RELEASE

SEVENTH FRAMEWORK PROGRAMME

ICT-287510
RELEASE
A High-Level Paradigm for Reliable Large-Scale Server Software
A Specific Targeted Research Project (STReP)

D7.1 (WP7): Website and Initial Press Engagement

Due date of deliverable: 31st December 2011
Actual submission date: 31st December 2011

Start date of project: 1st October 2011 Duration: 36 months

Lead contractor: Heriot-Watt University Revision: 1.2

Purpose: To establish website, domain, and make initial press engagement

Results: The main results of this deliverable are

- We have purchased a domain, and established an outward facing website
- We have established integrated Redmine and git repositories linked to the website to facilitate interaction between partners.
- We have issued several press releases and made announcements at international conferences.

Conclusion: We have made a good start publicising the project to both general and technical audiences.

Project funded under the European Community Framework 7 Programme (2011-14)			
Dissemination Level			
PU	Public		⁎
PP	Restricted to other programme participants	(including the Commission Services)	
RE	Restricted to a group specified by the consortium	(including the Commission Services)	
CO	Confidential only for members of the consortium	(including the Commission Services)	

Website and Initial Press Engagement

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1 Introduction

The objectives of Task 7.1 are to "create a website and domain to disseminate project results and open-source components. Issue press releases at project start (month 3) and end (month 33) and as appropriate through the project. Initial and final releases should be through press department of one of the major participating companies". The lead participant is Heriot-Watt University.

1.1 Website and Domain

We have purchased the domain `www.release-project.eu/` and mapped it to servers at Heriot-Watt University. We have created an outward facing website at this domain with links to partners, events, a project summary and (password protected) internal repositories.

The top level of the website is shown in Figure 1.

1.2 Repositories

We have established repositories to facilitate interaction between project partners. Specifically we use Redmine for project management, e.g. as a wiki for project meeting arrangements. We have purchased space on github as a private repository for project documents and software.

The repositories are integrated with the website. Access to the Redmine repository is via a password protected link from the website and, in turn links to the github repository.

1.3 Press Releases and Public Announcements

We have made public announcements of the project to technical audiences, and plan further announcements. Outlines of the project have been presented at the Erlang Workshop in Tokyo in September 2011 (`www.erlang.org/workshop/2011/`) and at the Erlang User Conference in Stockholm in November 2011 (`www.erlang-factory.com/conference/ErlangUserConference2011`). We will attend and present a poster on RELEASE at the HiPEAC Conference in January 2012 (`www.hipeac.net/hipeac2012`).

We have made the following press releases, with an ensuing follow up article.

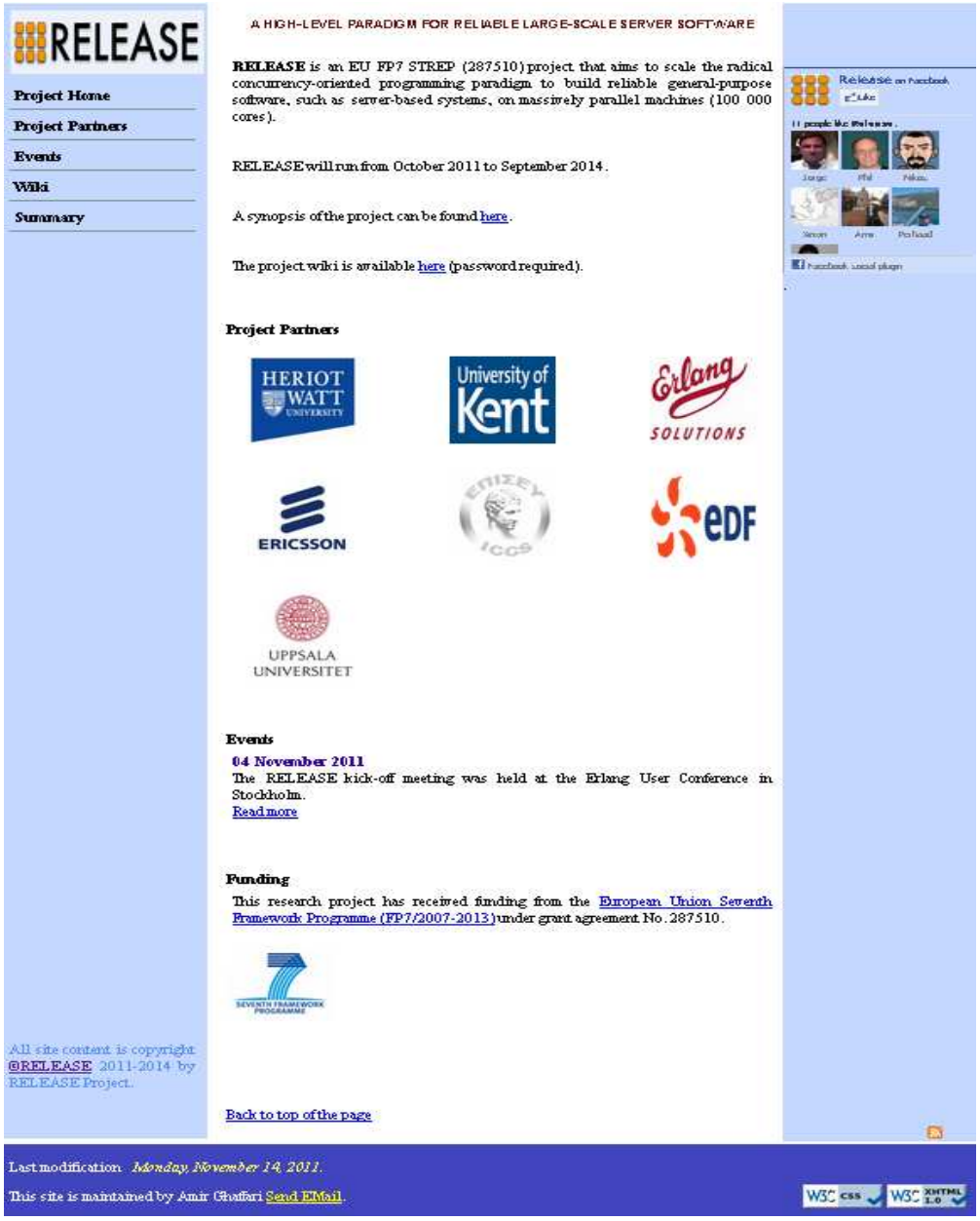

Figure 1: Top Level of the RELEASE Website

Press Release 1

`http://www.erlang-solutions.com/press-releases/3/entry/1253`

2011.07.26

Erlang Solutions Awarded Grants in Excess of £800,000 for Multi-core Computing Research

Erlang Solutions Awarded Grants in Excess of £800,000 for Multi-core Computing Research

Research will help develop and shape the multi-core frameworks of the future

London, 26th July 2011 - Erlang Solutions Limited has been awarded two grants, totalling £800,000, for research into the use of the Erlang programming language in multi-core computing. The grants are funded by the Seventh Framework Programme (FP7) for Research and Technological Development,

the EU's main instrument for funding research in Europe and are part of £6.9 million granted to two consortiums whose partners consist of European companies and universities. Under its Cooperation Programme, research support is provided to international cooperation projects across the European Union and beyond.

Erlang Solutions and its partners submitted proposals for the ParaPhrase and RELEASE projects in answer to FP7's call for proposals on the subject of "Alternative Paths to Components and Systems" in Computing, in its Information and Communication Technologies (ICT) research category. The objective is to achieve breakthroughs in the transition to multi-core architectures across the whole computing spectrum embedded, general-purpose and high-performance computing. This transition affects the underlying hardware, the system software (compilers, tools, OS, etc.) and the programming paradigms.

Titled "Parallel Patterns for Adaptive Heterogeneous Multi-core Systems", the ParaPhrase project addresses a key technical problem that currently limits the use of integrated multi-core parallel systems, despite its potential for both cheap, scalable high-performance computing and for significant reductions in power consumption. The problem is to maintain portable performance across multiple different CPU/GPU combinations. The ParaPhrase project will address this by developing and deploying new high-level design patterns for parallel applications that allow alternative parallel implementations and that can be initially mapped and subsequently re-mapped to the available hardware.

Kevin Hammond, Professor of Computer Science at the University of St Andrews and the ParaPhrase project coordinator said: "It's great to be working with Erlang Solutions and its outstanding team of multi-core experts. The company is a leading commercial provider of Erlang-related research, and will expose our research results to tens of thousands of Erlang programmers around the world. Multi-core is a key area where functional language technologies can make a major impact on the real world. ParaPhrase will take a new pattern-based approach, using advanced software refactoring to build parallel programs from sets of software components that will help programmers 'think in parallel'."

For the RELEASE project, research will be conducted into "A High-level Paradigm for Reliable Large-scale Server Software". The aim is to scale the radical concurrency-oriented programming paradigm to build reliable general-purpose software, such as server-based systems, on massively parallel machines. Concurrency-oriented programming is distinctive, as it is built on highly-scalable lightweight processes which 'share nothing', in contrast to a conventional language that must typically use operating system processes.

Erlang Solutions will lead on designing and engineering the scalable infrastructure and leverage its events expertise to lead on dissemination and exploitation through conferences, publications, training and through the Erlang opensource community. As both a developer of Erlang applications and a training and consultancy provider, it is in a unique position to carry out detailed evaluation of the work, embed its findings in its own development lifecycle and then provide training and promote appropriate techniques to its clients.

"We are delighted to have the opportunity to work on scaling the radical Erlang programming language to build reliable general-purpose software on massively parallel machines," said Philip W. Trinder, Professor in Computer Science in the School of Mathematics and Computer Science, Heriot-Watt University and RELEASE project coordinator. "We believe we have assembled a world-class team from across Europe. As the language is a trend-setter for reliable distributed computing we expect that RELEASE will have a global impact far beyond the burgeoning Erlang community."

"These two grants show Erlang Solutions' commitment to stay at the forefront of Erlang based research, helping Erlang become a winner in the multi-core and cloud computing revolution," commented Francesco Cesarini, Founder and Technical Director at Erlang Solutions. "We are delighted to work with our world class academic and industrial partners. With their support we have been given the opportunity to develop the multi-core frameworks of the future."

Press Release 2

`http://www.erlang-solutions.com/news/1/entry/1276`

2011.11.09

Release Project Launch

While the Erlang User Conference might have been the big event last week, our Stockholm office hosted the kickoff of the Release project. This is a EU funded project whose aim is to scale Erlang to run on machines with hundreds of thousands of cores. The focus will be on the Erlang VM, tool sets and middle-ware needed to write software on these architectures. Erlang Solution's responsibility will include a scalable visualization infrastructure, the middle-ware needed for systems to scale up and down.

We are fortunate to be working with some of the best researchers in the field. The project is coordinated by Heriot-Watt University in Edinburgh. They will also be looking at high level programming patterns. Simon Thompson is leading the team from the University of Kent in Canterbury. They are looking at the tool set needed to manage such systems. The OTP team at Ericsson will be working together with Institute of Communication and Computer Systems (Athens) and Uppsala University and to extend the Erlang VM allowing it to run on such architectures. Finally, we have EDF who will be managing one of the case studies based on their Sim-Diasca simulation framework. They have access to a Blue Gene computer we will be porting Erlang to. You can read more about the project on the official website.

Press Release 3

`http://www.cs.kent.ac.uk/news/2011/MulticoreReleased/`

Multicore released! ... RELEASE project funded by the European Union

Every eighteen months during the last thirty years has seen the power of the computer that can be built on a silicon chip double this has now come to a halt. Instead, chip manufacturers build multiple computers or cores on each chip: nearly all PCs are now 'dual' or 'quad' core, and the number of cores it is possible to put on each chip is growing exponentially.

Building software for these multicore systems requires radically new software development technologies that can exploit the different platform. Instead of programming a single core, the cores have to be programmed to work together in a coordinated way, and in a way that scales with the numbers of cores. The RELEASE project will deliver a scalable and reliable programming platform for multicore, using systems of communicating processes and embodied in the Erlang programming language.

Simon Thompson, Professor of Logic and Computation in the School of Computing is the lead investigator for Kent, and said "I am really excited to be beginning this project with leading researchers from across Europe: Ericsson's OTP group and the Uppsala team are the main implementors of Erlang, and so our work will directly benefit all Erlang users; the groups from Heriot-Watt, Kent and Athens will contribute state of the art tools, and EDF and Erlang Solutions will help us get the design right by working with us on case studies, in EDF's case running Erlang on an IBM BlueGene supercomputer."

Follow Up Article

`http://www.radio-electronics.com/news/design-principles/erlang-wins-800000-for-multi-core-computing-746`

28th July 2011

Erlang wins Euro 800,000 for multi-core computing research

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