

Architectural Design 2

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Derived from Roger S. Pressman, *Software Engineering: A Practitioner's Approach*, 6th Edition, McGraw-Hill 2005

Why Architectural Design

- Architecture is the product of the early design phase
- Architecture determines the structure of the project

Architectural Design

- Design should define
 - External entities
 - Interaction between software and the external entities
 - Structure of the system

Architectural Design

- Representing the system in context
- Defining archetypes
- Refining the architecture into components
- Describing instantiations of the system

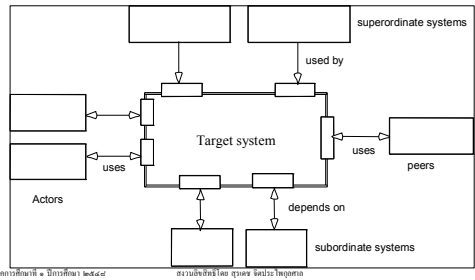
System in Context

- System Context Diagram (SCD) represents
 - the flow of information into and out of the system
 - the user interface
 - support processing

Representing the System in Context

- Architectural Context Diagram (ACD) models
 - how the software interacts with external entities

Architectural Context Diagram



Defining Archetypes

- Archetype = a model that represents a core abstraction that is critical to the design of an architecture for the target system

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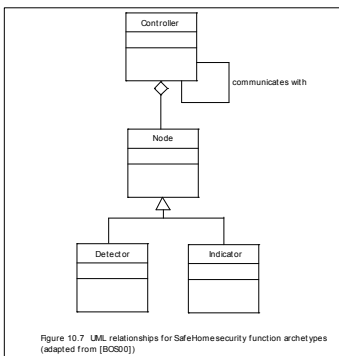


Figure 10.7 UML relationships for SafeHome security function archetypes (adapted from [BCS00])

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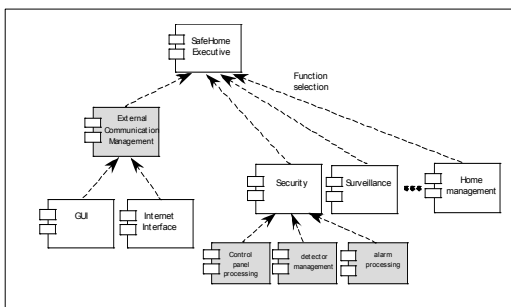
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Refining the Architecture into Components

- Components of system architecture are derived from
 - Application domain
 - Infrastructure domain
 - Interface domain

Component Structure



Describing Instantiations of the System

- The architecture is applied to a specific problem with the intent of demonstrating that the structure and components are appropriate

