

# Defining Methodology with a Few Examples

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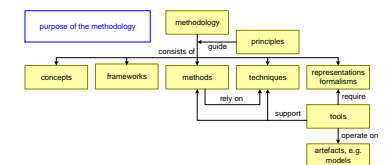
## Abstract

We use many confusing terms. This presentation shows how Philips Research used the term Methodology at the beginning of this century. A few examples illustrate how actual methodologies map on this interpretation.

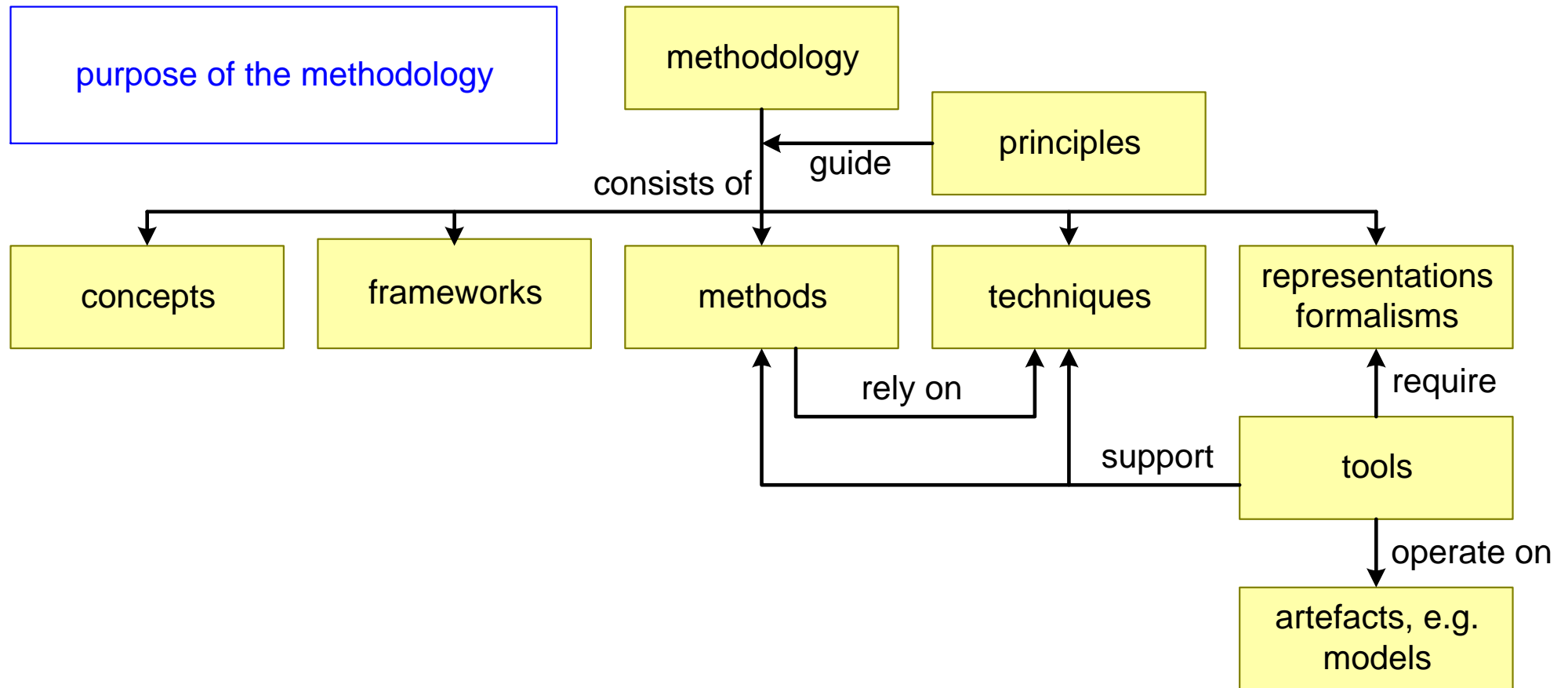
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August 16, 2025  
status: draft  
version: 0.5



# Mutually Related Elements Form a Methodology



# Example CAFCR Mapped on the Elements

purpose: solving right problem, practical, light weight, learning, sharing between diverse stakeholders

methodology

CAFCR as methodology

principles

1. feedback
2. be explicit
3. human understandable

concepts

frameworks

methods

techniques

representations formalisms

quality attributes

usable  
stability  
attractiveness  
responsiveness  
image quality  
wearability  
storability  
dependable  
safety  
robustness  
integrity  
availability  
effective  
throughput or productivity

interoperable  
connectivity  
3rd party extendible

serviceable  
configurability  
installability

ecological footprint  
contamination  
noise  
disposability

liable  
liability  
testability  
traceability  
standards compliance

future proof  
evolvability  
portability  
upgradability  
extensibility  
maintainability

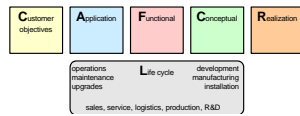
efficient  
resource utilization  
cost of ownership

consistent  
reproducibility  
predictability

logistics friendly  
manufacturability  
logistics flexibility  
lead time

down to earth attributes  
cost price  
power consumption  
consumption rate  
(water, air, chemicals, et cetera)  
size, weight  
accuracy

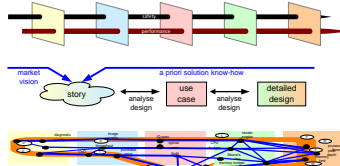
CAFCR+



BAPO



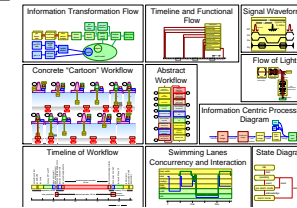
time box  
iterate  
visualize  
qualities  
storytelling  
reasoning  
A3s



submethods



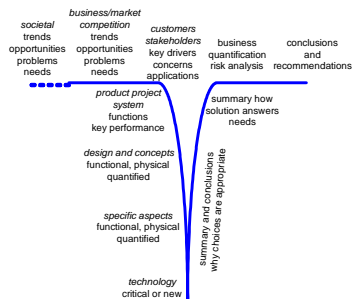
informal, borrowed, and simplified



quadruplet  
KPPs, key drivers

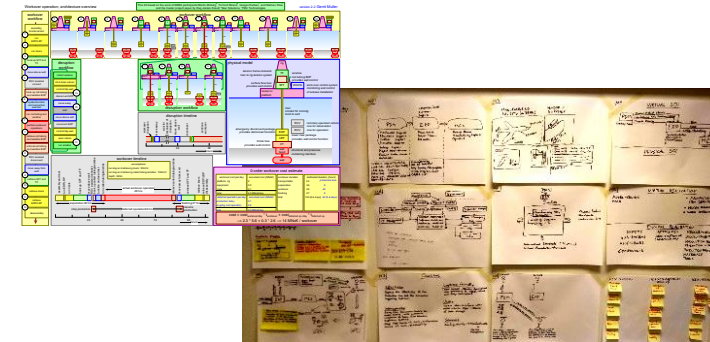


T-shaped



tools

flipovers, stickers  
Visio, PowerPoint





# Elaborating some of the Terms

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- A **framework** is a structure to help in positioning elements.
- A **method** is a description or visualization on how to achieve a purpose. A method contains a sequence of steps with guidance on how to go through the steps to achieve the purpose. It may elaborate on how to perform the steps, what artifacts to produce, and what means to use.
- **Techniques** serve specific purposes, providing a description how to achieve the desired purpose
- A **process** is a blueprint of working that organizations provide to achieve specific goals, e.g. they may have a systems development process (typically phase gated).

# Elaborating More Terms

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- A **concept** is an implementation agnostic capture of an idea.  
for example when looking at defense drones, concepts are
  - overwhelming the enemy with quantity and diversity of drones
  - reducing detectability by scattering incoming radiation (stealth)
- A **principle** is a generalized guiding insight
  - for example, decomposition or partitioning is a widely used principle
- A **representation** or **formalism** is a definition on how to show and interpret ideas in diagrams, text, or formulas

# A Methodology has a Name and Consists of These Types of Elements

- A **purpose** describes what the methodology aims to achieve for its users.
- A **principle** is a general insight that guides elements of the methodology.
- A **concept** captures an abstract idea as foundation for more concrete ideas of the methodology.
- A **framework** is a structure to position ideas.
- A **method** describes how to achieve a specific overarching purpose of the methodology using a sequence of steps.
- A **technique** describes how to achieve the specific purpose of a step of a method.
- A **formalism** defines a representation for concrete artifacts used by the methodology.
- A **tool** provides support for the efficient application of methods and techniques based on formalisms.

Arjan Mooij provided these compact definition