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Ita Richardson  
Per Runeson  
Richard Messnarz (Eds.)

# Software Process Improvement

13th European Conference, EuroSPI 2006  
Joensuu, Finland, October 2006  
Proceedings

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Proceedings

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## Preface

This textbook is intended for use by SPI (Software Process Improvement) managers and researchers, quality managers, and experienced project and research managers. The papers constitute the research proceedings of the 13th EuroSPI (European Software Process Improvement, [www.eurospi.net](http://www.eurospi.net)) conference, held in Joensuu, Finland, 11-13 October 2006. The conference was held in 1994 in Dublin (Ireland), 1995 in Vienna (Austria), 1997 in Budapest (Hungary), 1998 in Gothenburg (Sweden), 1999 in Pori (Finland), 2000 in Copenhagen (Denmark), 2001 in Limerick (Ireland), 2002 in Nuremberg (Germany), 2003 in Graz (Austria), 2004 in Trondheim (Norway), and 2005 in Budapest (Hungary). EuroSPI has established an experience library ([library.eurospi.net](http://library.eurospi.net)) which will be continuously extended over the next years and will be made available to all attendees. EuroSPI has also initiated a European Qualification Network in which different SPINs and national initiatives join mutually beneficial collaborations (EQN -- EU Leonardo da Vinci network project).

With a founding conference on 5.12.2006 through EuroSPI partners and networks, in collaboration with the European Union (supported by the EU Leonardo da Vinci Programme), a European certification association will be created for the IT and services sector to offer SPI knowledge and certificates to industry, establishing close knowledge transfer links between research and industry. The biggest value of EuroSPI lies in its function as a European knowledge and experience exchange mechanism for SPI know-how between research institutions and industry.

September 2006

Richard Messnarz  
[www.eurospi.net](http://www.eurospi.net)

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# Software Process Improvement – EuroSPI 2006 Conference

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**Abstract.** This book constitutes the refereed research proceeding of the 13th European Software Process Improvement Conference, EuroSPI 2006, held in Joensuu, Finland in October 2006. The 18 revised full papers presented were carefully reviewed and selected from 62 submissions. The papers are organized in topical sections on SPI (Software Process Improvement) processes, SPI and risk management, measurement, process modelling, human factors, and implementation of SPI.

## 1 EuroSPI

EuroSPI's mission is to develop an experience and knowledge exchange platform for Europe where SPI practices can be discussed and exchanged and knowledge can be gathered and shared. This mission is implemented by three major action lines:

1. An annual EuroSPI conference supported by Software Process Improvement Networks from different EU countries.
2. Establishing an Internet based knowledge library, newsletters, and a set of proceedings and recommended books.
3. Establishing an effective team of national representatives (in future from each EU country) growing step by step into more countries of Europe.

EuroSPI represents a European experience forum collaborating with nearly all SPINs in Europe. EuroSPI offers experiences which can be re-used creating benefits in your own organization.

EuroSPI is a successful initiative since 1994. Annual conferences were held 1994 in Dublin (Ireland), 1995 in Vienna (Austria), 1996 in Brighton (UK), 1997 in Budapest (Hungary), 1998 in Gothenburg (Sweden), 1999 in Pori (Finland), 2000 in Copenhagen (Denmark), 2001 in Limerick (Ireland), 2002 in Nuremberg (Germany), 2003 in Graz (Austria), and 2004 in Trondheim (Norway), 2005 in Budapest (Hungary), 2006 in Joensuu (Finland), and is scheduled /planned 2007 in Berlin (Germany).

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EuroSPI is managed by a partnership of large Scandinavian research companies and experience networks (SINTEF, DELTA, STTF), the ASQF as a large German quality

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SILLITTI Alberto, Free University of Bolzano-Bozen, ITALY  
STALHANE Tor, Norwegian University of Science and Technology, NORWAY  
TUKIAINEN Markku, University of Joensuu, FINLAND

### 1.3 EuroSPI Scientific Chairs

The EuroSPI general chair is responsible for the entire conference, including the research and the industry tracks. The EuroSPI Scientific Program Committee Chairs represent acknowledged scientific experts in the SPI field who coordinate the reviews of papers in collaboration with the members of the scientific program committee.



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## 2 European Certification Association

The EuroSPI group with partners joined a consortium and received EU funding (EU Leonardo da Vinci Network EQN – European Quality Network, 2005 - 2007) to establish a European qualification strategy for job roles, such as SPI manager, project manager, scope manager, innovation manager, etc.) Key job roles are being identified, and all job roles need to fulfil certain European quality criteria to become accredited.

An EU-Certificates association will be founded in December 2006 as an accreditation association, seated in Vienna, managed by EuroSPI partners. All partners of EQN become founding members, plus those who will be invited to the founding conference. Project partners from participating EU projects and programs will join as members as well. Every 2 years a director is elected from all members who will be heading the management team (those managing the EU certificates and the test portal systems).

The services are

- Accreditation of training institutions who offer specific job roles and publishing the list of accredited training institutions
- Accreditation of trainers who offer specific job roles and publishing the list of accredited trainers
- Certification of students and publishing the list of certified students (list of all innovation managers who are certified...etc.)
- Access to the online knowledge library through a flat fee per year

The core group contains 17 organisations, plus approx. 50 European training organisations who will be invited to the founding conference in December 2006.

### 3 How to Read the Proceedings

Since its beginning in 1994 in Dublin, the EuroSPI initiative outlines that there is not a single silver bullet to solve SPI issues but you need to understand a combination of different SPI methods and approaches to achieve concrete benefits. Therefore each proceeding covers a variety of different topics and at the conference we discuss potential synergies and combined use of such methods and approaches. This proceeding contains selected research papers for 6 topics:

- SPI and Processes (3 papers)
- SPI and Problem / Risk Management (3 papers)
- SPI and Measurement (3 papers)
- SPI and Process Modelling (3 papers)
- SPI and Human Success Factors (3 papers)
- SPI Implementation (3 papers).

#### 3.1 Recommended Further Reading

In [1] we integrated the proceedings of 3 EuroSPI conferences into one book which was edited by 30 experts in Europe. In [2] you find the EuroSPI research proceeding published by Springer and based on EuroSPI 2004. In [3] you find the most recent EuroSPI research proceeding published by Springer and based on EuroSPI 2005.

### References

1. Messnarz R., Tully C. (eds.), Better Software Practice for Business Benefit - Principles and Experience, IEEE Computer Society Press, ISBN: 0-7695-0049-8, paperback, 409 pages, Wiley-IEEE Computer Society Press, September 1999
2. Dingsøyr, T. (Ed.) , Software Process Improvement 11th European Conference, EuroSPI 2004, Trondheim, Norway, November 10-12, 2004. Proceedings, 2004, X, 207 p., Softcover, ISBN: 3-540-23725-9, in: Lecture Notes in Computer Science, Vol. 3281 , Springer Verlag, November 2004
3. Richardson I., Abrahamsson P, Messnarz R., (Ed.) , Software Process Improvement 12th European Conference, EuroSPI 2005, Budapest, Hungary, November 9-11, 2005. Proceedings, 2005, X, 213 p., Softcover, ISBN: 3-540-30286-7, in: Lecture Notes in Computer Science, Vol. 3792, Springer Verlag, November 2005



# Developing Software with Scrum in a Small Cross-Organizational Project

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**Abstract.** In an action research study, we describe the application of the scrum software development process in a small cross-organizational development project. The stakeholders in the project report many of the benefits we have found in previous studies, such as increased overview of the project, flexibility and motivation. In addition, we have found that estimation can be challenging in cross-organizational projects due to the customer-provider relationship between the participating organizations.

## 1 Introduction

Agile development has recently attracted much interest because of claims of many improvements on areas such as work performance, quality and work environment. This paper discusses experience with the introduction of Scrum to improve certain aspects of the software development process for a department in a research institute working with mathematical and geographical software. The context is a joint project for, and in cooperation with, a public limited company to develop a digital map application.

The purpose of this paper is to add to the scant literature on empirical studies of software development with Scrum, specifically in a small-team setting comprising developers from two organizations, in this case a public limited company (customer) and a research institute.

The rest of the paper is organized as follows: First we set the theoretical context for the study, summarize previous empirical studies of Scrum, and discuss our research question. Further, we discuss action research, which is the research method applied in this study. We have organized the findings according to the phases of action research: we describe how we diagnosed the development processes at the research institute, how we planned to introduce Scrum, what actually happened when introducing Scrum to a pilot project, and how we evaluate this with respect to the business goal and research goal. Finally, we specify the contributions of this study in relation to the existing empirical knowledge base of Scrum.