

# Jordan University of Science and Technology

## Managing Simulation Workflow Patterns using Dynamic Service-Oriented

**Authors:** Khaldoon Al-Zoubi, G. Wainer

**Abstract:** Distributed simulation usage in industry has been limited due to its high cost in comparison to its returned benefits. A number of surveys of experts from different background suggested the need of distributed simulation features to overcome its challenges and cost. The RESTful Interoperability Simulation Environment (RISE) middleware, based on RESTful Web-services, deals with these issues. However, simulation assets also need to be part of a formal Business Process Management (BPM) to allow practical across-enterprise collaboration. The Workflow mechanism introduced here promises to help with this situation. Further, these workflows provide automation, repeatable and reusable simulation experiments. We present the design of a workflow component that is capable of managing and executing different workflow patterns across various simulation RISE servers. We further present in detail a number of simulation workflow patterns executed by the workflow component.