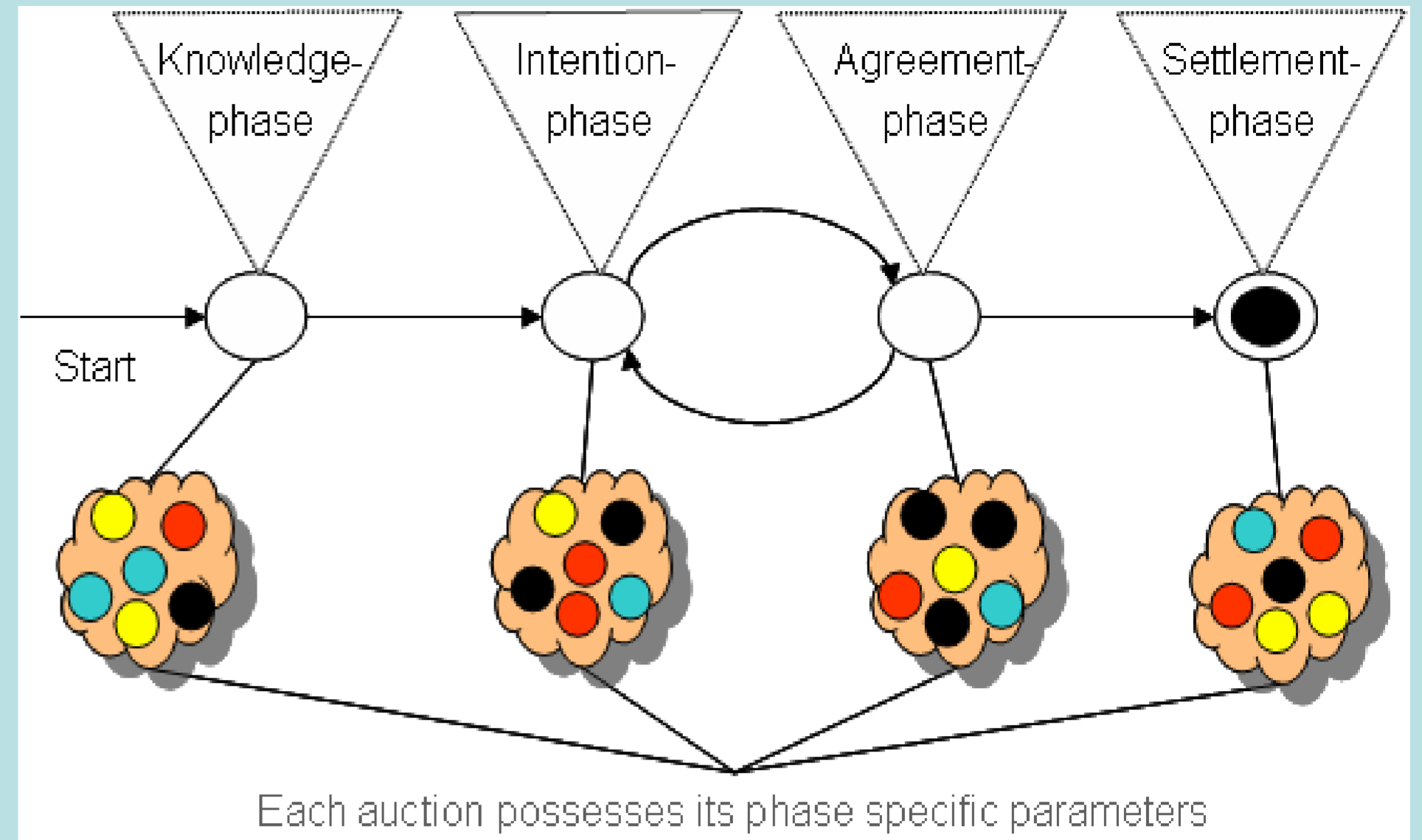


P-Trade – the Generic P2P Trading Platform

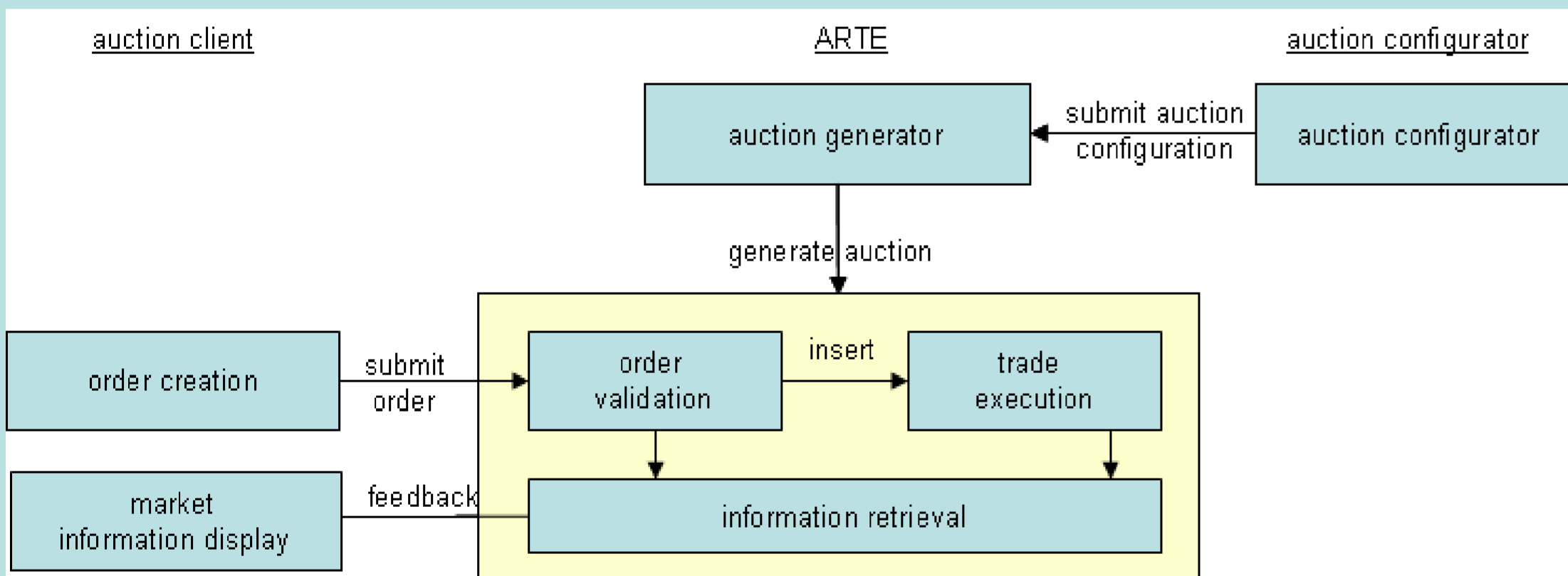
Foundations

- Auctions are negotiation mechanisms that are used to organize the exchange of goods and services.
- Almost everything that can be bought and sold may be exchanged in electronic auctions.
- Auctions vary in type and form.
- Negotiations possess a common negotiation process consisting of specific phases.
- Each phase configurable with a phase specific set of parameters.
- The configuration of the negotiation phases determine the auction.
- The specific configuration depends on multiple factors like traded good, participants, information available on the value of the traded good, etc.



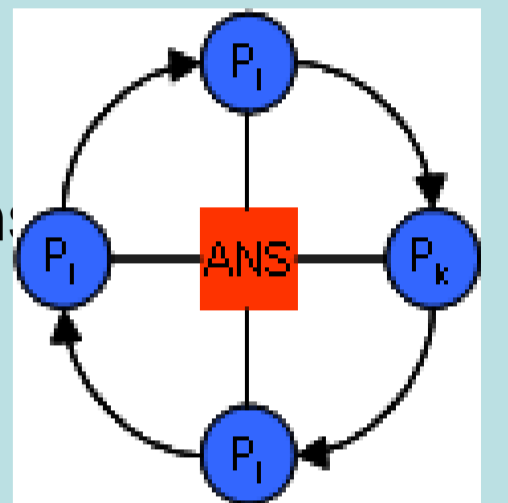
The roles and main functionalities of each P in P-Trade

- P as auction runtime environment ARTE
 - communicates with ANS
 - generates auctions running in ARTE
- P as a generic auction client
 - adapts requirements given by the traded good and auction specification
 - Present market and order information
- P as an auction configurator
 - configures new auctions
 - auction configuration based on auction families
 - reconfiguration of running auctions



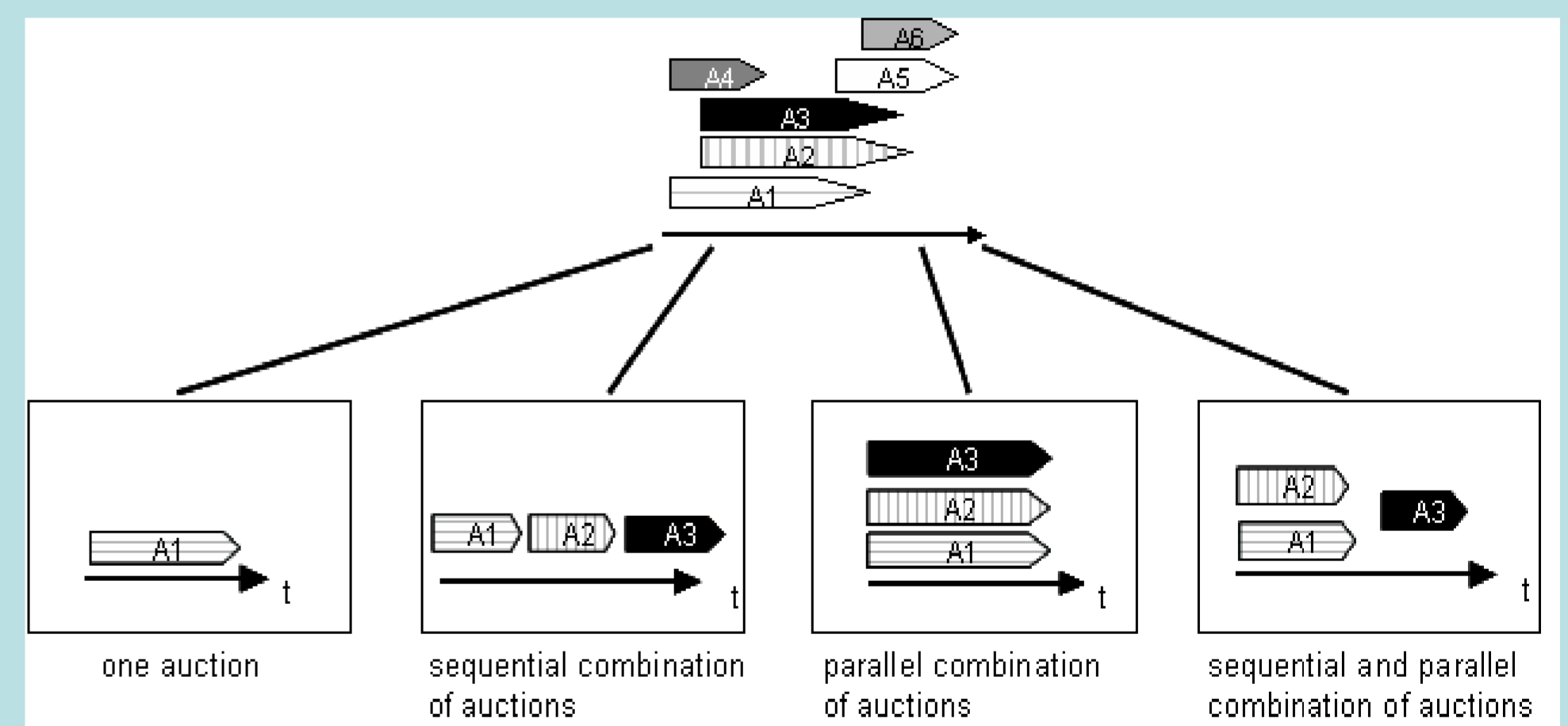
The system architecture of P-Trade

- A central auction name server (ANS) containing information about running auctions
- Each peer (P) registers to the ANS
- ANS delivers information about running auctions to Ps



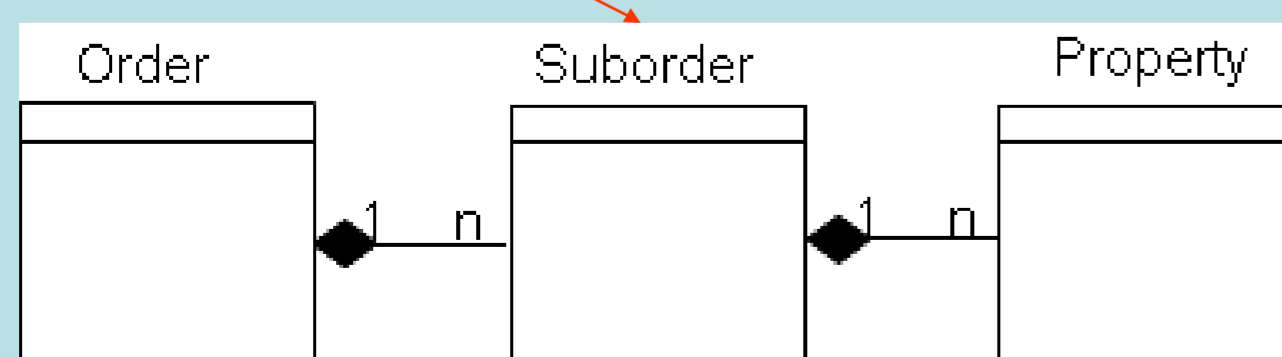
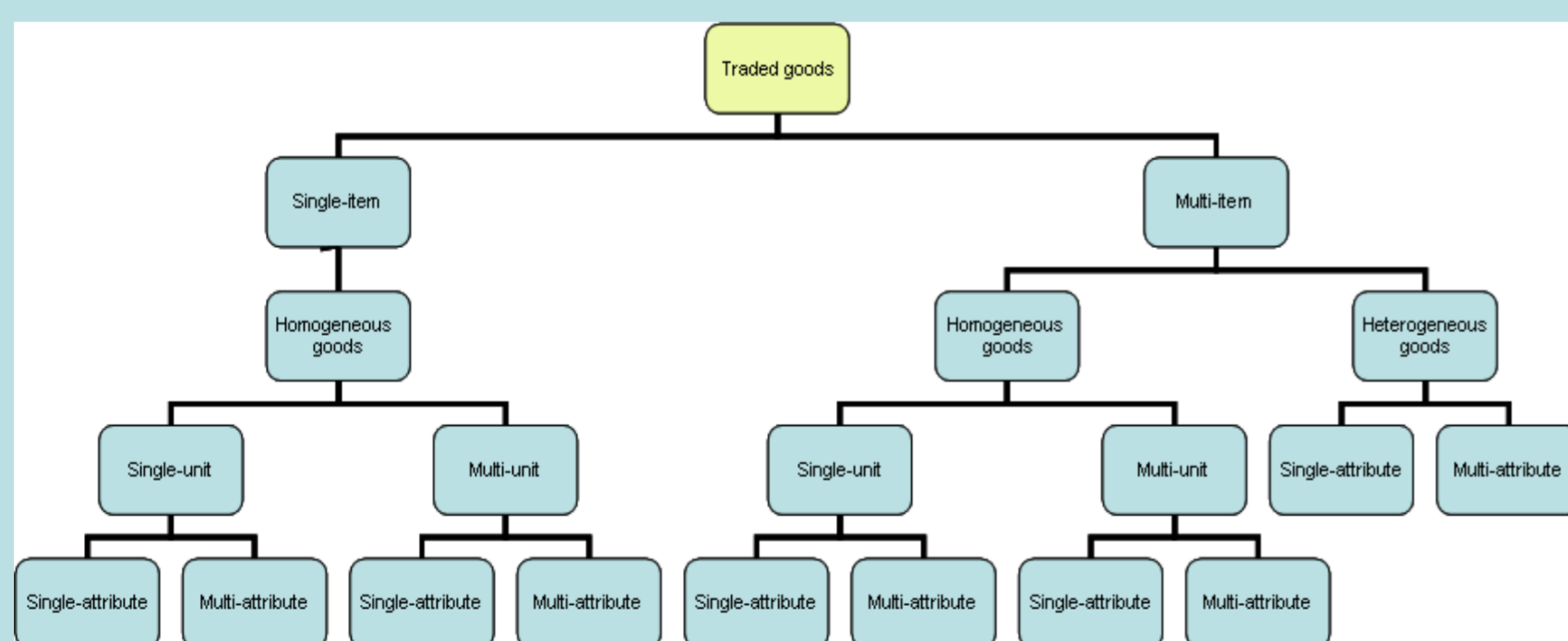
Each P in P-Trade supports complex market structures

- Complex market structures containing multiple auctions
- Any kind of combination of auctions conceivable



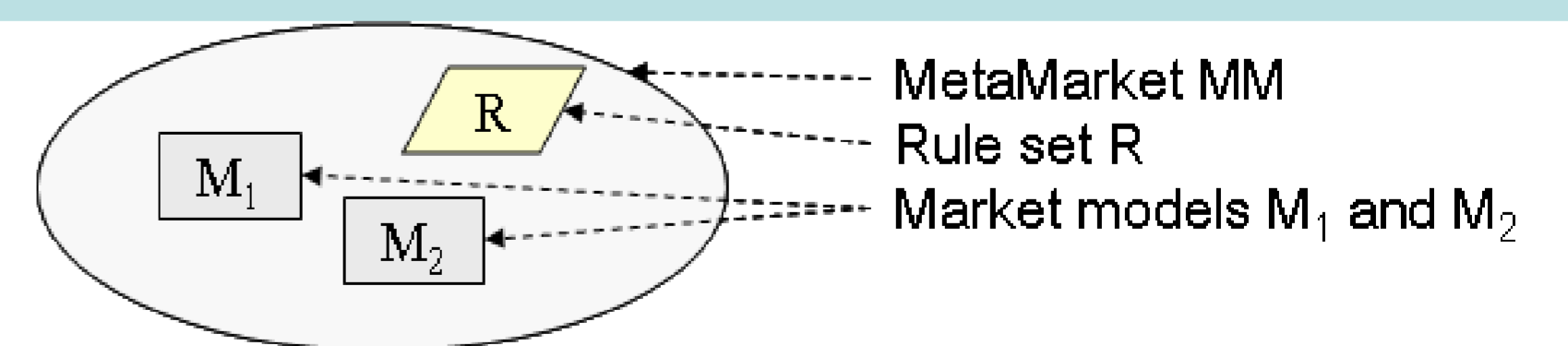
P-Trade supports the auctioning of any kind of products

- Dynamic property-based description of products enable the specification of any kinds of products.



Each P in P-Trade manages complex market structures

- The MetaMarket construct to manage complex market structures
- Auction life-cycle managed by rules
- Rules are based on auction exogenous and endogenous events



$$MM := (M_1, M_2, \dots, M_k, R_1, R_2, \dots, R_n), k, n \in \mathbb{N}, R_j \in \{R_x^f, R_y^e\}, x, y \in \mathbb{N}$$