Dynamic Range of Abstraction Levels in Architecting

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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.
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September 9, 2018
RAPpyramid
From system to Product Family or Portfolio

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DRALpyramidGrowth
Product Family in Context

- Parts, connections, lines of code
- Multidisciplinary design
- Systems
- Stakeholders
- Enterprise
- Enterprise context

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RAPdiabolo
RA: Capturing the Essence

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number of details

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

enterprise context
enterprise
stakeholders
systems
multidisciplinary design
parts, connections, lines of code

reference architecture

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,
from needs and requirements to design: decomposition, interface definition, allocation, concept selection, technology choices

Design

anticipating engineering needs and constraints

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Architecting: realization and design choices in context

- Enterprise context
- Enterprise
- Stakeholders
- Systems
- Multidisciplinary design
- Parts, connections, lines of code

Some context details are essential
Some technical details are essential
Frequently observed gaps

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