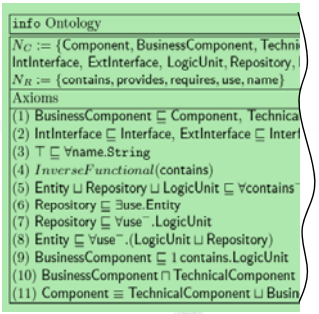
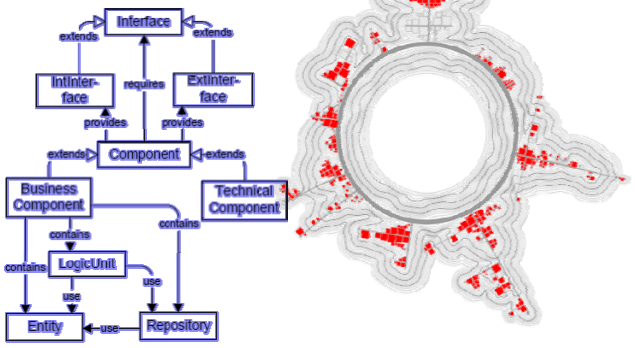
Wie beschreiben wir Softwarearchitekturen und wie wollen wir sie sehen?

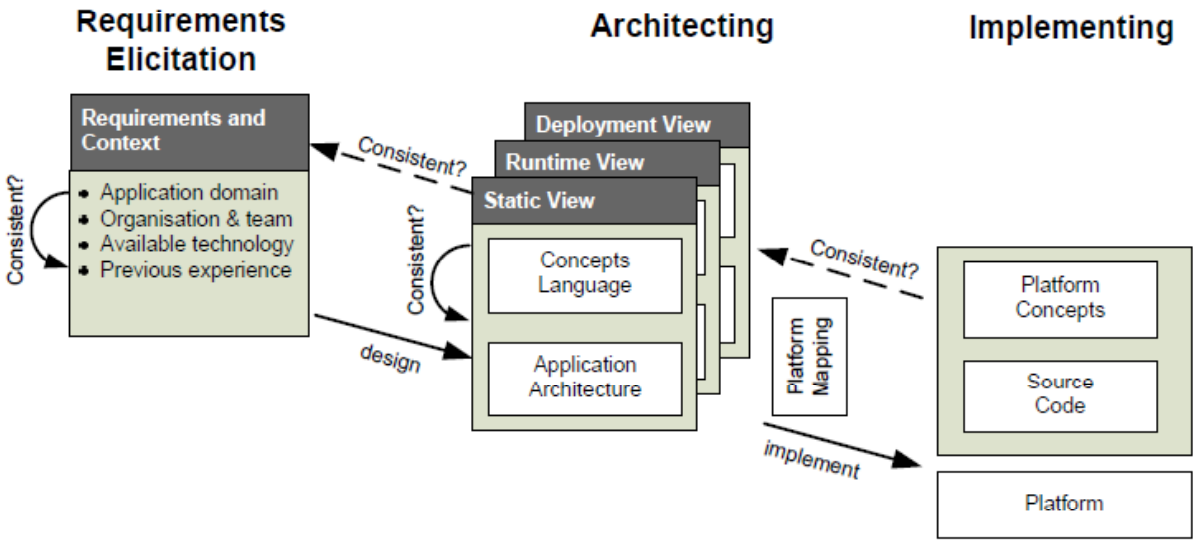




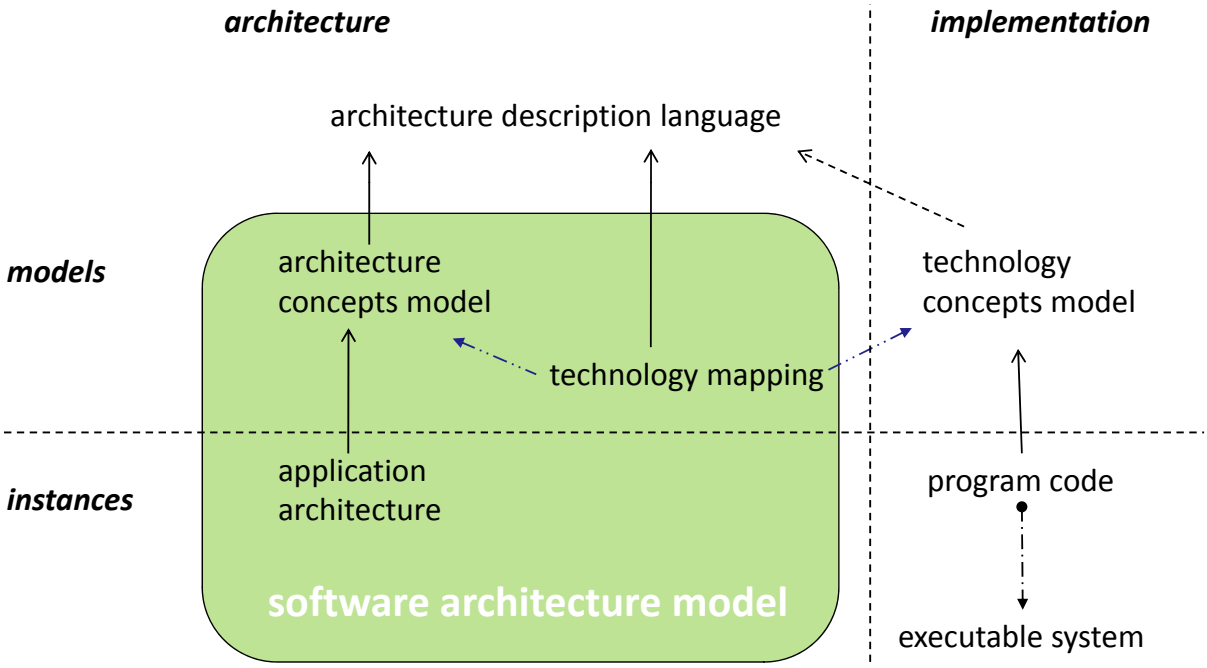
Claus Lewerentz

Brandenburgische
Technische Universität Cottbus
Lehrstuhl Software-Systemtechnik

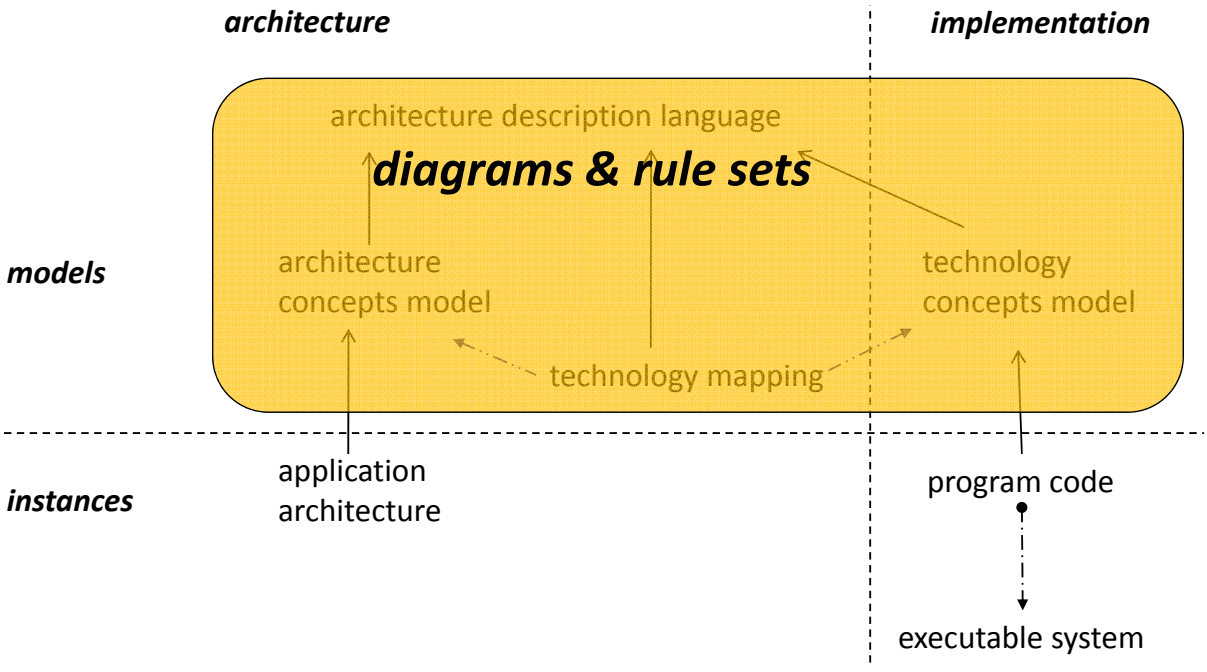
Architekturzentrierter Entwicklungsprozess



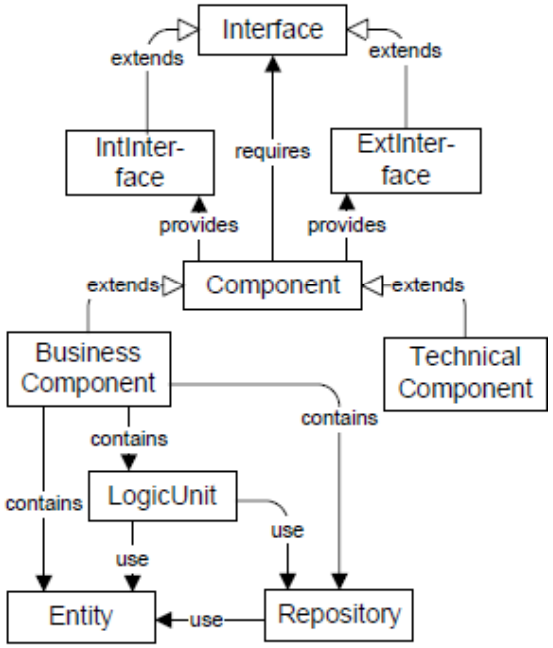
Architekturmodelle und Programme



Notationen / Visualisierungen

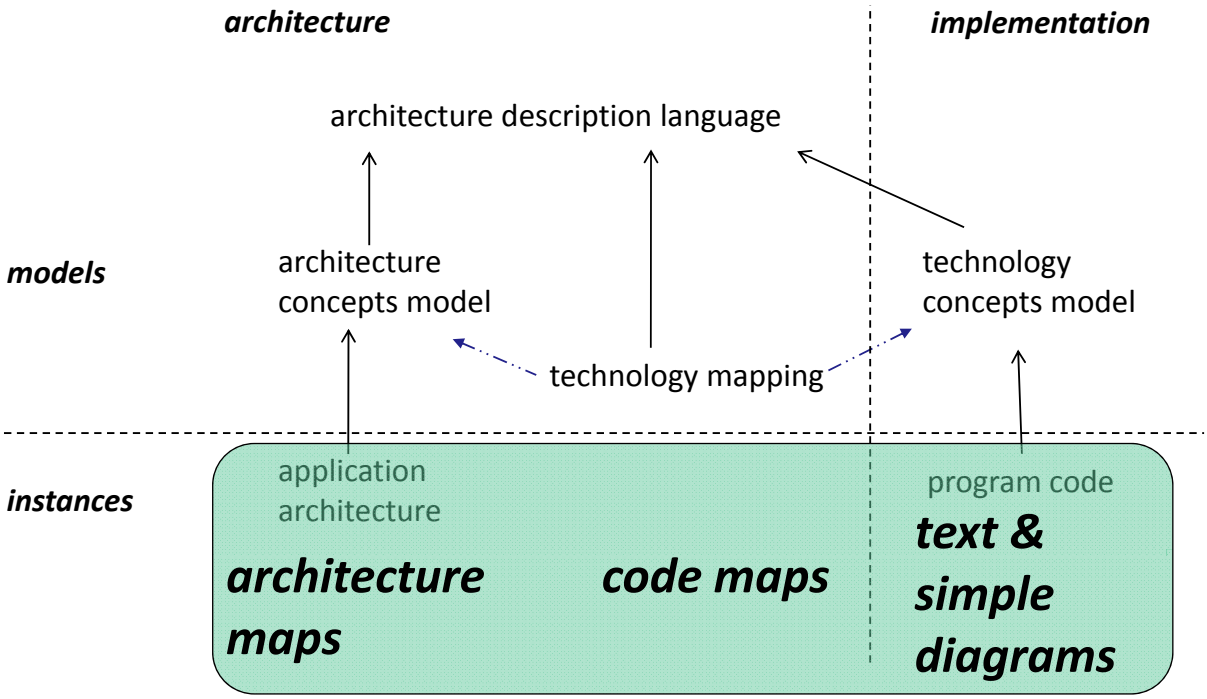


Beispiel für „architecture concept model“

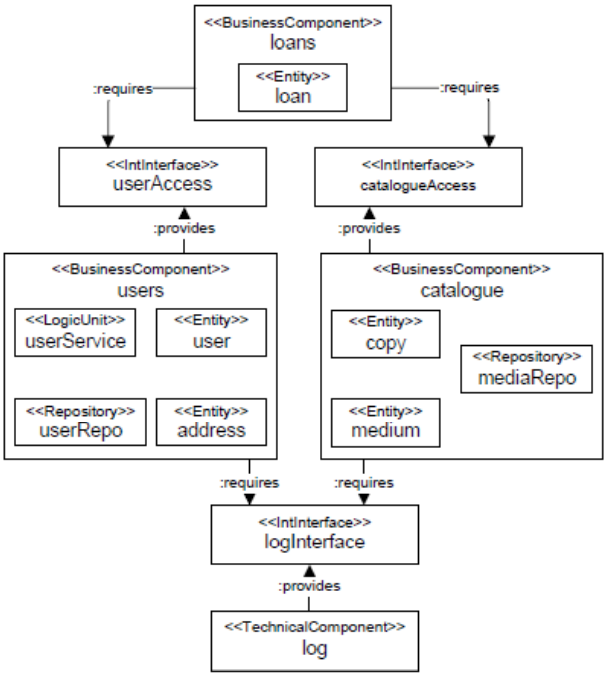


info Ontology
$N_C := \{$Component, BusinessComponent, Techni
IntInterface, ExtInterface, LogicUnit, Repository, I
$N_R := \{$contains, provides, requires, use, name$\}$
Axioms
(1) BusinessComponent $\sqsubseteq$ Component, Technica
(2) IntInterface $\sqsubseteq$ Interface, ExtInterface $\sqsubseteq$ Interf
(3) $\top \sqsubseteq \forall$name.String
(4) $InverseFunctional$(contains)
(5) Entity $\sqcup$ Repository $\sqcup$ LogicUnit $\sqsubseteq \forall$contains$^-$
(6) Repository $\sqsubseteq \exists$use.Entity
(7) Repository $\sqsubseteq \forall$use$^-$.LogicUnit
(8) Entity $\sqsubseteq \forall$use$^-$.(LogicUnit $\sqcup$ Repository)
(9) BusinessComponent $\sqsubseteq$ 1 contains.LogicUnit
(10) BusinessComponent $\sqcap$ TechnicalComponent
(11) Component $\equiv$ TechnicalComponent $\sqcup$ Busin

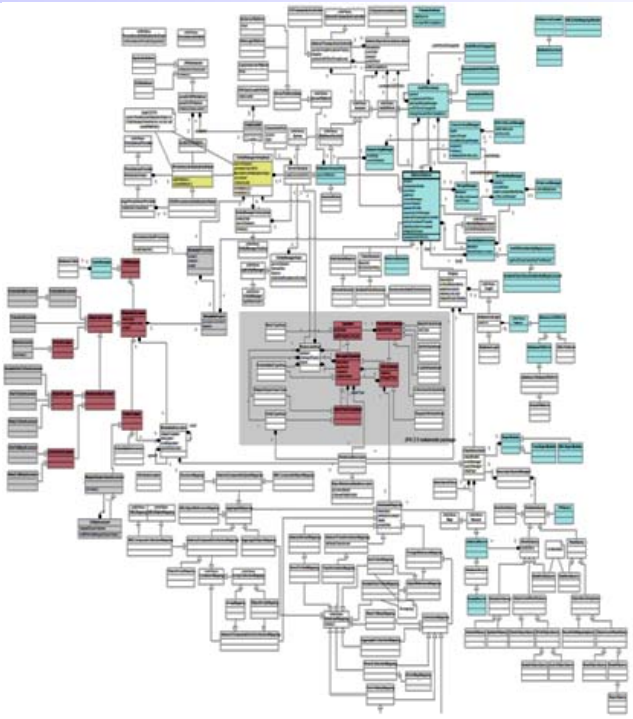
Notationen / Visualisierungen



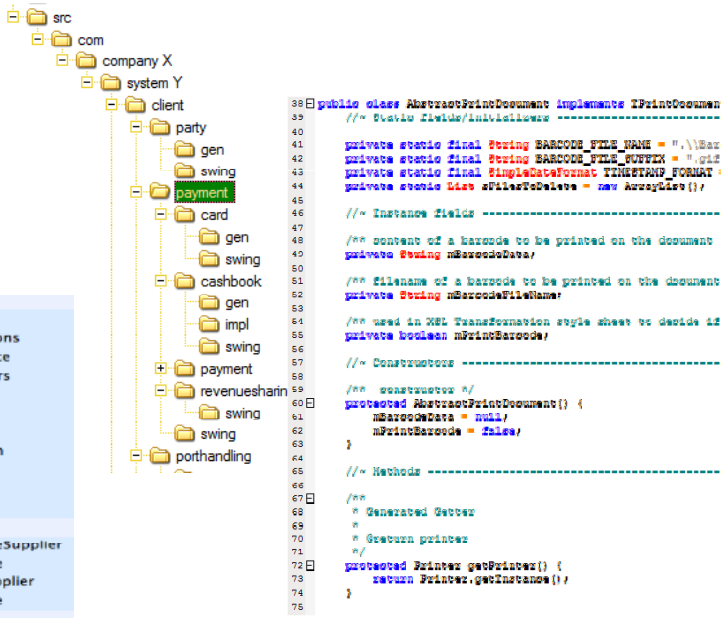
Beispiel “application architecture”



Beispiel “application architecture”



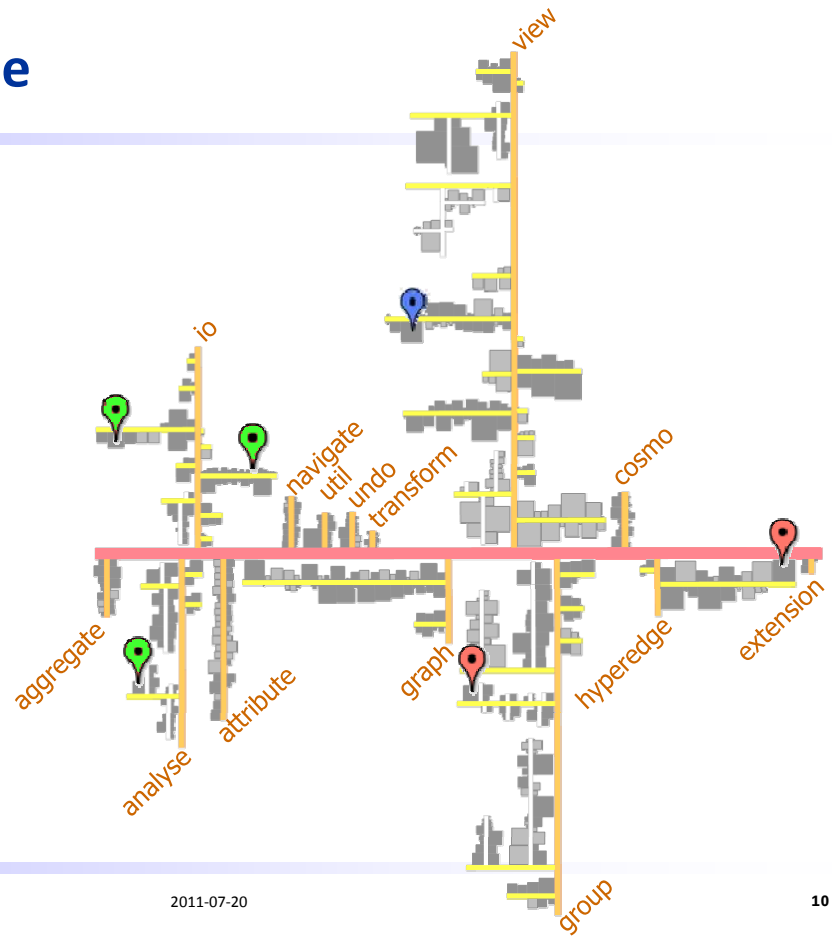
Programmcode und Implementierungsstruktur



Sonargraph (hello2morrow)

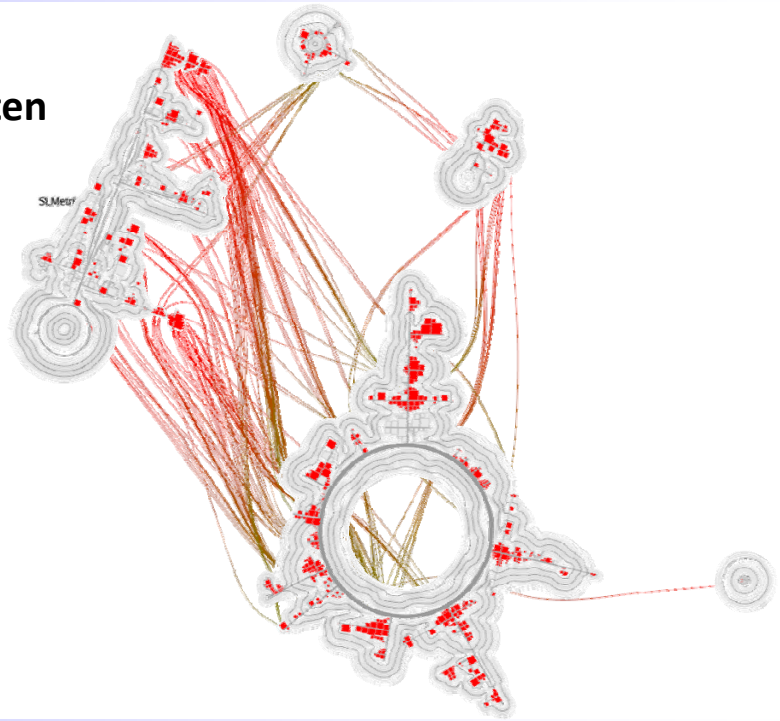
Softwarestädte

“Code-Stadtplan”



Architektur-Landschaften / -karten

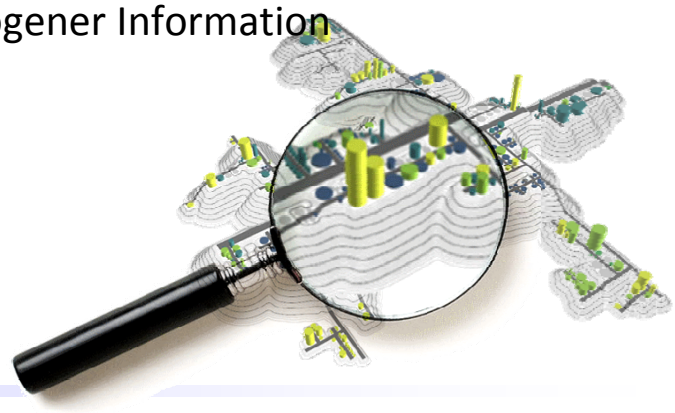
Architekturkomponenten als vernetzte Städte



Entwicklungsgeschichte & thematische Landkarten

- Entwicklungsgeschichte zum Verständnis wichtig
  → stabile Basisvisualisierung
  → Verortungs- und Orientierungsstruktur

- Integration von Code- und Architekturdarstellungen
- Integration von prozessbezogener Information



Referenzen

- Marcel Bennicke, Claus Lewerentz. **Towards Managing Software Architectures with Ontologies**, in: Gregor Engels, Claus Lewerentz, Wilhelm Schäfer, Andy Schürr, Bernhard Westfechtel (Eds.): Graph Transformations and Model-Driven Engineering, LNCS 5765, pp. 274–308, Springer-Verlag 2010

- Frank Steinbrückner, Claus Lewerentz
  Representing Development History in Software Cities
  In: Proceedings of the 5th International Symposium on Software Visualization, October 25-26, 2010, pp. 193-202

- www.software-cities.org

- www.hello2morrow.com/products/sonarj