Li, Ximeng; Nielson, Flemming; Riis Nielson, Hanne

Factorization of behavioral integrity. (English) [Zbl 07573643]


Summary: We develop a bisimulation-based noninterference property that describes the allowed dependencies between communication behaviors of different integrity levels. The property is able to capture all possible combinations of integrity levels for the “presence” and “content” of actual communications. Channels of low presence integrity and high content integrity can be used to model the effect of Message Authentication Codes or the consequence of Denial of Service Attacks. In case the distinction between “presence” and “content” is deliberately blurred, the noninterference property specialises to a classical process-algebraic property (called SBNDC). A compositionality result is given to facilitate a structural approach to the analysis of concurrent systems.

For the entire collection see [Zbl 1492.68027].

MSC:

68M25 Computer security
68Q85 Models and methods for concurrent and distributed computing (process algebras, bisimulation, transition nets, etc.)
94A60 Cryptography

Full Text: DOI