

Workflow brings robustness and traceability to a complex multi-site process

In order to industrialise the complete archival process, different tools, methods and legacy data are encapsulated into a single comprehensive workflow, whose use leads to an optimised throughput.

Background

In order to respond to customer and regulatory requirements, engineering companies need to increase their capability to gather and store product design data. Formats are expanding to cover 3D geometry data and product structure, and these organisations need to establish the methods and processes that will enable a comprehensive, reliable and trustworthy archival.

Customer problem

Product data is created and stored across multiple dispersed sites using authoring and data management tools from different vendors, with data access methods that are specific to each location. This leads to a complex archival process, with a large volume of data, and a large number of dispersed sites.

Additionally there is a need for a robust archival process. Archiving the product design data can now be a legal requirement, and thus this process must be resilient to operational changes and failures.

Also, as well as validating the quality of archived data, there can now be a requirement to certify the archival process itself. Current process schemes do not offer the traceability option needed for certification.

Our offer

SynfiniWay™ is a global virtualisation framework that provides sophisticated workflow editing with loop/branch and conditional path, and a workflow engine for optimised execution of the workflow from start to finish. This workflow functionality can be used to automate complicated processes. It comes with error handling, task rescheduling, monitoring and logging. Also the saving of the workflow definition in readable XML is supported. We offer implicit and resilient dataflow for each workflow stage, including transfer resume and caching; and a service-oriented view of tools and applications.

Solution

In the SynfiniWay framework the diverse archival tasks are implemented as virtualised services. These services are linked into a workflow that describes the complete archive process. The workflow is automatically executed with the SynfiniWay workflow engine, which ensures optimal placement of jobs and implicit transfer of data between tasks using shortest routes.

Encoding the extensive archival process into a single workflow definition brings structure to a complex process and allows for saving the workflow description itself with the archived data.

The workflow engine brings the first level of infrastructure robustness to the process by finding and re-submitting services or resuming data transfers when machines and connections break. A second level of robustness can be easily incorporated into the workflow itself simply by adding new branch and loop paths to treat computation errors, for instance.

The workflow execution is recorded in a workflow execution trace, ensuring traceability of the different tasks of the archival process.

Benefits

Linking the diverse archival tasks into a workflow simplifies the archival process considerably. Instead of having to manually retrieve all the data from different sources, you now only need to launch your archival workflow.

The workflow-enabled process is more reliable and robust, due to the resilience features of the SynfiniWay engine and the way that enhancements in the workflow definition can easily be made.

With the run-time workflow execution trace, the user has the basis to preserve both the process generating the archive, as well as the data itself.

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