

Access control policies typically take the form of a set of static rules pertaining to individual entities under control. This can be impractical in real-world scenarios: authorization invariably depends on wider situational context which often tends to be highly dynamic. This leads to increasingly complex rules, which have to change over time to reflect the evolution of the controlled system.

Ensemble-based architectures allow dynamic formation of goal-oriented groups in systems with large number of independent autonomous components. Because of the ad-hoc and situation-aware nature of group formation, ensembles offer a novel way of approaching access control.

The goal of this work is to design a Scala framework and internal DSL for describing access control related situations via ensembles. In particular, the framework will define ensemble semantics suitable for evaluating the ensembles and establishing access control at runtime.