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Using CASL to specify the requirements and the design: A problem specific approach.
(English) [Zbl 0966.68583]

Summary: In 1995, M. Jackson introduced the concept of problem frame to describe specific classes of problems, to help in the specification and design of systems, and also to provide a framework for reusability. He thus identifies some particular frames, such as the translation frame (e.g., a compiler), the information system frame, the control frame (or reactive system frame), ... Each frame is described along three viewpoints that are application domains, requirements, and design.

Our aim is to use CASL (or possibly a sublanguage or an extension of CASL if and when appropriate) to formally specify the requirements and the design of particular classes of problems (“problem frames”). This goal is related to methodology issues for CASL, that are here addressed in a more specific way, having in mind some particular problem frame, i.e., a class of systems.

It is hoped that this will provide both a help in using, in a really effective way, CASL for system specifications, a link with approaches that are currently used in the industry, and a framework for the reusability. This approach is illustrated with some case studies, e.g., the information system frame is illustrated with the invoice system.

For the entire collection see [Zbl 0947.00036].

MSC:
68U99 Computing methodologies and applications
68Q65 Abstract data types; algebraic specification

Software:
CoFI