

Contextualization in Event-based Systems



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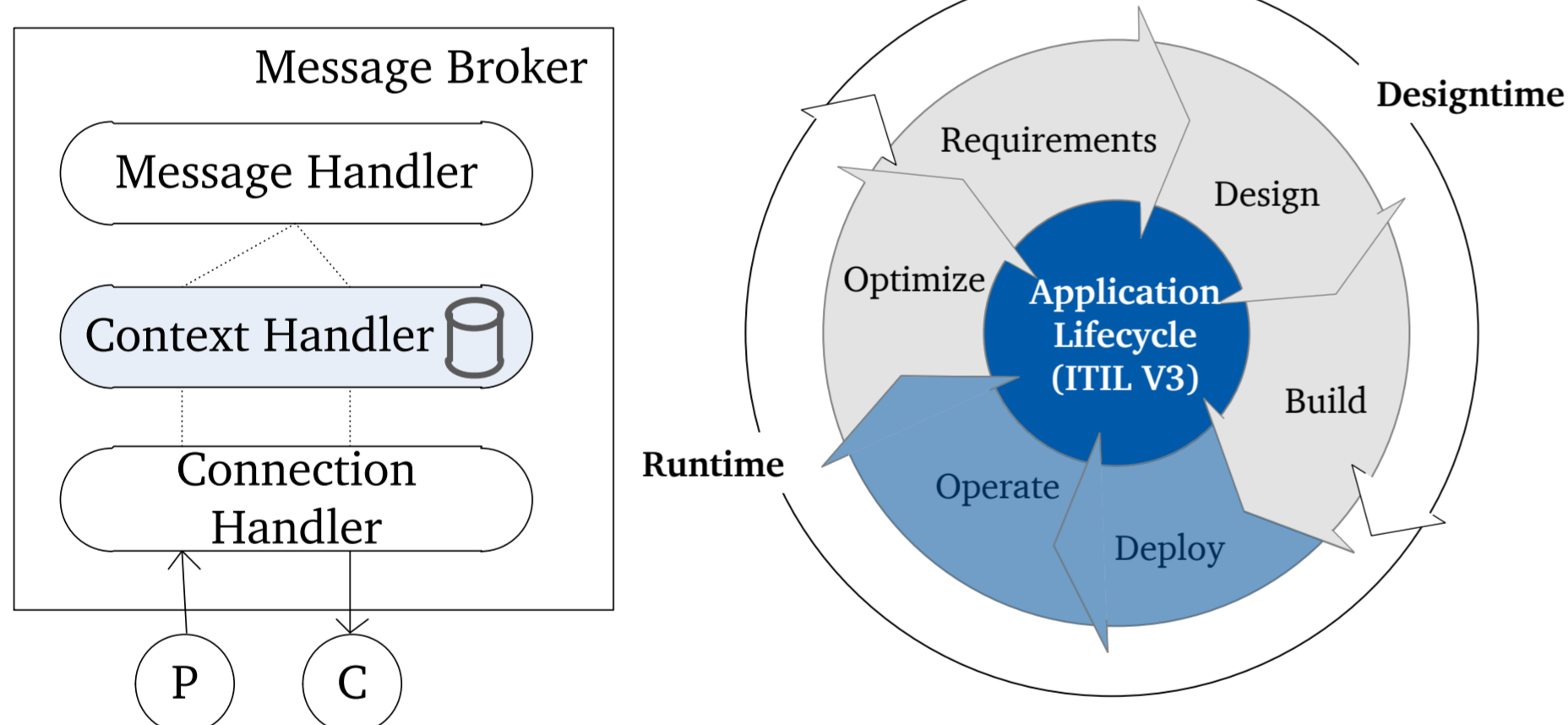
Context Transformations

Problem: The context in which a message was produced is unknown to consumers of the message.

- data might not adhere to the consumer's type system
- leads to wrong interpretation of data (e.g. confusing units)

Idea: Add a transformation layer to message brokers

- the layer transforms from the producer's context to the consumer's context
- producers and consumers specify their context
- transformation is transparent to producers and consumers
- context definition is easy, flexible and can change at runtime
- formal model for programming languages support
- allow flexible transformations while guaranteeing type safety



Contextualized Enrichment

Elementary event notifications are often not meaningful enough. Thus, derive higher level events by

- event combination (aggregation)
- look up auxiliary information (enrichment)

Challenge: Combining the right event notifications and looking up only the necessary information.

General idea: Drive decisions with human readable and comprehensible policies.

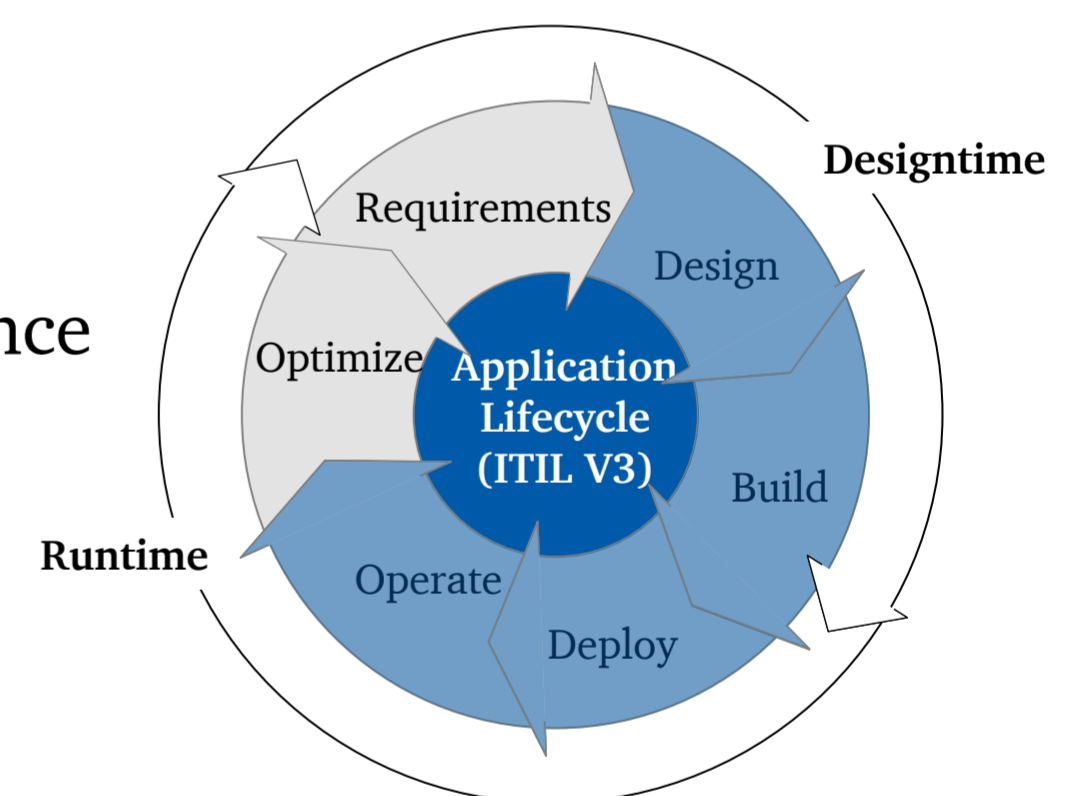
Example:

A company has a restricted area. Policy:

- Only authorized persons are allowed in that area
- Guests may enter when accompanied by an authorized person
- Guests may not be without an accompanied person for more than 30 seconds

System should identify the following questions:

- Which security clearance does a person have?
- What does it mean to be in the area?
- What does it mean to accompany



Dynamo PLV

Dynamic and seamless integration of production, logistics and traffic.



IT as an interdisciplinary, cross section discipline.

Our contribution:

- use event-based paradigm to model inter-company communication
- provide solution for high heterogeneity
- historicize events for later model creation/validation

