Universal Traceability

A Comprehensive, Generic, Technology-Independent, and Semantically Rich Approach

by Hannes Schwarz

DESCRIPTION:

Traceability describes the ability of stakeholders to understand and follow relationships between artifacts that play some role in software development. It is essential for many development tasks, e.g., quality assurance, requirements management, or software maintenance. Aiming to overcome various deficiencies of existing traceability concepts, this book presents a universal approach describing required features of traceability solutions. This includes a technology-independent, generic template for the definition of semantically rich traceability relationship types and technology-independent patterns for the retrieval of traceability information, reflecting generic problems common to traceability applications. The universal approach is implemented on the basis of two concrete technologies which facilitate comprehensive traceability: the TGraph approach and OWL ontologies. The applicability of the approach is shown by three case studies dealing with the reuse of software artifacts, process model refinement, and requirements management, respectively.