

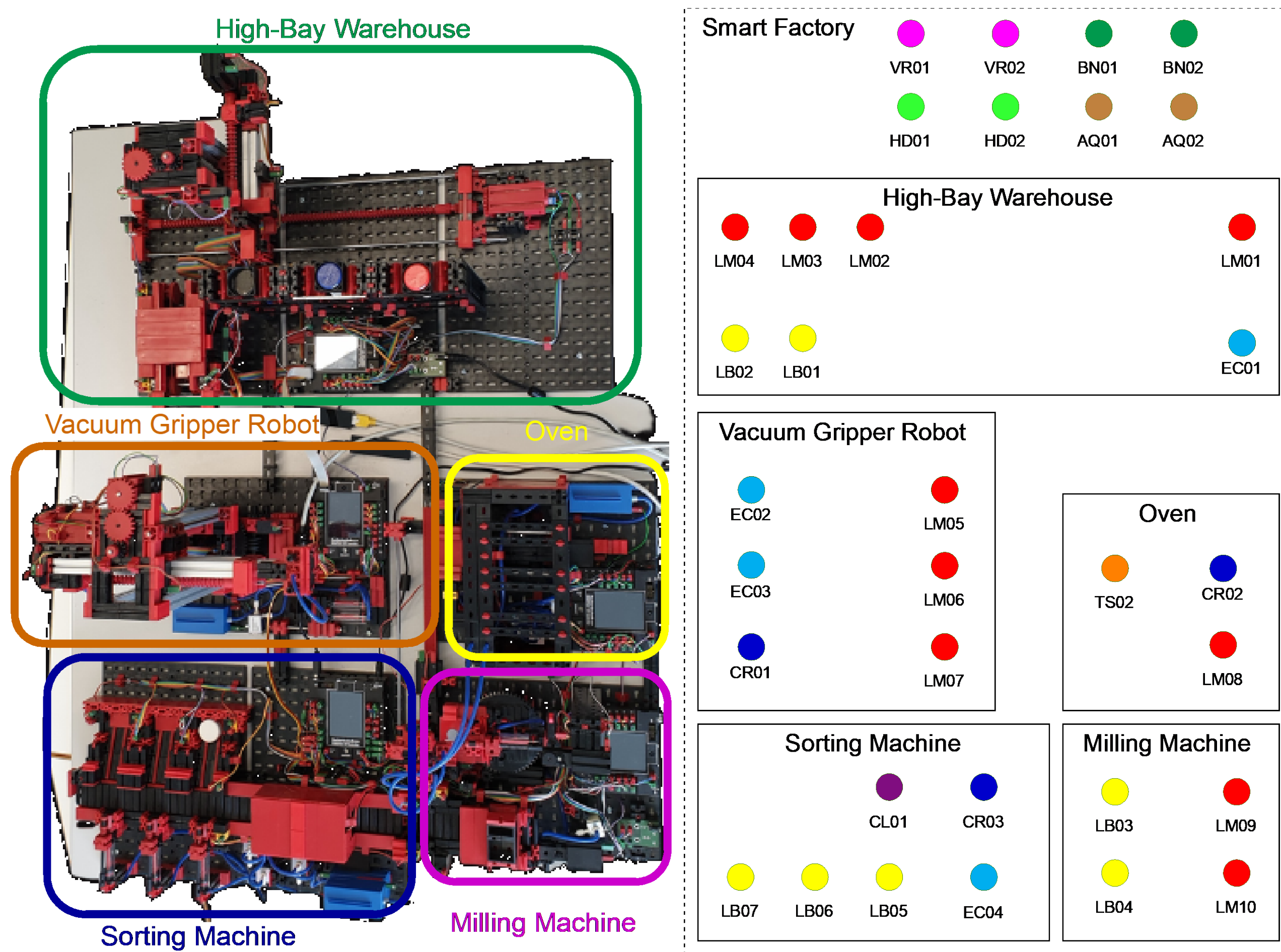
Integrating IoT-Driven Events into Business Processes

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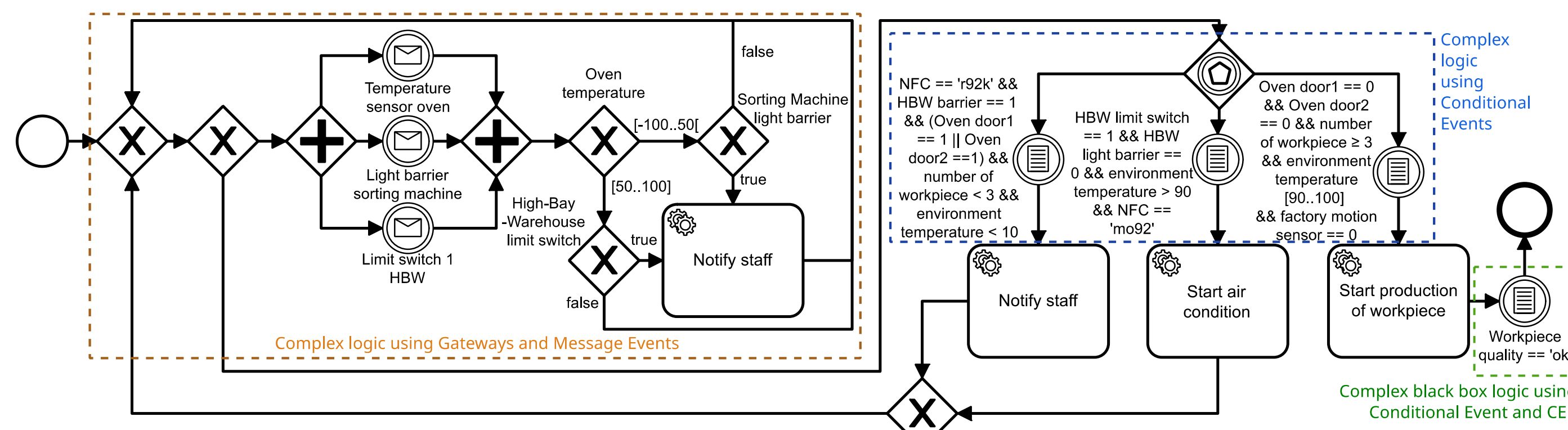
Introduction

- IoT is everywhere: new data sources for real-time decision making in business processes (BPs)
- Current support for integration of IoT into BPs insufficient



Problem

- Complex relations among low-level sensors lead to high-level business process events
- Multiple stages of transformations (low-level → high-level) → **Event Compositions** and **Event Hierarchies**
- Modeling with BPMN/DMN very complex; CEP black-boxes



Research Question

How can IoT-driven events be represented in a business process model?

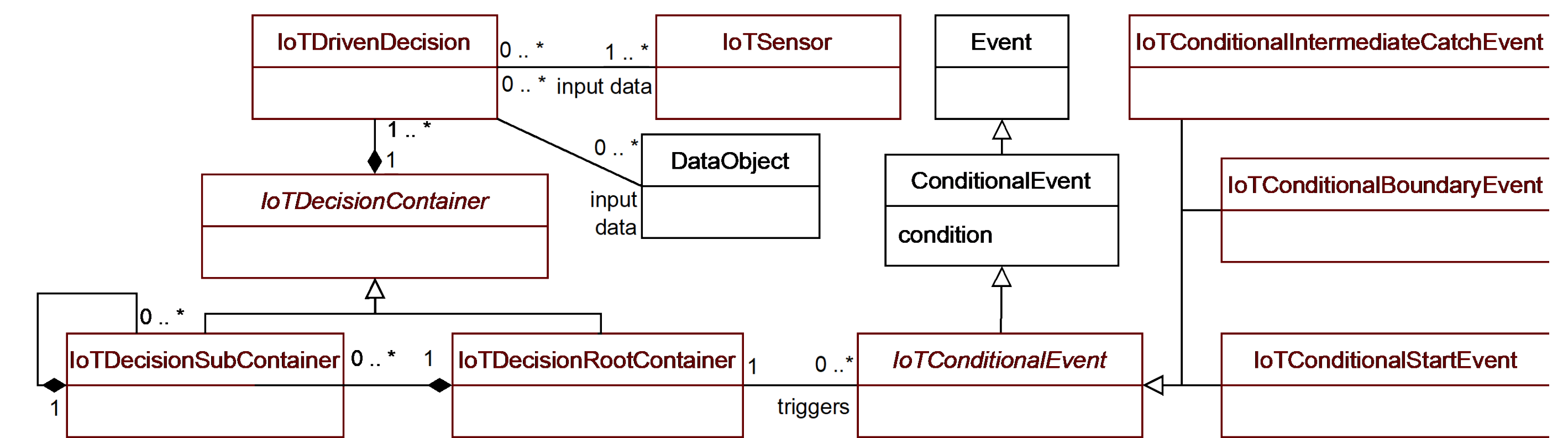


Requirements

- R1:** IoT-driven event specification and reuse in BPs
- R2:** Support for IoT data from various sources and of arbitrary abstraction levels
- R3:** IoT as special data sources; highlight IoT involvement and make transformations explicit
- R4:** Model IoT driven events together with BPs

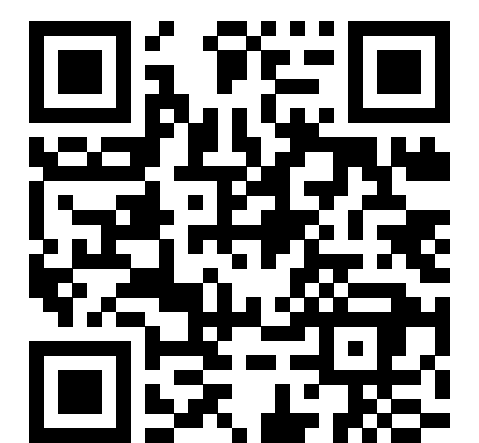
Approach: Abstract Syntax

- BPMN 2.0 metamodel extension: **IoT Conditional Event**
- Decision Containers** associated with IoT Conditional Events
- Decision Containers include IoT sensor data & transformations
- Hierarchical composition of Decision Containers

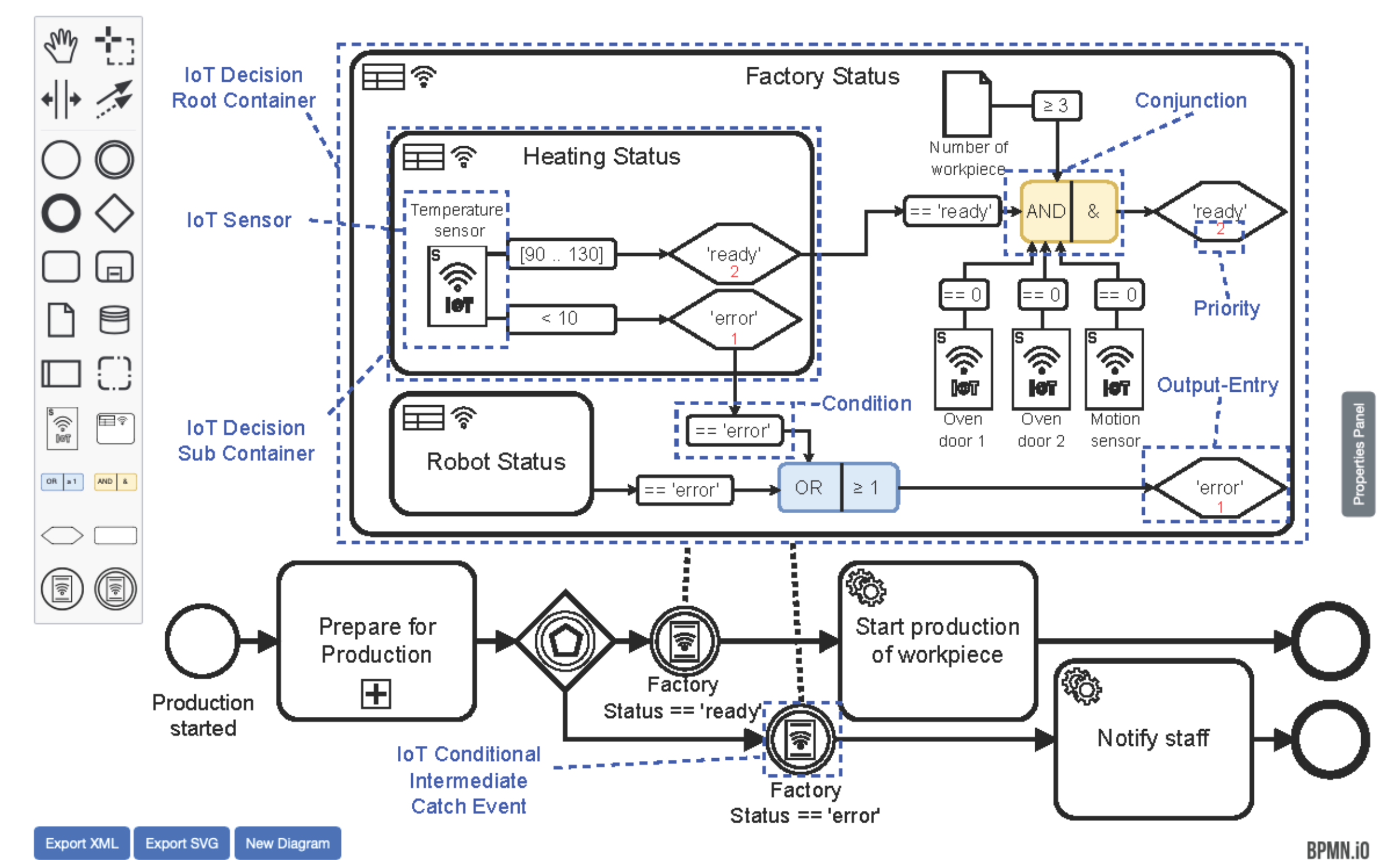


Approach: Concrete Syntax

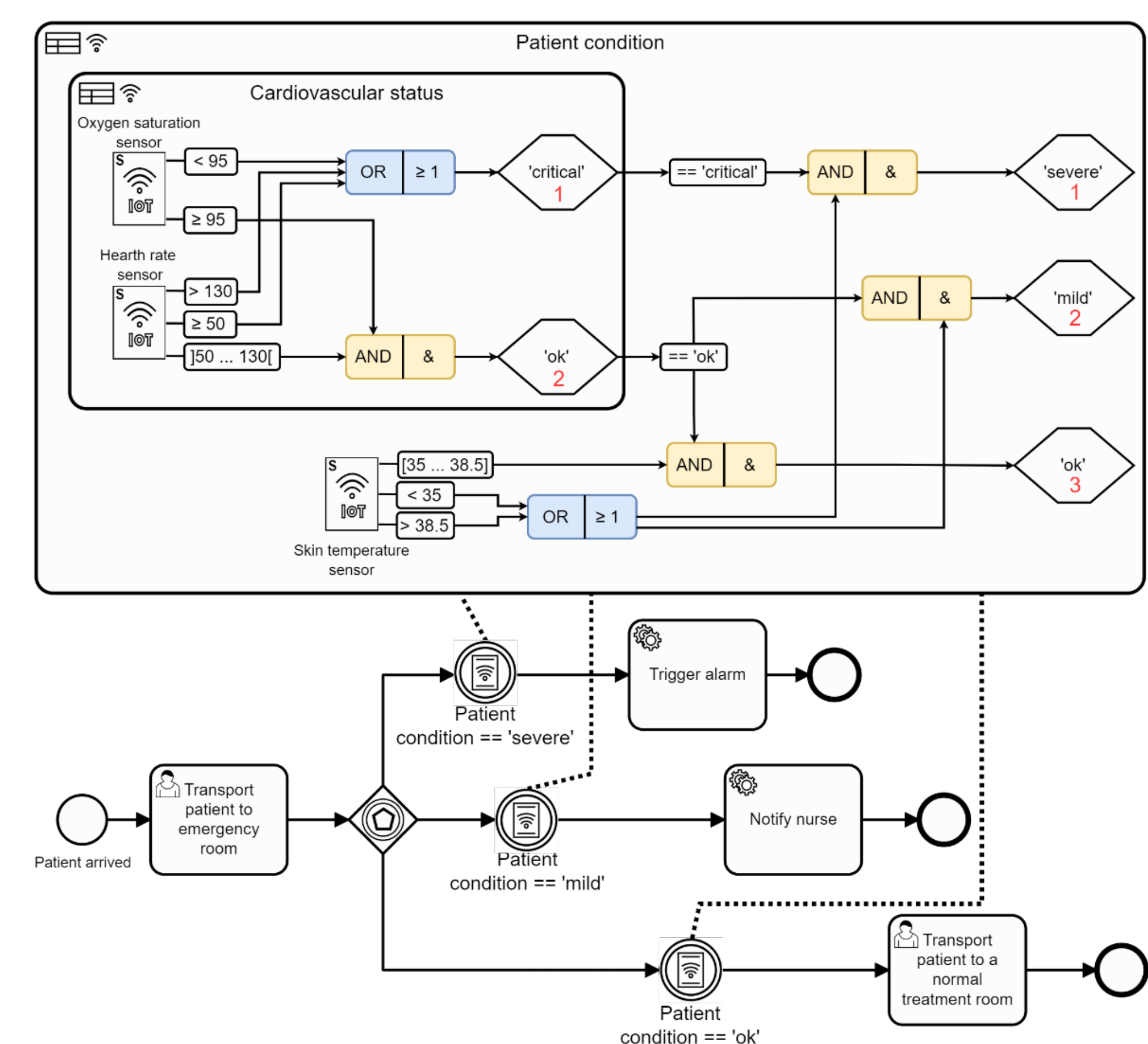
- Flow-based modeling in web editor
- Aligned with visual BPMN 2.0 concepts



Example 1: Smart Manufacturing



Example 2: Smart Healthcare



Contact and project information

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