

Second International Workshop on From Software Requirements to Architectures (STRAW'03)

Daniel M. Berry
School of Computer Science
University of Waterloo
Waterloo, ON N2L 3G1, Canada
dberry@uwaterloo.ca

Rick Kazman
Software Engineering Institute
Carnegie Mellon University
Pittsburgh, PA 15213, USA
kazman@sei.cmu.edu

Roel Wieringa
Department of Computer Science
University of Twente
7500 AW Enschede, the Netherlands
roelw@cs.utwente.nl

<http://se.uwaterloo.ca/~straw03/>

Abstract

The Second International Workshop on From Software Requirements to Architectures (STRAW'03) was held in Portland, Oregon, USA on 9 May 2003 just after the Twenty-Fifth International Conference on Software Engineering (ICSE'03). This brief paper outlines the motivation, goals, and organization of the workshop

1. Motivation

Over the past 10 years, software requirements engineering and software architecture have been the topic of fastly growing research disciplines.

Requirements engineering has seen the advent of

- goal-oriented approaches,
- scenario-based requirements engineering,
- sociology- and linguistics-based techniques, and
- formal techniques

for identifying and specifying requirements.

Architecture design has seen the advent of

- patterns research,
- architectural style research,

- attribute-based architecture design,
- architecture description languages,
- component-based approaches, and
- product-line architectures.

There is a clear relationship between requirements engineering and architecture design. However, for the most part, the two disciplines have evolved independently from each other, and promising areas of mutual interest remain to be explored. For example, an important type of design research consists of relating classes of problems to classes of solutions. In software engineering, there are interesting connections between software problem patterns and software solution patterns. Recent research in problem frames could therefore be extended by including architecture patterns and investigating relationships between the two kinds of patterns.

The patterns paradigm may be extended by including the wider business context, consisting of business processes, actors, and strategies. In this wider context, the problem is one of alignment of software architecture with business architecture. Here, domain knowledge may be codified using reference architectures.

A third area of potential fruitful interaction is that of component-based development. Assembling components into a system requires an architecture that mediates between the system requirements and the requirements on the components. More generally, when we extend our view from

a single system to a hierarchy of systems, the interplay between requirements and architectures is a central guiding principle in system design.

2. Goal

The goal of the workshop was to bring together researchers from the requirements engineering and architecture communities to exchange views and results that are of mutual interest, and to discuss topics for further research. Topics of interest included, but were not limited to, the following list.

- Deriving architecture descriptions in concert with requirements specification
- Attribute-based architecture design
- Tracing architectural decisions to requirements
- Evolving architectures and requirements
- Alignment between software architecture and business architecture
- Relating architecture patterns to requirements patterns
- Reference architectures
- Reuse of requirements and architectures
- Systems engineering approaches
- Formal foundations of the requirements–architecture relationship
- Requirements and architecture specification languages
- Tools and environments for requirements engineers and software architects

3. Participant Selection

A maximum of 30 participants were selected on the basis of the submitted material. Papers were reviewed by a program committee in terms of their relevance to the aims of the workshop and technical content.

4. Program Committee

- Daniel Berry (co-chair), Canada
- Jaelson Castro, Brazil
- Anthony Finkelstein, UK
- Jaap Gordijn, Netherlands

- Carlo Ghezzi, Italy
- Rick Kazman (co-chair), USA
- Manuel Kolp, Belgium
- Jeff Kramer, UK
- Axel van Lamsweerde, Belgium
- Jeff Magee, UK
- John Mylopoulos, Canada
- Bashar Nuseibeh, UK
- Dewayne Perry, USA
- Roel Wieringa (co-chair), Netherlands

5. Workshop Structure and Activities

The workshop was closed. Participation was based upon the submitted papers, the best of which were presented. All papers were distributed to the participants before the workshop started. Each presented paper was assigned an opponent, who presented a brief counterpoint to the paper. During the day, participants proposed issues to be discussed at the end of the day. The workshop led to a list of issues discussed, conclusions reached, disagreements identified, and topics to be researched further.

6. Workshop Outputs

All papers, counterpoints, and discussion summaries were made available electronically at the workshop website at <http://se.uwaterloo.ca/~straw03/> soon after the workshop. The site aims to highlight outstanding issues that should be the focus of future research in the area.