
Optimized number of replications in PragmaDev Process V3.3.

Paris - France - Oct 3rd, 2024 - *PragmaDev Process* aims at verifying and optimizing business process models described with BPMN (Business Process Model and Notation). The new version of the tool automatically optimizes the number of replications necessary for a statistical simulation.

Complex organizations or system operations are based on processes that can be modeled graphically. The most popular notation is BPMN. It describes what the different participants in the organisation do and how they interact with each other.

Version 2.0 has introduced a statistical simulator of the process performance and version 3.0 has introduced resource management associated to the processes. Because BPMN simulations are based on statistical data, each scenario has to be repeated a substantial number of times so that the results eventually converge. The number of repetitions, called replications, is a tough number to evaluate. So a large arbitrary number is often used, making simulations quite long and tedious.

PragmaDev Process V3.3 introduces a replication number optimizer that automatically evaluates if there is a need to continue repetitions of the scenario. For that matter the tool needs:

- a desired accuracy, called Precision. A confidence level of 95% means that for a given number of subsequent replications, the values of 95% of those replications should fall in the interval.
- a lookahead value that is the number of extra replications to run after the desired precision has been reached, in order to make sure the upcoming simulations results still fall in the desired interval.

This new feature dramatically reduces the number of replications. Depending on the model we have in some real industrial cases witnessed a reduction by a ratio of a 100.

Also included in V3.3 is the export of BPMN models in HTML, with the diagrams exported as SVG images. That allows to keep the navigation links in the export, but also to zoom in without losing any quality in the model.

About PragmaDev

PragmaDev is a privately held company based in Paris France that provides two lines of product: 1) PragmaDev Process is a simple and powerful tool that aims at helping business process modelers to verify and optimize their models. It integrates a BPMN editor, executor, explorer and simulator. 2) PragmaDev Studio is a set of 4 tools to specify and design communicating systems. On the market since 2001 customers include Airbus, Nokia, Renault, the French Army, Wipro, ST-Microelectronics, Korean Telecom, the European Space Agency, Toshiba, and LG Electronics.

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