**Introduction**

- Before building a system supporting a business process, requirements need to be elicited.
- Requirements are by nature inconsistent, incorrect, or incomplete.
- Specifying requirements in formal models provides advantages such as, e.g., test case generation or automatic consistency checks.
- Usually, stakeholders are experts in their domain, not in software engineering.
- Thus, they could judge the correctness of requirements if they could understand the captured intention.
- Valuable feedback can only be gathered through expensive explanation sessions.

**Stakeholders should experience intuitively what is specified so far, to be able to validate it.**

**Execution of the behavioral specifications captured so far (Play-Out) and animation of the results within domain of expertise of stakeholders to gather their feedback.**

**Approach**

- Allowing stakeholders to add new behavior through their interactions along the way during the simulation of the process in order to fill-in the blanks (Play-In).

**Play-Out**

- The simulation of multi-user business process always starts from an initial process state (e.g., Fig. ??, left side).
- Executing and replaying the behavior captured so far to provoke feedback about wrong models.
- Behavioral specifications (Story Patterns) are used to simulate process participants who are not enacted by a stakeholder.

**Interactive Visualization**

- Domain concepts are mapped into GUI & animated using familiar metaphors.
- Web-based GUI for remote validation sessions.
- Stakeholders can experience & re-enact their role within the business process.
- Enables the stakeholders to provide feedback within their domain.

**Implementation**

- Engine & models based on Eclipse Modeling Framework.
- Simulation through a Graph Transformation System.
- Web-GUI based on Enterprise Java Beans 3.0 on JBoss.
- Dynamic meta model to cope with new, changed, or removed domain concepts.
- Current and future work:
  - GMF Editors suitable for stakeholders.
  - Play-Out strategies (e.g., lead users to inconsistencies).
  - Creation of state space based on behavioral models to explore alternatives.

**Figure 1:** Stakeholders can validate only what they understand.

**Figure 2:** Participants can seamlessly fill-in the blanks by interacting with the simulation or each other.

**Figure 3:** Stakeholders experience the content of formal models via simulation and animation.

**Figure 4:** Formal behavior specification of sending an email derived from Fig. ??.

**Figure 5:** State $s_{left}$ is followed by $s_{right}$ after a stakeholder enacting the Customer sends an email.

**Figure 6:** Connecting to a simulation session and choosing a role.

**Figure 7:** Actions which were observed in earlier sessions are proposed.

**Figure 8:** Stakeholders interact with documents & each other.

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