

Systems Integration Course

by *Gerrit Muller* USN-SE

e-mail: gaudisite@gmail.com

www.gaudisite.nl

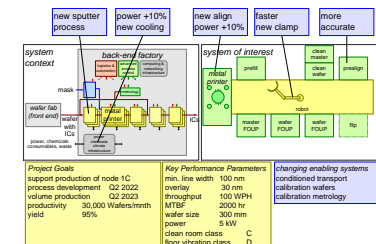
Abstract

This course combines the Architecture and Design insights with the conventional Project Management Views to create a Robust Project Plan including the early verification and validation that Systems Integration strives for.

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.

January 9, 2022
status: preliminary
draft
version: 0



Course Flow

	day 1	day 2	day 3	day 4
9:00	course intro	early validation	project management	elective
10:00	systems integration intro	make system, SW, and HW block diagrams (parts, interfaces, connections)	re-assess risks of KPP	identify tensions and transform sequence into a (PERT) plan
11:00	case discussion	dynamic behavior	determine an incremental integration sequence to measure the KPP ASAP	elective
12:00	systems integration context	model dynamic behavior resulting in the KPP	readiness levels, systems of systems, elective	reflection and discussion
	determine KPPs and their quantified specification		reflection and discussion	
13:00	lunch	lunch	lunch	lunch
14:00	reflection and discussion	reflection and discussion	assessment integration configurations and testware, supplier and logistics status, technology readiness , and development and resource status	elective
15:00	assess risk of KPPs caused by volatility, uncertainty, complexity and ambiguity	integration strategy environments and configurations		assess robustness of plan
16:00	describe typical use (including circumstances in the context) related to KPP	map dynamic behavior on block diagrams and budget : quantify contributions to KPP		make and give presentation to management
17:00	reflection and discussion	elective	elective	reflection and discussion
		reflection and discussion	reflection and discussion	

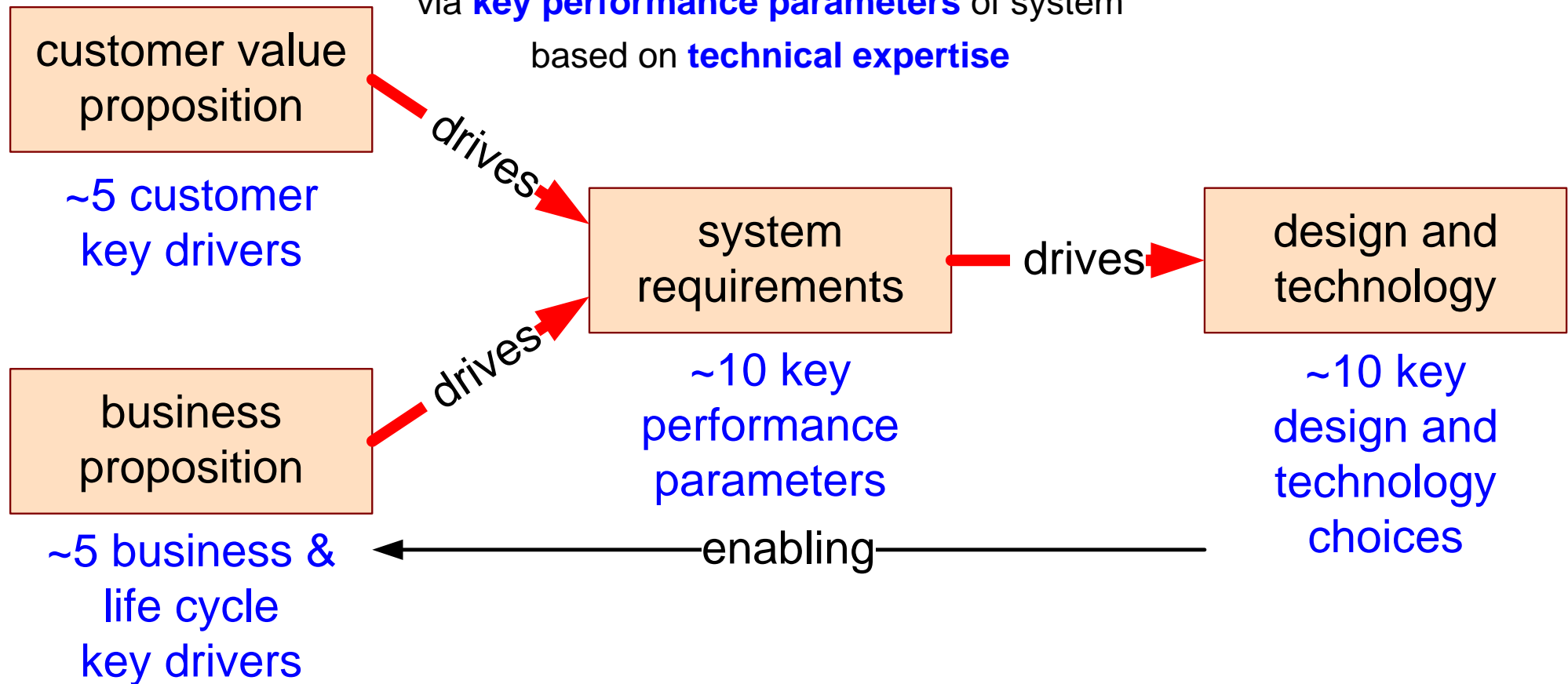
<i>people, process, and organization</i> <ul style="list-style-type: none"> human aspects process and integration organization 	<i>technical</i> <ul style="list-style-type: none"> budgeting testing systems of systems 	<ul style="list-style-type: none"> architecting for integration impact of change software and integration product families, platforms
---	---	--

electives

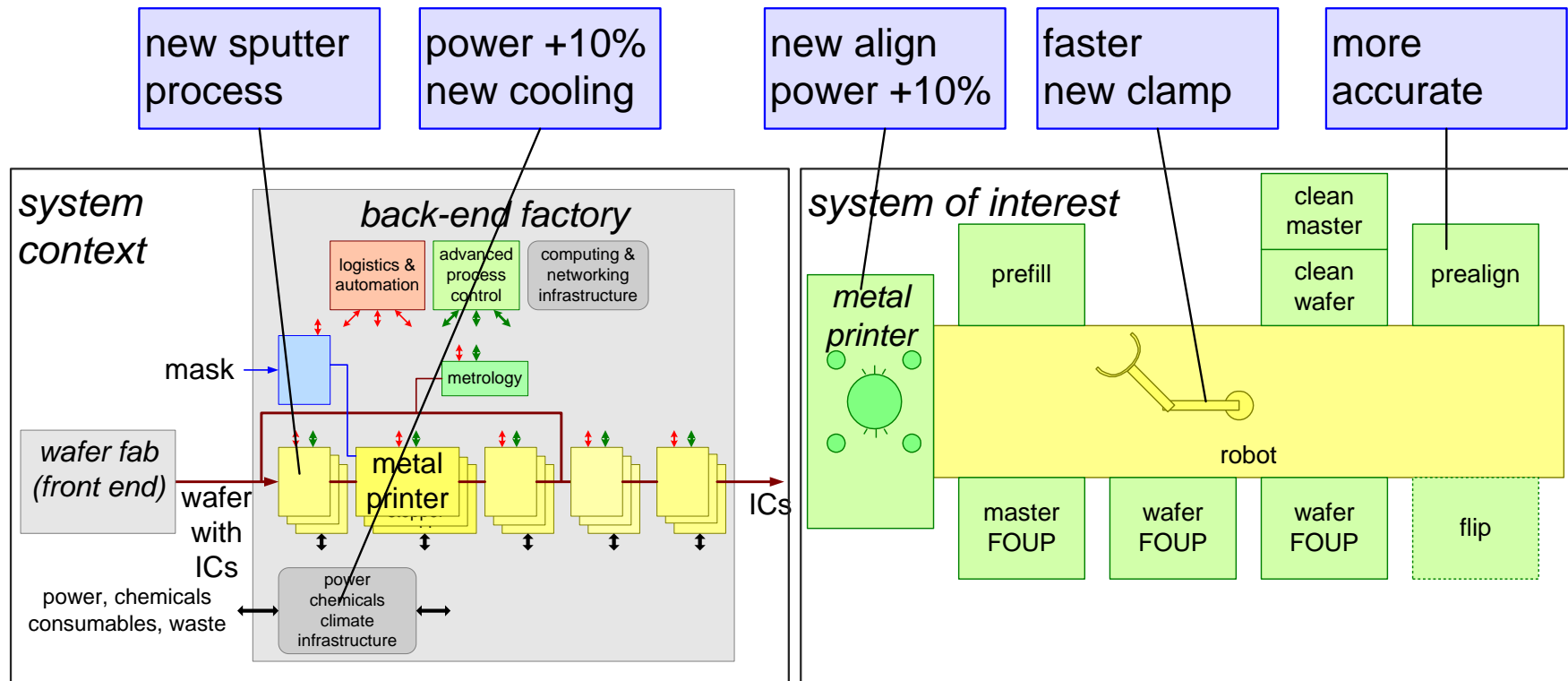
Architecture Top View

Systems Engineering: *Fitness-For-Purpose*

Achieving **customer** and **business key drivers**
via **key performance parameters** of system
based on **technical expertise**



Example Project Overview



Project Goals

support production of node 1C
 process development Q2 2022
 volume production Q2 2023
 productivity 30,000 Wafers/mnth
 yield 95%

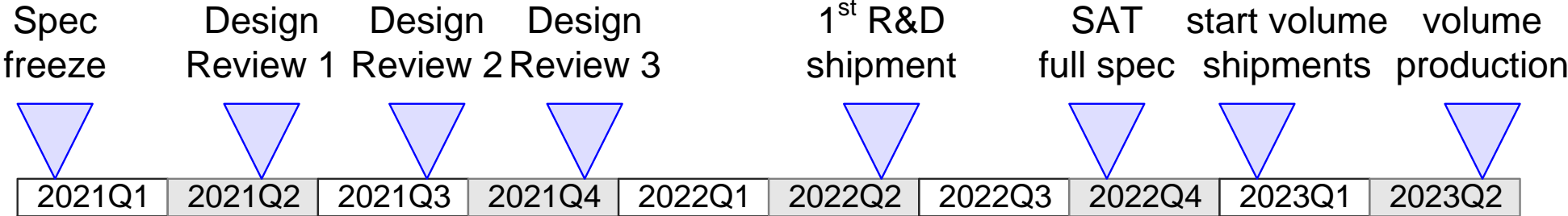
Key Performance Parameters

min. line width 100 nm
 overlay 30 nm
 throughput 100 WPH
 MTBF 2000 hr
 wafer size 300 mm
 power 5 kW
 clean room class C
 floor vibration class D

changing enabling systems

conditioned transport
 calibration wafers
 calibration metrology

Example Project Master Plan



Example Risk Analysis Matrix

