

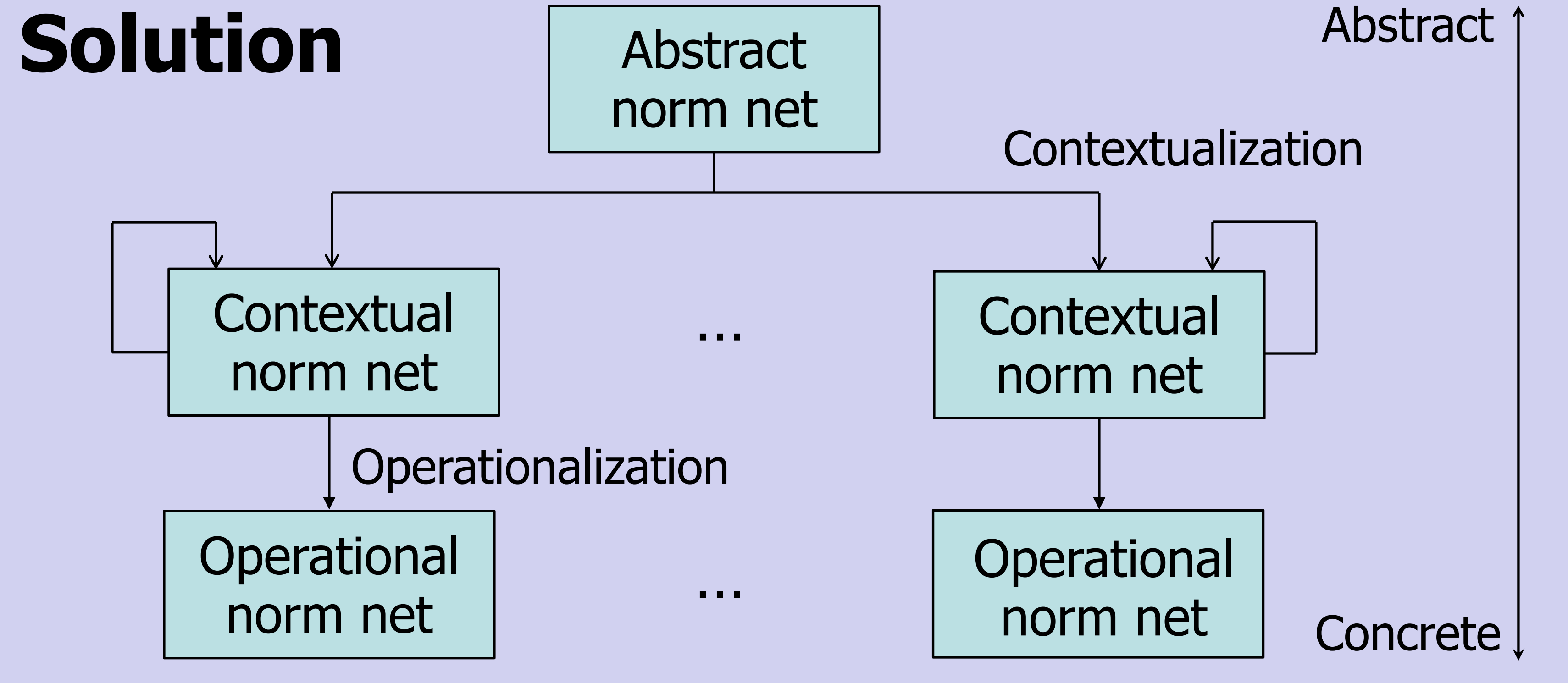
A Context-aware Normative Structure in MAS

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Motivation

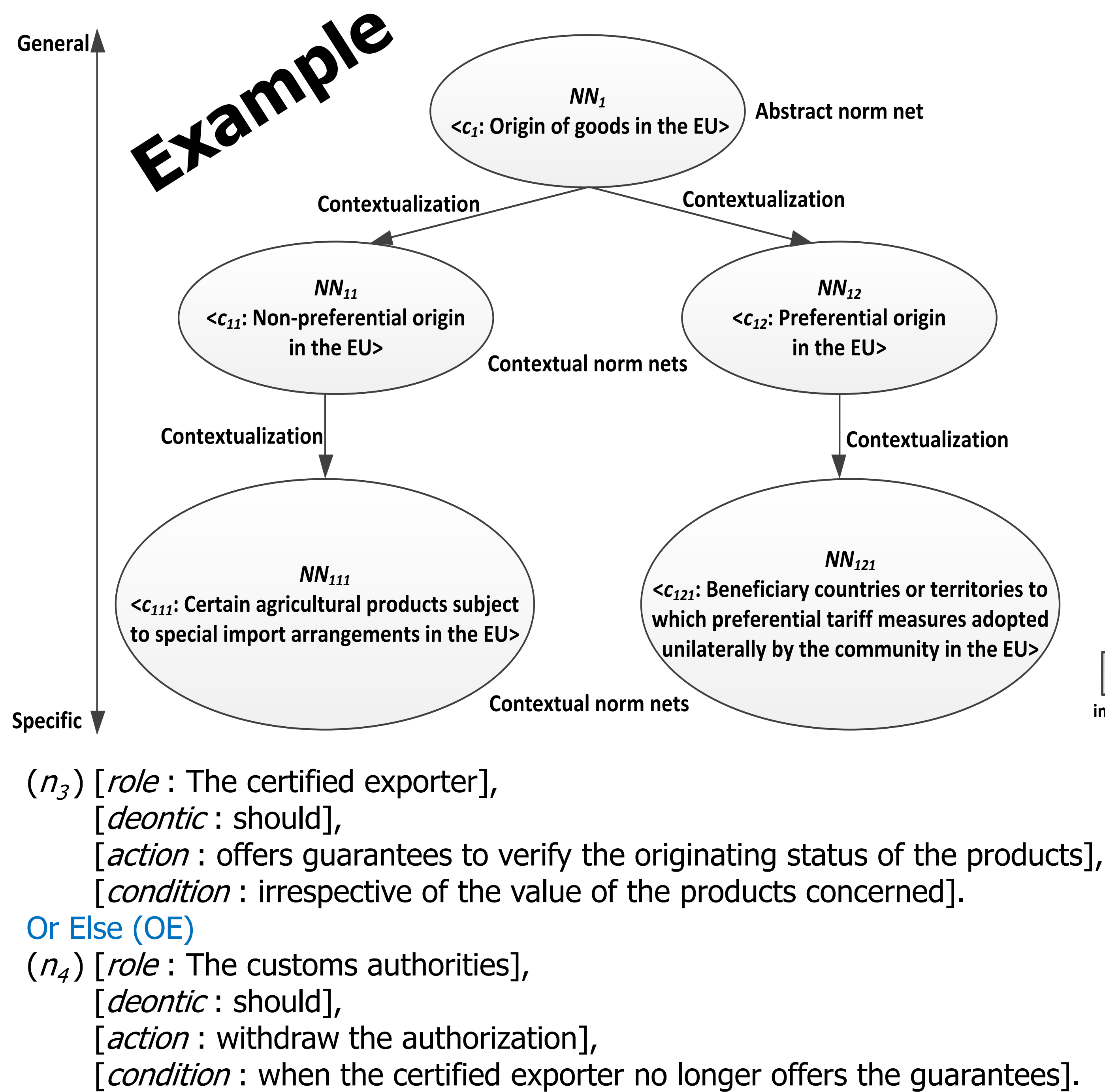
- Norms are not independent with each other.
- Norms are applied in a specific domain determined by the values of related situational variables.
- Norms are not formed at a single level of abstraction.

Solution

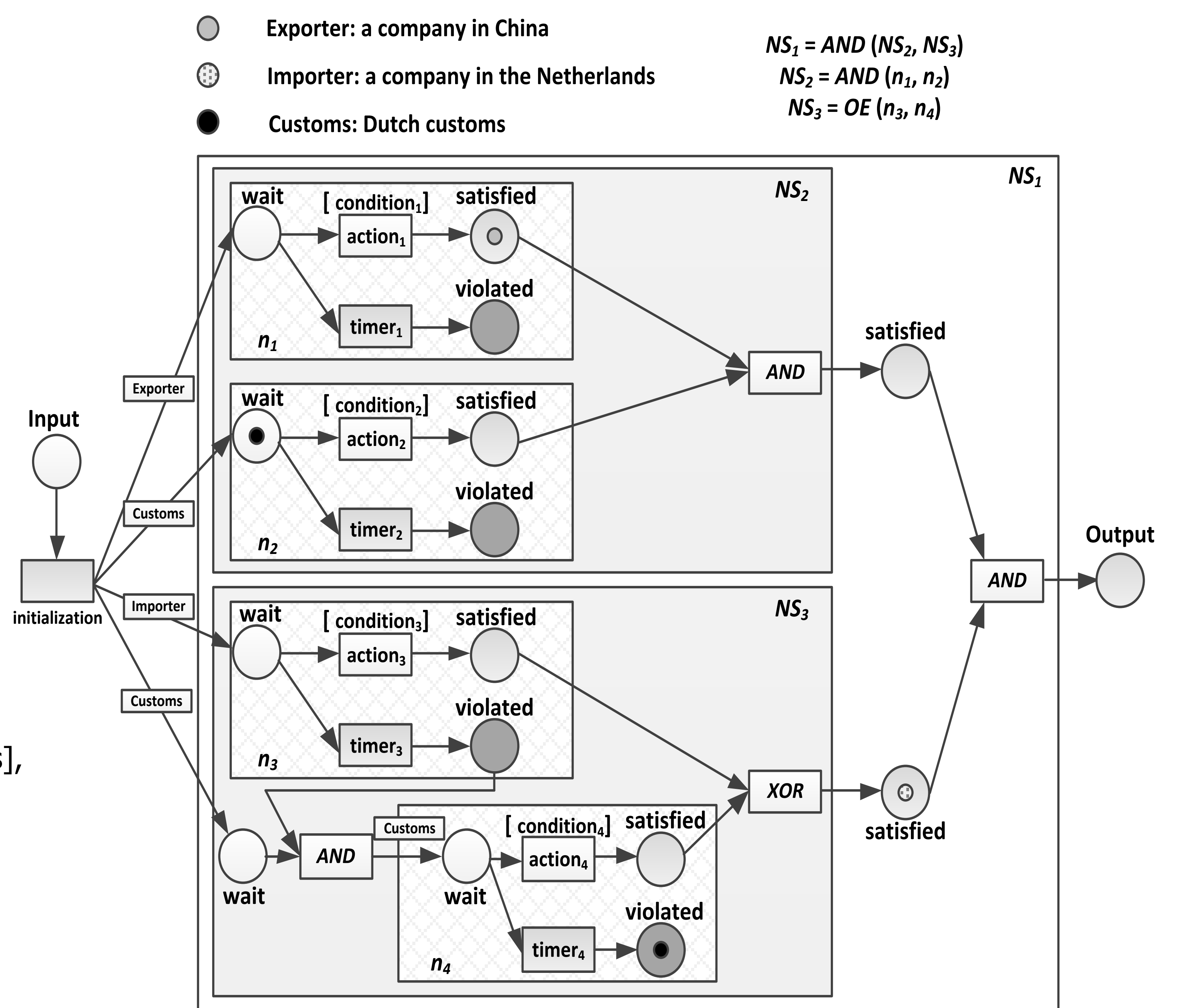


Key Concepts

- Norm $n = (role, deontic, action, condition)$.
- Norm net $NN = (c, NS)$ where
 - $context\ c$ is an abstraction of the application domain of NN determined by situational variables related to individuality, activity, time, location, relation, etc.,
 - $NS = n$, or $NS = AND(NS_i, NS_j)$, or $NS = OR(NS_i, NS_j)$, or $NS = OE(NS_i, NS_j)$.
- A norm net $NN' = (context', NS')$ is a contextualization of another norm net $NN = (context, NS)$ if their ontologies are unified and $context' \subseteq context$.



Verification: Norm net mapping to CPN



Conclusions

The proposed normative structure

- captures the interrelationships between norms.
- captures the institutional contexts of norms.
- provides a norm net contextualization process.
- provides a mapping of norm nets to CPNs.

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