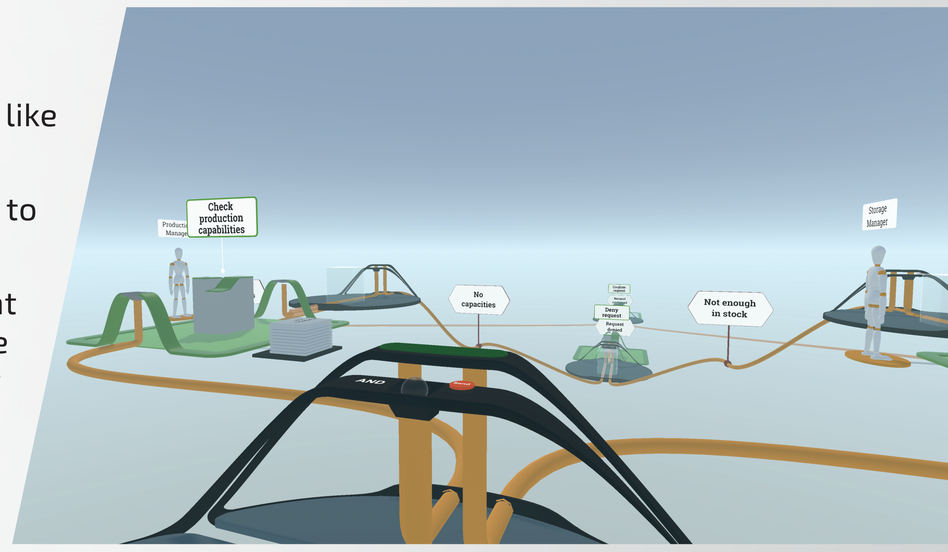
Immersive Process Models

Summary

Real-world processes are traditionally communicated to users through abstract graph-based models like event-driven process chains (EPCs), i.e. 2D representations on paper, desktop or mobile UIs.

We propose immersive process models, an alternative EPC exploration interface, which aims to transform the exploration of EPCs into a multisensory virtual reality (VR) journey.

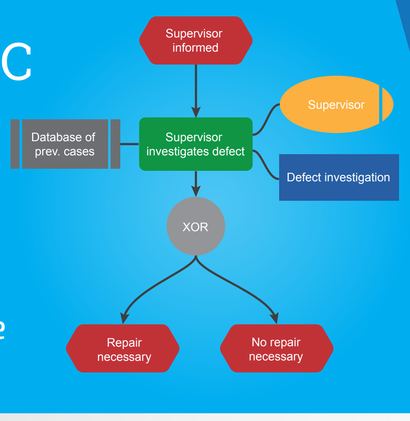
To make EPC exploration more enjoyable, interactive and memorable, we propose a concept that spatializes EPCs by mapping traditional 2D graphs to 3D virtual environments. EPC graph nodes are represented by room-scale floating platforms and explored by users through natural walking. Our concept additionally enables users to experience important node types and the information flow through passive haptic interactions. Complementarily, gamification aspects aim to support the communication of logical dependencies within explored processes.

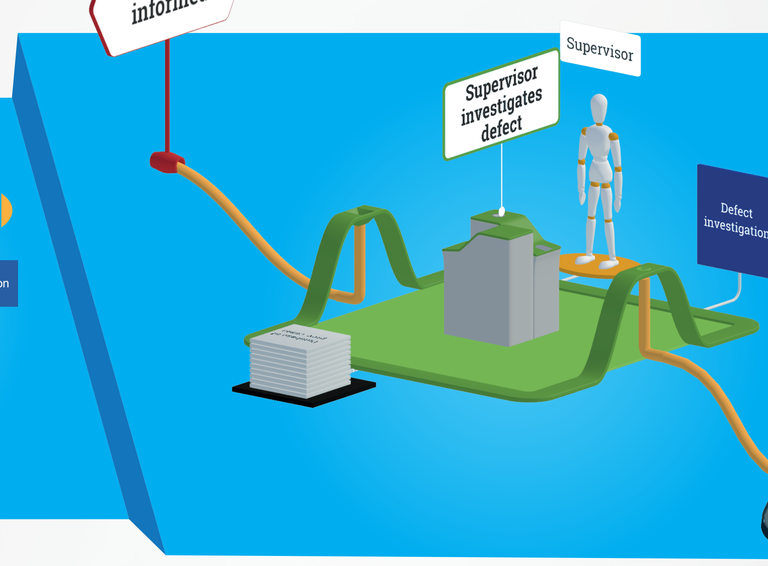


Event Driven Process Chain (EPC)

Traditional: 2D EPC

- 2D nodes and edges
- different node types
- visual feedback only
- paper or desktop/mobile



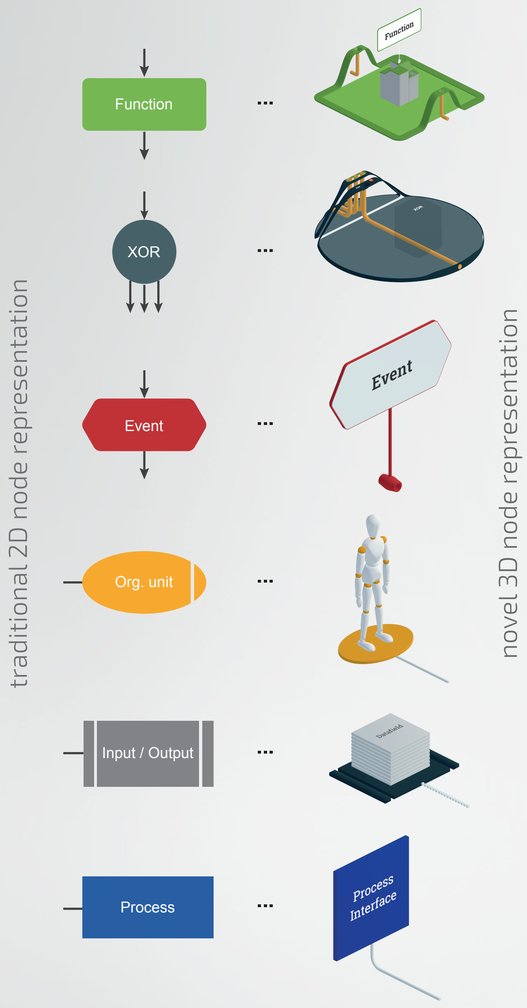


Novel: 3D EPC

- connected 3D platforms
- different platform types
- multisensory feedback
- immersive VR

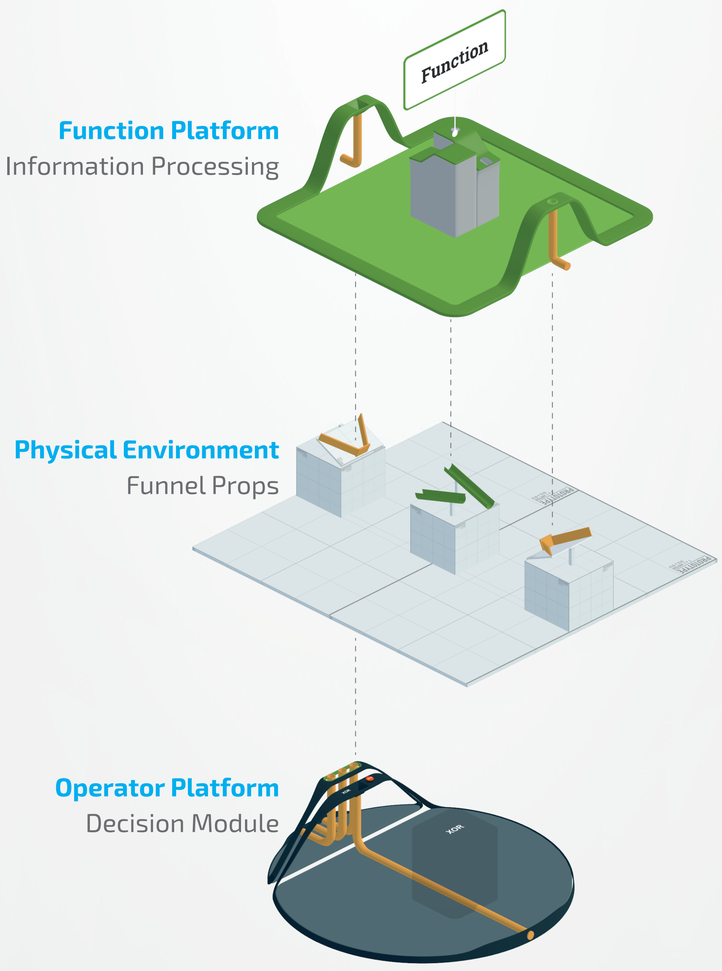
2D to 3D Mapping

- 3D design inspired by 2D shapes and colors
- room-scale 3D platforms
  - represent 2D nodes
  - support natural walking
- 3D tube system
  - represents 2D edges
  - transports information packets



Passive Haptics

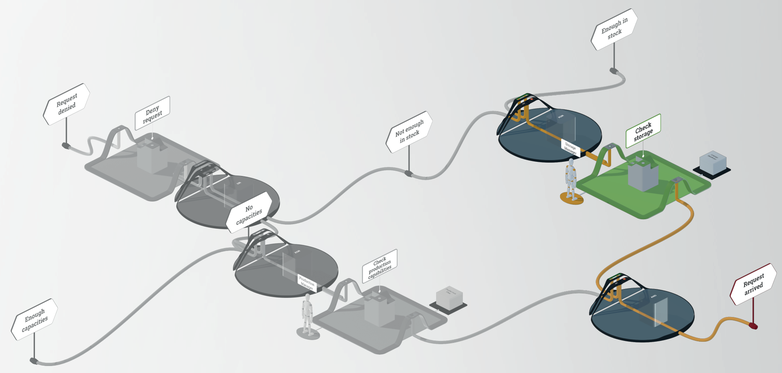
- information packets = spherical props
- interaction with passive physical funnels
- mirroring VR mapping to reuse props
- user actions
  - carries information from input to output
  - processes information at function platforms
  - controls flow at operator platforms



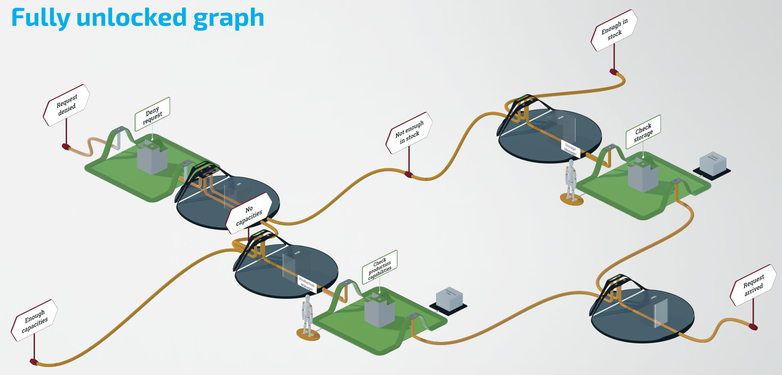
Walkthrough

- exploration in logically meaningful order
- basic form of gamification
- node requirements must be fulfilled to proceed
- user actions
  - unlocks platforms node by node
  - starts at root platform
  - accompanies information through the EPC

Partially unlocked graph: locked nodes are shown in gray



Fully unlocked graph



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