Dynamic Range of Abstraction Levels in Architecting

by Gerrit Muller  University of South-Eastern Norway-NISE

e-mail: gaudisite@gmail.com

www.gaudisite.nl

Abstract

One of the challenges in architecting is to span many orders of magnitude in the level of abstraction. The system of interest itself can be viewed on many levels of abstraction. However, the context of customers, life cycle, and related products adds a few more orders of magnitude to be spanned.
Dynamic Range of Abstraction Levels in Architecting

Gerrit Muller
From system to Product Family or Portfolio

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version: 0.1
June 21, 2020
DRALpyramidGrowth
Product Family in Context

Dynamic Range of Abstraction Levels in Architecting

1. **Enterprise Context**
   - enterprise context

2. **Enterprise**
   - enterprise

3. **Stakeholders**
   - stakeholders

4. **Systems**
   - systems

5. **Multidisciplinary Design**
   - multidisciplinary design

6. **Parts, Connections, Lines of Code**
   - parts, connections, lines of code
some context details are essential

some technical details are essential

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RAPdiaboloRA
Capturing all information that is required for: logistics, manufacturing, legislation, maintenance, life cycle support,
Design from needs and requirements to design: decomposition, interface definition, allocation, concept selection, technology choices

Static system definition, mono-disciplinary number of details, multi-disciplinary design, system requirements, dynamic range of abstraction levels in architecting.
Architecting: realization and design choices in context

Some context details are essential

Some technical details are essential

Dynamic Range of Abstraction Levels in Architecting

number of details

10^9
10^6
10^3
10^0
10^-3
10^-6
10^-9

parts, connections, lines of code

systems

multidisciplinary design

stakeholders

enterprise

enterprise context

Architecting
Frequently observed gaps

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