

Product Development Process (PDP)

Product Development Process

Introduction

Program targets

Framework

Phases

Governance

Reporting

Wrap up

Product Development Process

WHAT

Product Development Process (PDP) defines the methodology to execute an automotive system program from *Concept* to *Market*



WHY

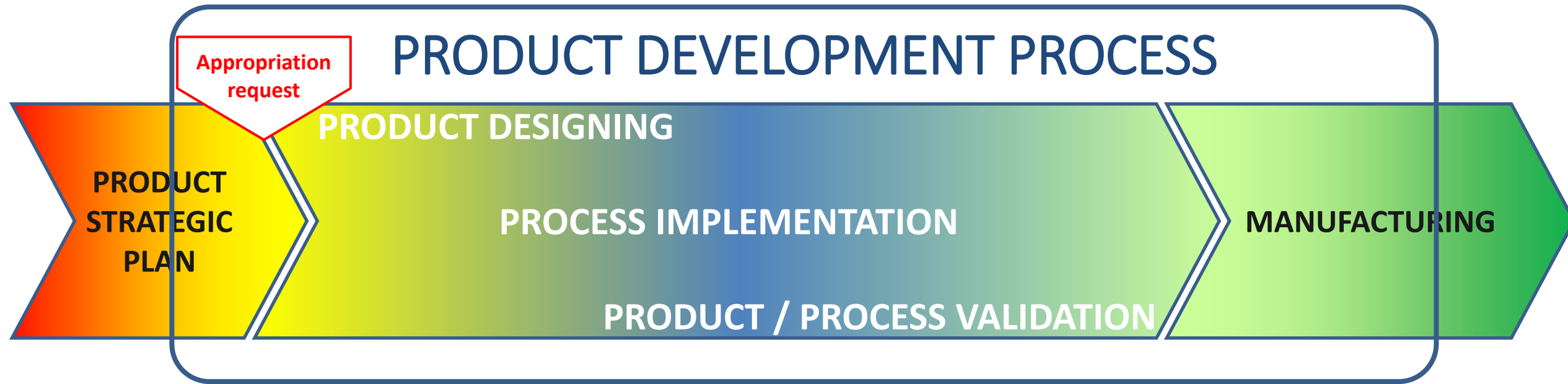
PDP is a project management tool aiming to plan and monitor the development of the product and the manufacturing process



HOW

PDP clearly specifies works to be done, when they have to be completed and the way to measure and report the results





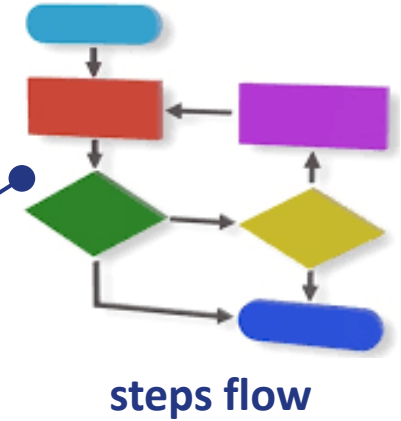
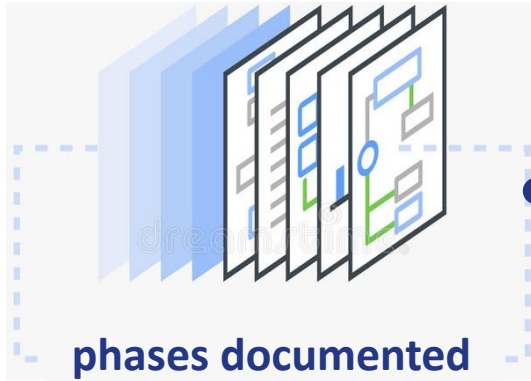
Introduction of a new product into the market starts from definition of a strategic plan, that shapes an industrial initiative with appropriation request.

Then, industrialization is kicked-off, including product designing, process implementation and validation of both; these phases partially overlap each other, until the manufacturing launch.

PDP embraces the industrial initiative definition, the whole industrialization core stage and the start of serial production and initial ramp-up.

Abstract

- ❑ Product Development Process (PDP) is committed to provide with clear organizational targets, methods and tools to develop and assess the program status and risks
- ❑ PDP defines:
 - rules and governance
 - tasks ownership
 - Key Performance Indicators and deliverables
- ❑ PDP promotes a culture of accountability and allows team members and management to verify the results
- ❑ The Company Leadership Team endorses the PDP and governs the program execution in order to ensure timely launches consistent with business requirements and customer satisfaction targets
- ❑ PDP is a living process capable of evolving and adapting to the needs of the Corporation



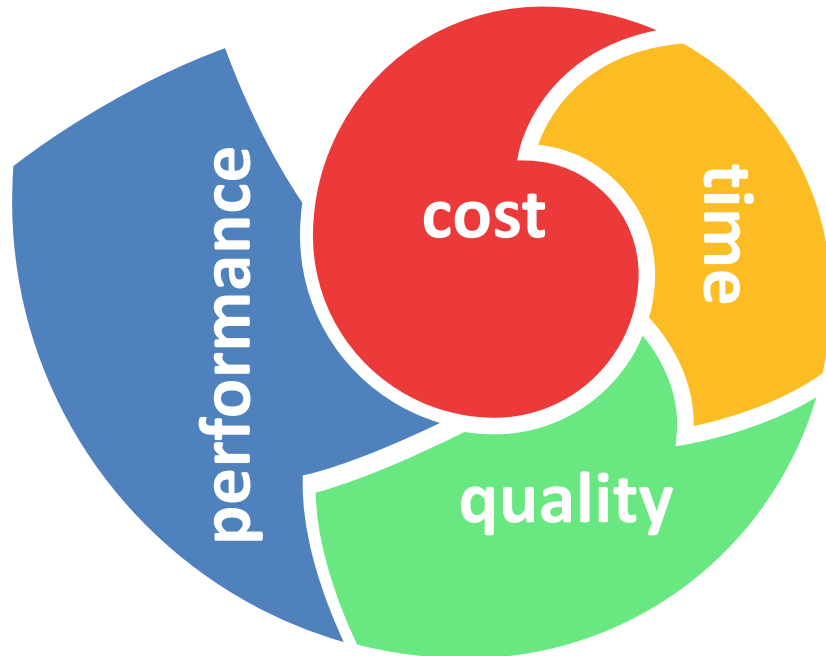
process is any set of activities that uses resources to transform inputs into outputs



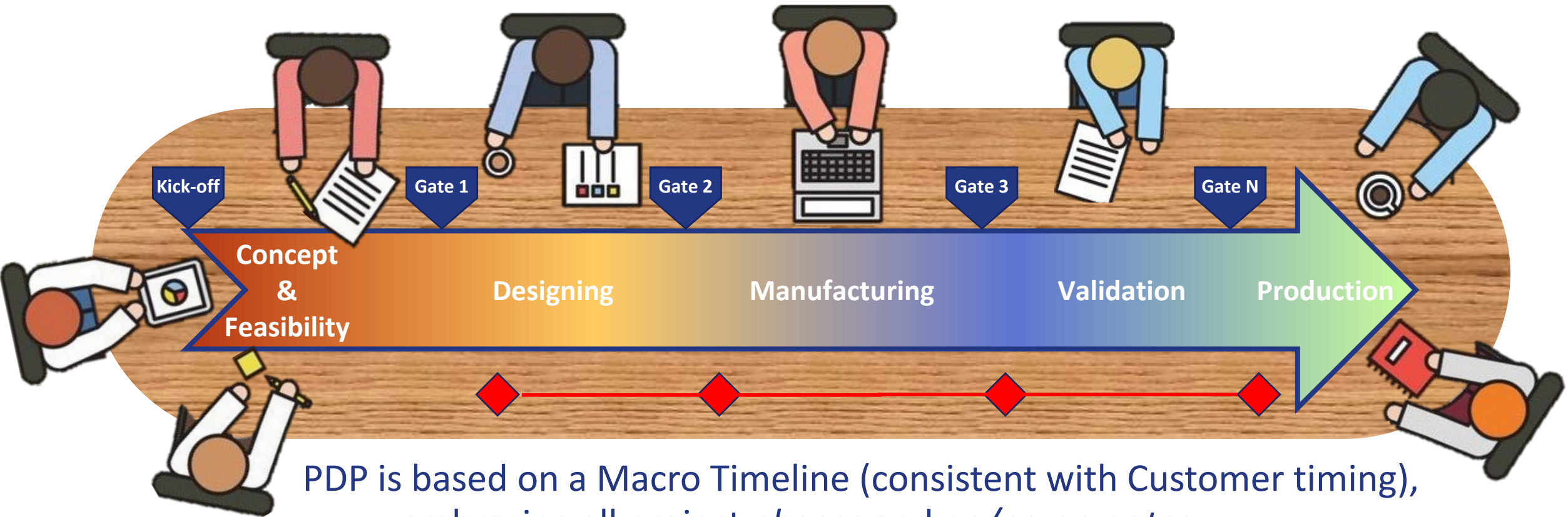
Program Targets

Basic data and requirements for the planning of a product industrialization program include:

- ◆ Contract Charter and Customer Agreement
- ◆ Product Initiative with targets setting in term of: 



PDP framework



PDP leadership is practiced by the *Platform Manager* who coordinates the permanent project dedicated *cross-functional Team*, composed by representatives from all Departments.

PDP framework

STELLANTIS



Politecnico
di Torino



rules, roles
and responsibility



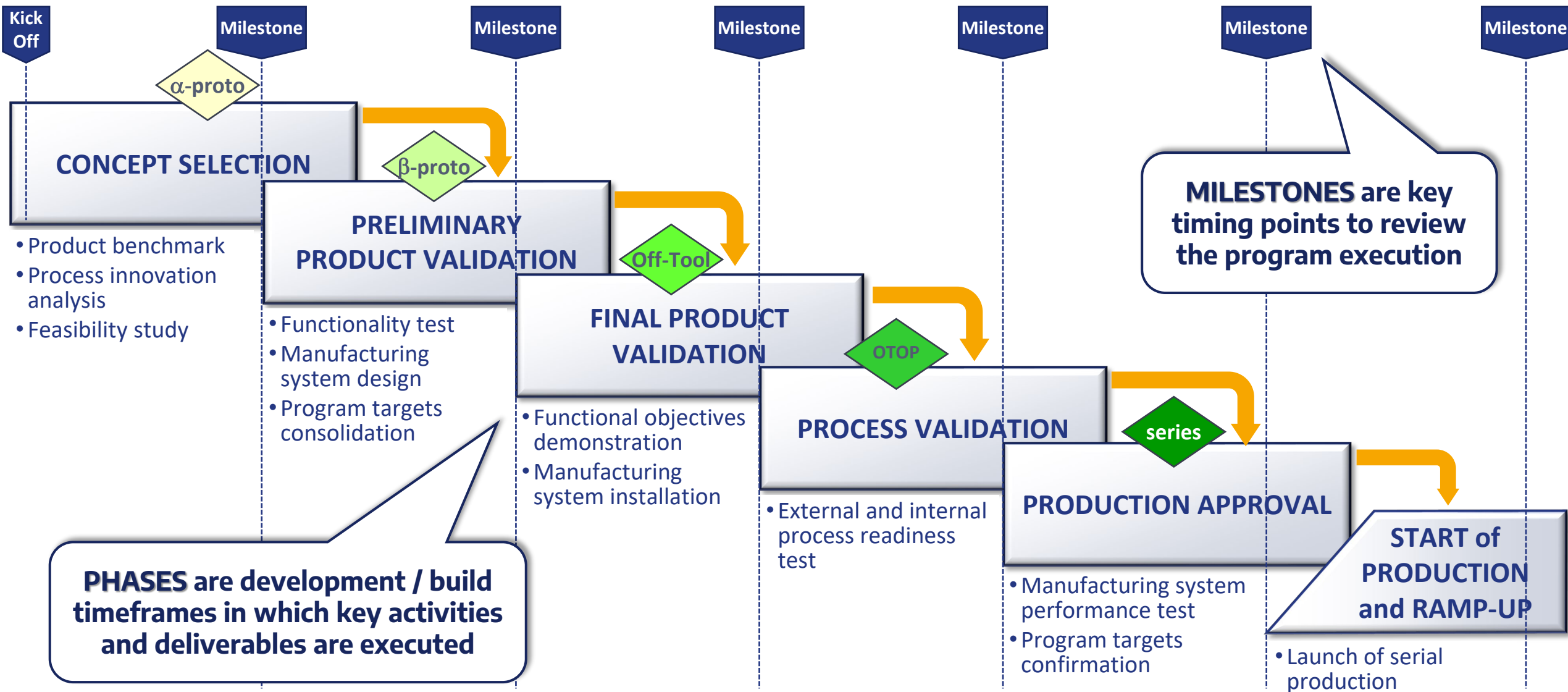
sub-processes and
execution tasks



planning, reporting
and risk management

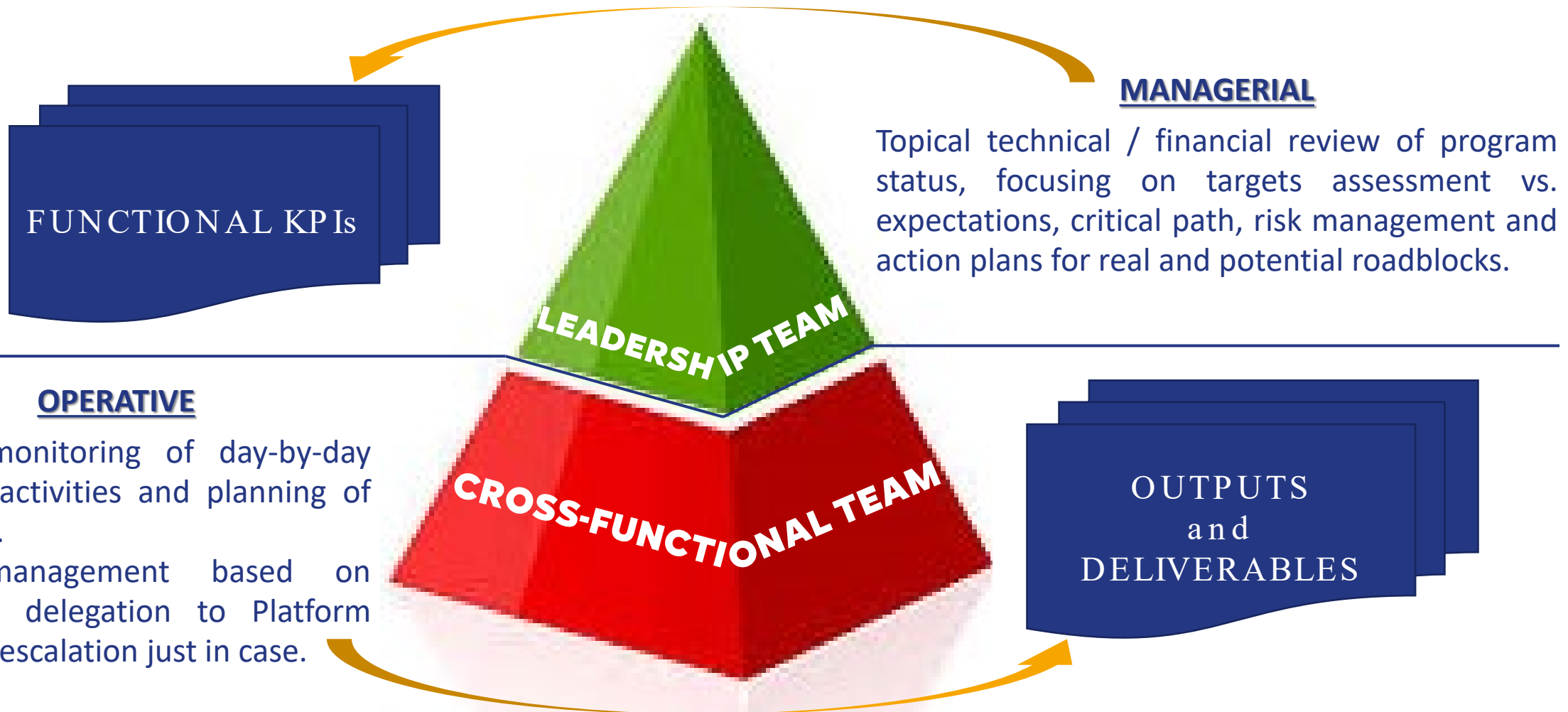
program status assessment

PDP phases and milestones




PDP governance

Two governance levels are structured to control program progress, manage deviations and roadblocks



PDP reporting

KPI #	DELIVERABLE	OWNER	MILESTONE ASSESSMENT	OUTLOOK	LINK
KPI 1	Functional objectives	Product Engineering	● ▲ ✖	● ▲ ✖	⇒
KPI 2	Process capability	Manufacturing	● ▲ ✖	● ▲ ✖	⇒
KPI 3	Warranty indicators	Quality	● ▲ ✖	● ▲ ✖	⇒
KPI 4	Financial metrics	Finance	● ▲ ✖	● ▲ ✖	⇒

Milestones reviews are supported by "Check List" including Functional KPIs list,  Deliverable description and Owner, status assessment and outlook, and link to reference evidence templates.

Standardized templates, including KPIs definition, expectations and status, are used for monitoring program work progress vs. targets, highlighting any real and/or potential issues and problems, and reporting to Management.

Financial Metrics - Status to Target

KPI - 4 Owner: FI Begins at: MS1 Ends at: MS6

Definition Financial Objectives (Targets) are developed that ensure a robust core powertrain and customer/vehicle business case.

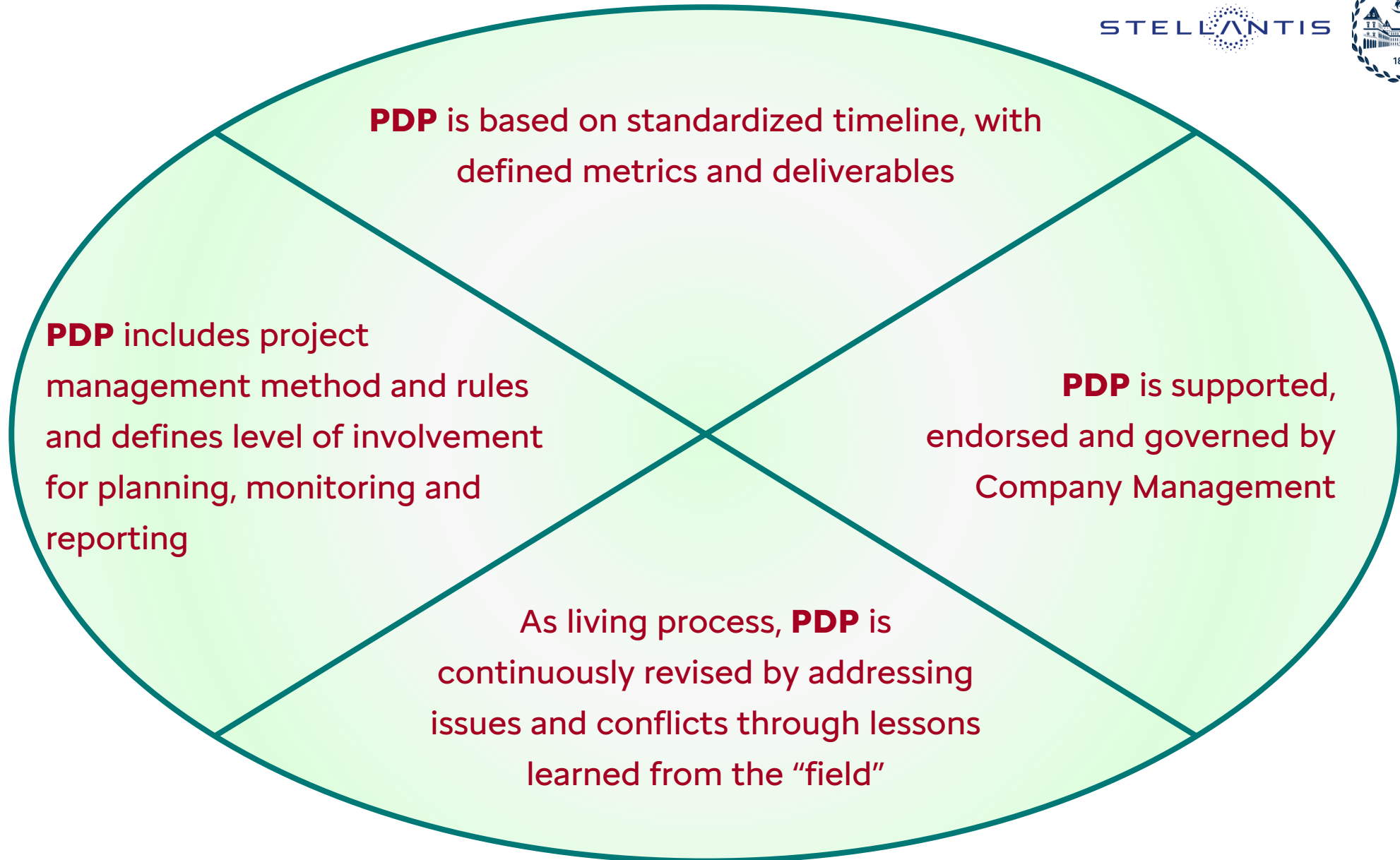
Expectation Status to target

Status at MS3: ▲

Outlook at MS4: ●

Current status: **overall cost and investment forecast aligned with the target.**

	Approved	Target	Assessment	Outlook	Actual	Committed	Status	Forecast to Complete
FINANCIALS	Investment - €M				Investment - €M			
	Manufacturing	xyz	xyz	●	●	xyz	xyz	xyz
	Vendor Tooling	xyz	xyz	▲	●	xyz	xyz	xyz
	ER&D / ED&D	xyz	xyz	●	●	xyz	xyz	xyz
	Total Investment	xyz	xyz	▲	●	xyz	xyz	xyz
Average Per Unit								
FINANCIALS	Direct Material Cost	xyz	xyz	▲	●	-	-	xyz
	Transformation Cost	xyz	xyz	●	●	-	-	xyz
	Total Production Cost	xyz	xyz	▲	●	-	-	xyz



APPENDIX



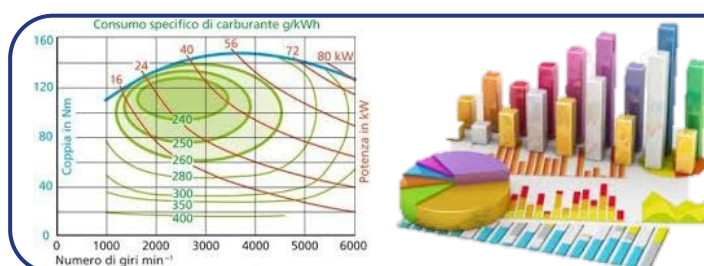
Time to Market: from project approval to commercial launch



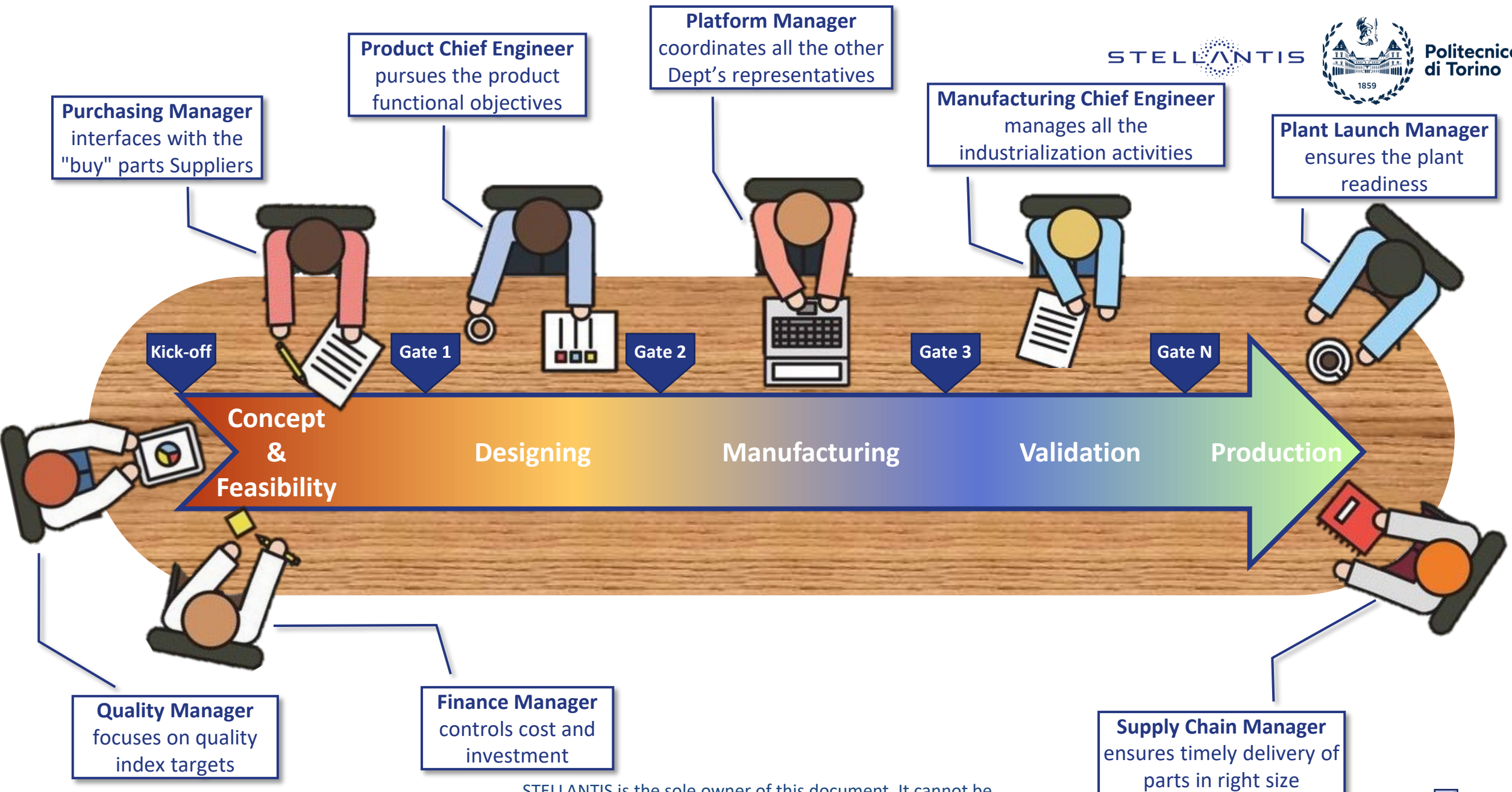
Total Production Cost - including Material / Manufacturing / Logistics cost - and **Capital Expenditure Investment**



Internal and external Quality index (re-work and repairing, scraps, defects, failures, warranty cost...)

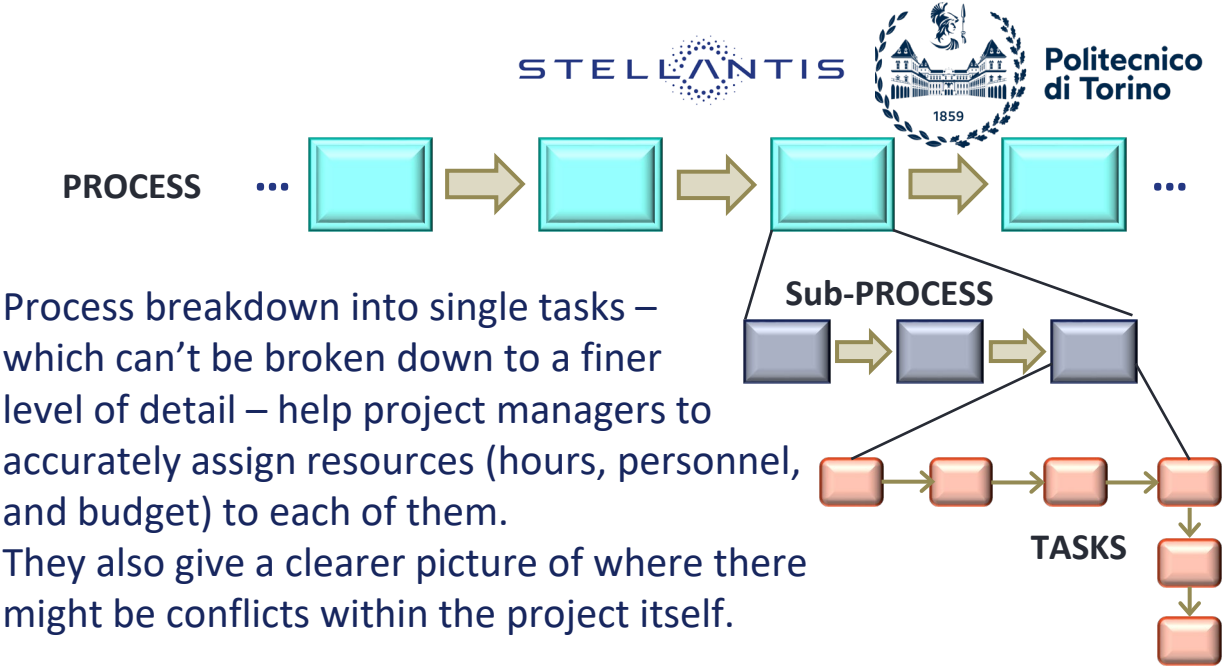


Product and Process Performance, i.e. engine torque, power, fuel consumption...; production capacity, efficiency, lead time...



RACI matrix defines the roles referred to the activities:

R	Responsible — Person working on activity
A	Accountable — Person with decision authority
C	Consult — Key stakeholder who should be included in decision or work activity
I	Inform — Needs to know of decision or action



Risks on program targets resulting from gaps between planned and actual activities are assessed by the "multi-steps status", based on risk classification:

Risk classification	Step 1 Risk identified	Step 2 Root-cause identified	Step 3 Interim action in place	Step 4 Solution identified	Step 5 Solution validated	Step 6 Solution implemented
high						
medium						

Risk management process – aiming to identify impacts of gaps and deviations on timing, cost, quality – help to support decision to proceed / stop the program.

Program status assessment:



ON TARGET

Activity on track, without any risk to deviate from the target



CONFIDENT

Activity progress not at target, with a recovery plan mitigating successfully any risk of gap or deviation



NOT CONFIDENT

Activity not meeting targets, mitigation plan not available / incomplete / not robust

Key Performance Indicators (KPIs)

- are quantifiable measure of performance over time for a specific objective
- provide targets for teams to shoot for
- track progress toward achieving key business results
- help people to make decision and move forward at the strategic level

Capital Expenditure Investment

	APPROVED COST-BOOK a	AUTHORIZED SPENDING b	COMMITTED c	FORECAST TO COMPLETE d	TOTAL INDICATED COST e = c + d	VARIANCE f = a - e	RISK / ACTION ref.
Area A - Item 1	xxx	yyy	zzz	xyz	yzx	zxy	●
Area A - Item 2	xxx	yyy	zzz	xyz	yzx	zxy	●
Area 3 - Item 3	xxx	yyy	zzz	xyz	yzx	-zxy	▲ - nn
Area A Sub-Total	XXX	YYY	ZZZ	XYZ	YZX	ZXY	●
Area B – Item 1	xxx	yyy	zzz	xyz	yzx	zxy	●
Area b – Item 2	xxx	yyy	zzz	xyz	yzx	-zxy	✗ - nr
Area B Sub-Total	XXX	YYY	ZZZ	XYZ	YZX	-ZXY	✗ - ns
Grand-Total	XXX	YYY	ZZZ	XYZ	YZX	ZXY	▲ - nt