

Connection models for the Internet- of-Things

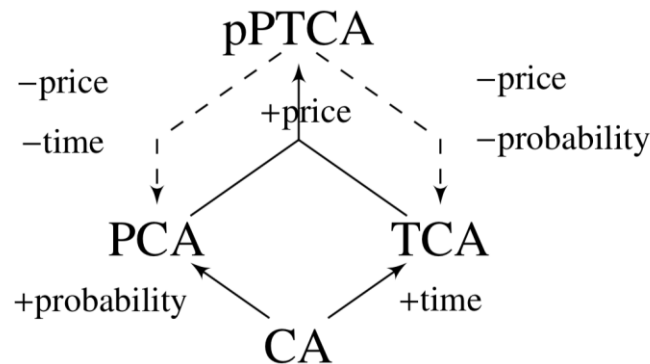
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Problems & Ideas

- Problems of accurate modelling and verification for the Internet-of-Things
 - Easy-understanding formalism and able to be verified
 - Rich expression of IoT features
- Ideas: Constructing the model based on Reo with priced, probabilistic and timed expression as a whole
 - Model: pPTReo (semantics pPTCA)
 - Specification: pPTDL

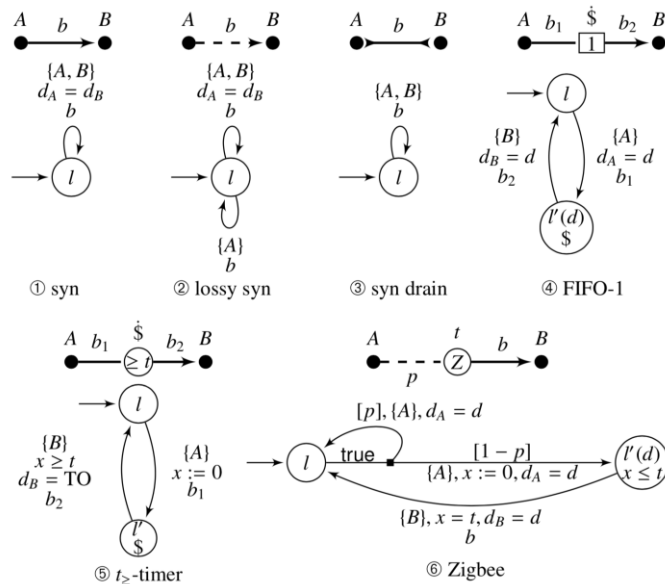
- **Pedigree of pPTCA**



Main Contributions

- Developing models pPTReo/pPTCA dedicated for IoT systems
- Proposing an expressive logic pPTDL for specification of IoT properties

• pPTReo/pPTCA of channels



• pPTDL syntax

$\phi ::= \text{true} \mid \neg\phi \mid \phi_1 \wedge \phi_2 \mid \mathbf{P}_{\sim p}[\psi] \mid \mathbf{R}_{\sim b}^{\text{rew}}[l]$

$\psi ::= \text{true} \mid \langle\langle \gamma \rangle\rangle\psi \mid \psi_1 \mathbf{U} \psi_2$

$\iota ::= A^k \mid F\phi \mid L\psi$