ToRDIS

Highly resilient factory shop floor digitalisation

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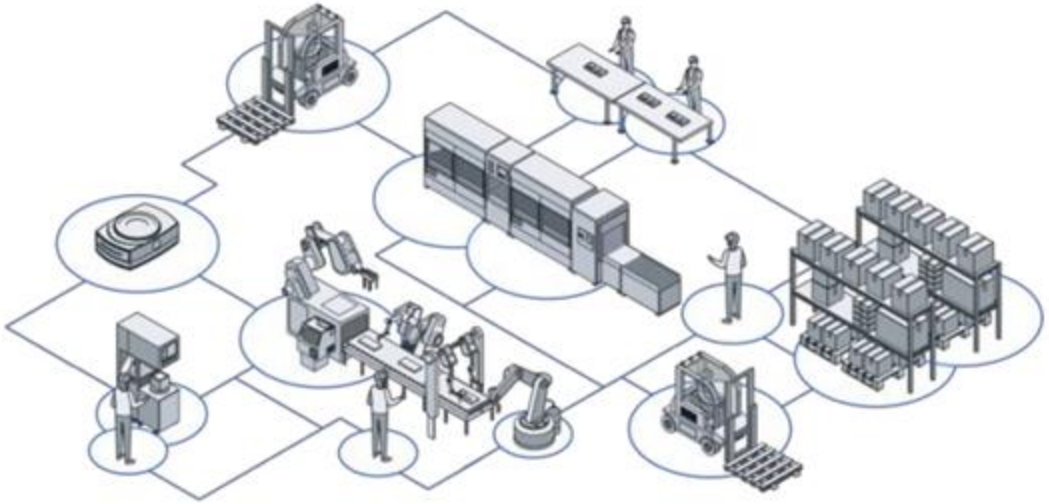
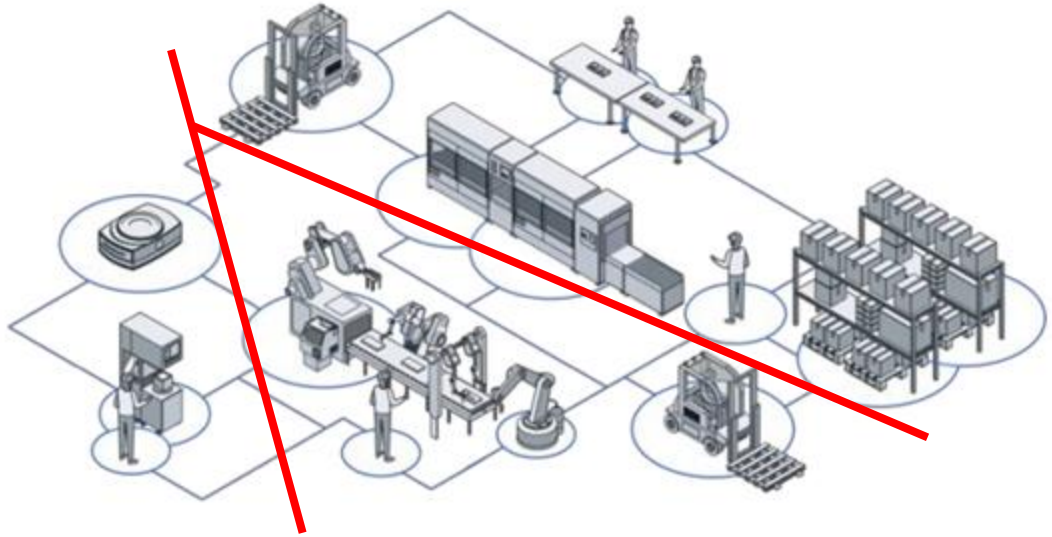
TaRDIS at Actyx

Actyx before TaRDIS:

- highly collaborative factories
  → **peer-to-peer IT architecture**



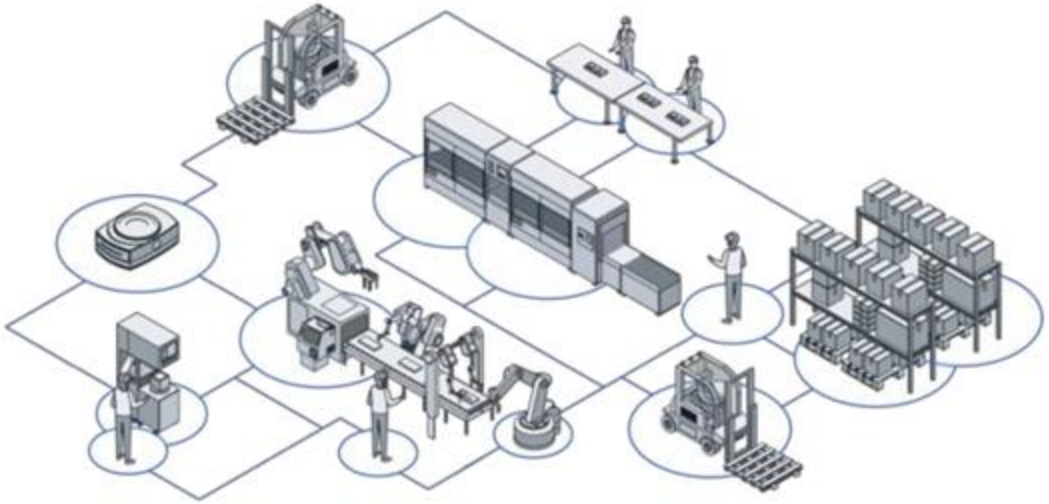
TaRDIS at Actyx



Actyx before TaRDIS:

- highly collaborative factories
  → **peer-to-peer IT architecture**
- challenging programming model
  due to **frequent network partitions**
- **eventual consensus** by merging event logs

TaRDIS at Actyx



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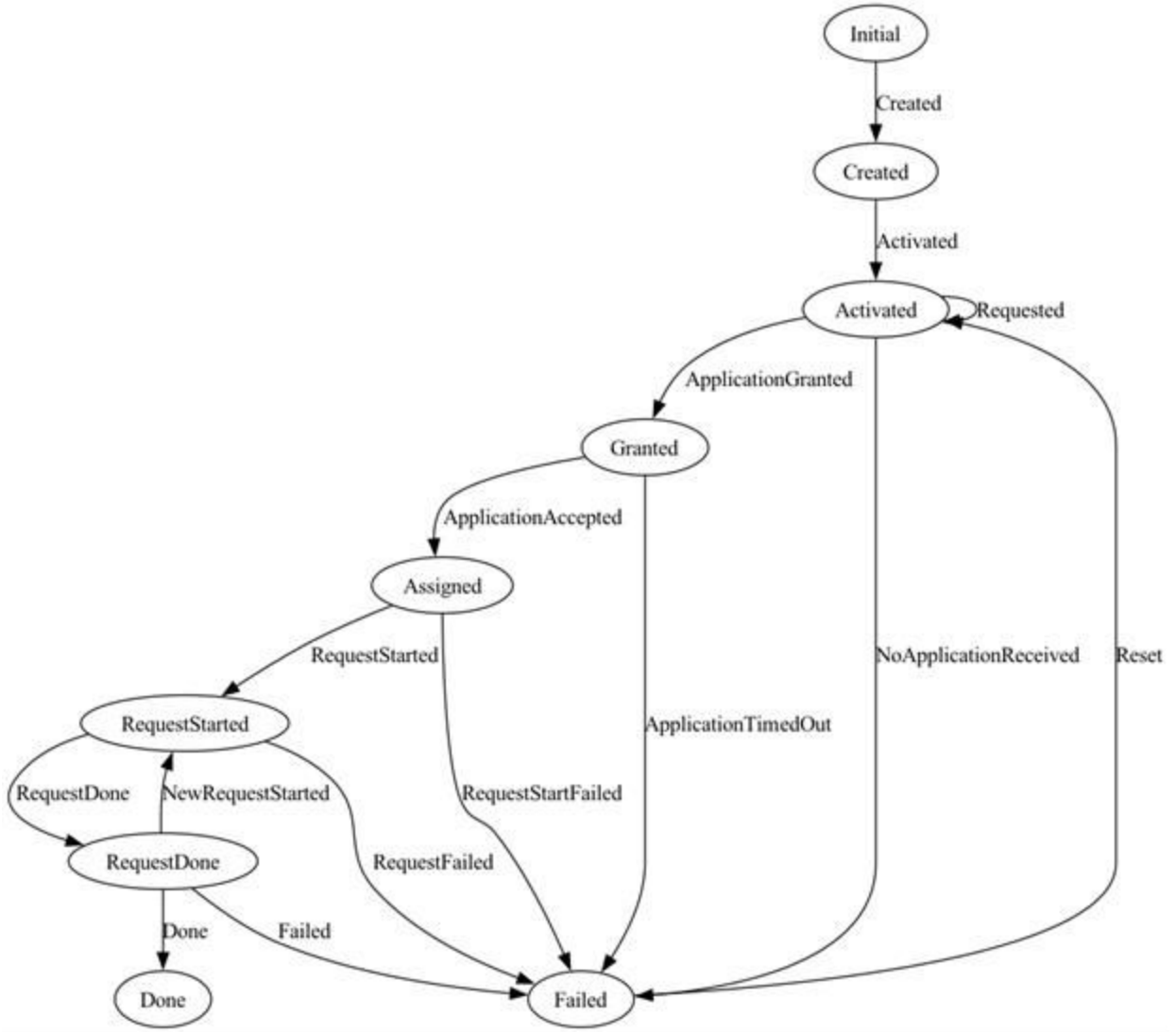
Actyx after TaRDIS:

- intuitive **design tools** for collaborative P2P systems
- powerful **correctness guarantees** for P2P implementations
- unlocking larger & more complex industrial use cases

Example Factory Workflow Diagram



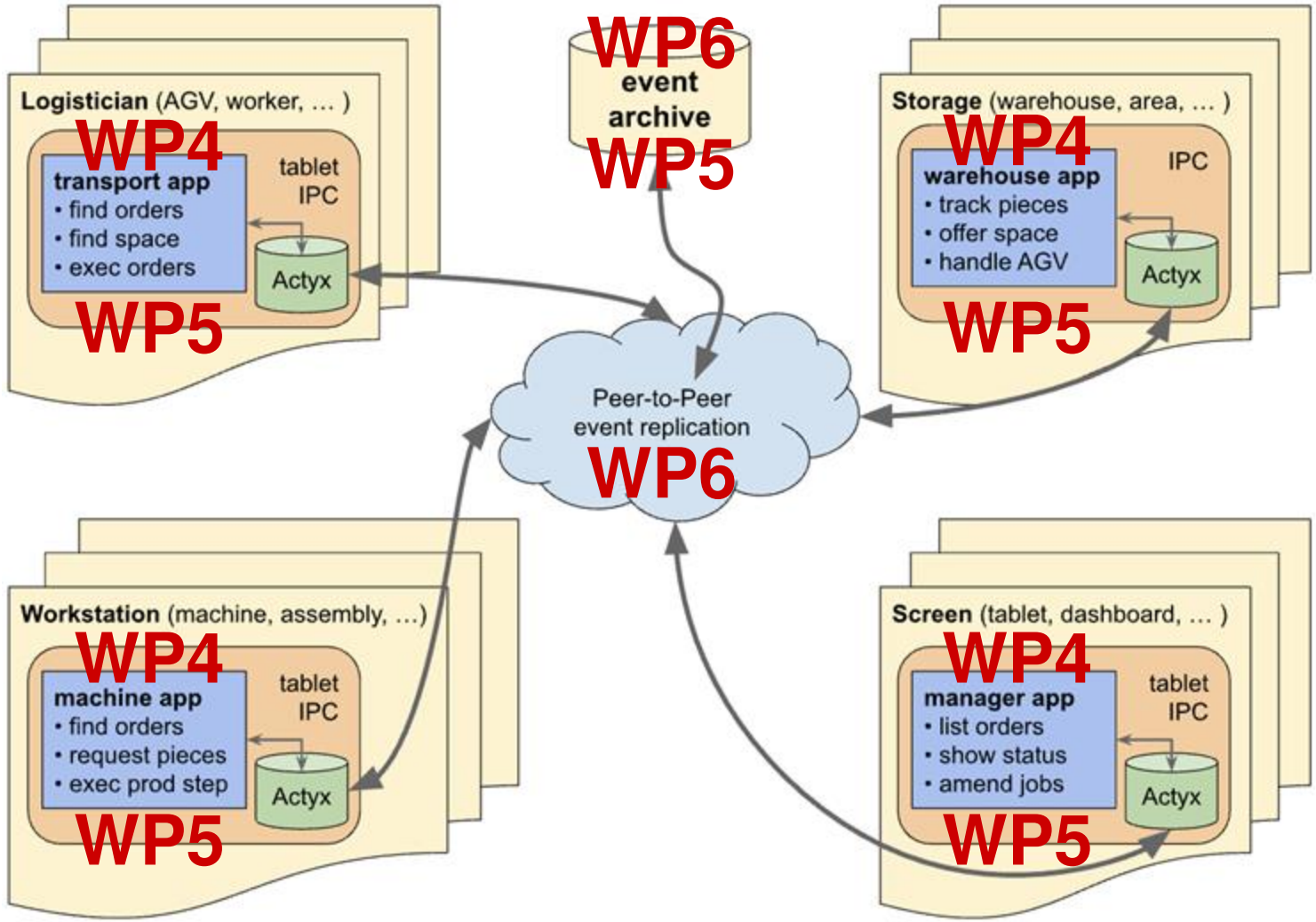
Architecture of TaRDIS implementation

WP3: workflow design

WP4: correct implementation

WP5: smarter decisions

WP6: smarter data mgmt



TaRDIS

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THANKS

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Expected TaRDIS improvements

- graphical workflow design to involve production experts
- more precision in specification (e.g. for specific participants), also capturing manual interventions in proper protocols
- guarantees around compensating actions in case of history invalidation (i.e. after event log reconciliation)
- smarter data management and decision making
  ⇒ pattern recognition
- scalability to larger swarm sizes
- composing workflows to form larger workflows while keeping eventual consensus and compensation guarantees