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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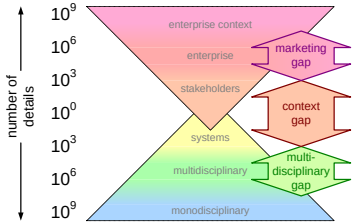
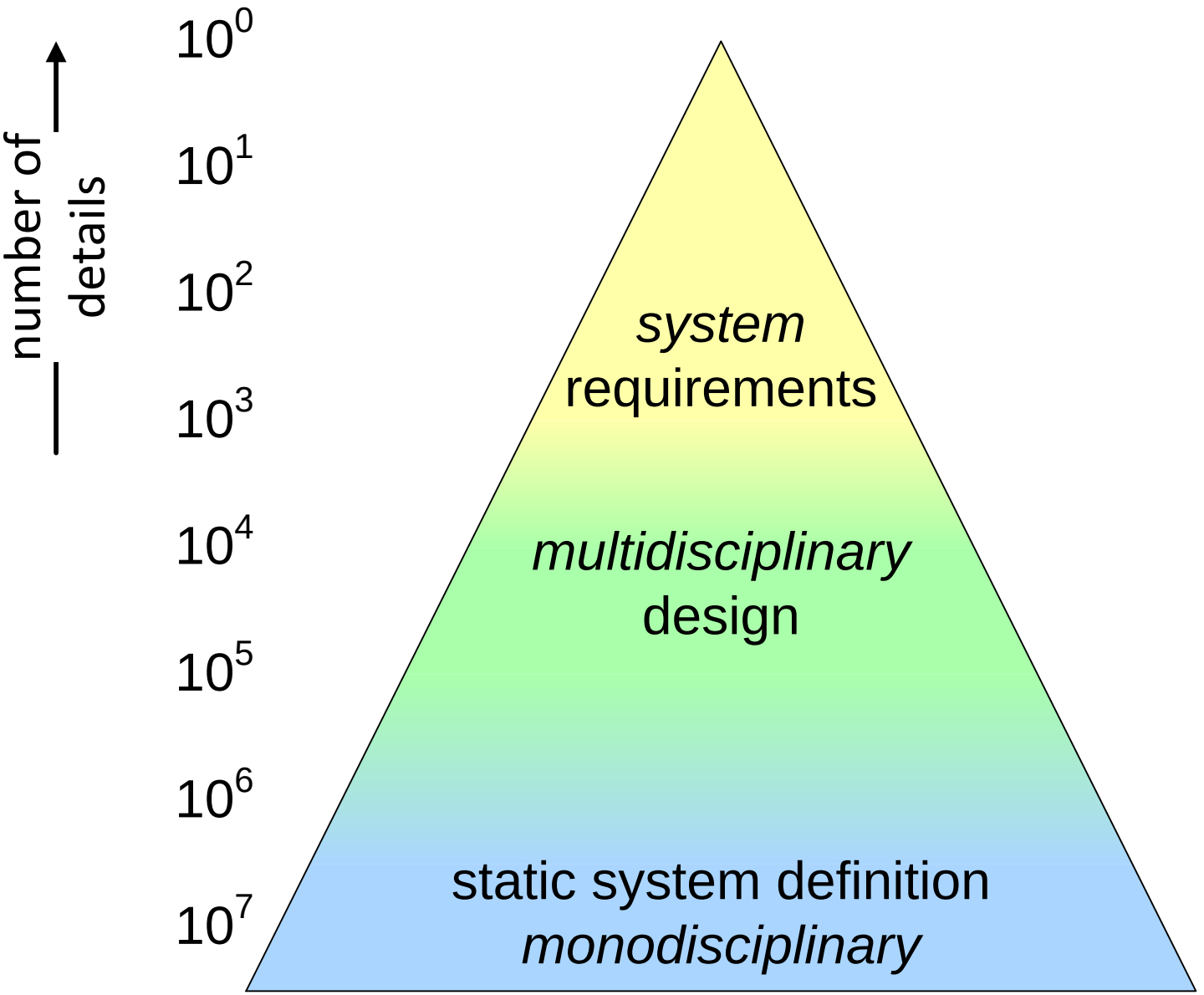
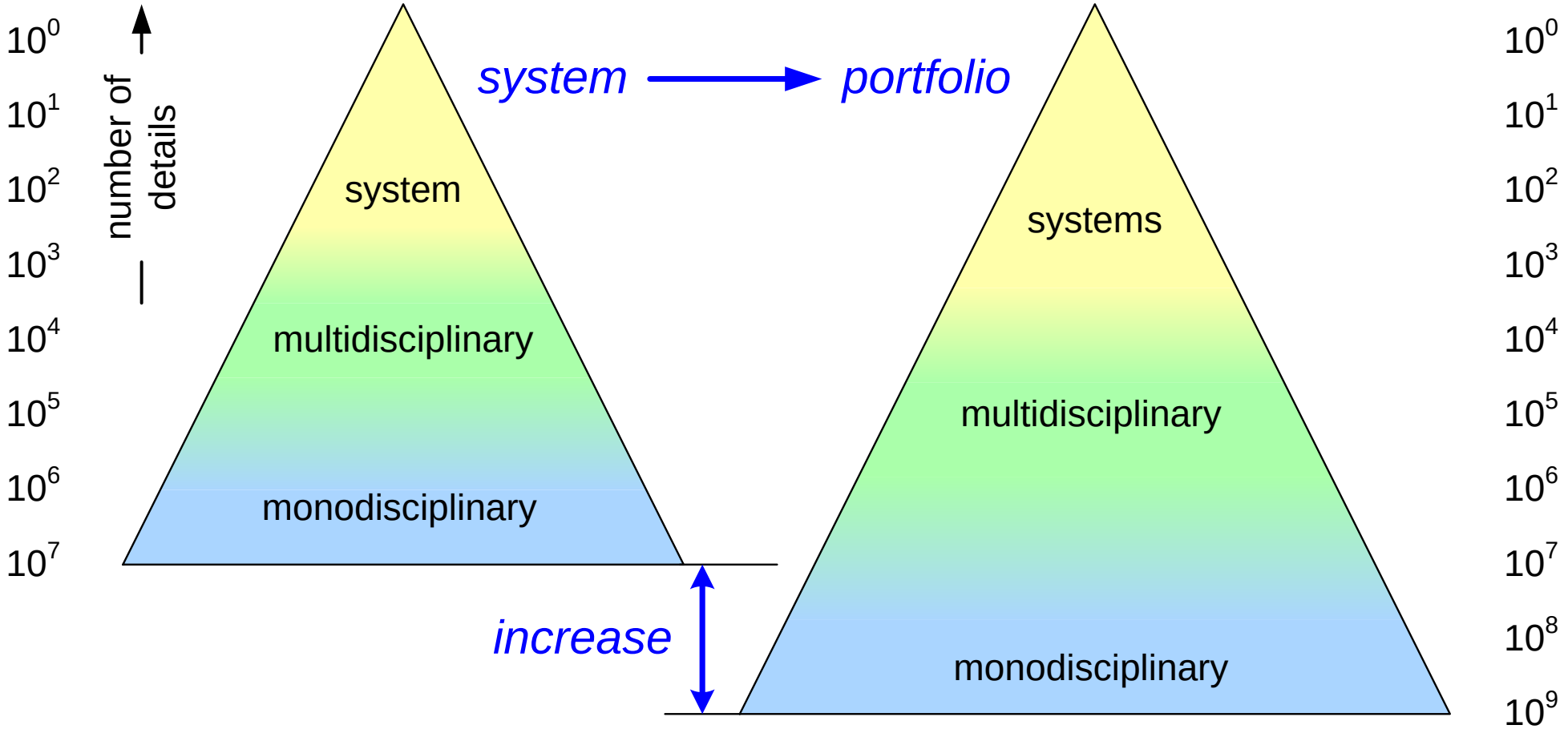


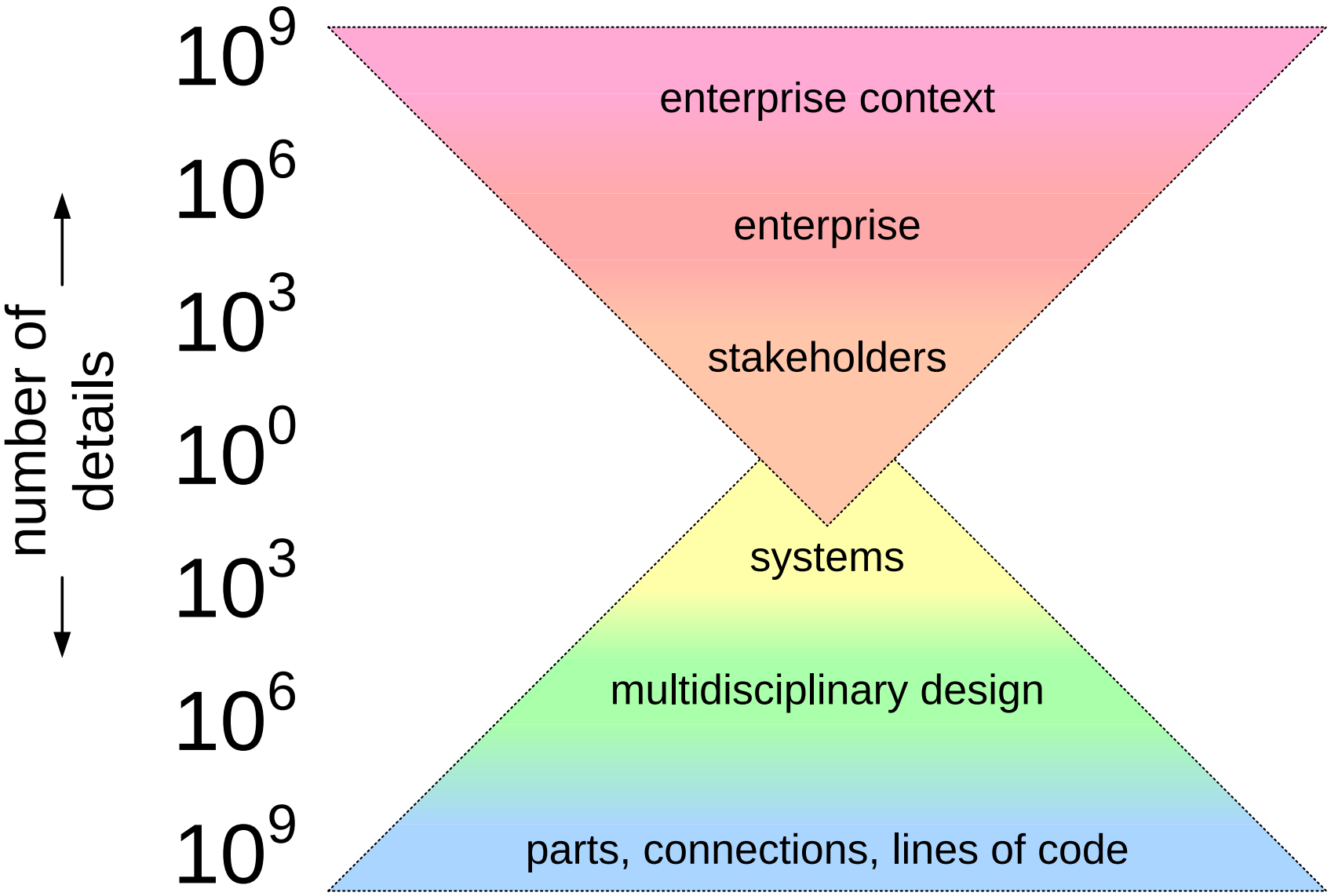
Level of Abstraction Single System



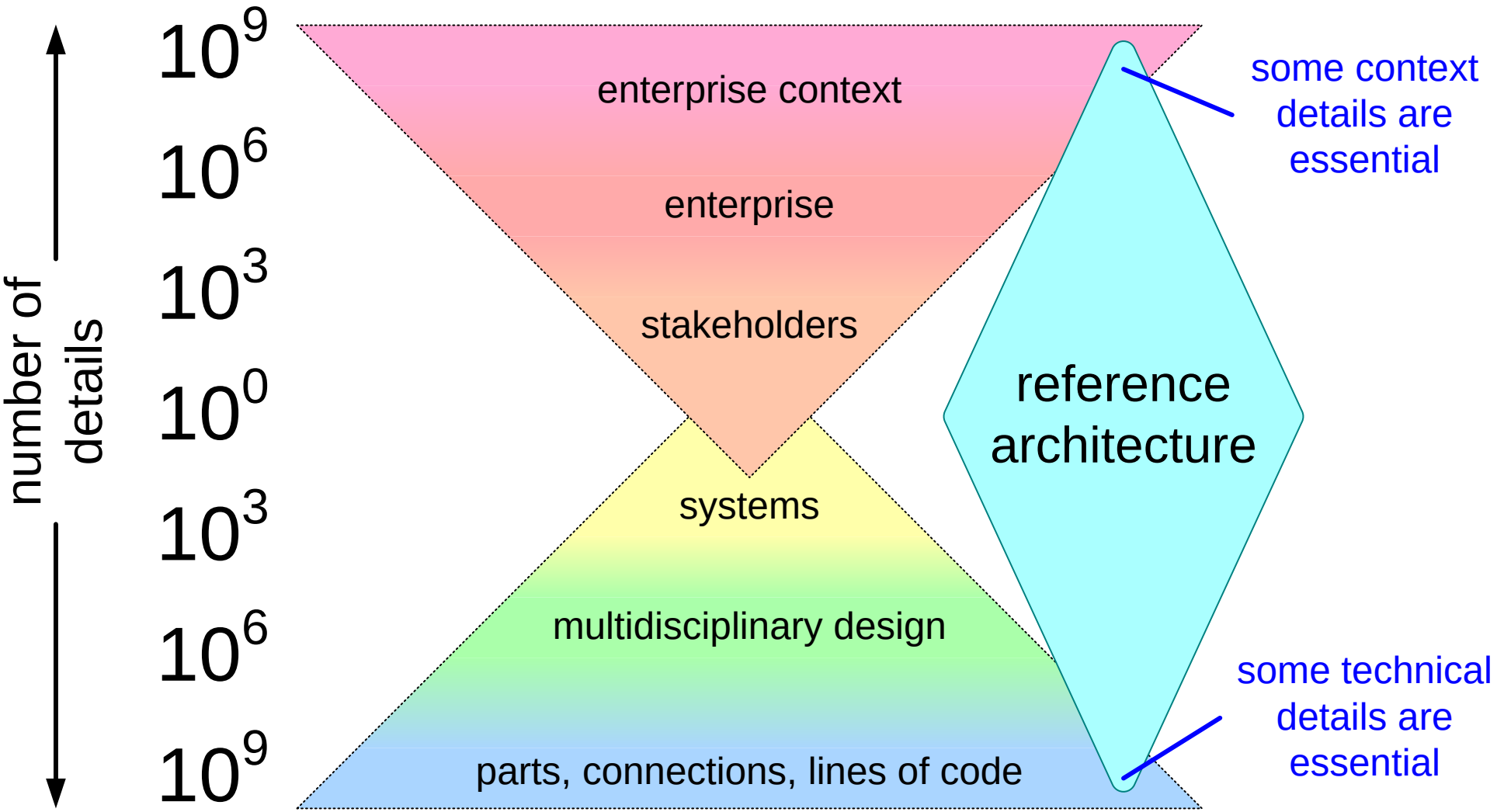
From system to Product Family or Portfolio



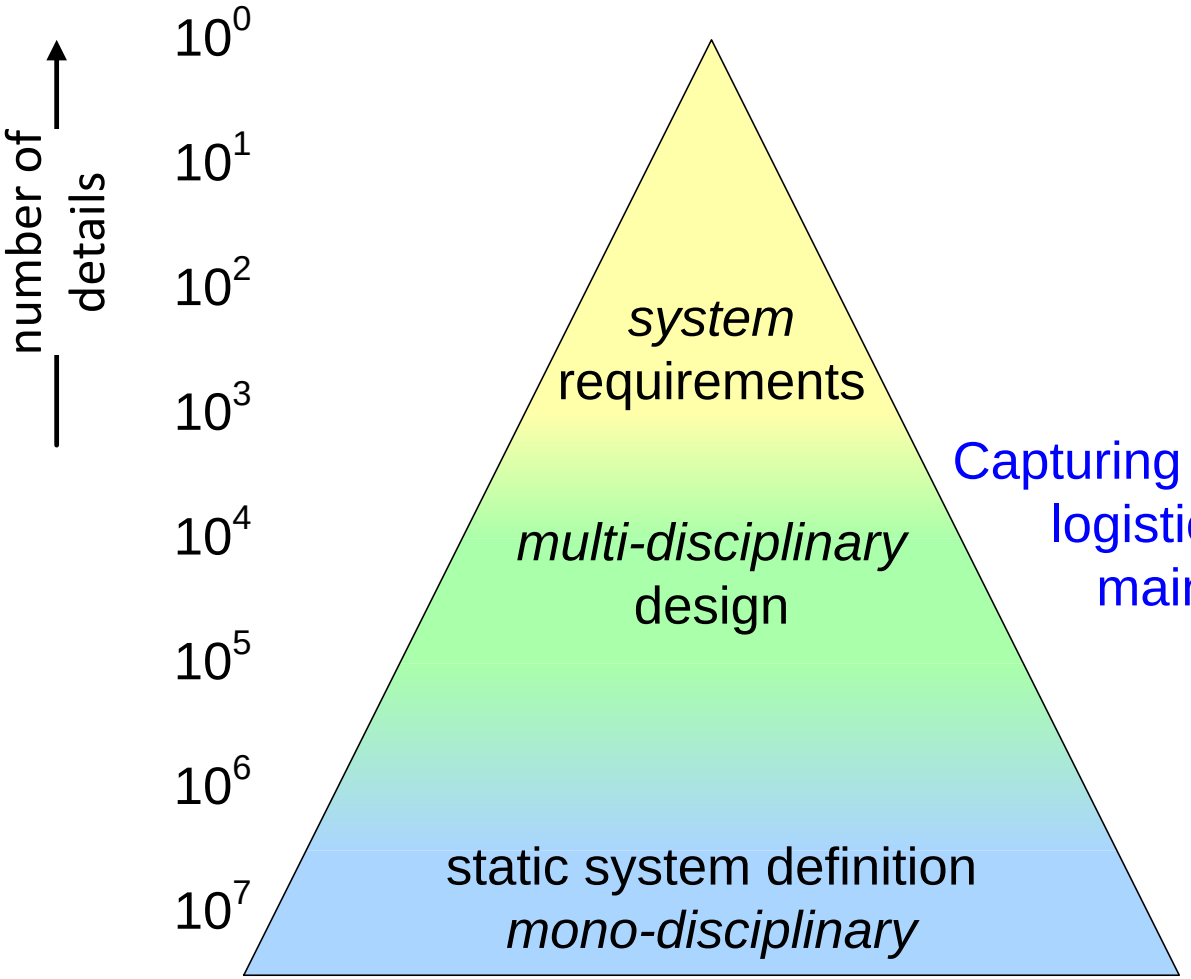
Product Family in Context



RA: Capturing the Essence



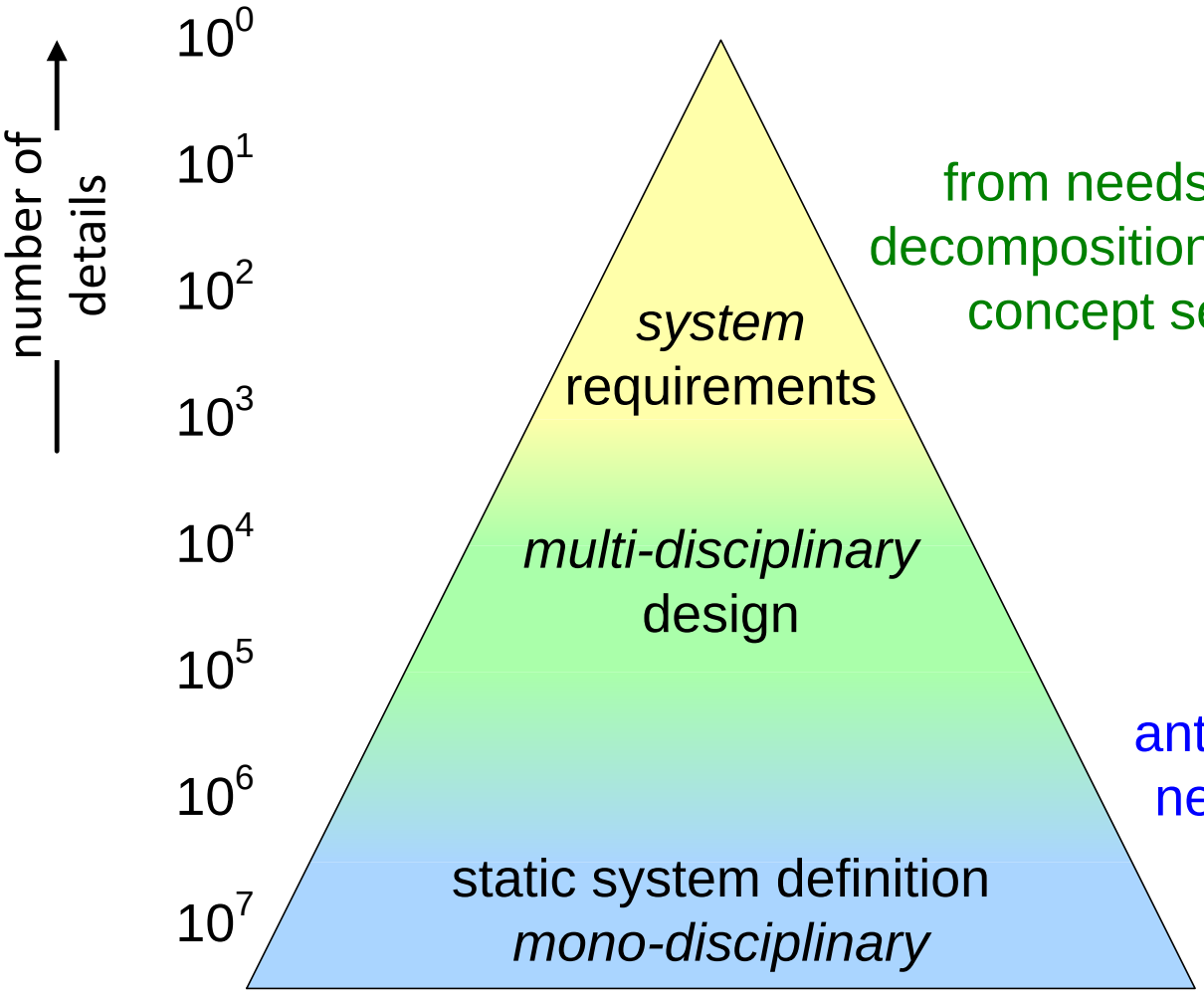
Engineering



Capturing all information that is required for: logistics, manufacturing, legislation, maintenance, life cycle support,

Engineering

Design

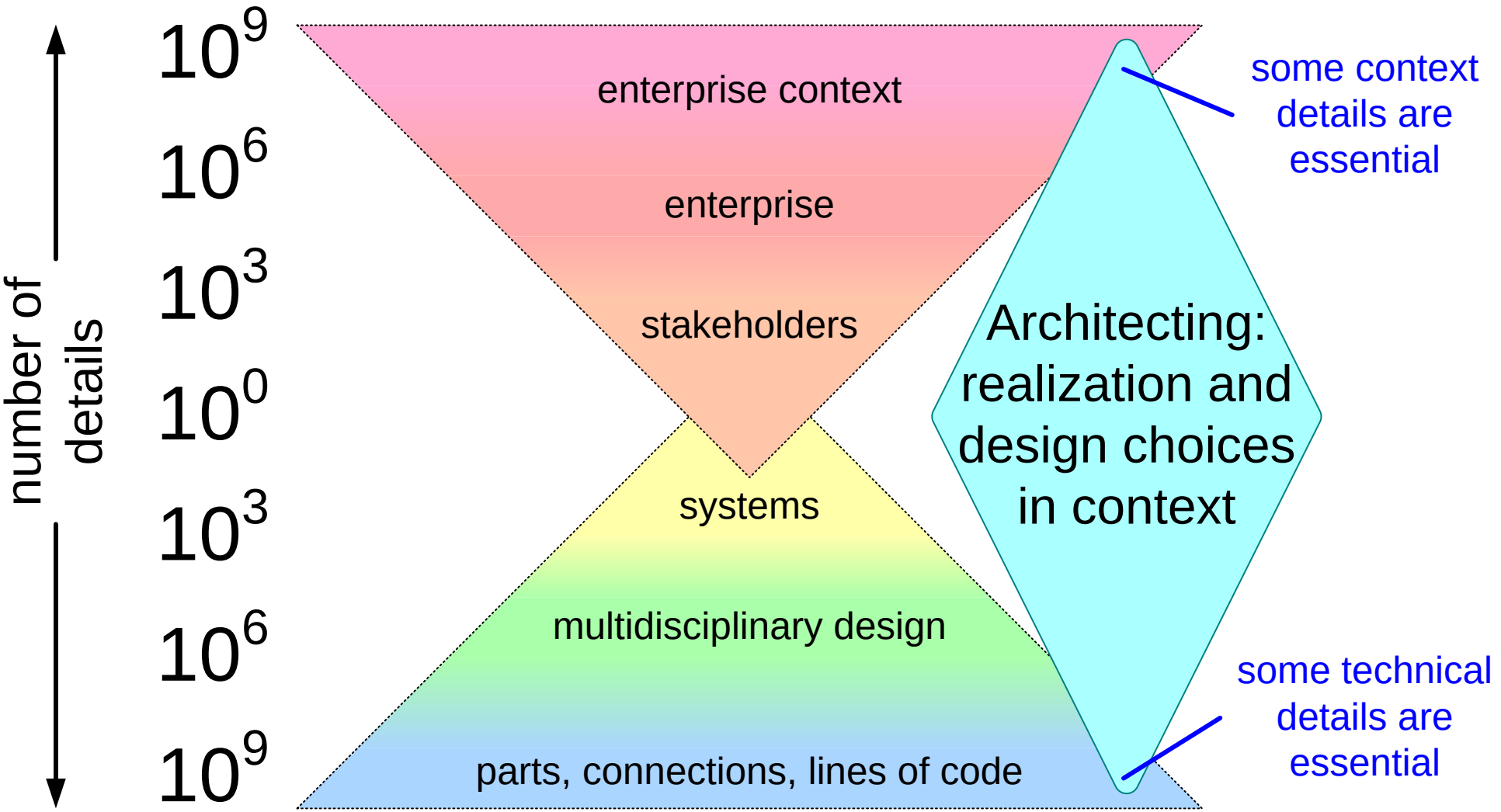
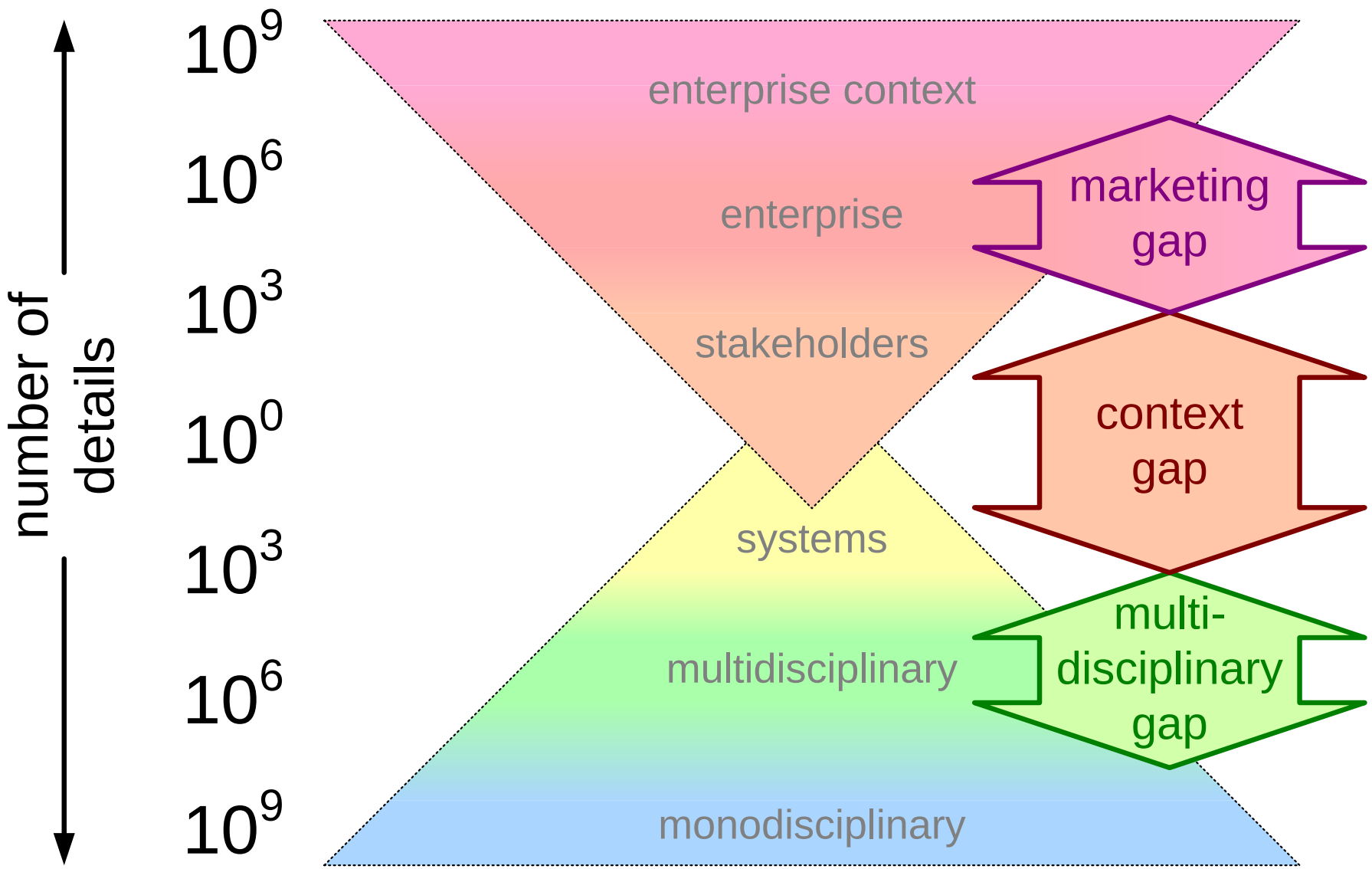


from needs and requirements to design:
decomposition, interface definition, allocation,
concept selection, technology choices

Design

anticipating engineering
needs and constraints

Architecting



Frequently observed gaps