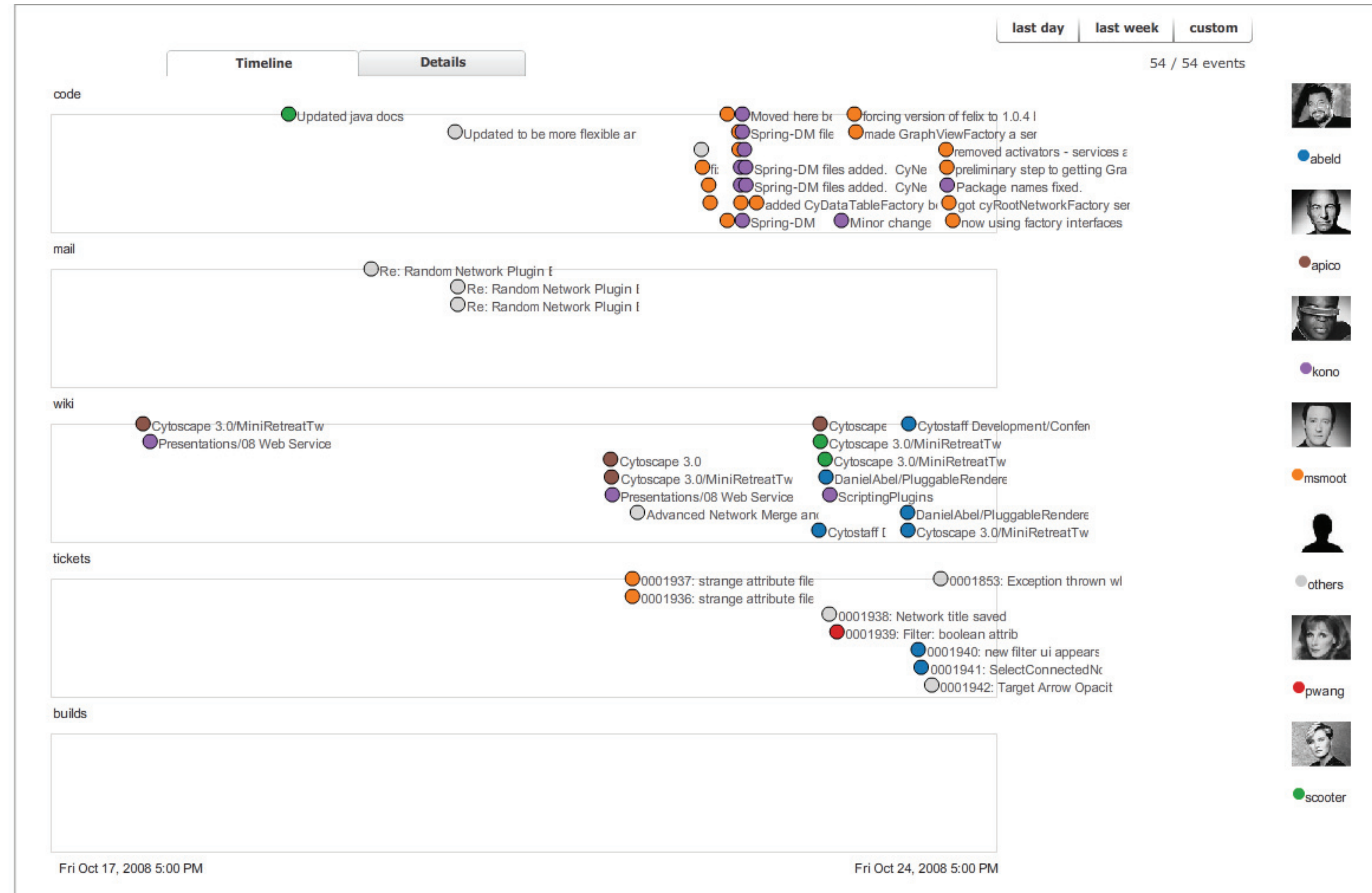


A Visual Awareness Tool for Software Developers: Exploring Real-life Usage Scenarios

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What is Awareness?

- Awareness can mean different things in different domains
- Previous exploratory case studies contribute to an emerging understanding of awareness in software development [1,2,3,4]
- Consistent evidence suggests two awareness components in software development: an awareness of peer activities and an awareness of changes to shared resources (artifacts)

Existing Tools to Support Awareness

- Researchers have proposed multiple tools to support awareness in software development [5]
- Existing tools typically employ a visual, dashboard-like interface
- Evaluation techniques for existing tools have room for improvement
- Existing tools typically focus on awareness with respect to one type of artifact: source code
- There is a chronic lack of understanding of how these tools can be used in real-life environments

[1] Ko et al., Information Needs in Collocation Software Development Teams, ICSE 2007
[2] LaToza et al., Maintaining mental models: a study of developer work habits, ICSE 2006
[3] Gutwin et al., Group Awareness in Distributed Software Development, CSCW 2004
[4] Damian et al., Awareness in the Wild: Why Communication Breakdowns Occur, ICGSE 2007
[5] Storey et al., On the Use of Visualization to Support Awareness of human activities in software development: a survey and a framework, ACM symposium on Software visualization, 2005

Research Questions

- What user motives trigger tool engagement?
- What information do users seek?
- What actions result?
- How does usage vary? Are there patterns?
- Is there a social/cultural aspect to using the tool?

Study and Data Collection

- Multiple case study; unit of analysis is the tool user
- Tool will be deployed into two software development organizations for three weeks
- Tool is instrumented to record all user actions
- Weekly log books ask participants to develop stories of their usage scenarios
- Tool allows direct user feedback
- Post-study interviews explore social/cultural aspects of using the tool

Tool Overview

- Integrates awareness information from multiple sources into a single interface: code, mail, documentation, tickets, and continuous builds
- Employs a visual timeline view for a quick overview of recent software project events, as well as an email client-like view to expose more event content
- Runs in a web browser using Flash Player
- UI is supported by a system of back-end services

