

Modeling and Analysis: Iteration and Time-boxing

by *Gerrit Muller* University of South-Eastern Norway-NISE

e-mail: gaudisite@gmail.com

www.gaudisite.nl

Abstract

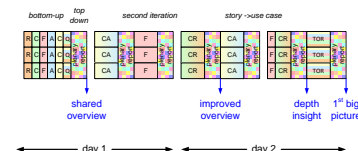
Modeling of Systems and their context is done to support communication with stakeholders, to facilitate reasoning about system requirements and design, to support decision making, and in general to create and maintain understanding, insight, and overview. The challenge in modeling is to find an appropriate abstraction level, and to make sufficient progress.

In this paper we discuss how time-boxing and iteration over multiple views and models helps to address both challenges. Time-boxing and iteration fit in a broader modeling method that we will discuss briefly to provide background.

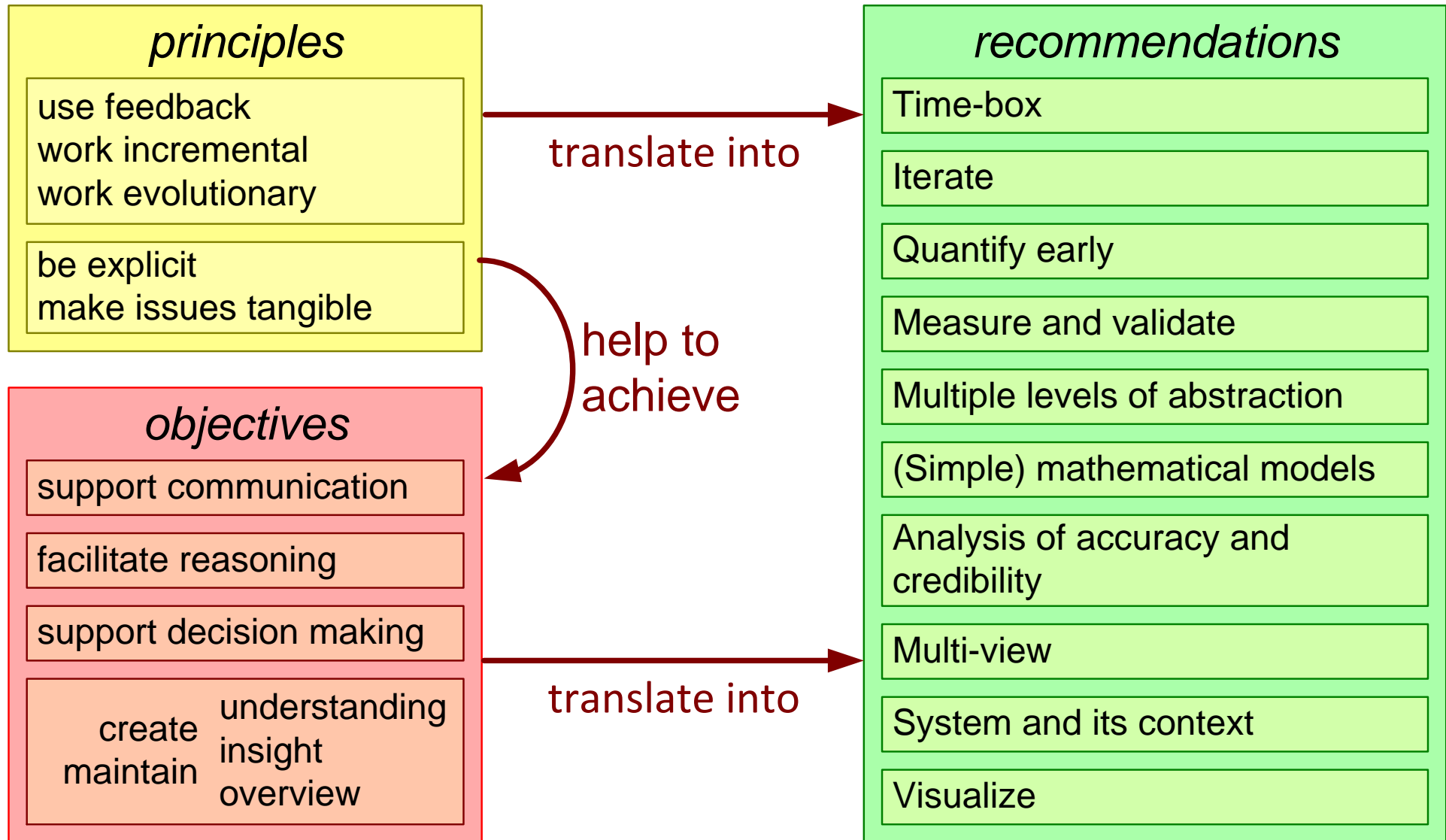
Distribution

This article or presentation is written as part of the Gaudí project. The Gaudí project philosophy is to improve by obtaining frequent feedback. Frequent feedback is pursued by an open creation process. This document is published as intermediate or nearly mature version to get feedback. Further distribution is allowed as long as the document remains complete and unchanged.

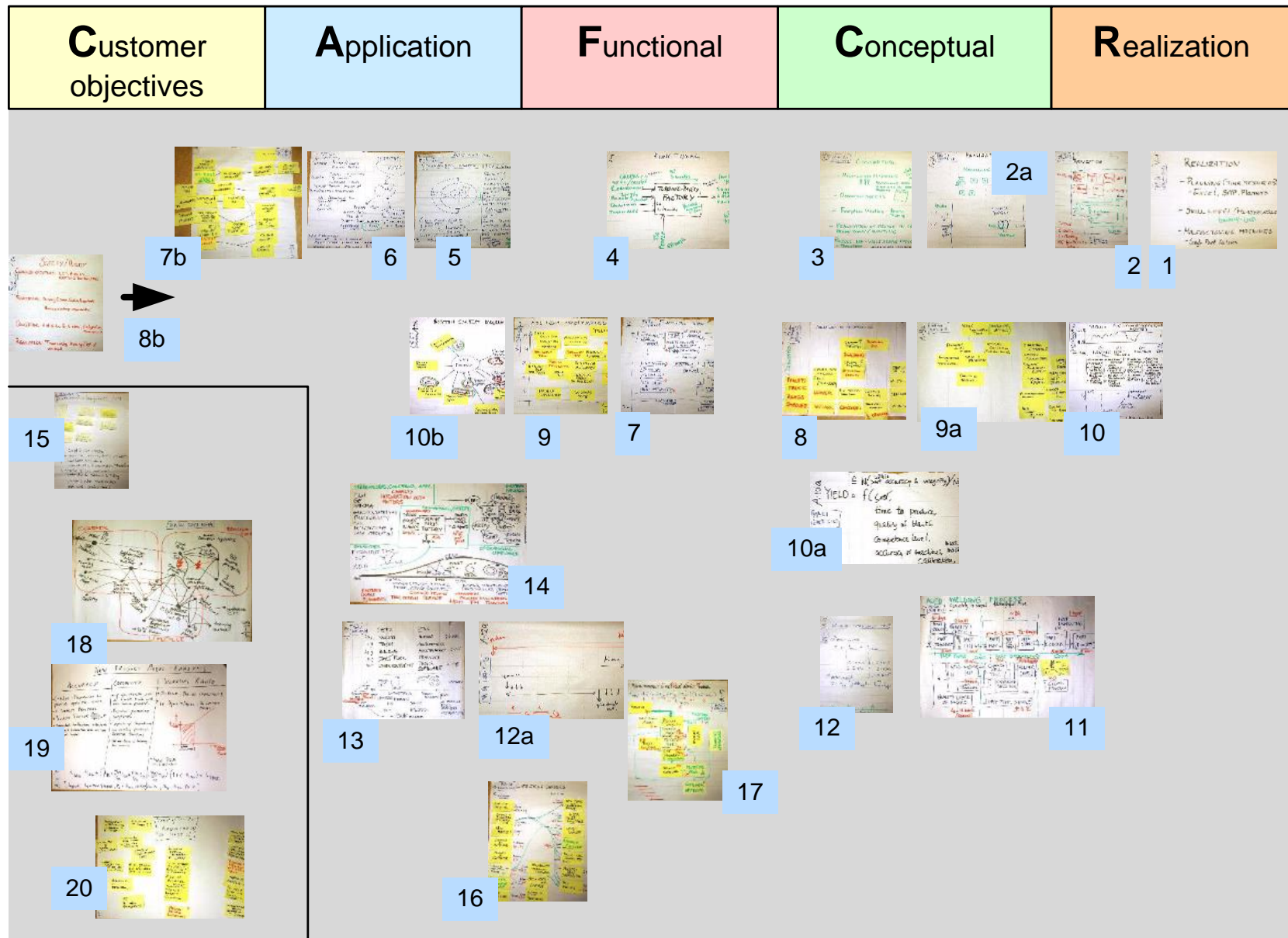
September 9, 2018
status: planned
version: 0



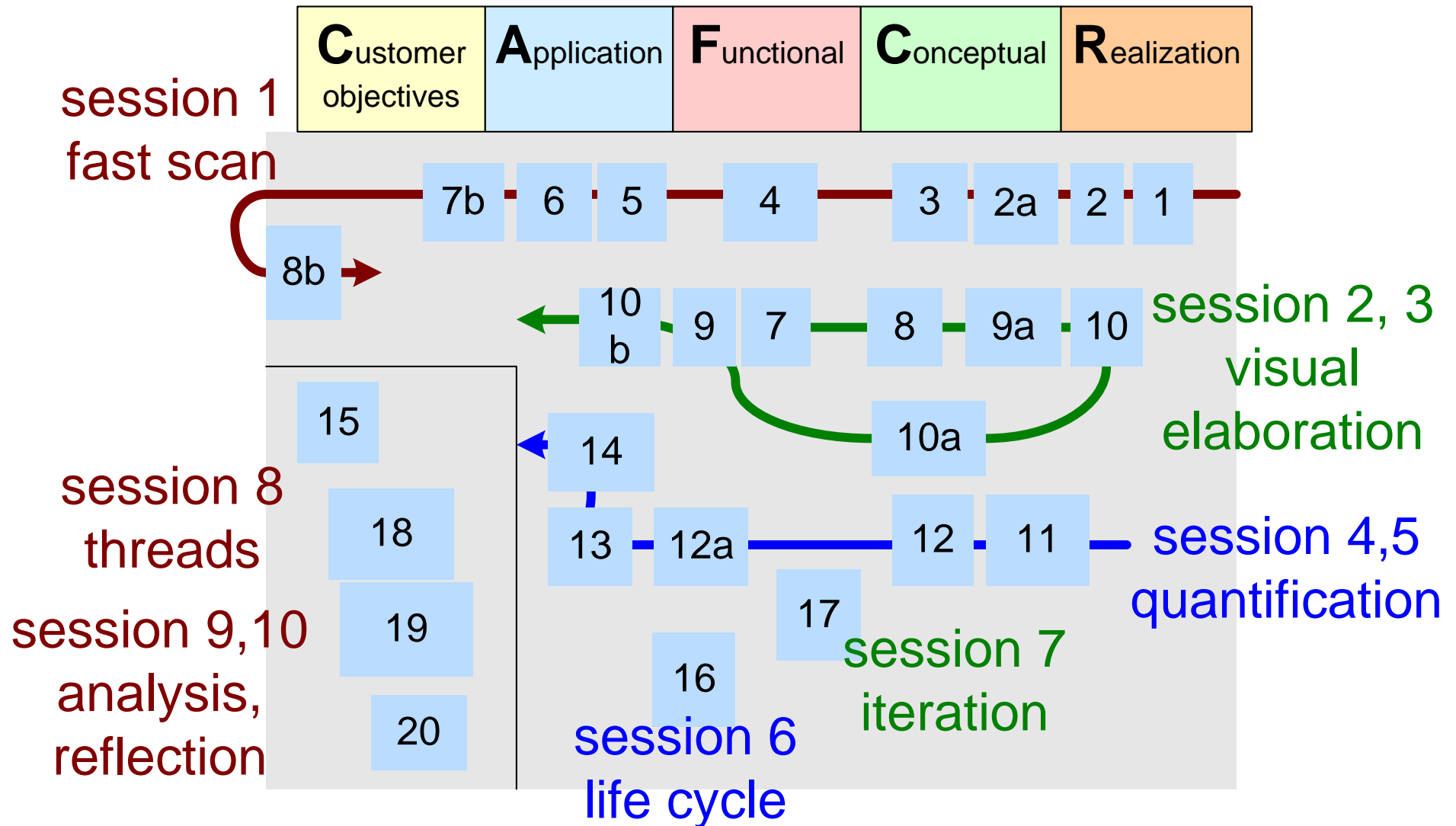
Guidelines from Modeling and Analysis Course



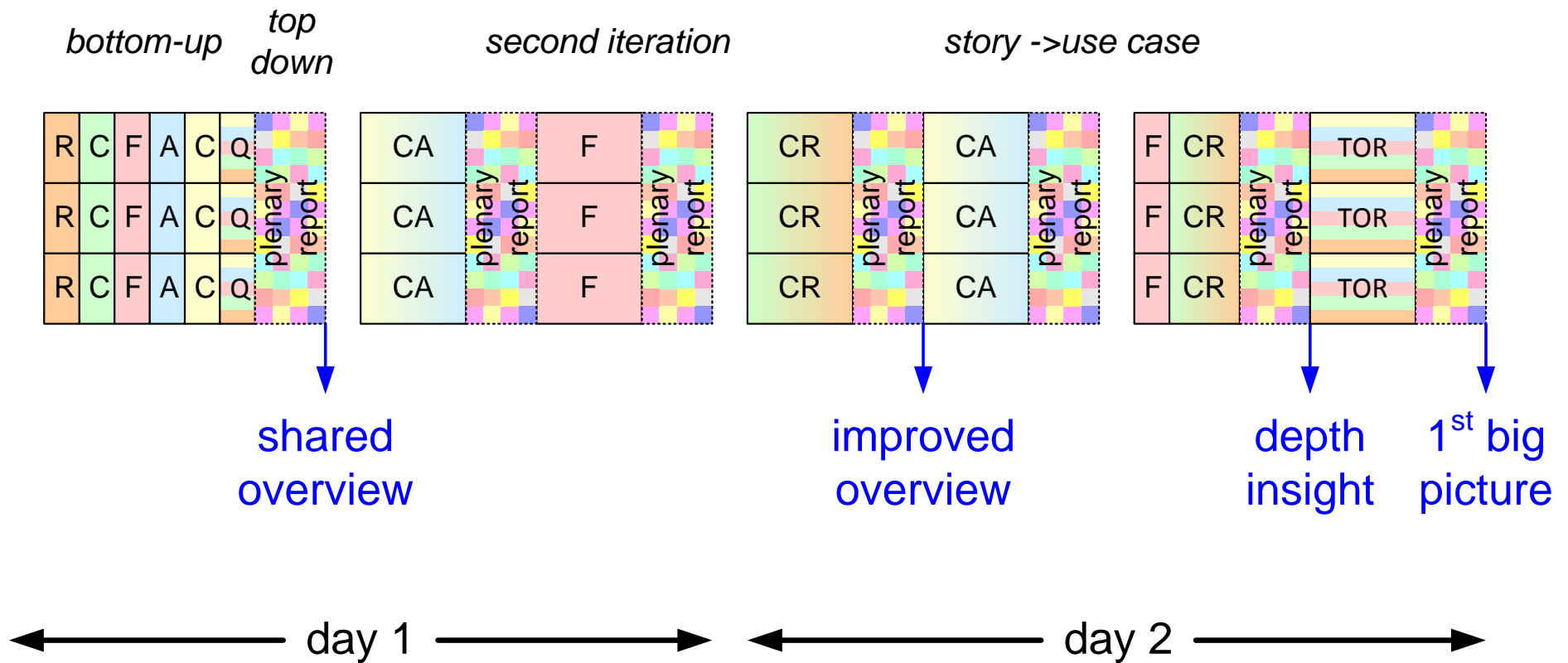
Flip-overs of one week course



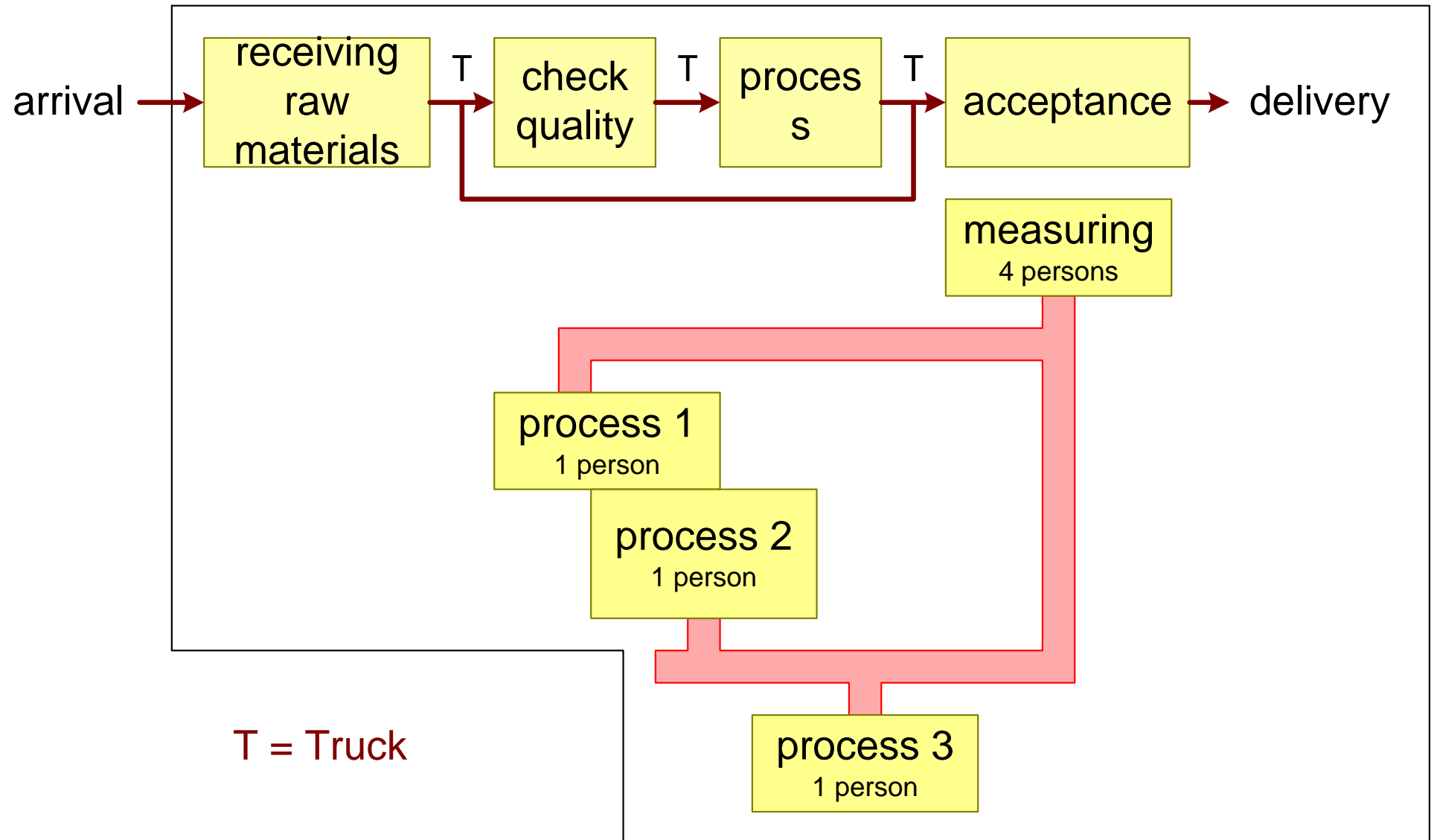
Schematic flow



Time-boxes and Iteration



Initial 2D Model



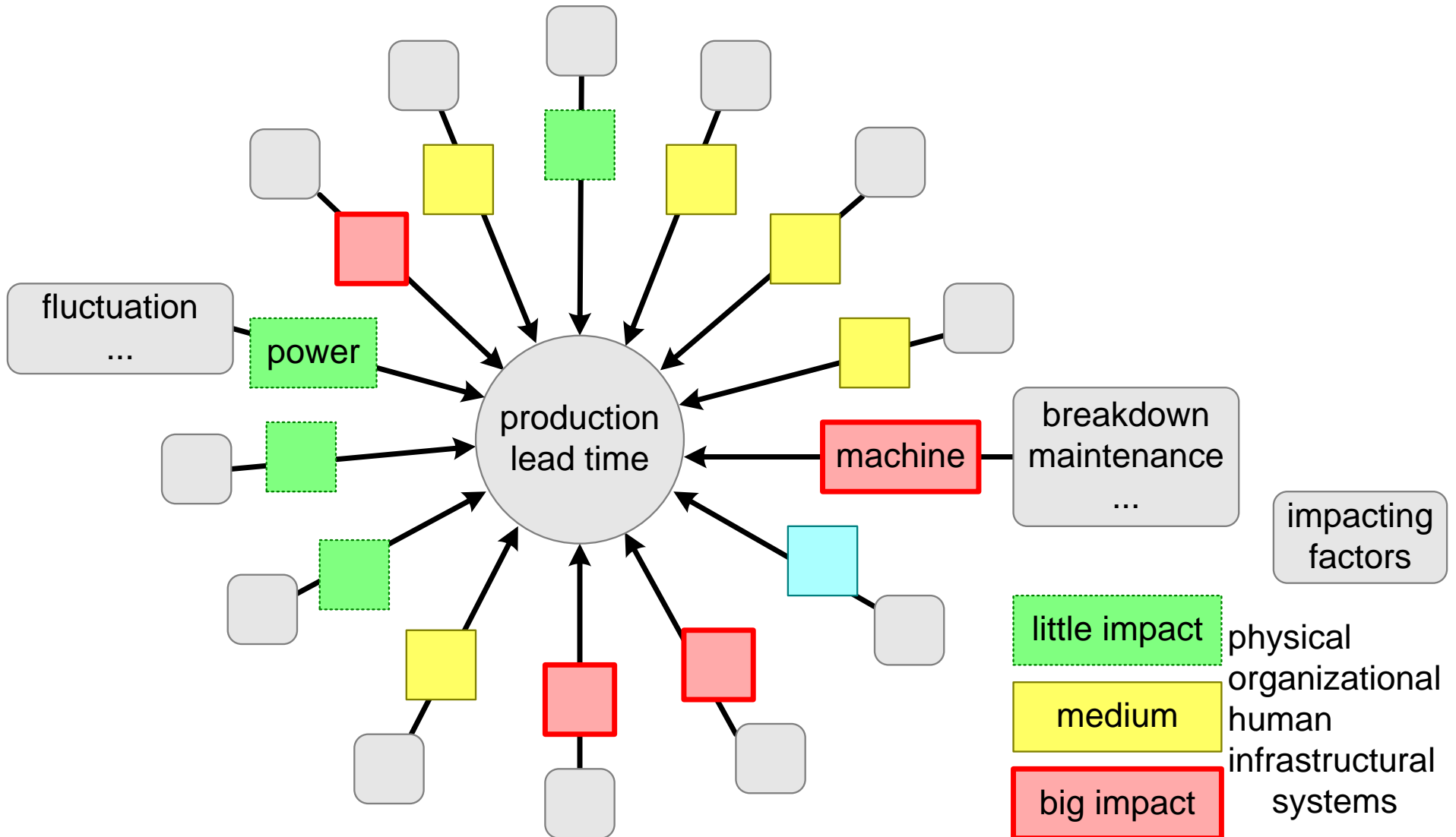
Lead-time Model

$$t_{\text{lead time}} = t_{\text{processing total}} + t_{\text{handling}}$$

$$t_{\text{processing total}} = \sum_{\text{all processes}} t_{\text{processing process}}$$

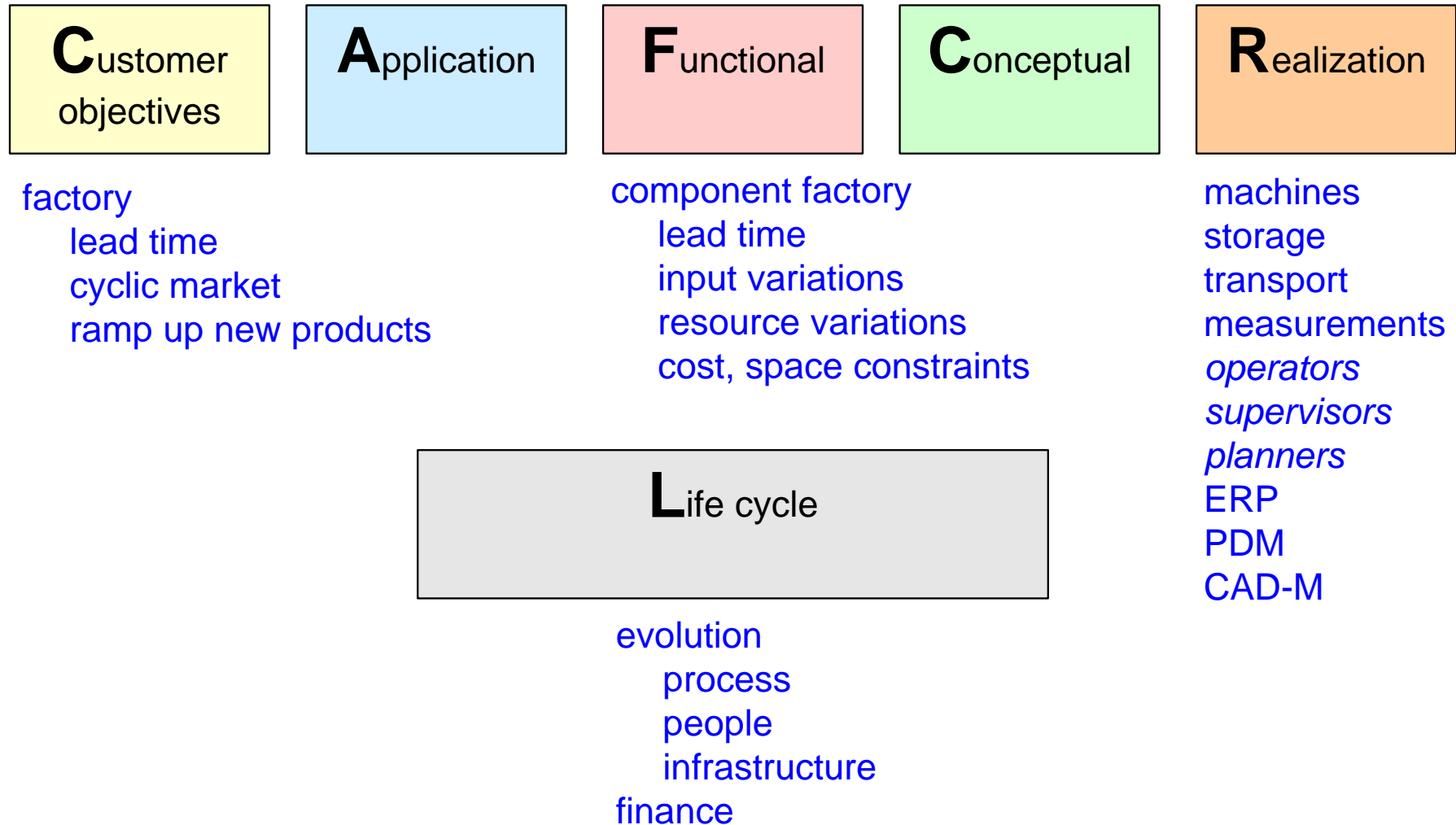
e.g. $t_{\text{drill 1..n}} + t_{\text{grind 1..m}} + \dots$

Life Cycle Model

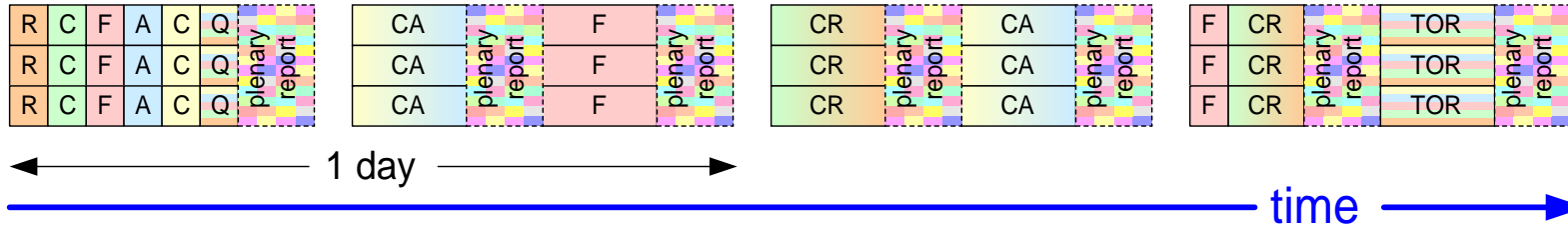


Models in CAFCR+

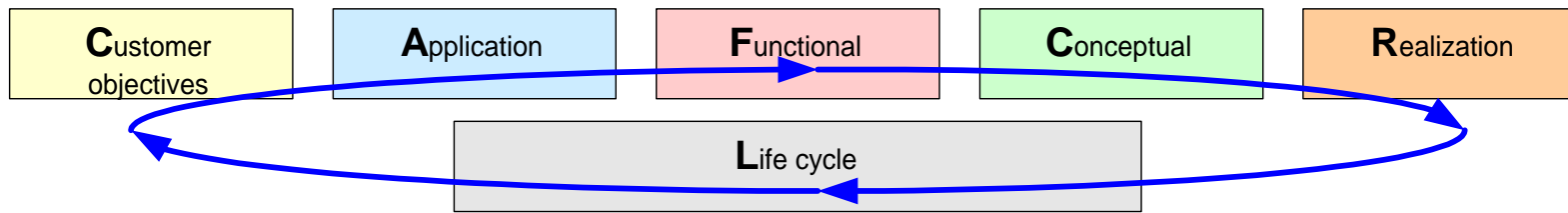
component qualities: safety, reliability, robustness, liability
factory qualities: predictable, traceable, timely



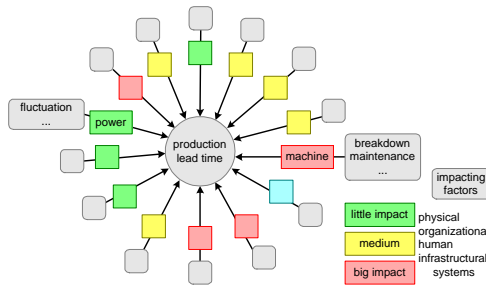
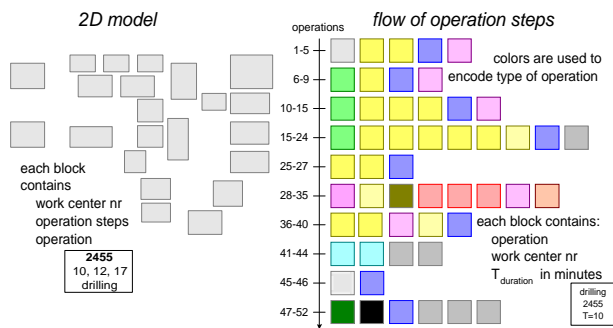
Summary



time box



iterate



$$t_{\text{lead time}} = t_{\text{processing total}} + t_{\text{handling}}$$

$$t_{\text{processing total}} = \sum_{\text{all processes}} t_{\text{processing process}}$$

$$\text{e.g. } t_{\text{drill 1..n}} + t_{\text{grind 1..m}} + \dots$$

visualize
be specific
quantify
validate