

Alaska Simulator is an interactive software tool developed at the University of Innsbruck which allows people to explore different approaches to process flexibility by using a familiar metaphor, i.e., travel planning and execution.

Major Roles of Alaska Simulator

- **Steve Student**: tests and analyzes his planning behavior with the simulator and explores how much planning is just enough under different circumstances
- **Rose Researcher**: investigates the strengths and weaknesses of different approaches for process flexibility using the simulator (for example see [[WRZW09](#)])
- **Isabel Instructor**: demonstrates the different flexibility approaches using a journey as a metaphor and explains the major differences between these techniques

Integrated Support for Decision Deferral Patterns

In today's dynamic business world the economic success of an enterprise depends on its ability to react to changes in its environment in a quick and flexible way. To address this need several approaches for flexible process support have been proposed. All of these approaches address the problem of process change either through structural modifications of a predefined workflow (e.g., adaptive workflows) or the introduction of more flexible execution models, which allow users to defer decisions regarding the exact control-flow to run-time (e.g.,

Late Binding

,
Late Modeling

or

Late Composition

). Common to all these approaches is the fact that they relax the strict separation of build-time (i.e., planning) and run-time (i.e., execution), which has been typical for plan-driven planning approaches as realized in traditional workflow management systems (cf. Figure 1). They allow for a more agile approach to planning by closely interweaving planning and execution. This should not be confused with chaotic approaches which tend to pre-plan very little and in the most extreme do not do any planning at all.

Figure 1: Different Approaches of Planning

Alaska Simulator is the first tool providing integrated support for all of these decision deferral patterns fostering the systematic comparison of their strengths and weaknesses.

Using a Journey as Metaphor for Business Process Management

The Alaska simulator uses a journey as a metaphor for a business process. The similarities being exploited here are that regardless whether a journey or a business process is executed, various steps must be planned and carried out, even if the actual execution of those steps may be different from what is initially foreseen. For optimizing the execution of a particular business case, information about goals, benefits (i.e., business value), cost and duration of activities is essential. Incomplete information prior to execution is a characteristic of both journeys and highly flexible business processes. When composing a concrete business case, different constraints like selection constraints, ordering constraints or resource constraints have to be considered, as similar constraints also exist when planning a journey (e.g., mandatory activities, dependencies between activities, opening times, budget).

Main Features

AST consists of three major components: the Alaska Simulator, the Alaska Configurator and the Alaska Analyzer. The major features of AST are as follows:

- **Design journey scenarios:** The Alaska Configurator allows researchers and instructors to design their own journey scenarios including locations, actions, events, constraints as well as the degree of uncertainty
- **Plan and execute journeys:** The Alaska Simulator allows to plan and execute journeys using different approaches for process flexibility
- **Log journeys:** Each step that is performed while planning and executing a journey is logged by the Alaska Simulator
- **Replay journeys:** To enable manual analysis of planning behavior, journeys can be replayed step by step in the Alaska Simulator
- **Analyze journeys:** Instructors and researchers are supported in analyzing the journeys after a planning session has been conducted with the Alaska Analyzer
- **Design surveys:** Researchers are supported to design questionnaires (e.g., to gather demographic data)
- **Design experimental workflows:** Researchers are supported to assemble journey configurations and surveys to experimental workflows