

Modeling and Analysis; Modeling Paradigms

by *Gerrit Muller* [TNO-ESI, University of South-Eastern Norway]

e-mail: `gaudisite@gmail.com`

`www.gaudisite.nl`

Abstract

The word modeling is used for a wide variety of modeling approaches. These approaches differ in purpose, level of detail, effort, stakeholders, degree of formality, and tool support.

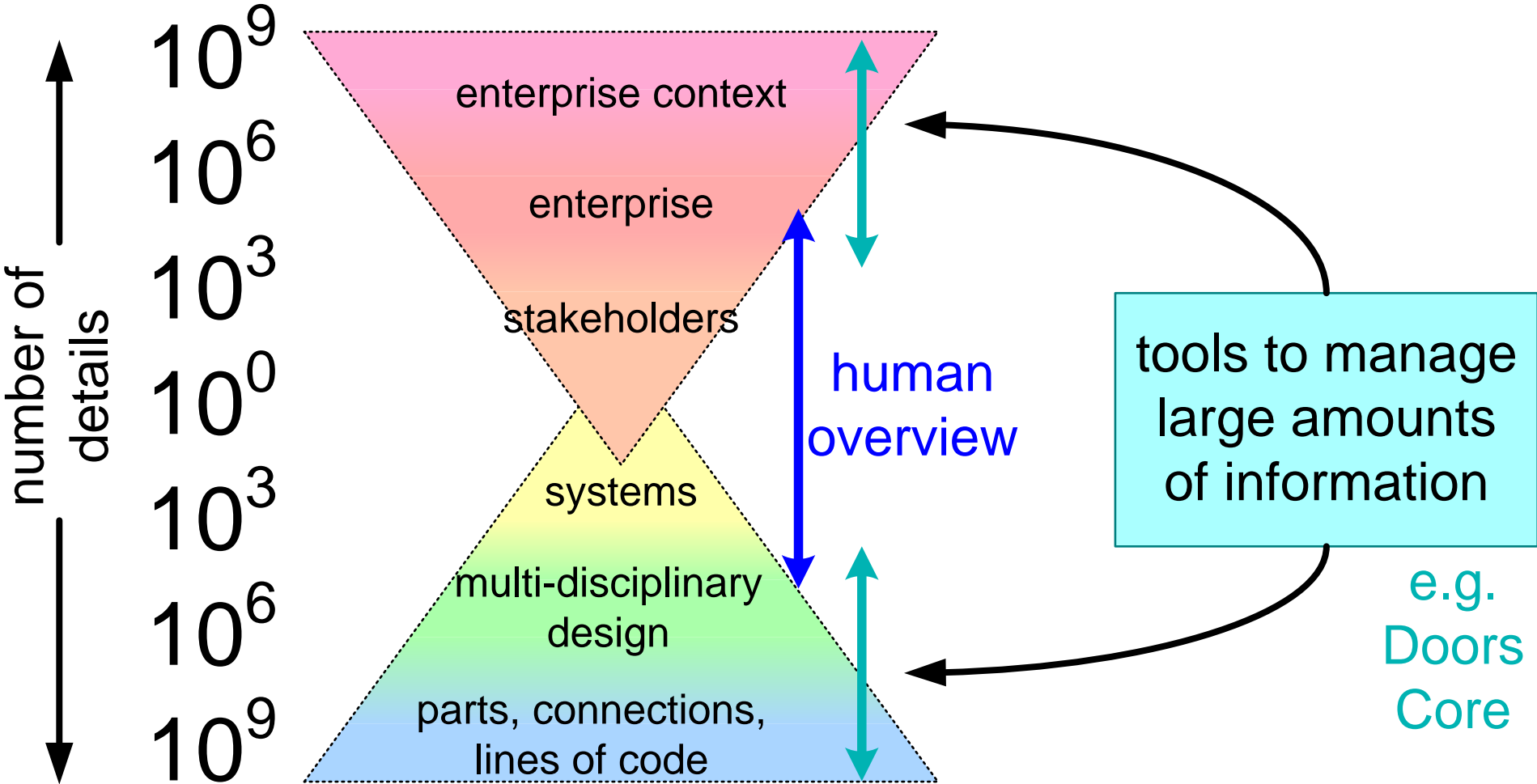
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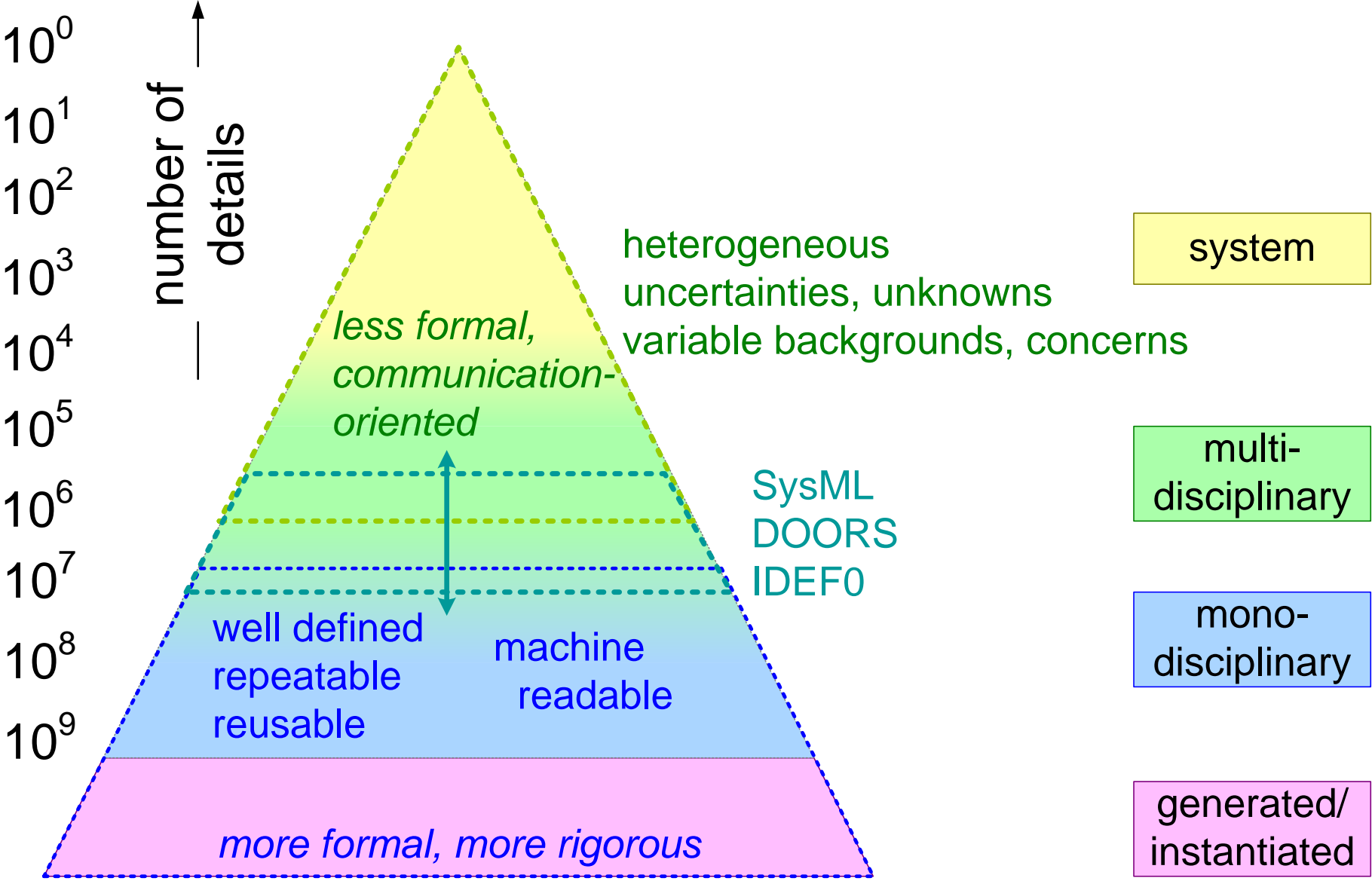
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paradigm	purpose
Conceptual system modeling	architecting <small>understanding, evaluating, creating reasoning, communicating, decision making</small>
SysML	formal capture of structure and behavior <small>integrating other tools simulating</small>
Design for 6 sigma	quality improvement in repeatable environments <small>Black box oriented</small>
Conceptual information modeling	understanding and formalizing information
Design Framework	capturing and tracing architecture decisions
Matlab	modeling and analyzing designs and algorithms <small>simulation and code generation</small>
CAD	mechanical and electrical design <small>interoperates with dedicated analysis, e.g. thermal, structural</small>
Formal specification and design (model checkers)	verification

Human Thinking and Tools



Formality Levels in Pyramids



Modeling Paradigms

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