Abstract

This paper describes the knowledge-based system techniques, such as program transformation and artificial intelligence techniques, used to design a reliable protocol. Program
transformation techniques can be used in deriving protocol specifications. AI techniques, such as search algorithms and theorem proving, can be used to reduce the global space search. AI techniques can also be used to help correctness proving in protocol validation and verification. This study is based on the Alternative Bit Protocol (ABP).

References


Using Knowledge-based System Techniques in the Protocol Design Process


**Index Terms**

Computer Science  
Artificial Intelligence

**Keywords**

Axioms  
Correctness proving  
Deductive inference  
Intelligent assistant

Knowledge-based system  
Interface engine  
Protocol validation  
Protocol verification
Reachability analysis