

eNegotiation for Logistics Resource Reservation

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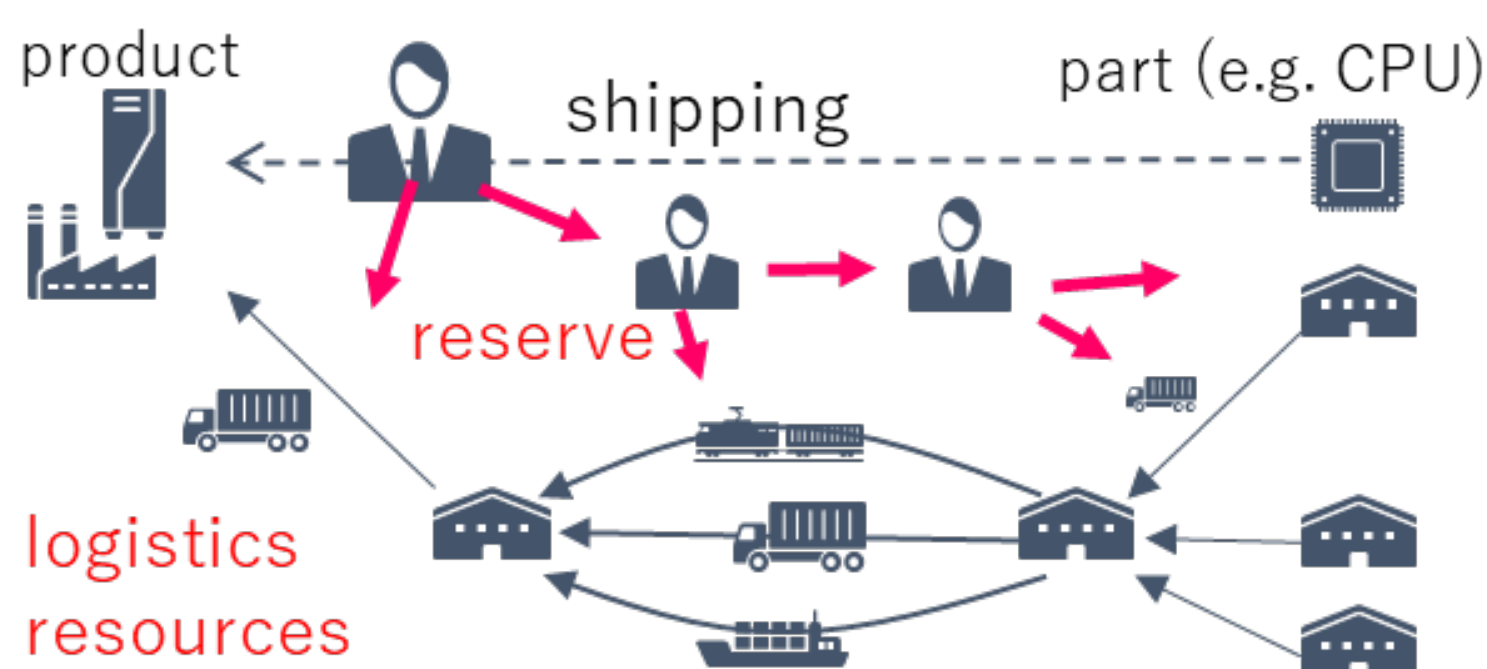
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Introduction

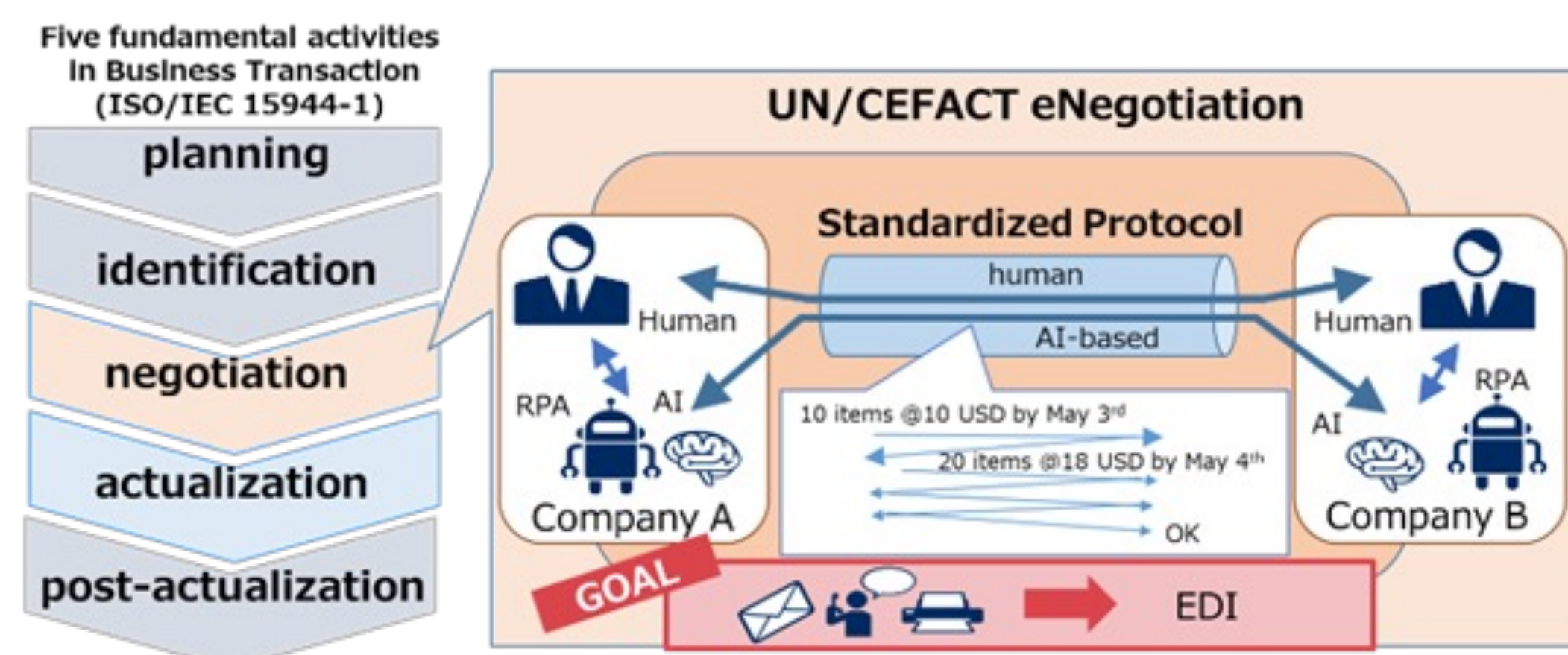
Logistics resources shared on the Physical Internet should be seamlessly reserved (c.f. RSVP : Resource reSerVation Protocol). Negotiation among stakeholders is one of the key activities.



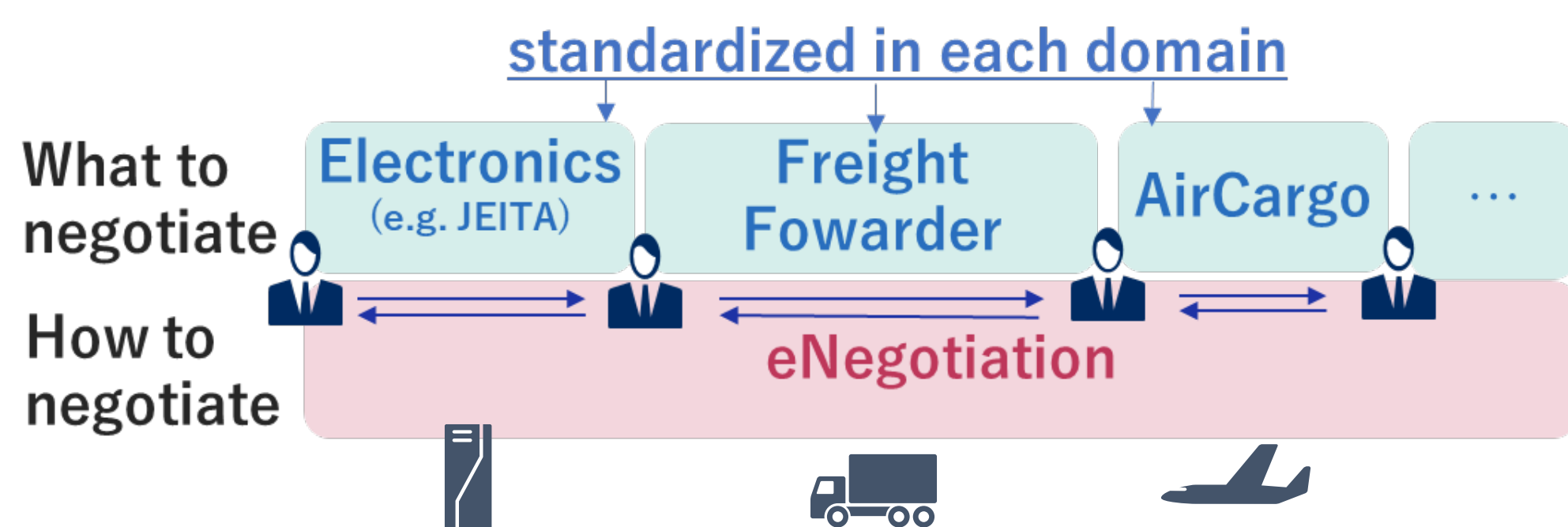
Objectives

Analogue negotiation communication (e.g. mail, telephone) should be replaced with a standardized digital protocol.

https://unece.org/sites/default/files/2021-11/BRS-eNego_v0.7.pdf



The protocol should not depend on the semantics of what to negotiate, but define the semantics of how to negotiate so that chained negotiation can be supported.

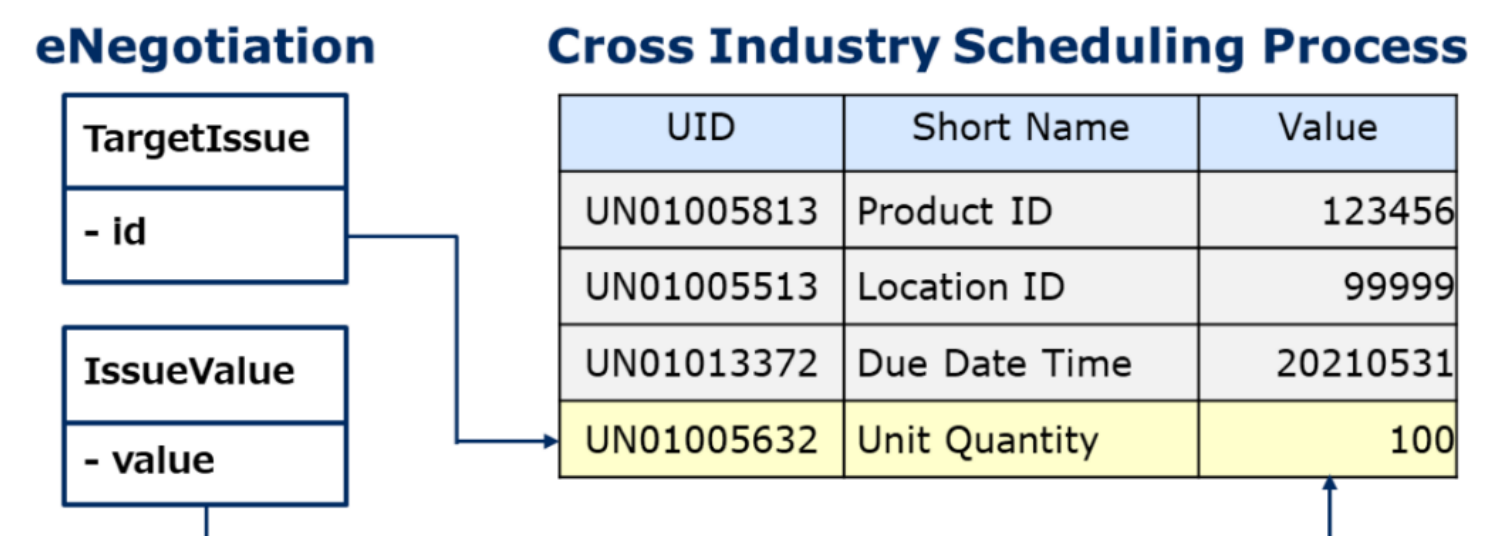


Chained negotiation among several business domains is useful to manage Scope3 emissions of GHG.

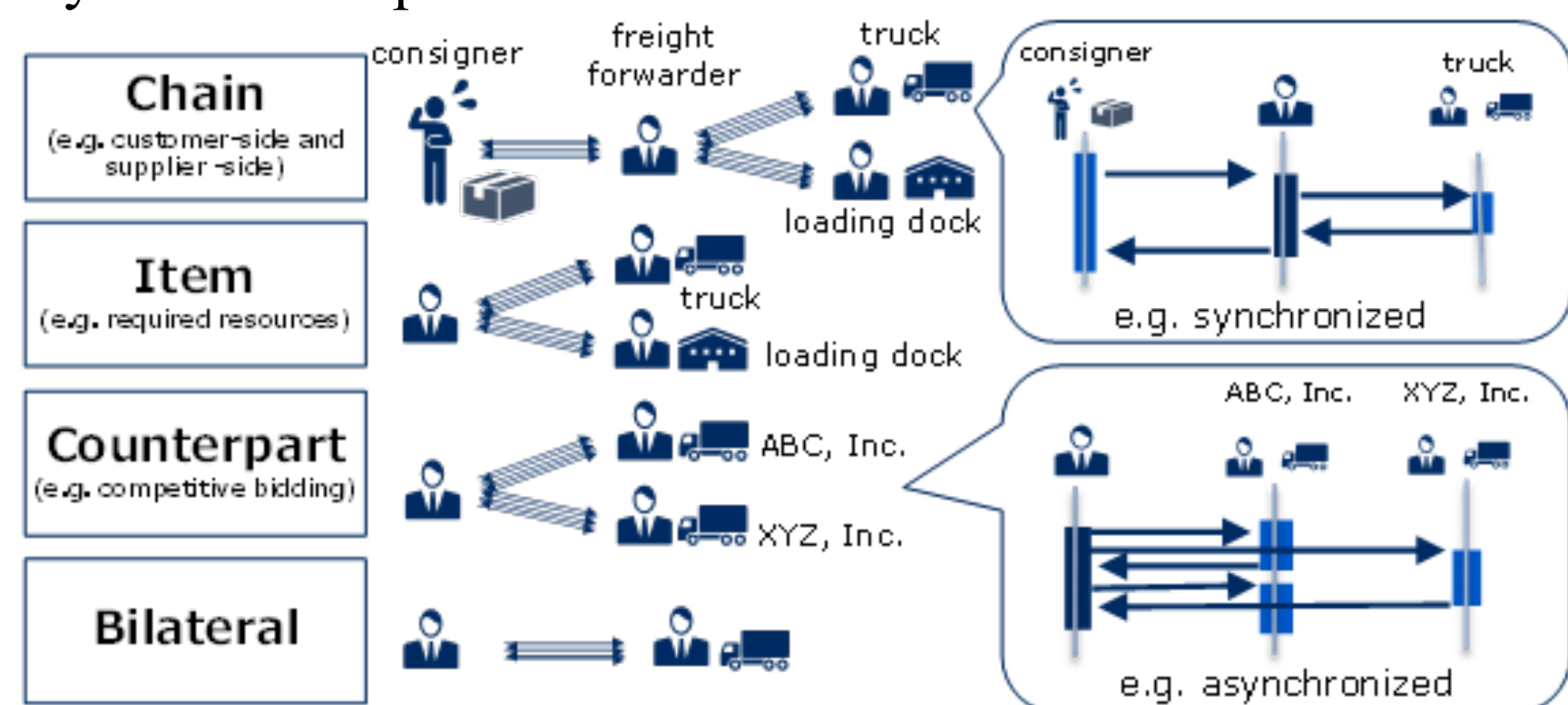


Methods

To represent negotiation issues in various business domains, eNegotiation defines how to specify target issue in a neutral way.



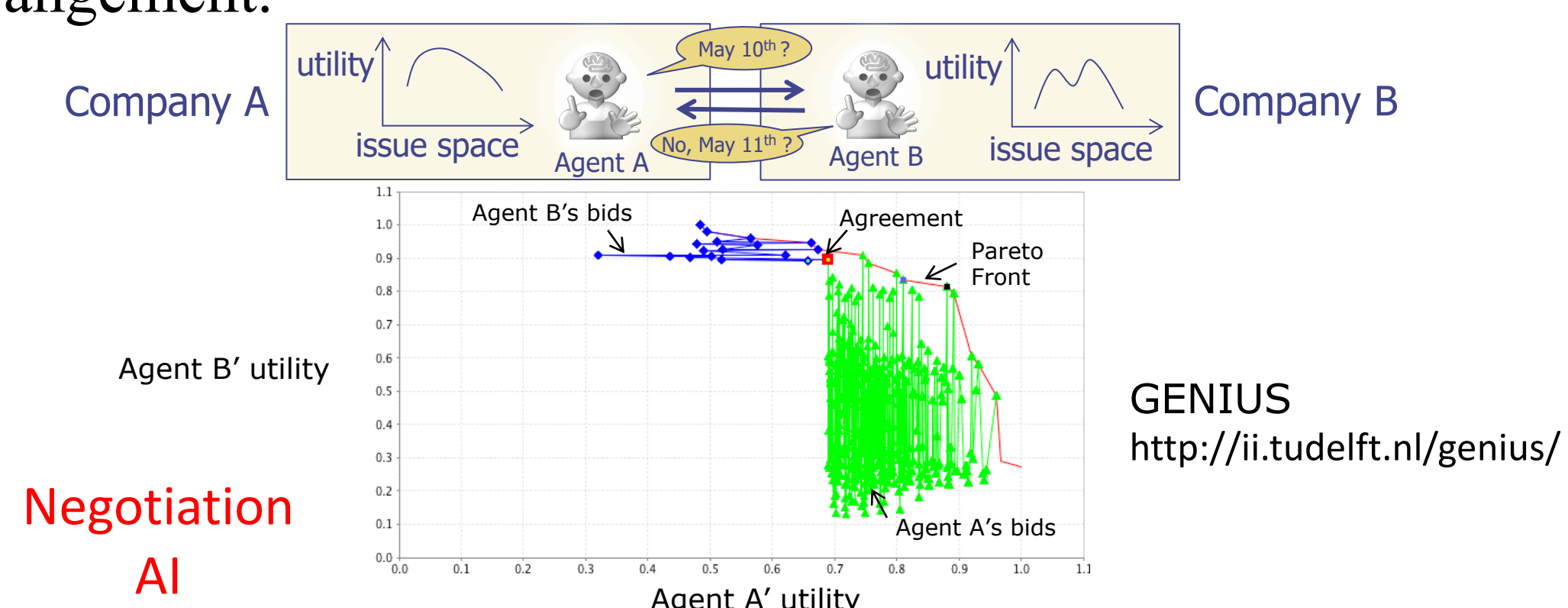
To support real logistics arrangement, eNegotiation has four layers and each layer has synchronized protocol and asynchronous protocol.



- Chain** A negotiation request from a customer triggers nested negotiations to suppliers.
- Item** Several items are required to be negotiated to provide a certain service or product.
- Counterpart** Several counterparts are involved in the negotiation for a certain item.
- Bilateral** Several message are exchanged in a single session with a certain counterpart.

Extentions

Negotiation AI, which has been studied in the filed of AI and Game Theory, enables to automate negotiation. One-sided AI, or chatbot, is also useful to increase the efficiency of logistics arrangement.



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