

## **A temporal defeasible logic for handling access control policies**

### **Abstract**

Access control policies are specified within systems to ensure confidentiality of their information. Available knowledge about policies is usually incomplete and uncertain. An essential goal in reasoning is to reach conclusions which can be justified. However, since justification does not necessarily guarantee truth, the best we can do is to derive “plausible/tentative” conclusions from partial and conflicting information. Policies are typically expressed as rules that could be complex and include timing constraints. Complex sets of access policies can contain conflicts e.g., a rule allows access while another rule prevents it. In this paper, we aim at providing a formalism for specifying authorization policies of a dynamic system. We present a temporal defeasible logic (TDL) which allows us to specify temporal policies and to handle conflicts. It can be shown that the proposed model is a generalization of the role-based access control model. © 2015 Springer Science+Business Media New York