

SCCH

Software Competence Center Hagenberg

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SCCH Process AnT – New Tool Developed

The goal of technical process analysis (process mining) is to detect, monitor and improve real (*de facto*) processes via extraction of knowledge from event logs. To implement and support process analysis, the tool SCCH Process AnT (SCCH Process Analysis Tool) was developed at SCCH.



Technical Process Analysis - Process Mining

In a typical (economical) process analysis the processes are identified by observing the actions, random samples or by conducting interviews with the employees. The results are gathered with a lot of effort and, nevertheless, represent in many cases more the *de jure* (should) than the *de facto* (is) process (especially with respect to rare misbehavior) and there are no concrete figures regarding the possible execution paths, frequencies and times.

The aim of the technical process analysis (process mining) is to detect, monitor and improve real processes via extraction of knowledge from event logs. The data, which is used for process analysis, generally already exists in the company, e.g., as event logs of machines or collected and processed in data bases. These data are analysed and connected with each other. The resulting *de facto* process model allows to discover bottlenecks, identify outliers and misbehavior, recognize patterns and to prevent

process abortion. A detailed performance analysis will further identify optimization potentials and improve, e.g., execution order. To support process analysis, we developed the tool SCCH Process AnT at SCCH and presented it at the ERP Future 2016.



SCCH Process AnT

SCCH Process AnT is implemented in Java. Data can be imported either from CSV-files or from data bases. After selecting a process the columns are mapped to the corresponding analysis fields; mandatory fields are the process instance, process step (or event) as well as at least one time value for each process step. Further optional analysis fields cover the selection of a production process in case of different products, the ID of a data record as well as an additional time value for both, start and end time of an event. SCCH Process AnT further supports two analysis fields for textual and numerical meta data to consider and display attributes like costs, resources or quality indicators. After mapping the analysis fields, data can be import-

ed and the desired period selected. A filtering of outliers (noise) is possible by setting a threshold value. The resulting process graph is displayed in the graphical user interface (see Fig. 1) and saved as a .graphml file so that it can also be opened by other tools (e.g., yEd). A comparison of *de jure* and *de facto* processes is also supported and highlights never/seldom used and additional process steps and paths (see Fig. 2).

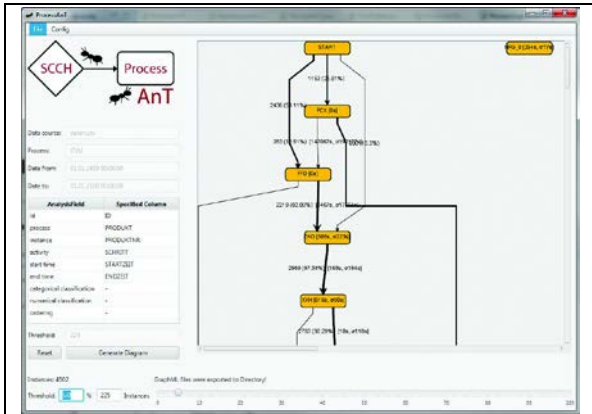


Fig. 1: Process Graph in SCCH Process AnT (SCCH)



Impact and effects

SCCH Process Ant supports high-performance process analysis also for large data amounts and provides a detailed analysis and presentation of key performance indicators, time values and metadata. Filtering mechanisms nevertheless ensure a clearly represented process, which can also be opened with other tools due to the well-known graphml format. A comparison of *de jure* and *de facto* processes permits an alignment of planned and actual activities.

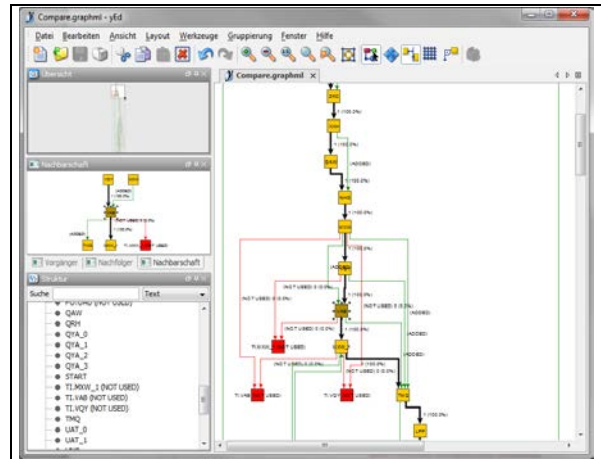


Fig. 2: Process Comparison, Presentation in yEd (SCCH)

SCCH Process AnT was applied to analyse production processes of large industrial companies. The process analysis detected bottlenecks of individual resources, process abortions, process delays as well as seldom misbehaviour. Further process optimization (especially with regards to content) was conducted together with domain experts of the companies. Process analysis can also be applied in other domains in which processes considering single items such as, e.g., a damage report (insurance company), a credit application (bank) or a produced item (production) are available.

Summing up, technical process analysis can be used to monitor and predict processes, for documentation purposes and to optimize the value-added chain. A further argument for process analysis is given by the new EU General Data Protection Regulation, which demands a detailed analysis and control of the usage of personal data.

SCCH Process AnT will be extended in future COMET-Projects and adapted to the requirements of a company. For further information or a demonstration of SCCH Process AnT please contact us.

Contact and information

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