**THANKS FOR YOUR ATTENTION!**

Figure 3 - Edinburgh poster (A4 and A0 formats available)

## **5.6 Press releases**

The project will also make regular press releases that will contain the progress of the project and plans for future actions of the partners.

These will be aimed to the general public, and will serve to raise the visibility of the project outside the scientific community. Efforts will be made to spread the generated knowledge to both graduate and undergraduate students through educational activities of the partners.

WP1 is in charge to prepare a general template to be distributed to the other partners for the press releases in their country.

## **5.7 Other dissemination material**

Other dissemination materials may include:

- hand-outs,
- bags for Conferences,
- banners and poster roll-ups,
- other equipment for conference stands,
- stickers for the to be placed on project equipment,
- writing pads,
- etc.

Materials to be used at TERAFLUX events. TERAFLUX will consider producing additional materials, taking into account the budgetary constraints. In some of the planned events, the TERAFLUX Consortium will also make use of materials available at the European Commission such as other “TERACOMP” initiative materials.



## 6 Internal dissemination: material and tools for consortium use only

In this section we describe the material and the tools used to spread the TERAFLUX project ideas and knowledge among TERAFLUX Partners.

### 6.1 Restricted deliverables

Table 6 shows the list of the deliverables restricted only to a group specified by the consortium (including the Commission services).

For each deliverable the following information is reported: deliverable number, deliverable name, WP involved, the lead beneficiary who is responsible for that deliverable, the nature (**R**eport or **O**ther) and the delivery date.

Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature <sup>1</sup>	Delivery date <sup>3</sup>
D1.1	Project Web Site	WP1	UNISI	O	6
D1.2	Dissemination plan	WP1	UNISI	R	6
D1.3	Financial report	WP1	UNISI	R	14
D1.4	Project management report	WP1	UNISI	R	12
D1.5	Financial report	WP1	UNISI	R	26
D1.6	Project management report	WP1	UNISI	R	24
D1.7	Financial report	WP1	UNISI	R	38
D1.8	Project management report	WP1	UNISI	R	36
D1.9	Final financial report	WP1	UNISI	R	50
D1.10	Project management report	WP1	UNISI	R	48
D1.11	Final management report	WP1	UNISI	R	48
D3.1	Initial Report describing the first Dataflow and Transactions Model (T3.3)	WP3	UNIMAN	R	6
D3.2	Report on Coarse Grain Optimisation (T3.1), Synchronous Concurrency (T3.2), Dataflow and Transactions Model (T3.3)	WP3	UNIMAN	R	12
D4.1	Report on the conversion of implicit concurrency properties into scalable parallelism	WP4	INRIA	R	12
D4.4	Report on multi-level parallelization and locality optimization	WP4	INRIA	R	24

**Table 6 - Restricted deliverables.**

### 6.2 Confidential deliverables

The Table 6 shows the list of the deliverables restricted only to a group specified by consortium (including the Commission services).

For each deliverable the following information is reported: deliverable number, deliverable name, WP involved, the lead beneficiary who is responsible for that deliverable, the nature (**R**eport or **O**ther) and the delivery date.

Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature <sup>1</sup>	Delivery date <sup>3</sup>
D7.1	Plan on interface deployment (internal use)	WP7	UNISI	O	6

**Table 7 - Confidential deliverables.**

### 6.3 Intranet web site – wiki

The intranet space, which is access restricted to project partners, is located at Internet address: <http://wiki.teraflux.eu> . This space has been designed using a wiki tool to improve the collaboration among the partners. In Figure 4 we show the main page of this site.



Figure 4 – [wiki.teraflux.eu](http://wiki.teraflux.eu) main page

### 6.4 Mailing lists

Three mailing lists have created for the purpose of exchanging information: one for the members of the executive board, one for technical discussion, and one for administrative and financial issues.

The mailing lists are the following:

- [teraflux-tech@dii.unisi.it](mailto:teraflux-tech@dii.unisi.it) – this list is open to all people belonging to a project partner: it is focused on technical and scientific issues of TERAFLUX project;
- [teraflux-eb@dii.unisi.it](mailto:teraflux-eb@dii.unisi.it) – this list is open only to members of Executive Board and to the Project Management Team and it is used to discuss items related to the project management and steering decisions as defined by the Consortium Agreement;
- [teraflux-adm@dii.unisi.it](mailto:teraflux-adm@dii.unisi.it) – this list is open only to administrative and financial personnel of TERAFLUX partners and it is used to discuss administrative and financial aspects of TERAFLUX project.

Valid alias of these mailing list are [teraflux-tech@teraflux.eu](mailto:teraflux-tech@teraflux.eu), [teraflux-eb@teraflux.eu](mailto:teraflux-eb@teraflux.eu) and [teraflux-adm@teraflux.eu](mailto:teraflux-adm@teraflux.eu) respectively.

Other mailing list, will be created on consortium request.

## **6.5 Meetings and conference calls**

Technical and Executive boards meetings are often made by means of teleconference.

The software chosen for the teleconferencing is the WebEx Meeting Center of Cisco (<http://www.webex.com/>).

This software allows the participants to interact, by talk, chat, share their documents and presentation just using a common browser.

The software capabilities have been enhanced buying an audio conference solution to let the participants join the meeting by dialing a landline telephone number.

## **7 Synergy and Interactions with other Projects and scientific programs**

Cooperation with other ongoing European research projects has been investigated and dissemination of results will be conducted through the contact with their representatives.

In order to reinforce FET-proactive initiative, we identified similar FET projects and we will establish collaboration with the following activities:

- we will insert publications and updates on project to a common FET web portal.
- we will have a representative of the project on a FET conference.
- we will contribute to joint activities (such as cluster meetings, roadmaps, workshops, etc).
- we will encourage students to apply for HiPEAC mobility grants (or similar) to implement exchanges between European institutions specially those participating in TERAFLUX.

### **7.1 Interactions with Networks of Excellence**

Most of the joint activities will take advantage of networking projects, such as HiPEAC or ARTISTS.

Many of the partners in the TERAFLUX project are also members of the HiPEAC network of excellence, which will be used as another channel for dissemination. The results of the project will be disseminated through participation in the cluster meetings, industrial workshops and other events that HiPEAC is organizing. Participation in such events will be valuable especially in the early stages of the project in order to focus the project the important scientific challenges and industrial needs of the next decade. Close interactions with application task force and programming models cluster of the network (both coordinated by the partner BSC) will be a key to highlighting the most important challenges in programmability, scalability and portability.

### **7.2 Synergy with other TERACOMP FET initiatives**

TERAFLUX will contribute to the organization of the yearly TERACOMP FET workshops with project effort and funding. Moreover all partners will remain available to participate to joint events with other FET projects.

TERAFLUX project has dedicated around 2% of its total funding in order to contribute to above joint activities.

## **8 Communication policy**

### **8.1 External communication**

The Coordinator Scientific Manager, located at Department of Information Engineering at University of Siena, is the central contact point for external communication. His contact details should be mentioned on the website and on any document where it appears to be relevant:

The contact details to be currently mentioned are:

TERAFLUX Project  
Roberto Giorgi, Coordinator Scientific Manager – UNISI  
Via Roma 56  
53100 Siena (ITALY)  
Tel: +39-0577-191-5182  
Fax: +39 0577-191-9064  
Email: giorgi@dii.unisi.it

### **8.2 Internal communication**

UNISI, as coordinator, is the central contact point for internal communication.

Documents and files can be uploaded on the Consortium wiki site available at: <http://wiki.teraflux.eu> which will keep track of them; they should be used only in mailing.

## **9 Conclusions**

This Dissemination Plan presented a comprehensive dissemination strategy with a common graphic identity, specific tools and activities adapted to the respective target groups, a clear communication policy and a strict internal assessment procedure.

To further improve the dissemination strategy during the project's life, the Dissemination Plan will continue to be updated.