Vision on Architecture

by Gerrit Muller	University of South-Eastern Norway-NISE

e-mail: gaudisite@gmail.com

www.gaudisite.nl

Abstract

Architecture is a term that is used with various meanings. This presentation shows the broader view on architecture as used at Gaudisite.nl. This vision includes customer value proposition and business proposition as part of the architecture.
Architecting Playing Field

organizational context
- customer organization
- business organization
- developing organization
- supplying organizations

operational and lifecycle context
- customer value proposition
- business proposition

system requirements

system design

technology

drives
enables
Market and Business Context

- continuously changing competitive landscape
- fast changing needs
- variation in needs

Consequence: uncertainties and unknowns

Objective of Architecture is to achieve Technical Leadership (e.g., a winning competitive position)

A good architecture facilitates fast creation of solutions, fitting the needs, and coping with uncertainties and unknowns
Context, Zoom-out and Zoom-in

customer organization

developing organization

architect

supplier organization

super system

system of interest

subsystems
Adding the Time Dimension

past system of interest

current

super system of interest

future super system of interest

based on TRIZ knowledge innovation

past subsystems

future subsystems

past developing organization

architect

suppliers organization

customer organization

Vision on Architecture
Gerrit Muller

version: 0.3
September 29, 2018
SEMABentitiesInTime
Vision on Architecture

8  Gerrit Muller

version: 0.3
September 29, 2018
SEMABarchitecting
Example Context

- Owner
- Tenant
- Inhabitants
- Government
- Contractor
- Installer
- Commissioner
- Suppliers
- IT Management
- Facility Management
- Light Designer
- Creation
- Use
Example Aspects in Office Lighting

- Energy star compliance
- Proper lighting information for facility management
- Customer value proposition
- Business proposition
- System requirements
- System design
- Standard solution
- Ease of installation and commissioning
- Broad application
- Compliance with network standards
- Compliance with green star
- Integrated in IT and facility management
- Secure against intruders
- Respecting privacy
- Form compatible fixtures
- Light quality and stability
- Presence sensing
- Network topology
- Function allocation
- Network protocol
- Power supply
- Electronics integration
- Presence sensors
- Light sensors
- Intelligent control
- LED lighting
- Authentication
- Encryption
- Location information
- Persistency
- Synchronization
- Lighting performance
Design = Structure + Dynamics + Quantification

- parts
- characteristics
- dynamics
- interact
- results in
- prime interest
- of customer
- functionality
- prime system responsibility
- prime interest
- of organization
Structure = Parts + Interfaces + Configuration

**ultimate goal:**
- modular component catalogue
- well-defined interfaces
- independent testable

to facilitate:
- fast creation of solutions
- concurrent engineering
- logistics and production
- variations and changes
- How do parts interact to create desired dynamic behavior?
  - allocate functions
- How do desired qualities and performance emerge from the interaction?
  - dimension and configure parts and functions