Architectural Decision Making; What Happens Behind the Scenes?

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Abstract

Many decisions are taken during the architecting of a system. The question is what are architectural decisions? And what is the process behind making these decisions? The expectations of the stakeholders will be discussed. The actual way of working of architects will be described.

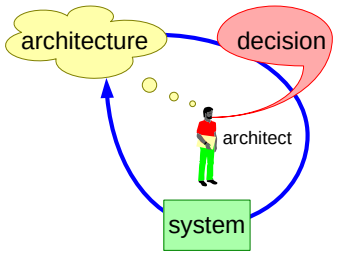

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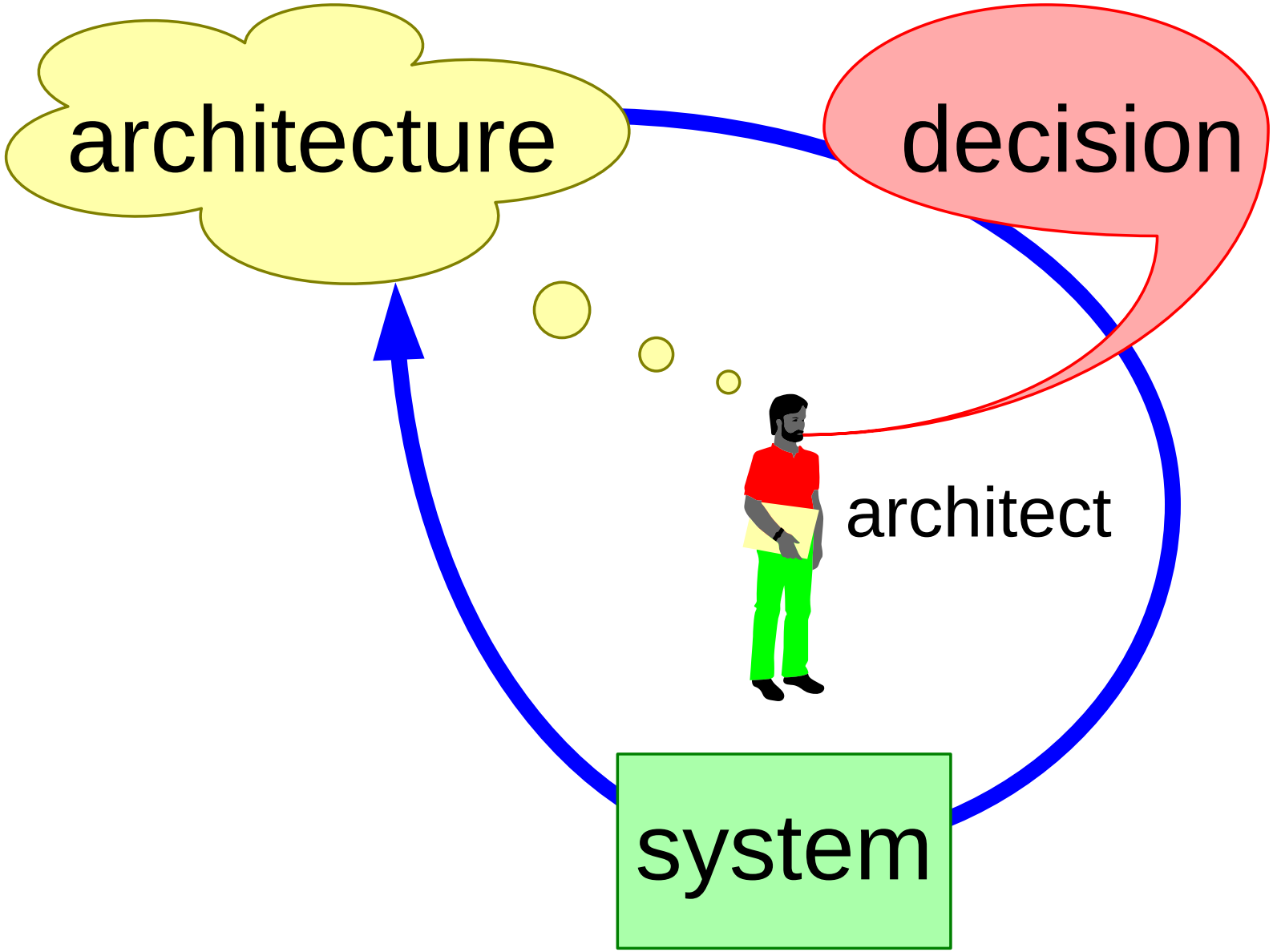
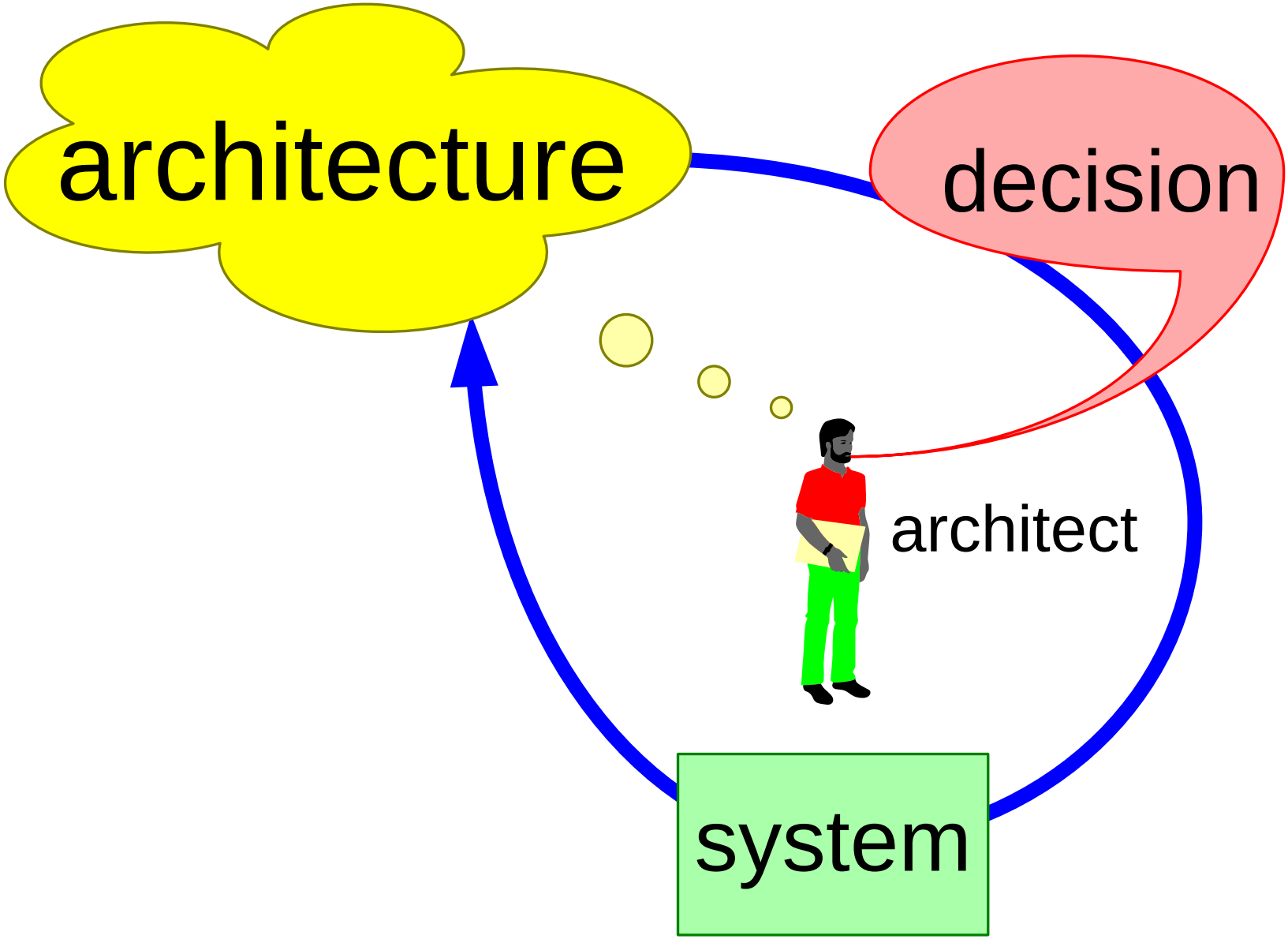
Figure Of Contents™



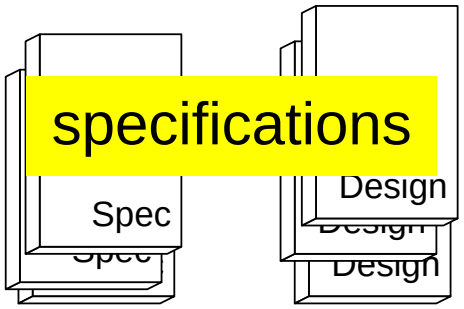
Buzzword, Hype, Solution or What?



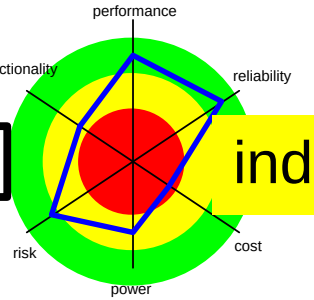
What is Architecture?

Mark all applicable boxes ☒

☐ specifications



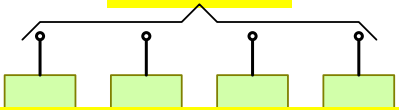
☐ indicators



☐ overarching vision

market, business, technology
process, product

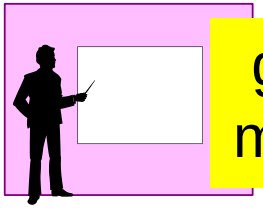
☐ API's



☐ high level rules

layer n !calls n-k; k>1
layer n !calls n+k; k>0

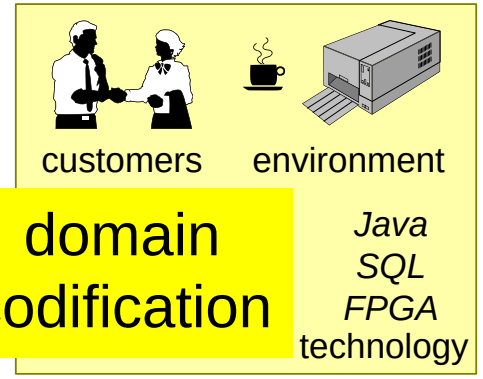
☐ guidance monitoring



☐ components (implementations)

☐ concepts

audio
pipeli
message
whit
communication
http
DVB
IPTV



☐ infrastructure

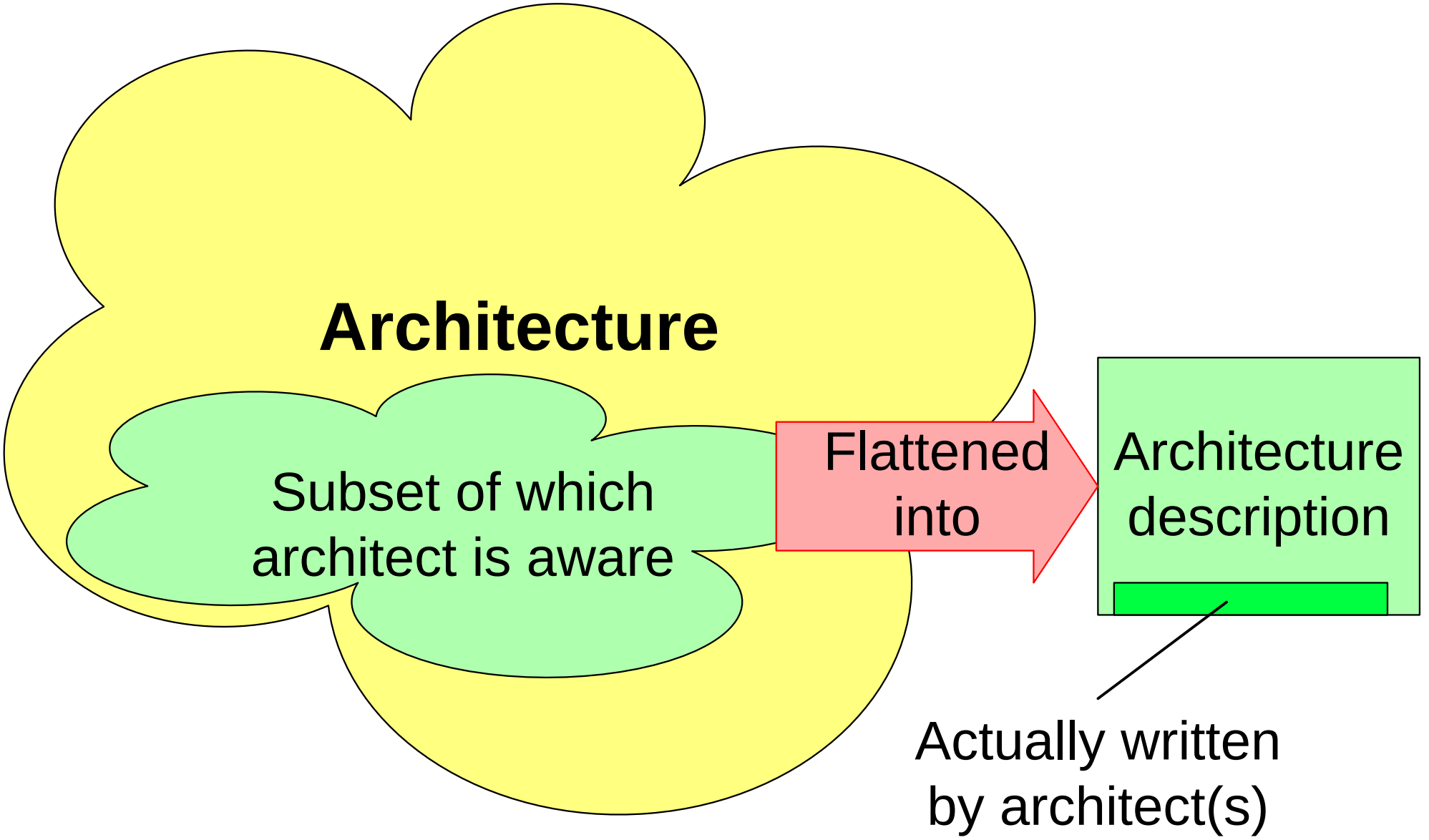
OS
file system
bus
memory
I/O

☐ standards

WMA
MP3
JPEG

☐ other...

Architecture vs Description



My View on Architecture

Do the right things

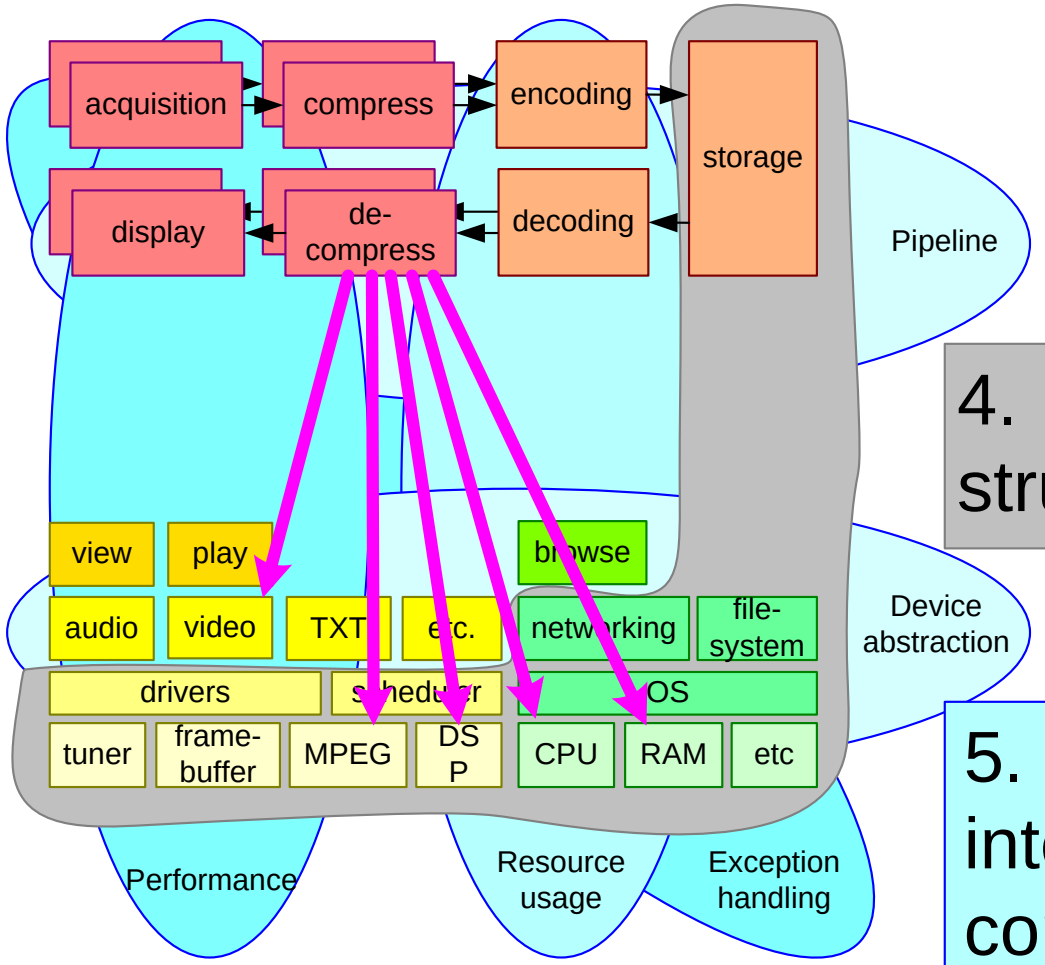
Do the things right

”Guiding How” by providing rules for:

1. Functional Decomposition

3. Allocation

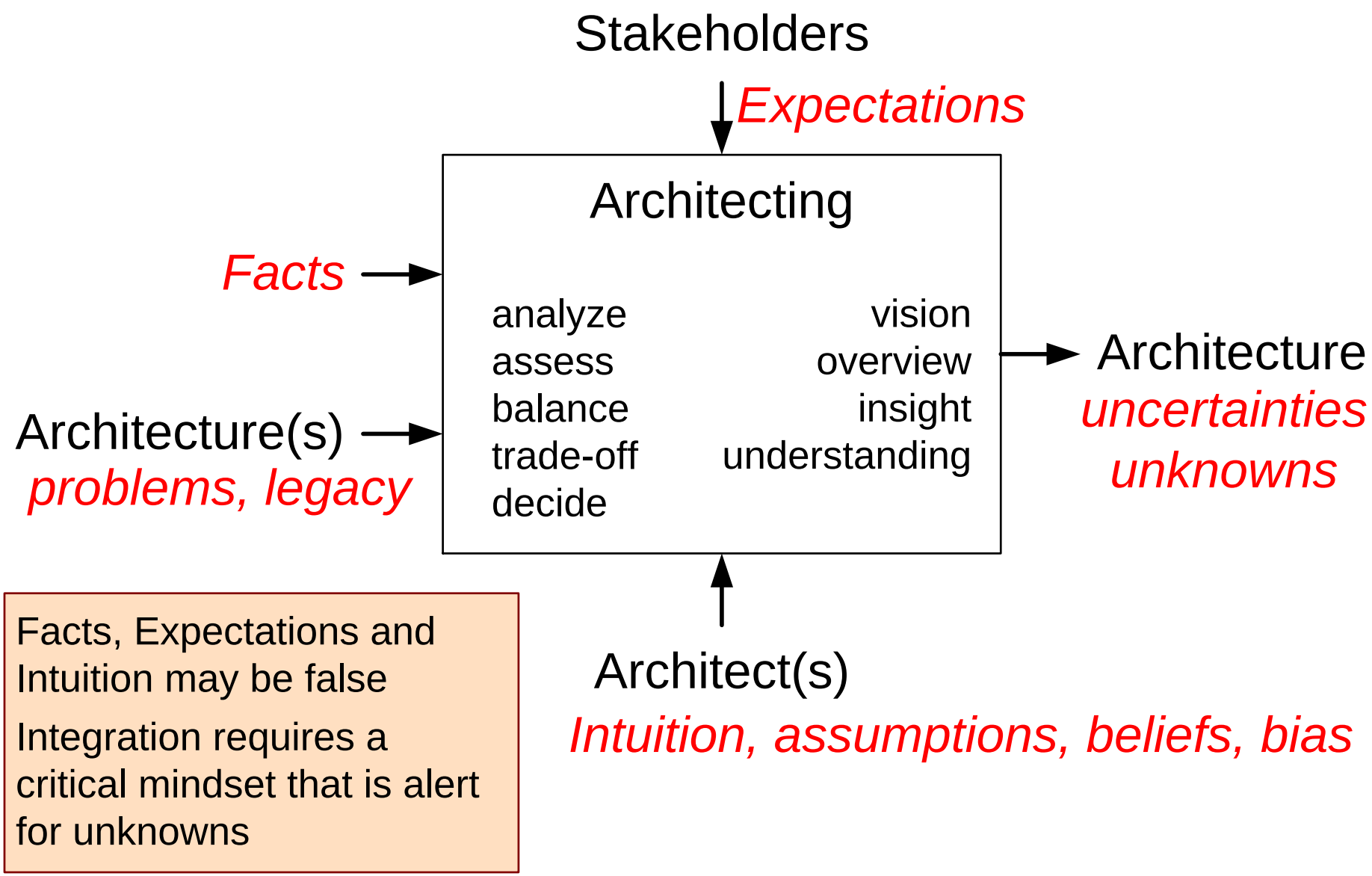
2. Construction Decomposition



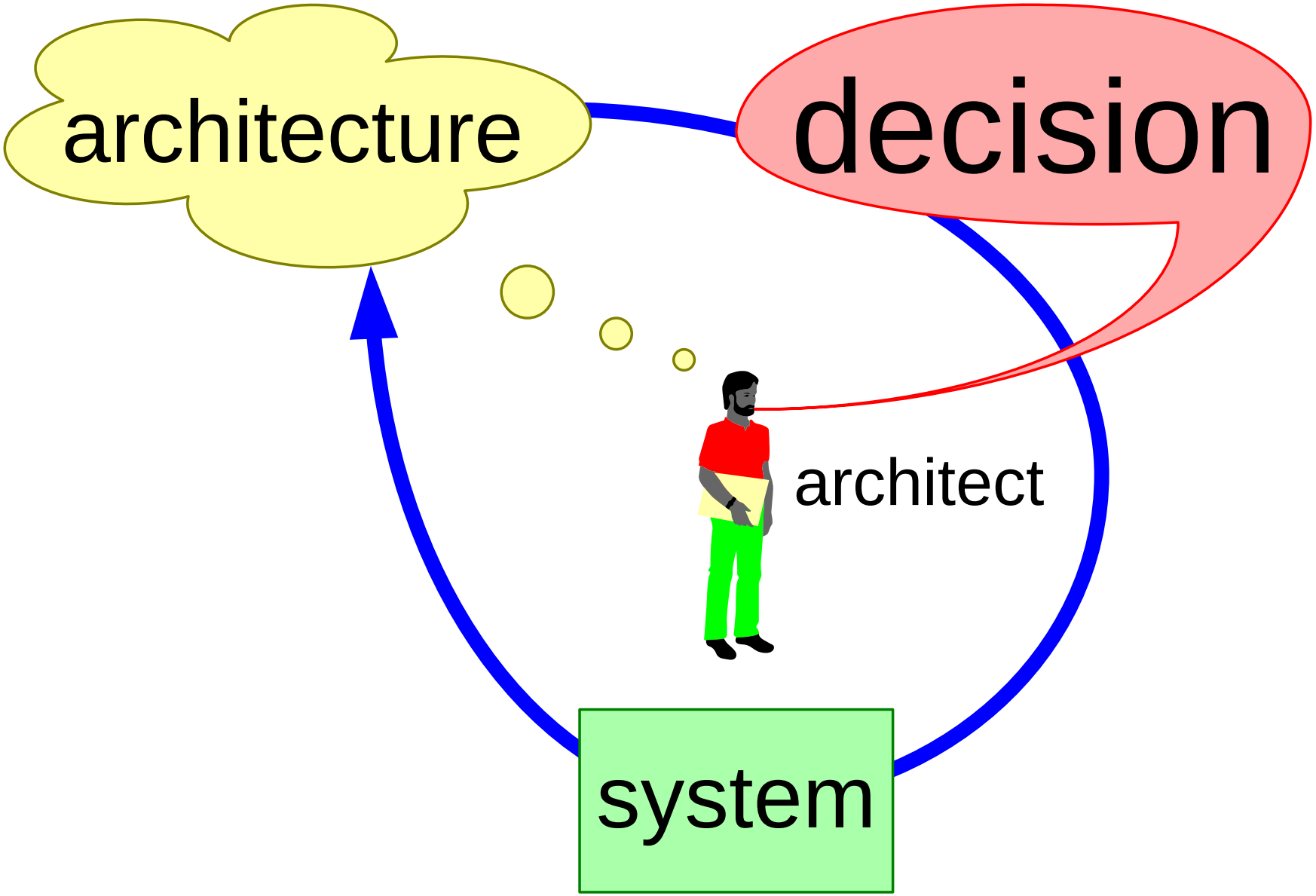
4. Infra-structure

5. Choice of integrating concepts

The Art of Architecting



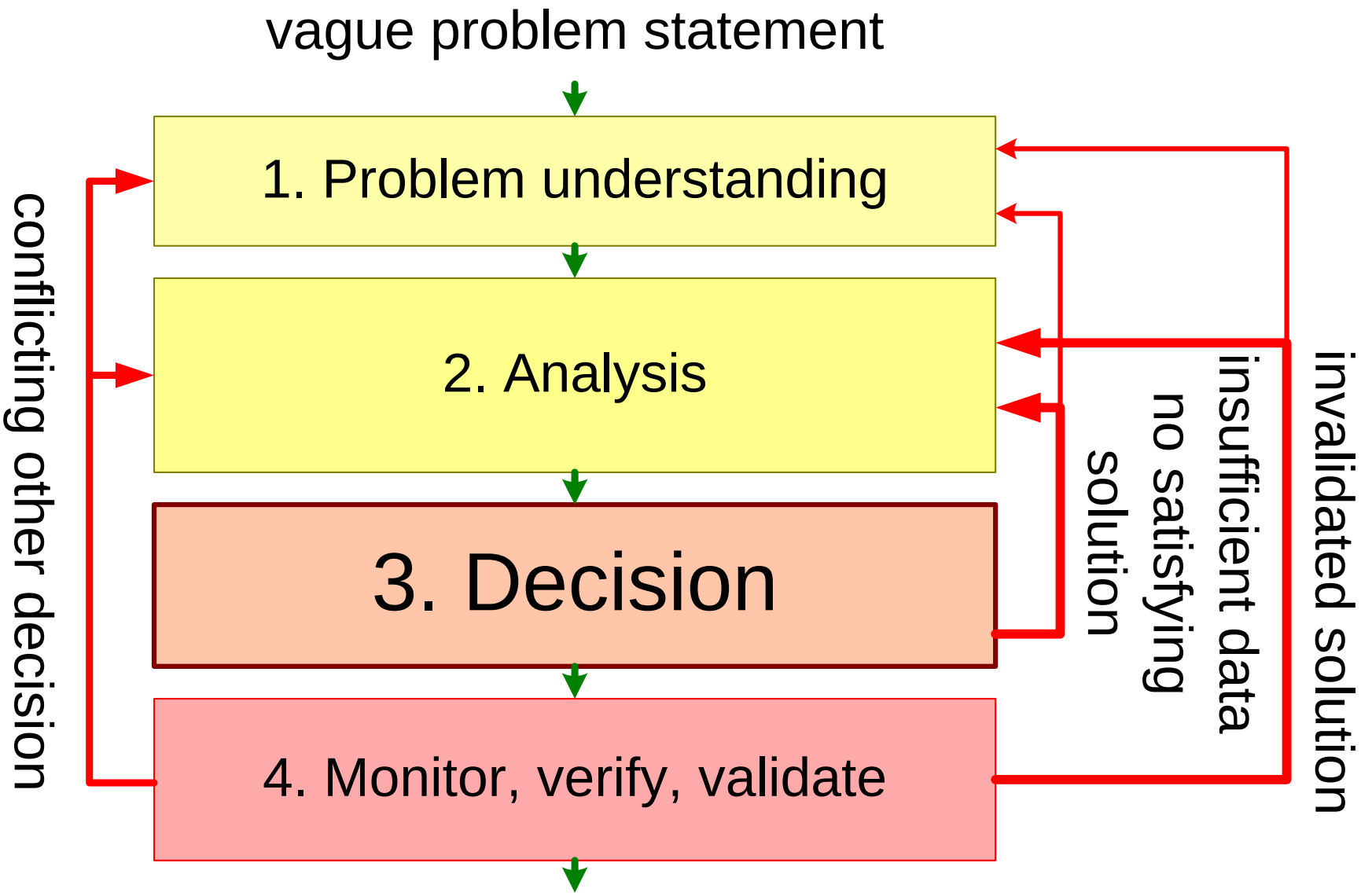
Another Buzzword or Solution?



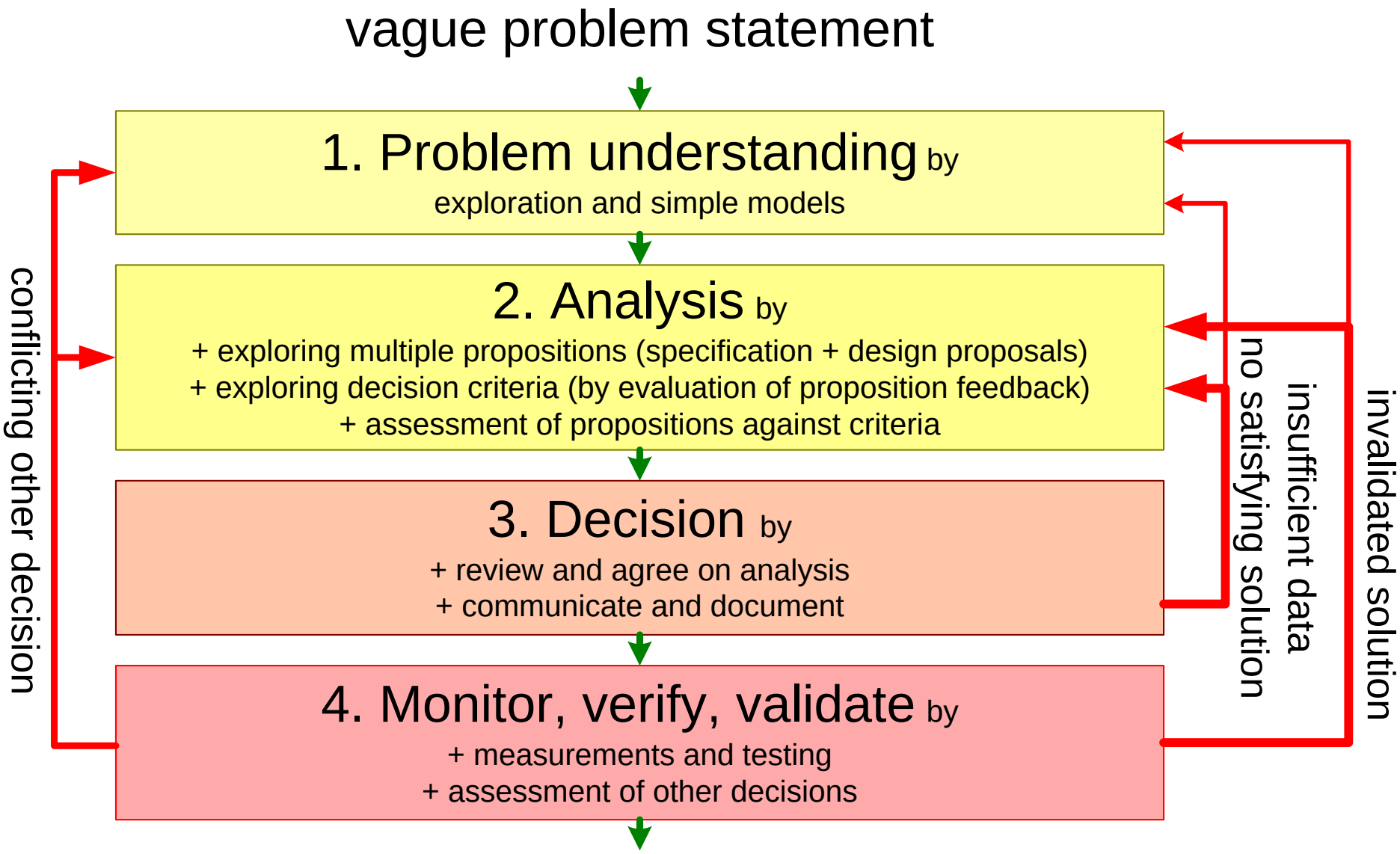
Question

How many (architectural) decisions does an architect make?

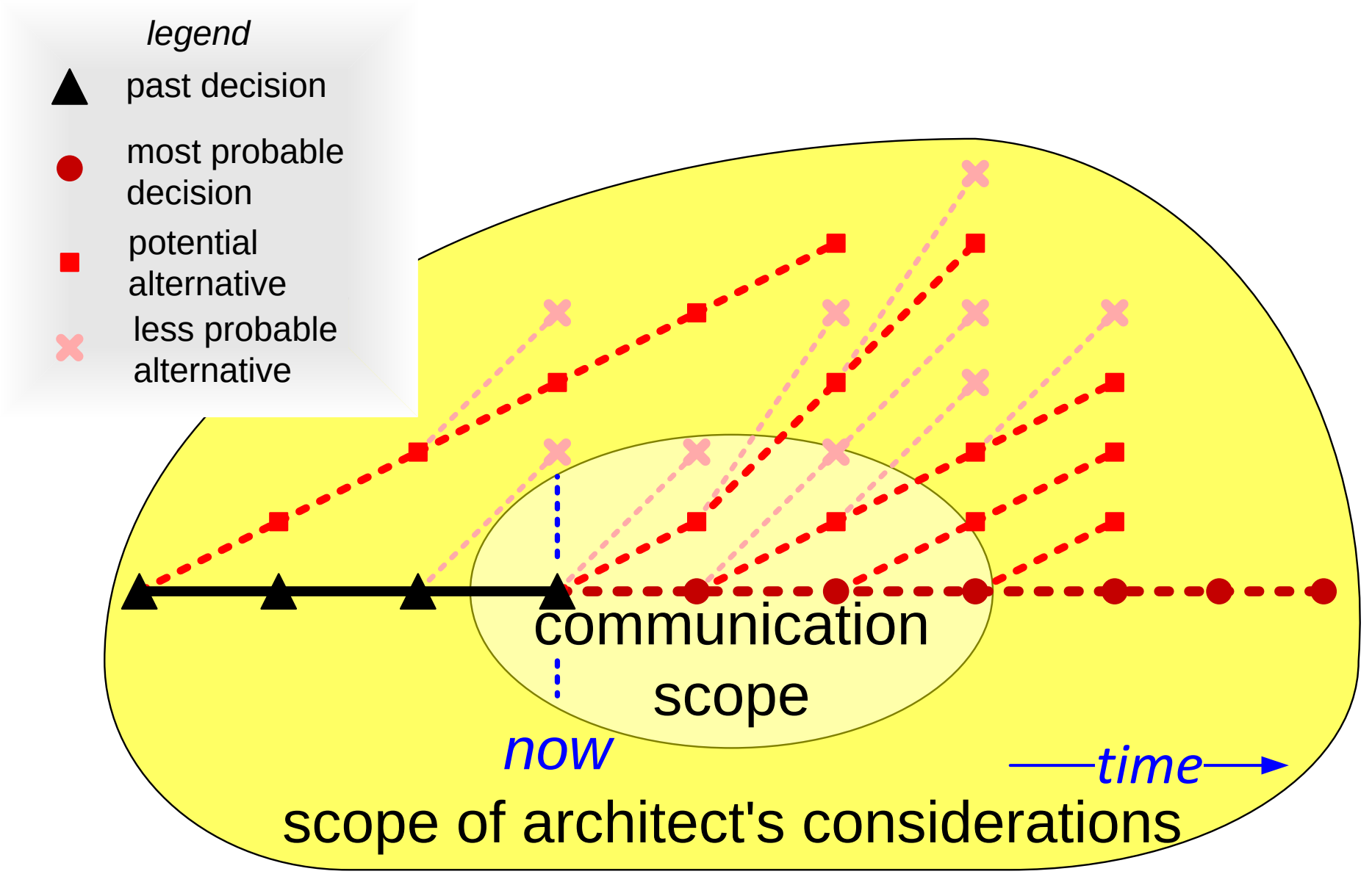
Decision Making Process



Decision Making Process *Annotated*



Graph of Decisions and Alternatives



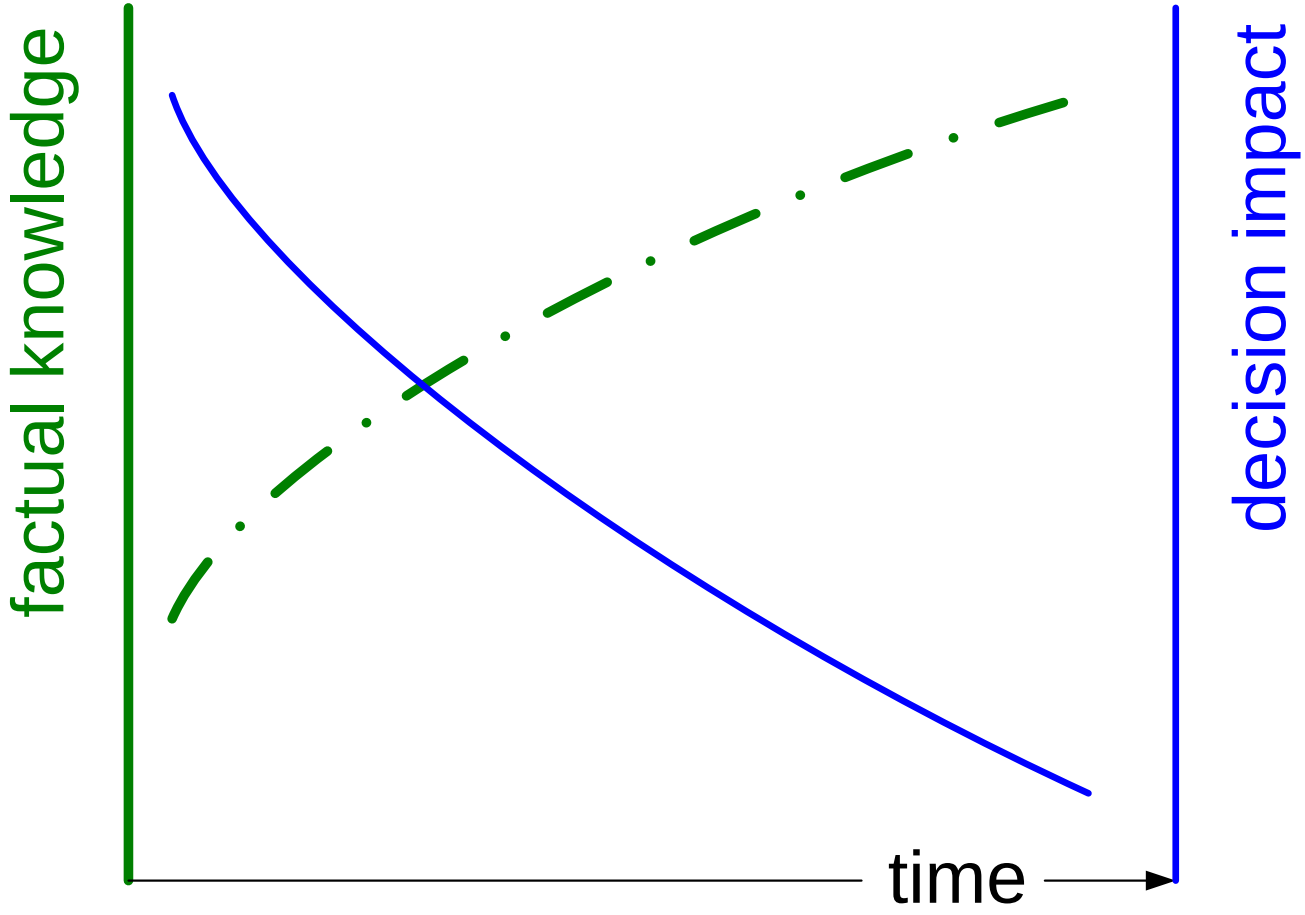
Different Types of Decisions

basic principles

requirements

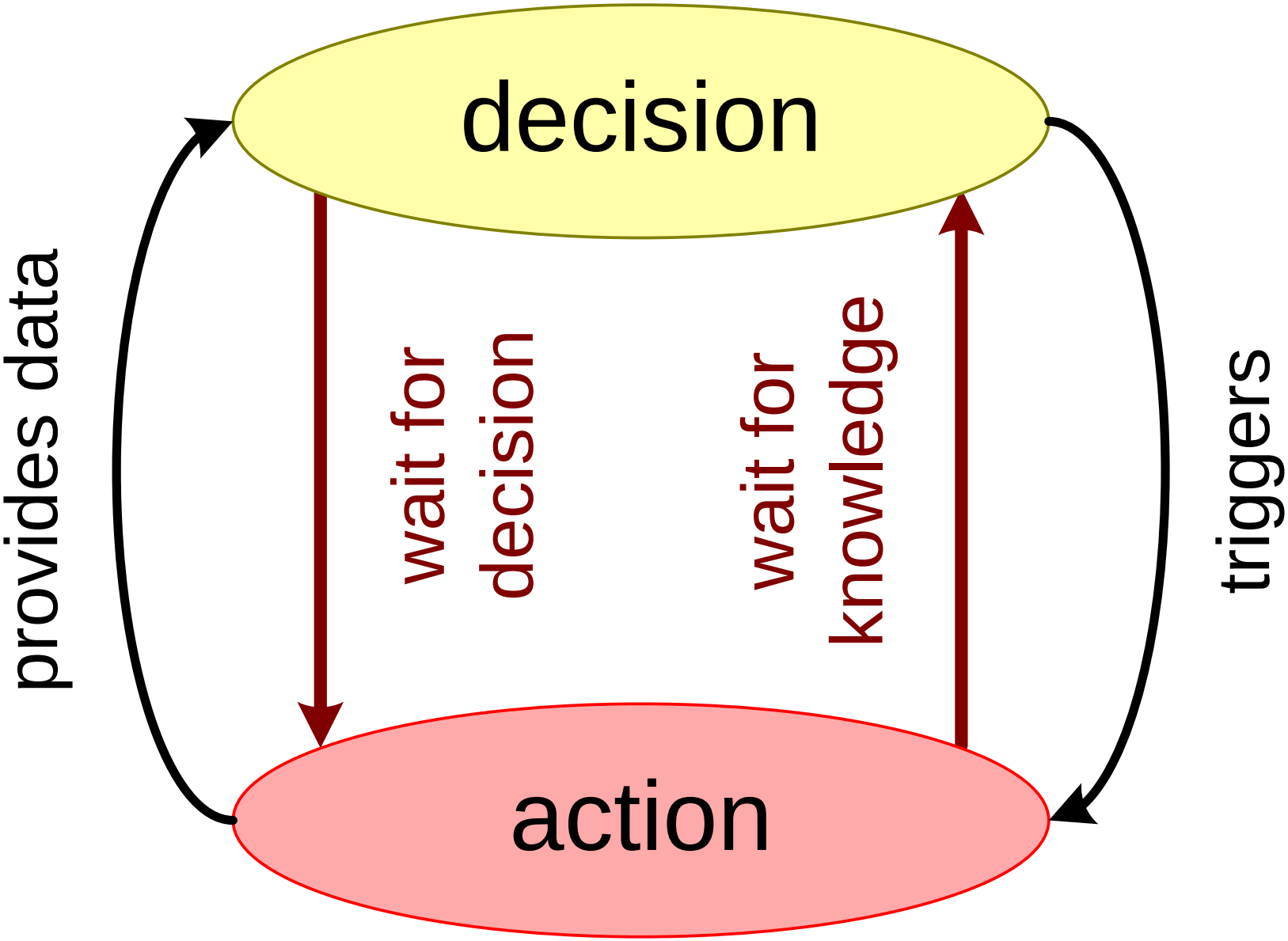
architecture rules
implementation choices
f.i. technology

Many Decisions are taken in the Dark

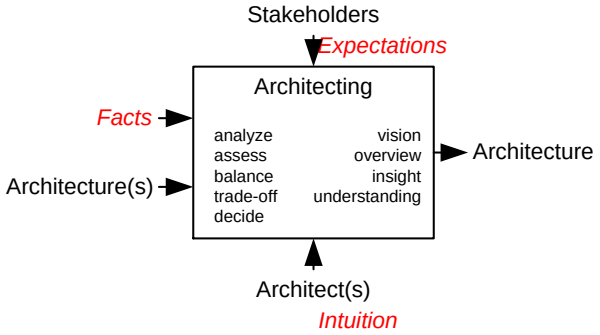


Highest impact decisions are taken while the least factual knowledge is available

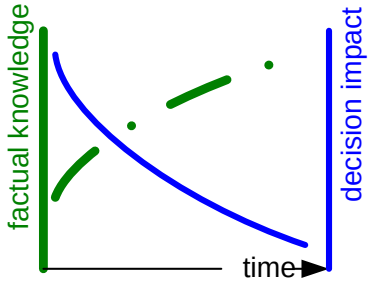
Chicken or Egg?



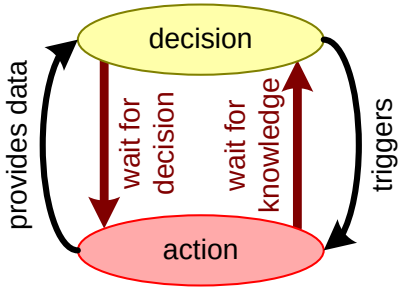
Why Project Leaders Sometimes don't like Architects



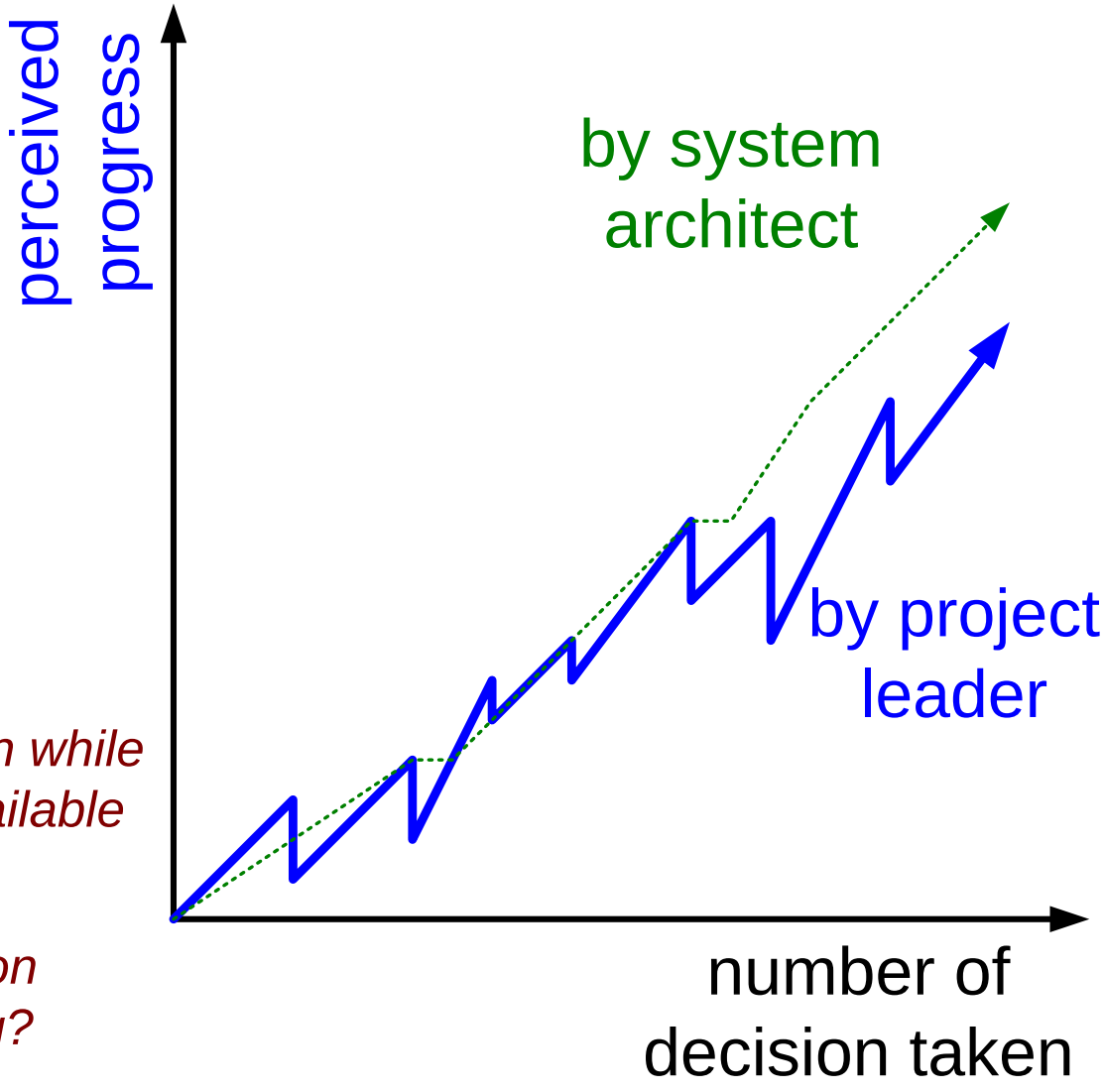
Facts, Expectations and Intuition might be false



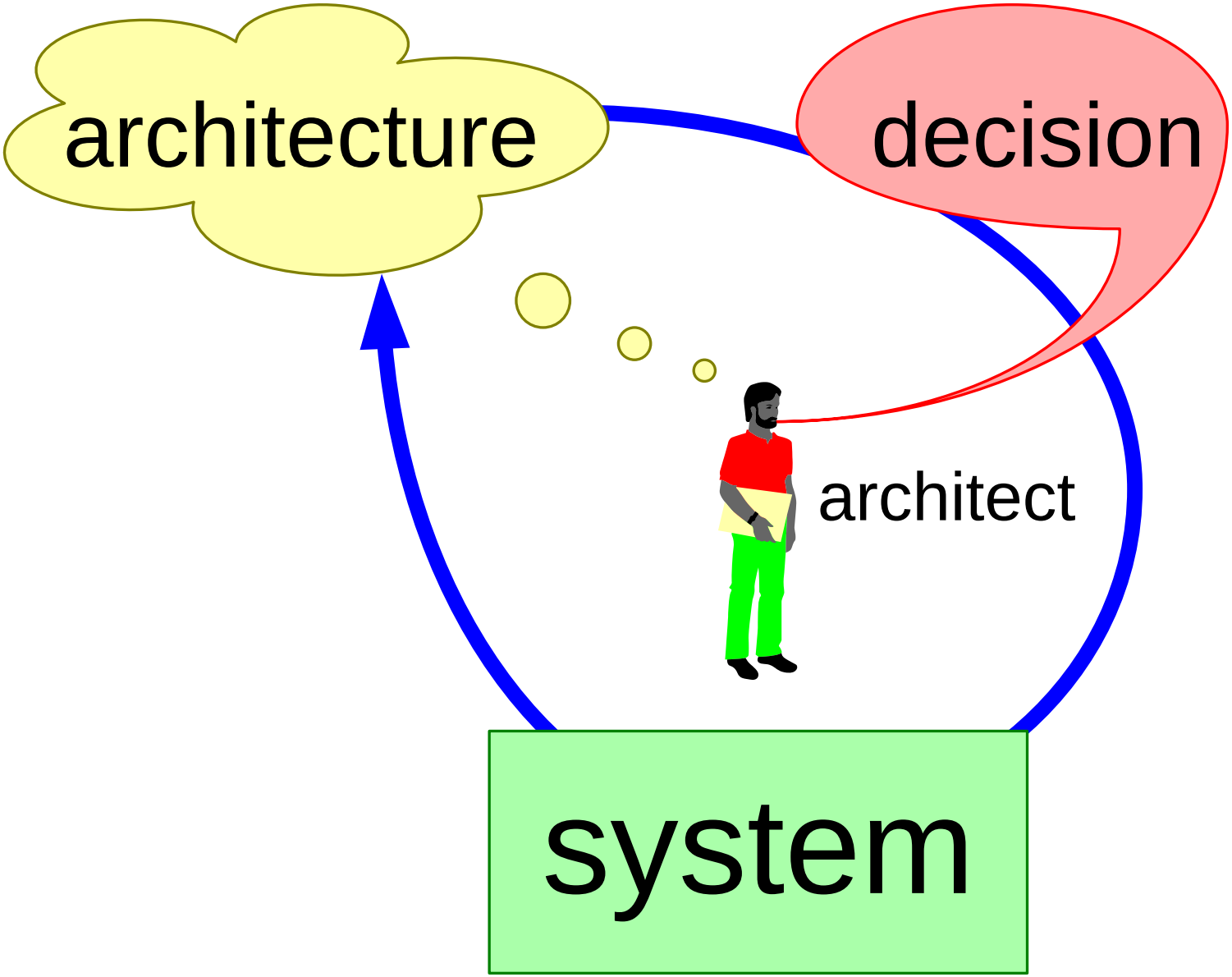
Highest impact decisions are taken while the least factual knowledge is available



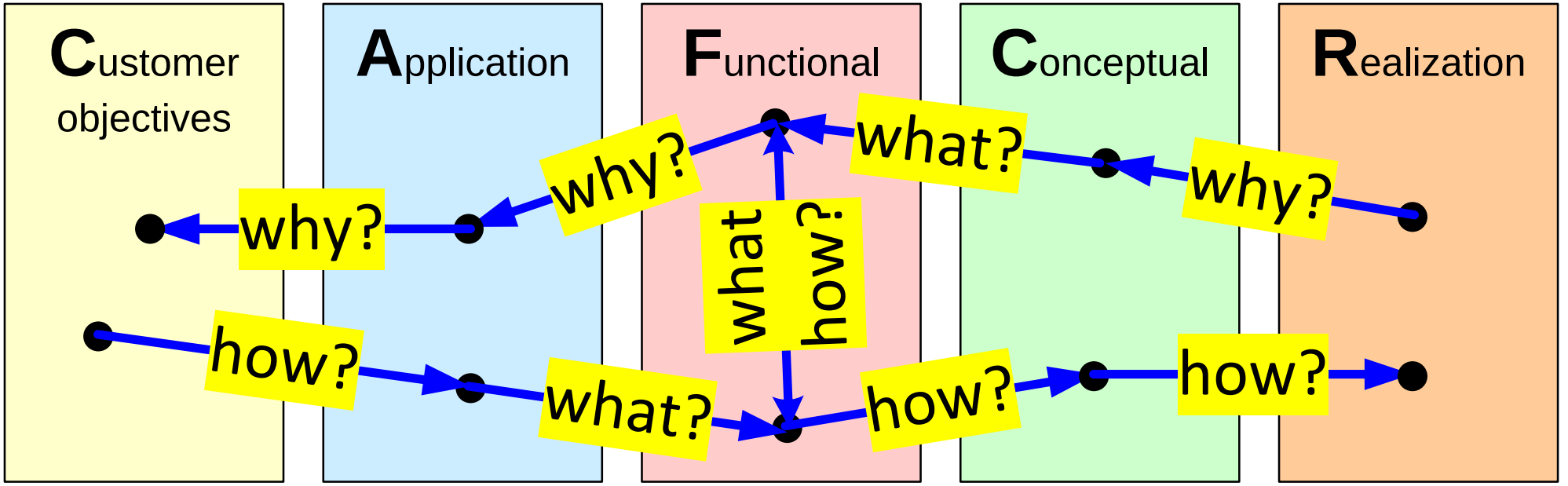
decision - action chicken or egg?



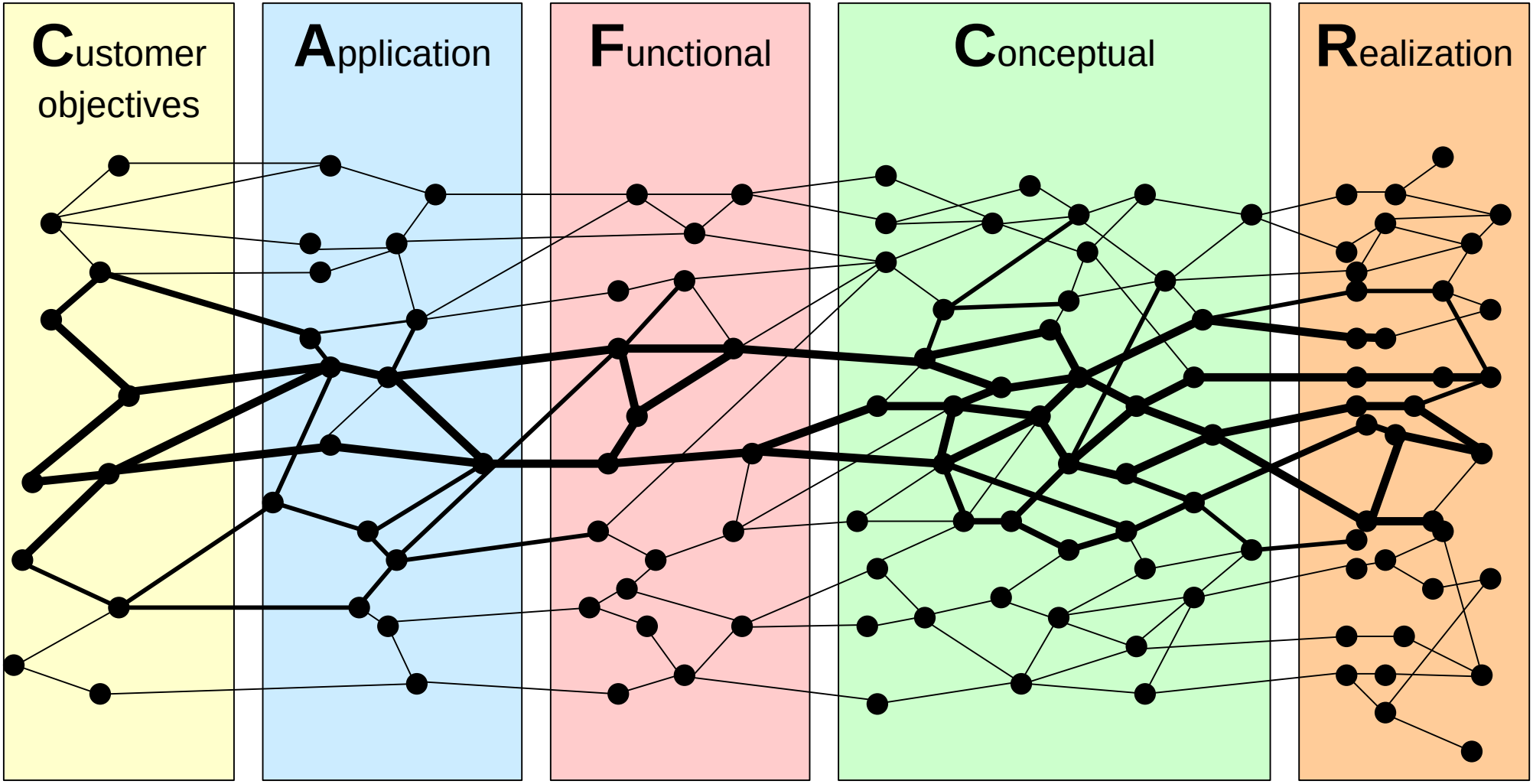
Bottom-line is a Working System



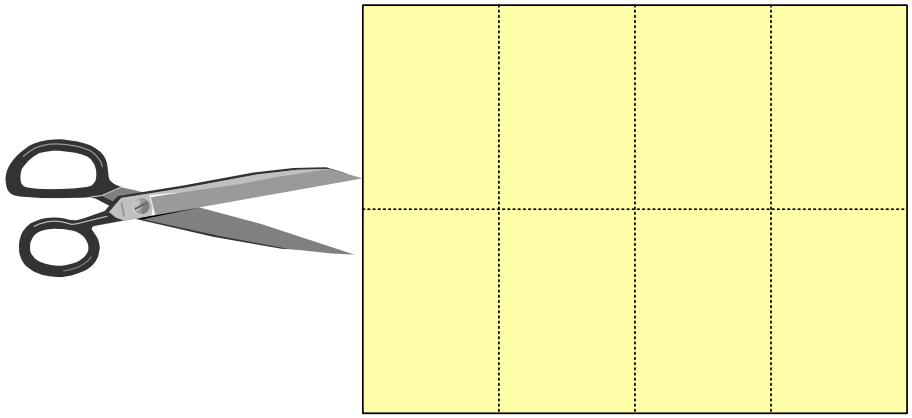
Decisions Are Related



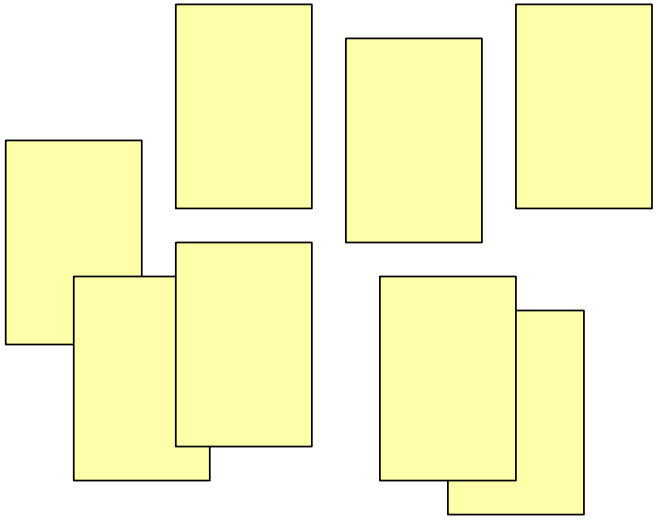
Worse, Decisions Are **Heavily** Related

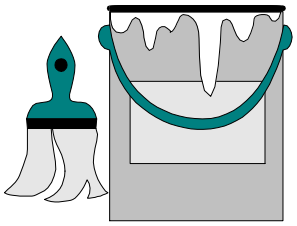


Architecting is much more than Decomposition

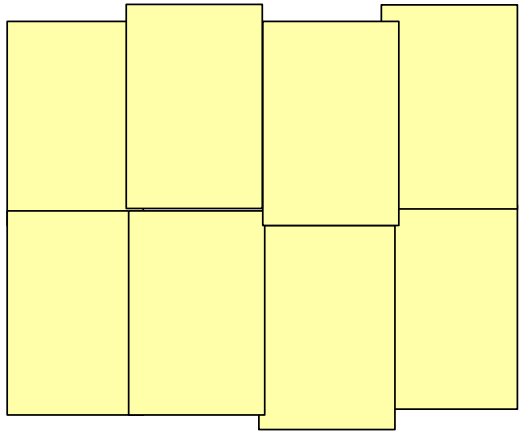


Decomposition is "easy"





Integration is difficult



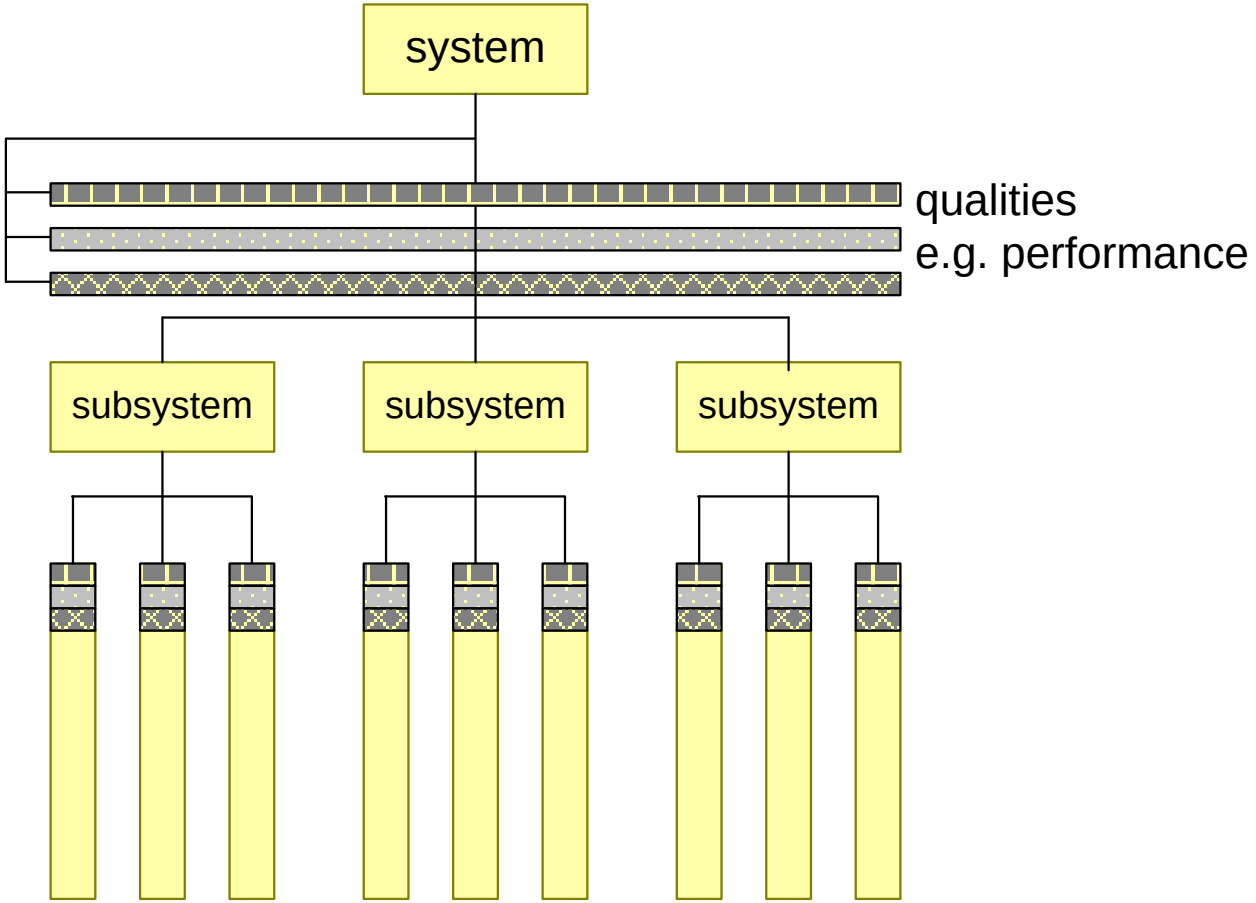
In Documentation Terms

's or structured

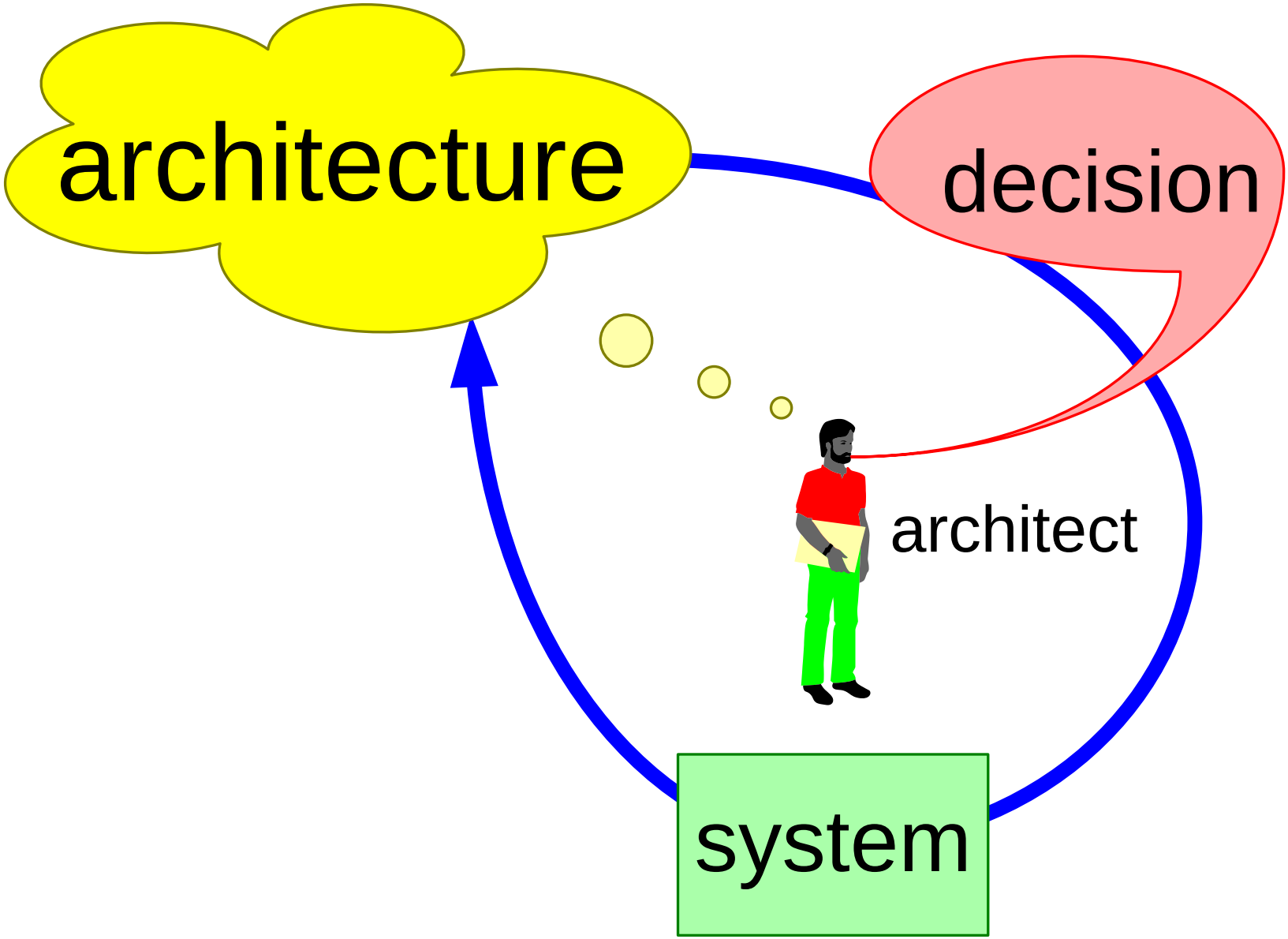
minutes 1
- decision 1
- decision 2
- decision 3

minutes 2
- decision 4
- decision 5
- decision 6

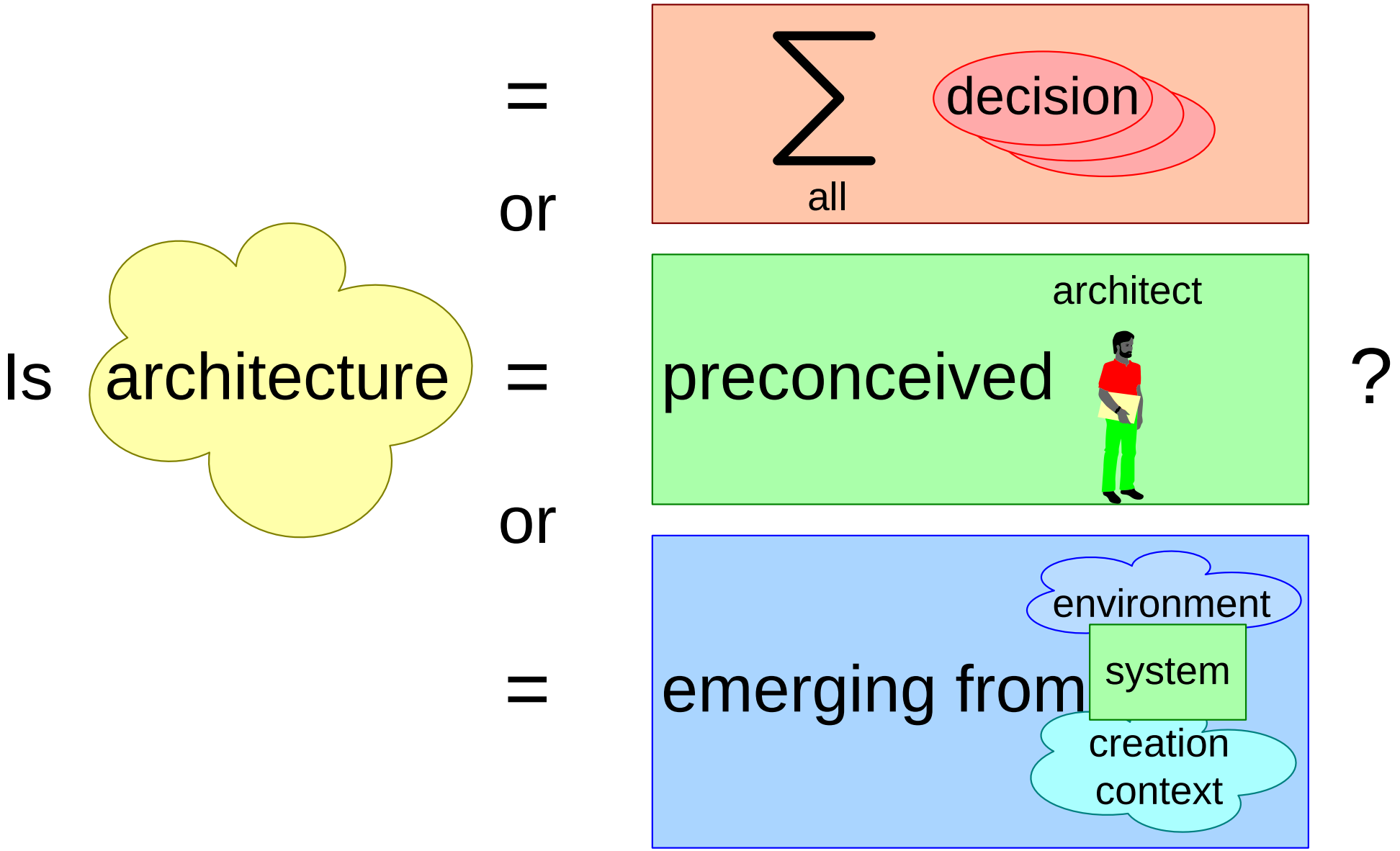
minutes k
- decision n
- decision n+1
- decision n+2



Revisiting Architecture



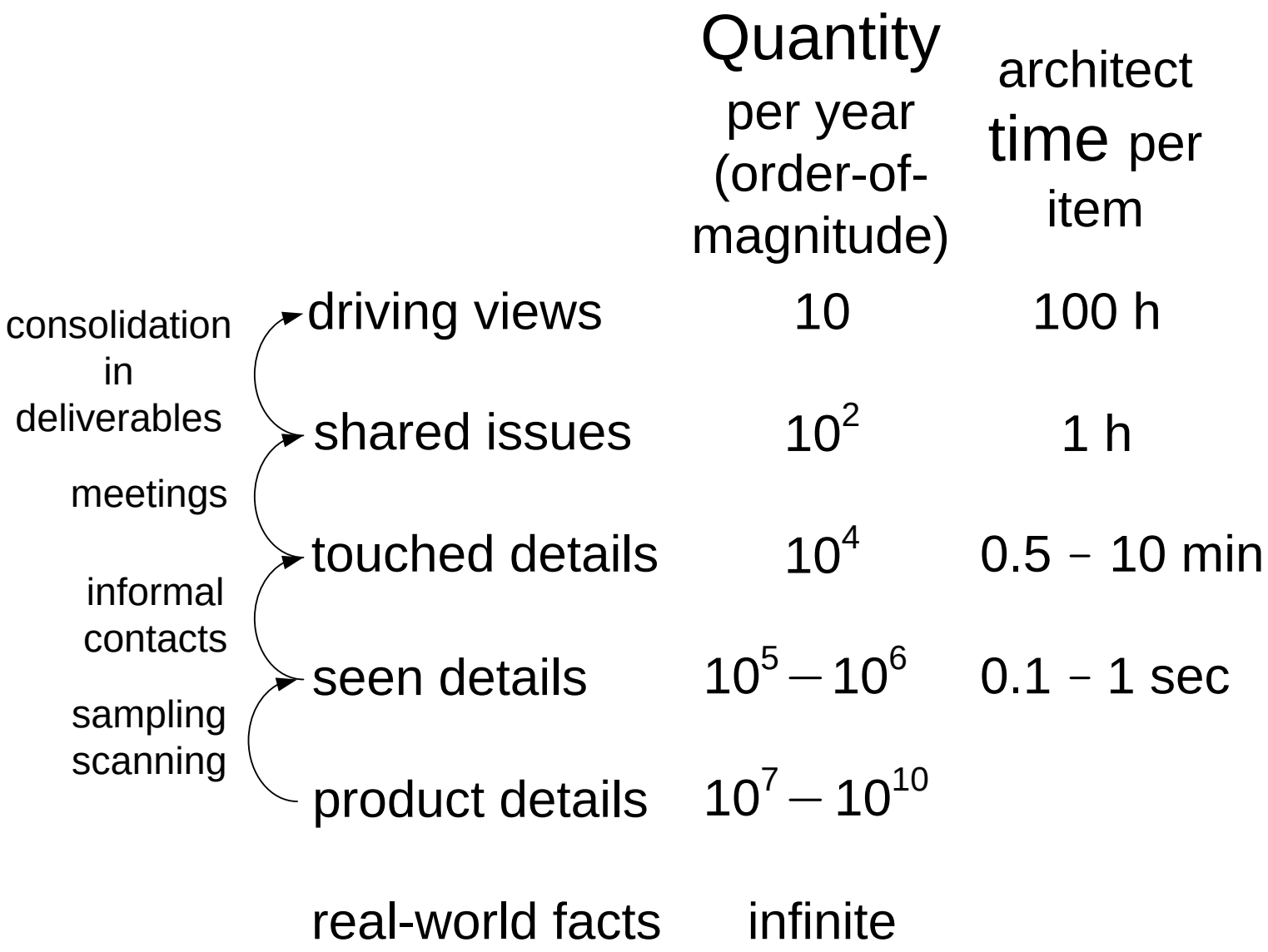
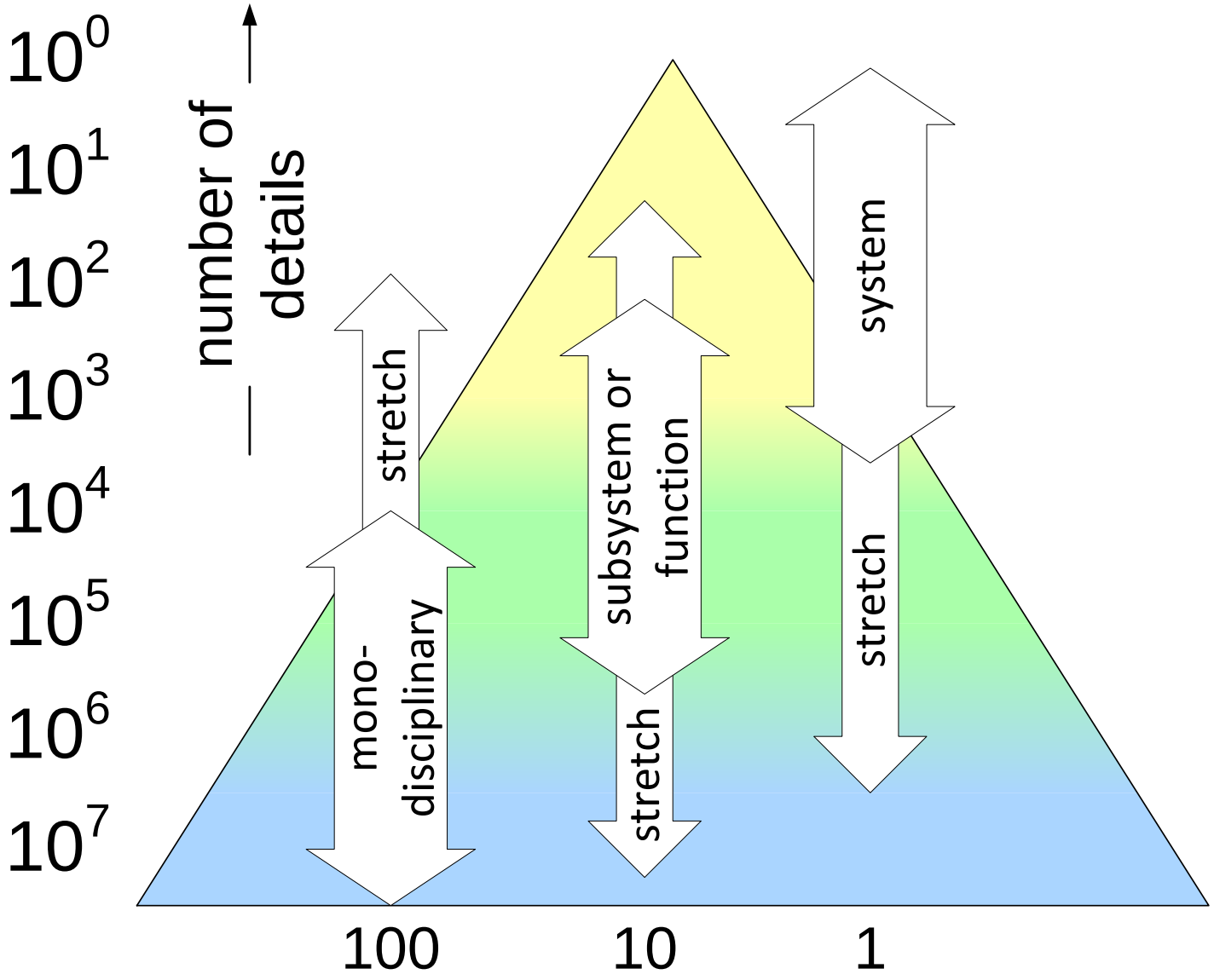
Fundamental Question



The End

Back-up Slides and Answers only after this Slide

Quantification from “The Role and Task of the System Architect”



Quantification from “Architectural Thinking”