EuroPLoP 2008 Focus Group
Domain-specific Complex Event and Rule Patterns
http://www.biotec.tu-dresden.de/~adrianp/europlop08_cep/EuroPLoP_CEP_Focus.pdf

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http://www.hillside.net/europlop/
Organized by Adrian Paschke and Rainer von Ammon

Complex Event Processing (CEP) and *business rules* are two emerging trends leading to a fundamental change in IT service and applications development and use. Instead of building monolithic systems, applications will be assembled in a flexible service-oriented way, possibly distributed over the internet.

CEP is an emerging enabling technology to achieve actionable, situational knowledge from distributed systems and data sources in real-time or almost real- time. Applications of CEP technologies arise in manifold domains such as Finance/Banking, Logistics, Automotive, Telco, Life science and the application scenarios range from, e.g., fraud detection, supply chain event monitoring, business activity monitoring and IT service management/governance to adaptive or self-autonomous reactive systems capable of handling e.g. pandemia situations.

Business rules are rapidly gaining popularity as a means to separate the business logic from the operational processes and applications. They allow specifying business knowledge in a way that is understandable by 'the business', but also executable by rule engines, thus bridging the gap between business and technology.

According to Gartner's emerging technology hype cycle CEP and business rules are considered as the main prerequisites for many other emerging technologies such as predictive business enterprise networks (service supply chains), real-time adaptive enterprise or autonomic IT systems. They might be applied separated or work in tandem thus enabling semi-autonomous decisions and reactions according to detected complex events, e.g. in order to handle and monitor business process workflows in a dynamic and flexible way.

Reference models for CEP and *business rules* offer the potential for an additional increase (1) in efficiency, aimed at cheaper and faster delivery of CEP and rule-based systems for specific domains, and (2) in reusability of successful CEP and business rules solutions in various domains. The models predefine a common frame of reference for a certain application domain, which can be customized to obtain models for specific applications in that domain.

Design patterns as more or less formalized descriptions of generic solutions to certain problem classes have become a wide-spread mean to transfer knowledge about successful designs. Hence, they qualify as an adequate representation format for the description of CEP patterns and rule patterns describing e.g. generic rule-based solutions for specifying business policies. A pattern language of domain-specific CEP patterns and rule patterns could establish a way to efficiently communicate about successful domain-specific CEP and rule-based solutions and reuse them for devising concrete implementation solutions in potentially multiple domains. That is, the advantage of CEP and rule patterns is their predefined, reusable, and dynamically customizable nature allowing the designer to reuse existing experience for building new CEP and rule-based applications.

If you plan to attend the Focus Group on CEP Patterns please send an eMail by April 25th to:
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Tentative Structure for the Focus Group Meeting:

a. Discuss fundamental terminologies, definitions and relations of the CEP and business rules approach and discourse the differences between the more behavioural oriented view on CEP addressing CEP models and CEP patterns and the more technical view on CEP addressing (complex) event patterns and processing of events in CEP media.

b. Survey existing and newly submitted CEP and rule patterns as well as patterns from closely related domains such as BPM, BAM, ITSM, SOA, Coordination, Workflows, …

c. Discuss a suitable classification scheme for clustering CEP patterns into vertical domain-specific and generic horizontal across-the-domain patterns

d. Categorize the patterns according to the classification scheme and discuss possible adaptation/extension of the general classification scheme

e. Survey existing notational pattern languages and representation formats and discuss requirements and critical success factors for CEP pattern languages

f. Brainstorming: Ideas on the (semi-) automated generation of new CEP applications by customization of reference models and their solution-oriented (design) pattern specifications to the context of a CEP application domain?

g. Wrap-up: Summary of achieved results, ideas and next steps in the CEP pattern community