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| Normative system | $\mathcal{N} := \langle \mathcal{E}, \mathcal{F}, \mathcal{G}, \mathcal{C}, \Delta \rangle$ |
| Events, comprising exogenous, (normative) actions and (normative) violations | $\mathcal{E} = \mathcal{E}_{ex} \cup \mathcal{E}_{inst}$ with $\mathcal{E}_{inst} = \mathcal{E}_{act} \cup \mathcal{E}_{viol}$ |
| Normative facts (fluents): power, permission, obligations and domain-specific facts | $\mathcal{F} = \mathcal{W} \cup \mathcal{P} \cup \mathcal{O} \cup \mathcal{D}$ |
| Generation relation: maps state and event to a set of events | $\mathcal{G} : \mathcal{X} \times \mathcal{E} \rightarrow 2^{\mathcal{E}_{inst}}$ |
| State formula: the set of positive and negative fluents comprising the current normative state | $\mathcal{X} = 2^{\mathcal{F} \cup \neg \mathcal{F}}$ |
| Consequence relation: maps state and event to a pair (additions, deletions) of sets of fluents | $\mathcal{C} : \mathcal{X} \times \mathcal{E} \rightarrow 2^{\mathcal{F}} \times 2^{\mathcal{F}}$ where $C(X, e) = (\mathcal{C}^{\uparrow}(\varphi, e), \mathcal{C}^{\downarrow}(\varphi, e))$ where (i) $\mathcal{C}^{\uparrow}(\varphi, e)$ initiates a fluent (ii) $\mathcal{C}^{\downarrow}(\varphi, e)$ terminates a fluent |
| The initial set of fluents | Δ |