Chapter 1 - Introduction

The aim of this paper is to explore the semantics of the group announcement operator in group announcement logic, attempt to enumerate the set of formulas a coalition can announce in a given state and finally implement a set of algorithms based on these logical definitions that can be used in model checking software.

Reasoning about coalitional ability and

Epistemic logic in general

Motivation In some year, some people released a paper on Group Announcement Logic, which does stuff and has an operator for evaluating the ability of a coalition of agents to share knowledge with other agents. The way it does this is by checking if there exists a set of formulas the coalition can announce such that the original formula becomes satisfied. This existential quantifier over an infinite set of legal formulas however also makes it rather challenging to write model checking algorithms for.

* Discuss different approaches towards coalitional ability in dynamic epistemic logic, * $\langle G \rangle \varphi$ expresses the fact that coalition G has the ability to make φ come about