

# Complex Event Processing

## Summary

Nowadays enterprises are more complex than ever. Different processes take place all over the world and events are flying through the enterprise IT systems. These systems have grown from standalone applications that were able to handle a certain aspect within an enterprise to an enterprise wide IT system that provides a coupling between the different IT applications.

These enterprise wide IT systems are widespread across large enterprises and generate many events that flow through the enterprise system layers. The events feed other applications or services which generate new events on their turn. We can truly speak about an event-cloud that hangs within an enterprise. Because of this event-cloud the event-flow of an enterprise IT system becomes non-transparent and difficult to understand.

A new innovation is arising that can help tackle this problem; Complex Event Processing (CEP). With CEP it is possible to correlate events and detect complex situations. This thesis deals with a number of CEP related questions. The first part describes surrounding concepts that help understanding what CEP really is about. The second part introduces a general CEP language and six representative cases. Three different CEP engines are evaluated and each case is expressed for all engines. To complete the impression of these engines also some performance tests are run. The third and last part is not directly about CEP but more about innovation management. It introduces innovation management on different levels and the integration between these levels. This will help to bring structure to innovations.