

# Panel: Critical Issues in Software Evolution

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The purpose of this panel on critical issues in software evolution is to summarize, generalize and report on the discussion sessions at the International Workshop on the Principles of Software Evolution (one of the sponsored workshops at ICSE98 which met on April 20-21, 1998).

The workshop was organized by Bob Balzer (Information Science Institute), Carlo Ghezzi (Politecnico di Milano), Takuya Katayama (Jaist), Jeff Kramer (Imperial College), David Notkin (University of Washington), Dewayne Perry (Bell Laboratories) and Akinori Yonezawa (University of Tokyo). The panelists will be chosen from the organizers and participants on the basis of their contribution to the workshop.

As noted in the title, the panel will discuss what arises in the discussions as critical issues in software evolution. Software evolution is widely recognized as one of the most important problems in software engineering. Despite the significant amount of work that has been done, there are still fundamental problems to be solved. This is partly due to the inherent difficulties in software evolution, but also due to the lack of basic principles for evolving software systematically. The purpose of this workshop is to discuss principles and mechanisms for software evolution.

Topics to be discussed at the workshop (and which are likely to be included in the panel discussions) include, but are not limited to

- principles of evolution:
  - theories of evolution
  - computational models
  - empirical study of evolution
  - principles of architectural, design, and implementation evolution

- design methodologies for evolutionary system
- mechanisms to support evolution:
  - adaptation and reconfiguration
  - language and system constructs
  - processes, methods, tools and environments
  - analysis and reasoning
  - inconsistency management
  - change implication and propagation
  - evolution across families and versions
  - evolution in network/web-based development

The workshop is organized in cooperation with the IEEE Computer Society, ACM SIGSOFT, the Japanese Society for Software Science and Technology, the Software Evolution Project supported by Ministry of Education of Japan, and the Software Development Methodology Project supported by JSPS.