Capacity Review

Template

S&OP / IBP Management Review

April 2021

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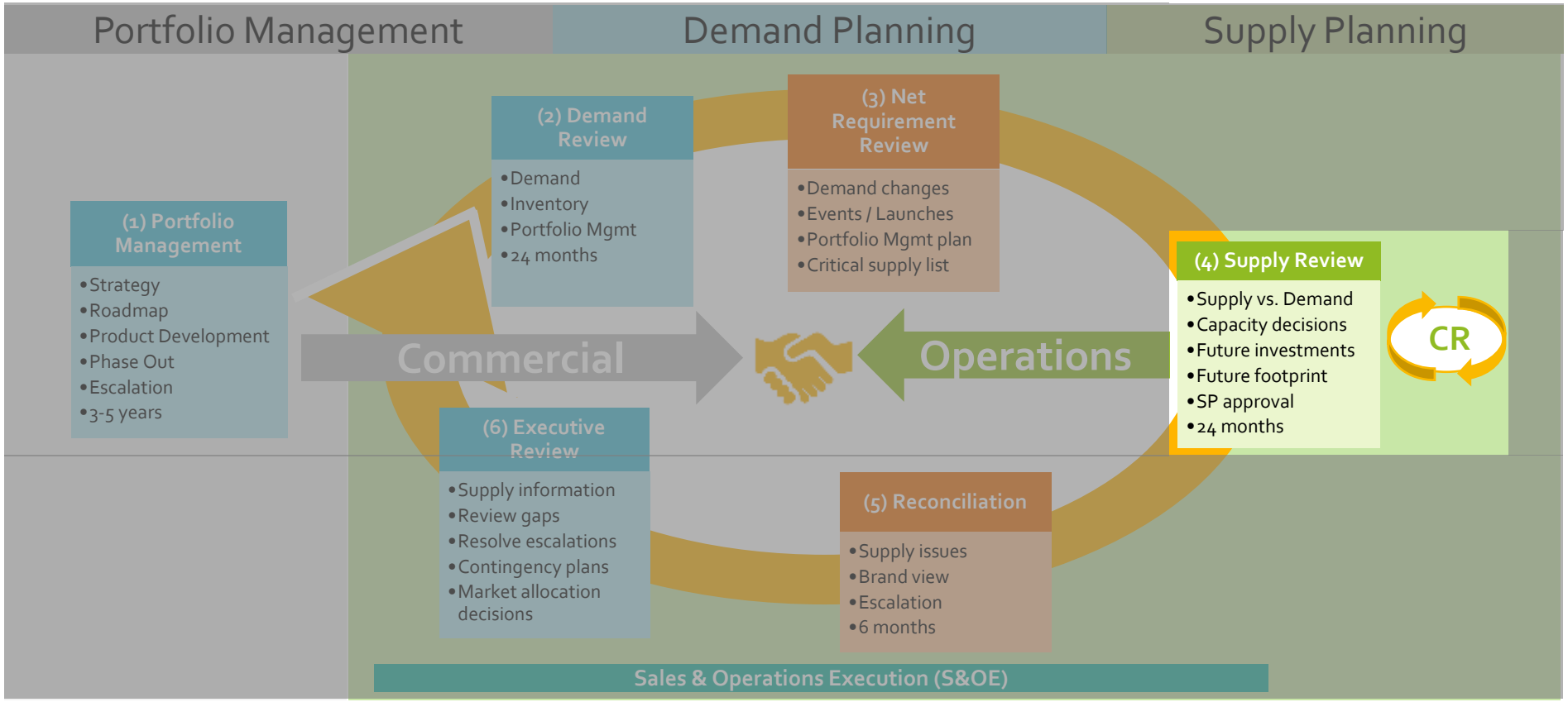
Capacity Review (CR)

Context & Objectives

The CR within the S&OP **Planning Cycle**



Reference: Sales & Operations Planning – T. F. Wallace / R. A. Stahl

The CR within S&OP **Planning Structure**

Demand Planning	Supply Planning	Capacity Planning	Aggregation	Time Frame
Product Portfolio Strategy & Forecasting	Network Strategy	Footprint Strategy	Division/ Franchise/ Business Unit	3 – 5 Years
Demand, Sales & Logistic Planning	Operations Planning	Resource Planning	Brand/ Product Family/ Value Stream	18 – 24 Months
Delivery Schedule	Master Production Schedule (MPS)	Rough-Cut-Capacity (RCCP)	Product Groups/ Capacity Groups SKUs	6 – 12 Months
Distribution & Order Requirements (DRP)	Materials Requirements (MRP)	Capacity Requirements (CRP)	SKUs	3 – 6 Months

Objectives of Capacity Review

Stakeholders
Chair: Leader Operations
Owner: Leader Supply Planning
Plant Leader(s)
Procurement Leader(s)
Finance Leader(s)

- **Review & looking forward** – ***deliver visibility on capacity*** – accept or modify the provided demand, shift and/or utilization scenarios
- **Make decisions** based on ***delivered scenarios*** for each value stream and / or capacity group where required
- **Authorize changes** in investments and/or recruiting requirements – ***orchestrated by supply planning***
- **"Break the ties"** for areas where needed investments are higher than approved budgets – discussions and ***deep dives are based on exceptions***
- **Confirm investment roadmap** and decide to address adjustments in the commercial business plan, if needed – ***agree and commit to action items*** by the different stakeholders

Capacity Review (CR)

Review Structure (Template)

Capacity Review - **Agenda**

Topic	Content/ Description	Page(s)
Review Focus, decisions required of CR Decision tracker of the last CRs	**Scope of Review, Attendance & Meeting actions**, Planning assumptions, KPI Summary	
Value Stream Review, by location and focus area	Capacity **Planning Framework**, Capacity Development & **Scenario evaluation**, Investment requirements, Value Stream decision summary	
Capacity **Review summary**, roadmap and action items	**Decision Summary** all reviewed Areas & Value Streams, **Capacity development roadmap**, New action items	

Capacity Review (CR)

Location 4
Value Stream Summary

ESR **Participants** & Stakeholders

Participants	**Information sharing with**
✓ Name 1 (Role / Location) ✓ Name 2 (Role / Location) ✓ Name 3 (Role / Location) ✓ Name 4 (Role / Location) ✓ Name 5 (Role / Location) ✓ Name 6 (Role / Location) ✓ … **Guest:** ➢ Name 7 (Role)	– Name A (Role) – Name B (Role) – Name C (Role)

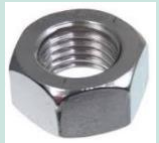
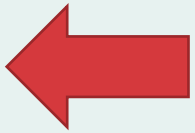
Attended

Action items & Follow up

#	Topic	Location/ Value Stream	CR from	Owner	Status	Comment
1						
2						
…						

Value Stream Overview – Location 4

Example

Value Stream	Products	KPIs		Brands supported	Review Focus
Area 1 Value Stream A		Annual Volume Annual COGS ($m) **% growth COGS**	28.000 3,0 **5%**	BA1 BA5 BB3	
Area 2 Value Stream B		Annual Volume Annual COGS ($m) **% growth COGS**	24.000 4,0 **5%**	BA1 BB3 BC5	
Area 3 Value Stream C		Annual Volume Annual COGS ($m) **% growth COGS**	640.000 6,4 **8%**	BA1 BA2 BA3	
Area 4 Value Stream D		Annual Volume Annual COGS ($m) **% growth COGS**	600.000 7,0 **9%**	BA2 BA3	
Area 5 Value Stream E		Annual Volume Annual COGS ($m) **% growth COGS**	8.000 1,2 **4%**	BA1 – BA9	

Assumptions of Capacity Review

Example

Demand / Supply Plan Assumptions	Growth Assumptions	Capacity Assumptions	Inventory Assumptions
• Unconstrained and Constrained data is from March Planning Cycle • Open orders and manufacturing backlog have NOT been taken into consideration • Demand for upcoming launches were added • …	• Next 24 months are based on SO&P Cycle (Forecast) • Year 3-5 were taken from long-term revenue projection • …	• Current standard hours and data to evaluate capacity were collected from routers • Current shift pattern is expected not to change • Saturday and overtime available if needed • Investments for launches were added • Yearly productivity gain of 2% • …	• Inventory Target currently includes Safety Stock and Cycle Stock for all products manufactured at the location • Safety Stock is minimum 4 weeks • …

Supply Health Status by Location & Manufacturing Area

Example

Location 4

Manufacturing Area	Safety Stock Health (SSH)	3 months Demand Plan (COGS / Units)	3 months constrained/ confirmed Supply Plan	Supply health < 3 months	Supply health 3-9 months	Supply health > 9 months	Comment
Area 1	58%	$750k (7k Units)	$800k $50k (8k Units)	61%	82%	100%	• Supply confirmed for Demand • Safety stock health back in 4 months
Area 2	84%	$1.000k (6k Units)	$1.200 $200k (7k Units)	86%	96%	100%	• Supply and Safety Stock confirmed
Area 3	57%	$1.600k (160k Units)	$1.550k ($50k) (150k Units)	62%	80%	100%	• Supply confirmed for Demand • Safety stock health back in 5 months
Area 4	43%	$1.750k (150k Units)	$1.500k ($250k) (130k Units)	39%	44%	97%	• Supply not confirmed next 3 months • Ongoing backorder risk • Capacity ramp up in progress • Supply back on track in 3 months and Safety stock health back in 12 months
Area 5	88%	$300k (2k units)	$300k ($0k) (2k units)	95%	100%	100%	• Supply and Safety Stock confirmed

Thresholds

< 50% ≥ 50% ≥80%

Supply health:
Demand Plan confirmed **AND** Safety stock health in place

Capacity Review (CR)

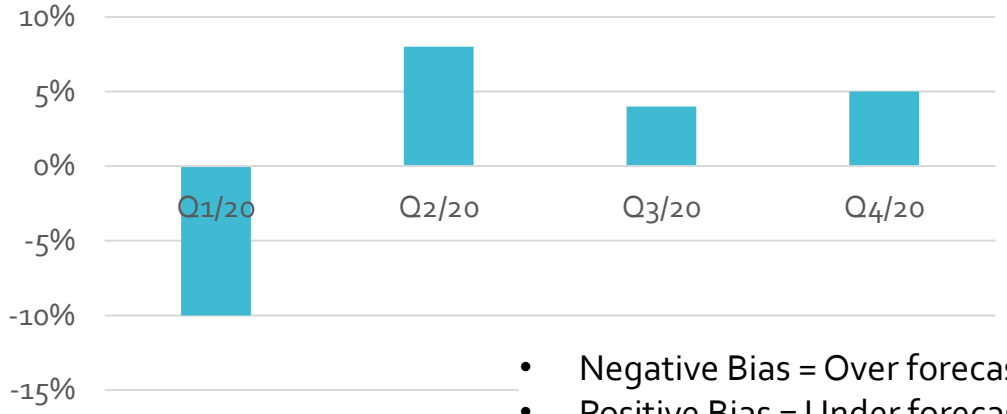
Location 4
Area 4
Value Stream D

Value Stream D - Capacity Planning Framework

Growth Rates

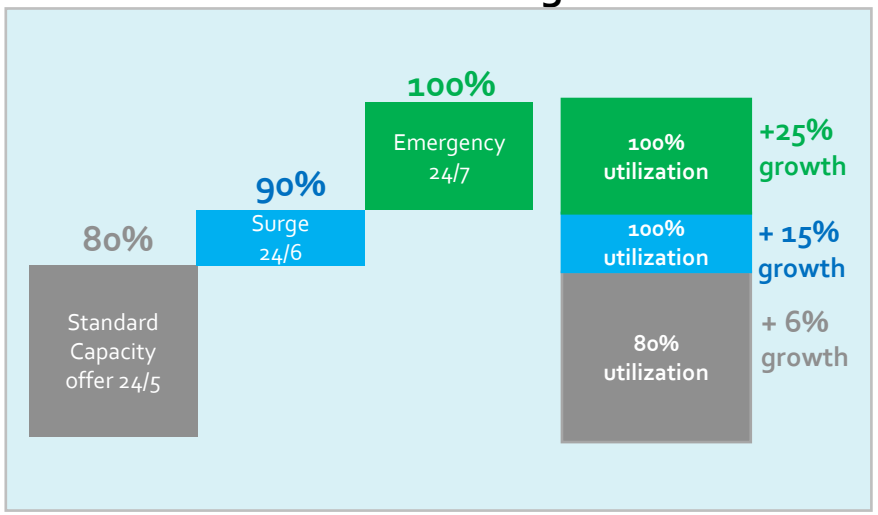
Year	Actual Growth Rate	Forecasted growth rate	Capacity Planning assumed growth
2020	10%		
2021		9%	
2022		9%	9%
2023			8%
2024			8%

Demand Reliability (Bias) over time



- Negative Bias = Over forecasting
- Positive Bias = Under forecasting

Shift Model Scenario Planning

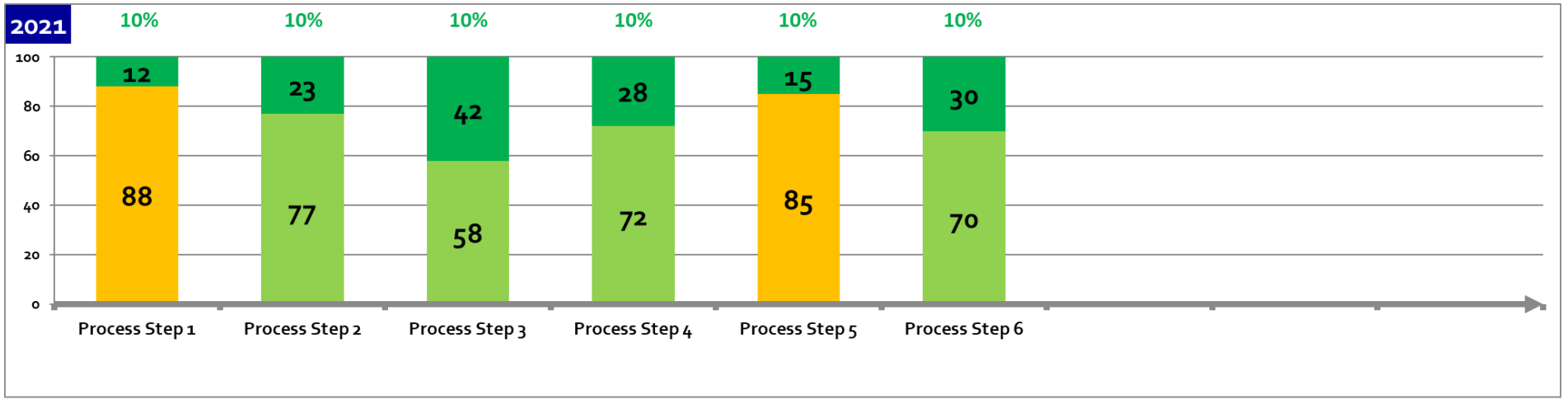


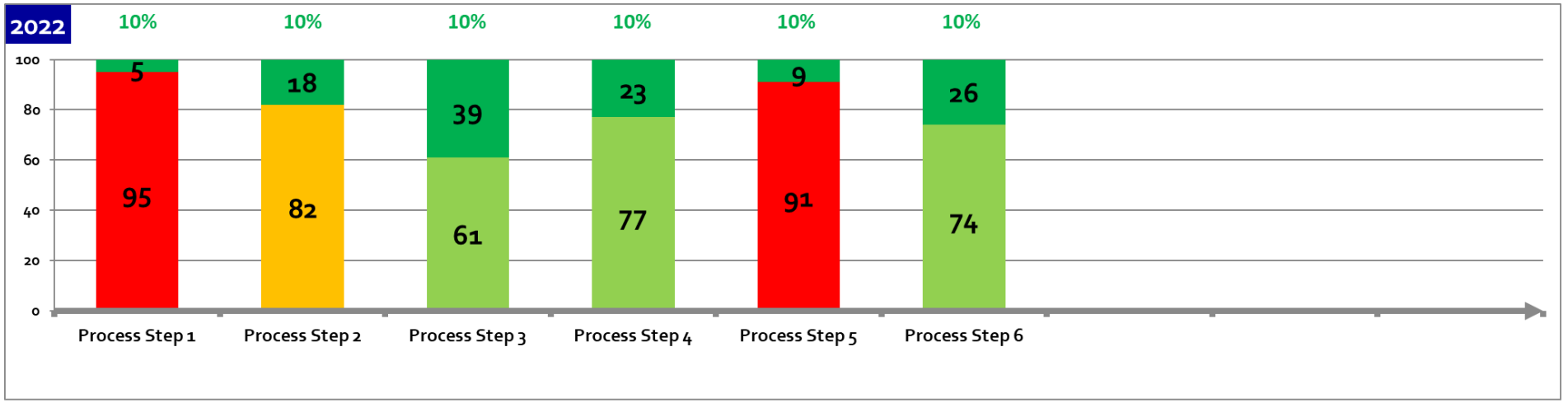
- Emergency maximum for 1 month
- Surge maximum for 3 months

Strategic Parameters

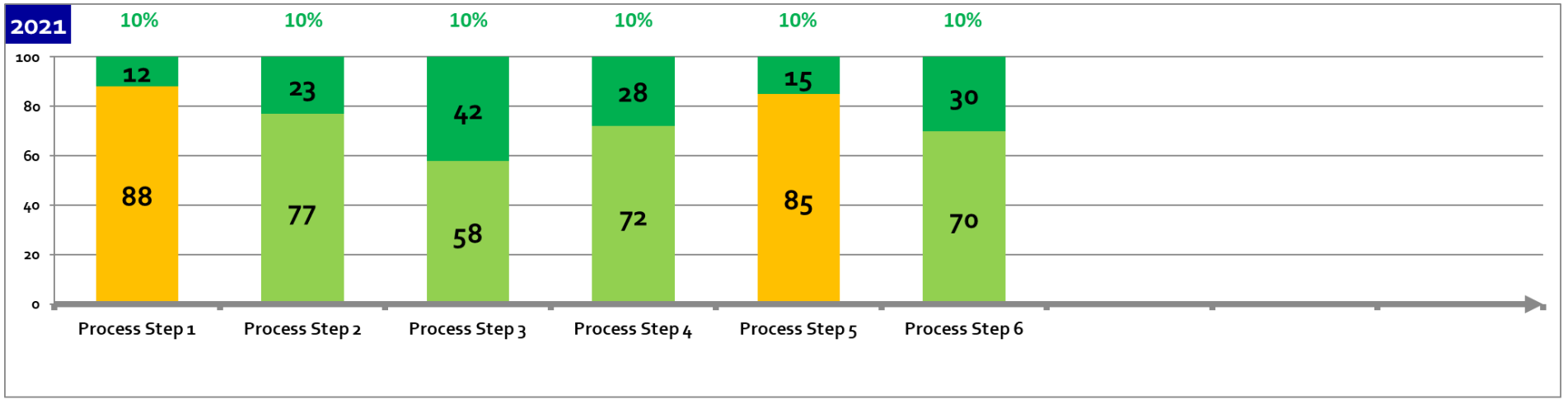
Topic	Status	Planning impact
Equipment Age	7,2 years	Reinvest via yearly budget → not planned
Space Utilization	75%	Sufficient for growth → not planned
Portfolio Freshness (launch/growth/mature/decline)	15% / 20% / 35% / 30%	8%-9% yearly growth → planned
R&D Pipeline	3 projects next 24m	w/ existing value stream → no new process step
Value Stream redundancy	65%	Via business cont. risk board → not planned

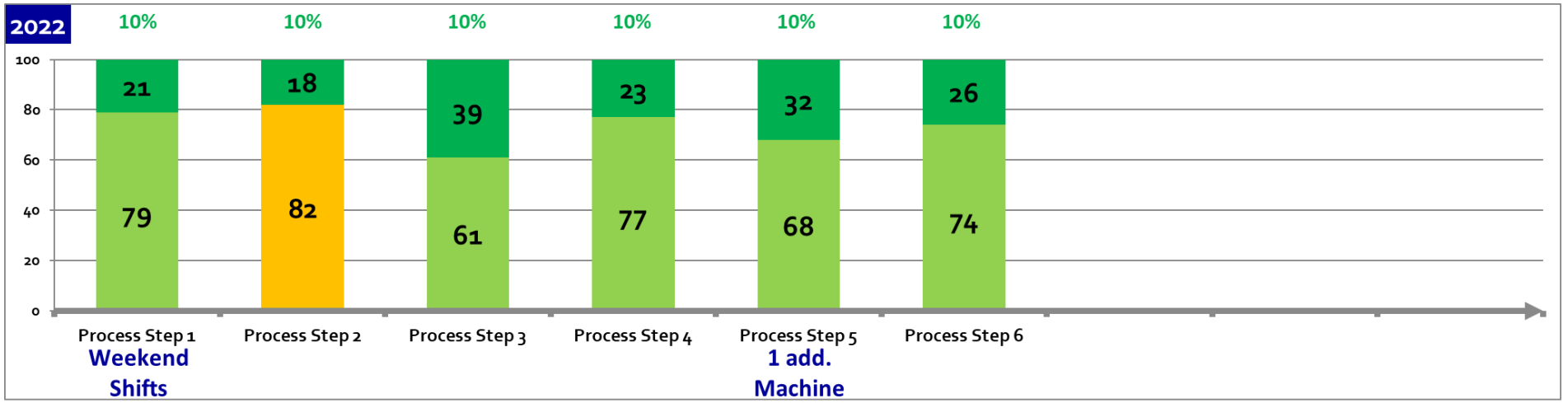
Value Stream D - Capacity Development





Value Stream D - Capacity Development





Value Stream D - Capacity Development

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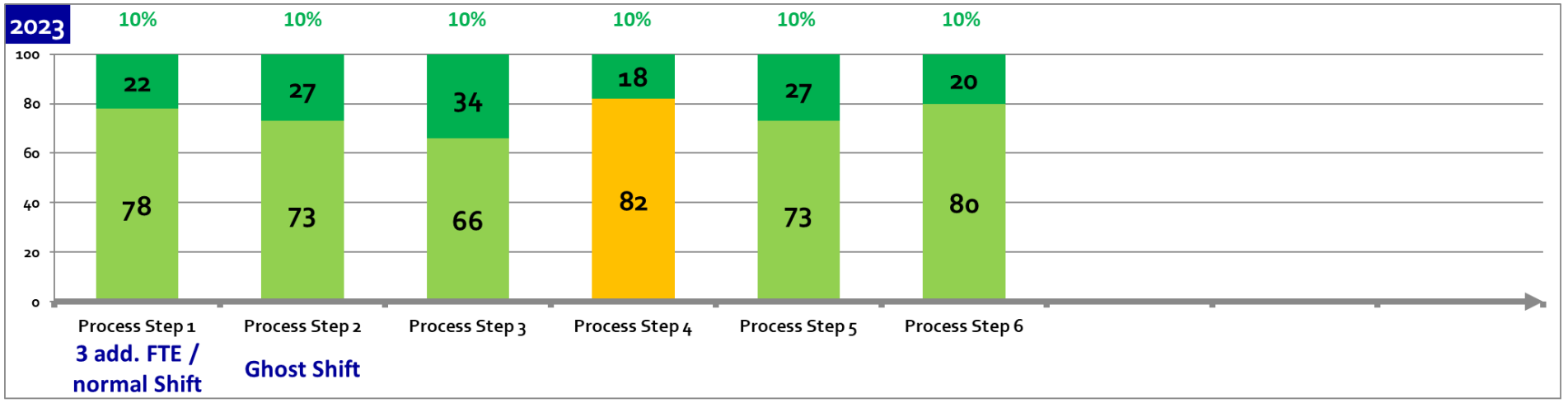
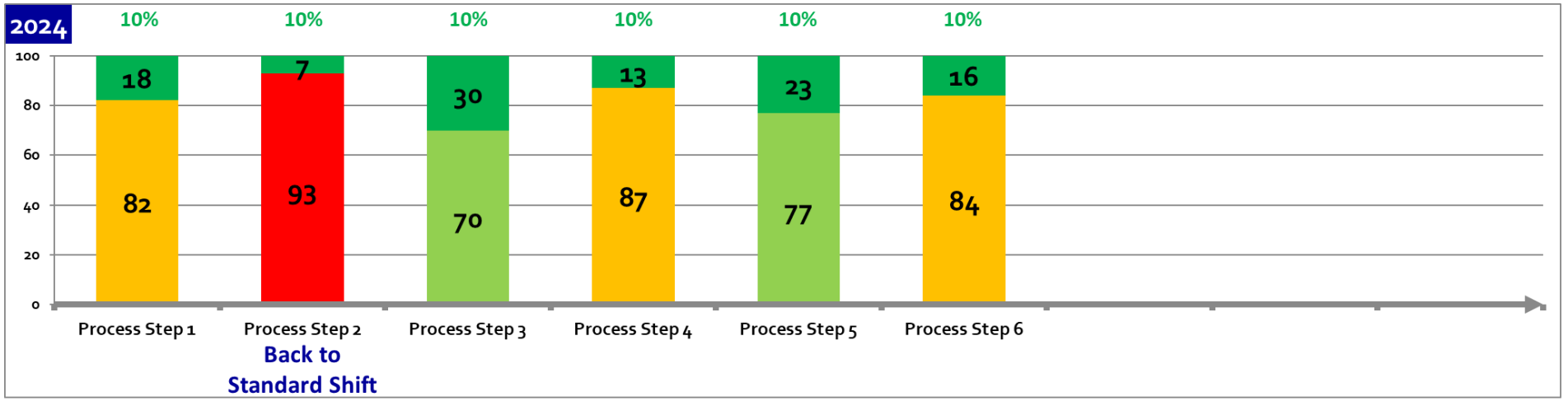
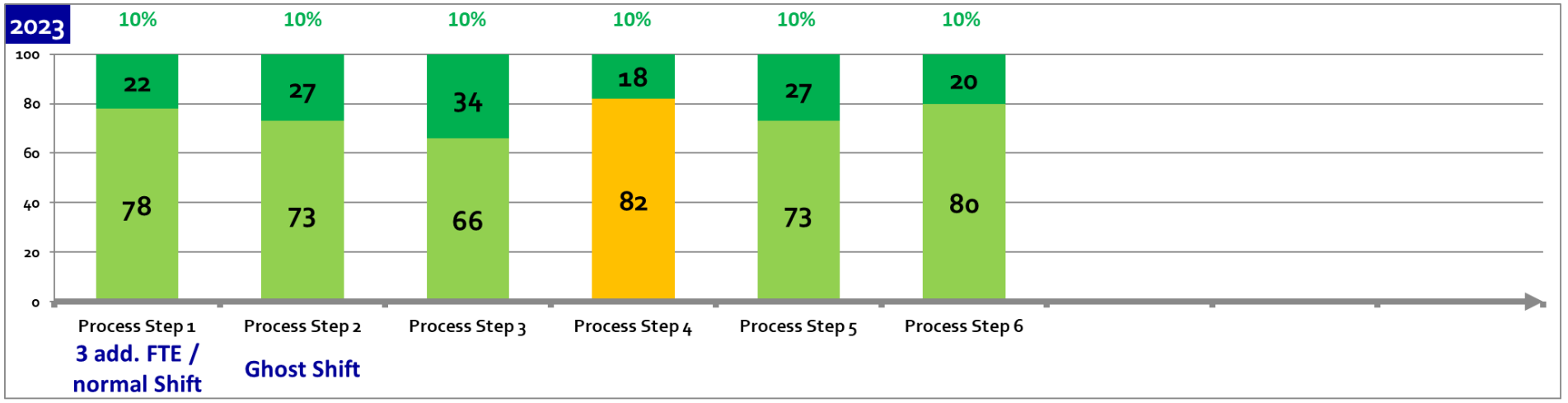
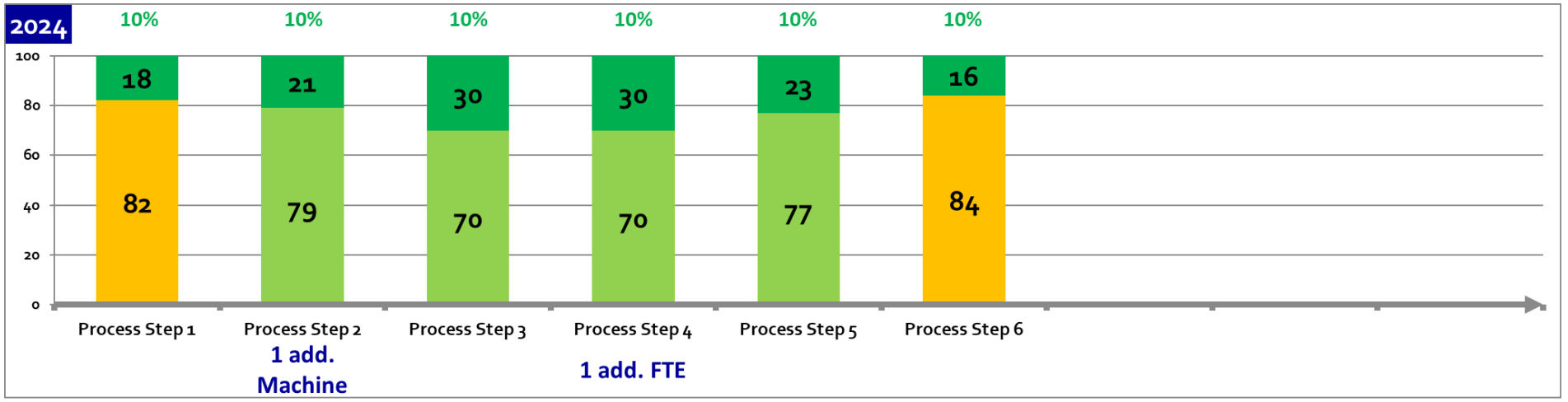




Value Stream D - Capacity Development





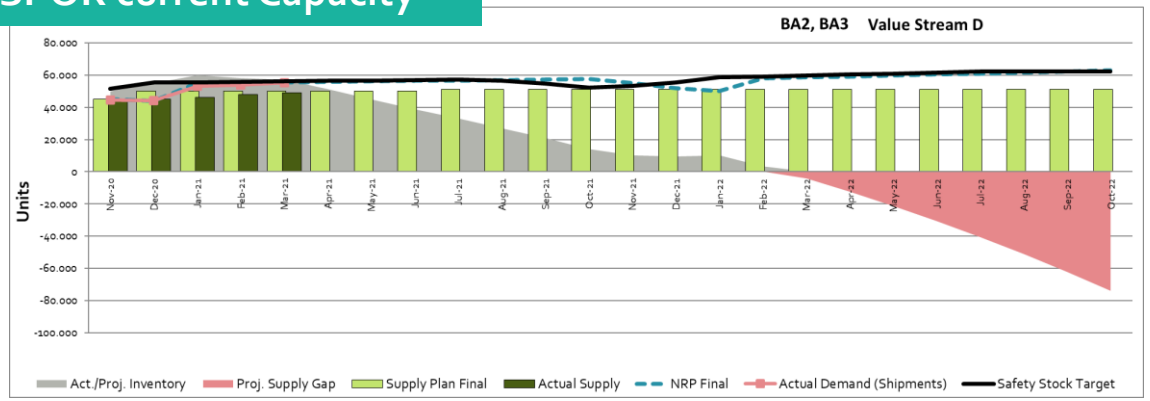
Decision Summary – Value Stream D (next 18 months)

Actions	When	Who
Address weekend shift starting Q1/22	Q4/21	Shift Leader
CER for 1 CNC Milling incl. Robot Handling	Q2/21	Unit Manager

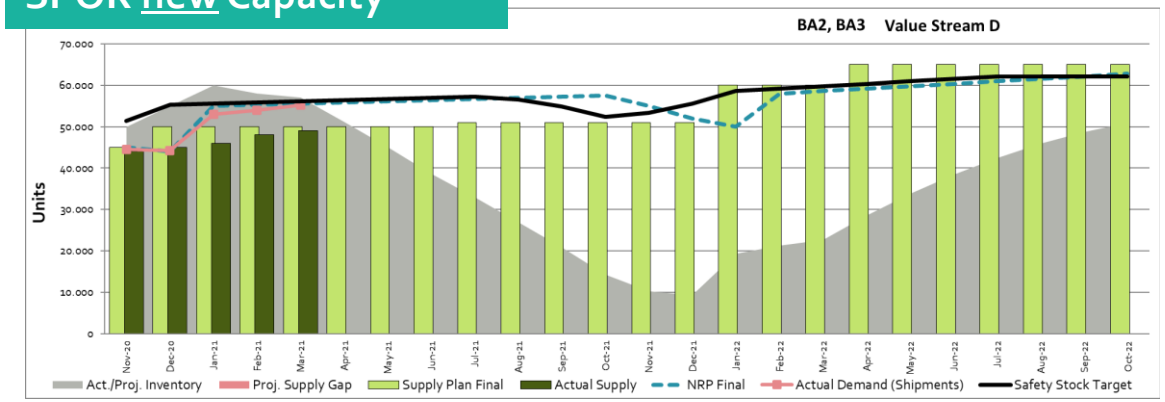
Year	2019	2020	2021	2022	2023	2024
Growth estimation		10%	9%	9%	8%	8%
COGS projection ($m) w/o changes	**6,5**	**7,0**	**7,5**	**8,1**	**8,6**	**9,2**
Investments ($m)			0,8			1,2
add. Depreciation ($k)			**80**	**80**	**80**	**200**
add. FTE (#)					3,0	1,0
add. FTE ($k)					**210**	**280**
add. Cost total ($k)		**0**	**80**	**80**	**290**	**480**
COGS impact (%)		**0,0%**	**1,1%**	**1,0%**	**3,4%**	**5,2%**
COGS projection ($m) adjusted		**7,0**	**7,6**	**8,2**	**8,9**	**9,7**

Productivity gain / year:	2%
Depreciation (years):	10
FTE cost / year ($k):	70

SPOR current Capacity



SPOR new Capacity



Capacity Review (CR)

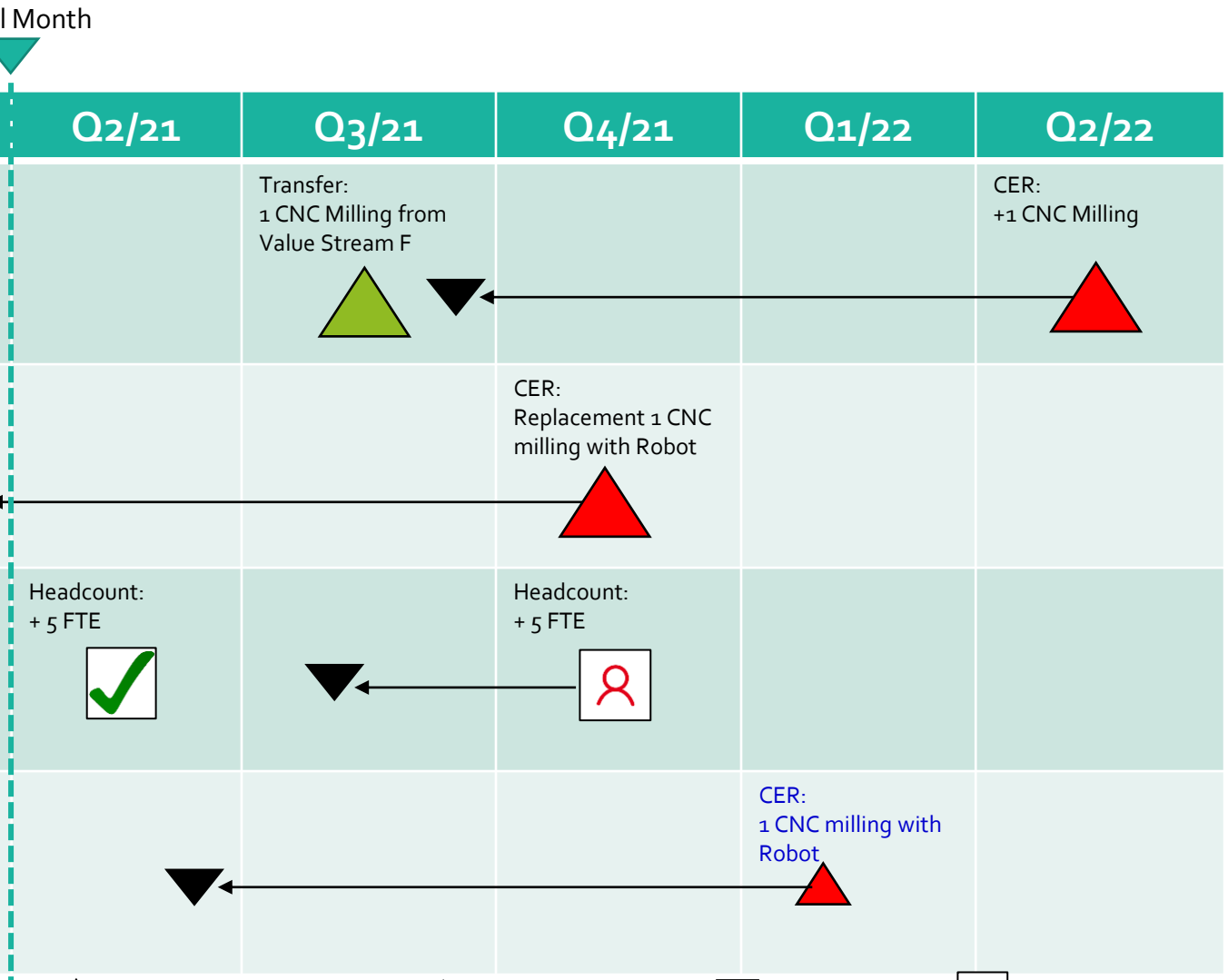
Decision Summary

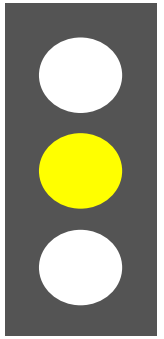
Capacity Roadmap

Decision Summary

Location	Area/ Value Stream	Capacity requirement	Time (mm/yy)	Est. Cost ($k)	Decision	Comment
…						
4	4 / D	Weekend shifts	01/22	50	approved	
4	4 / D	1 CNC Milling w/ robot handling	03/22	800	approved	
4	4 / D	3 FTE	09/22	210	approved	3 months training
4	4 / D	1 CNC Milling w/ integrated automation	02/24	1'200	Not approved	Follow up next CR, compensation of COGS impact to be evaluated
4	4 / D	1 FTE	03/24	70	Not approved	Leverage w/ existing staff
…						

Capacity Roadmap Tracker (18 months rolling)





Risks / Concerns

- CER for Value Stream B not yet approved, high failure risk of current equipment

Changes / Impacts / Opportunities

- Add. Machine for Value Stream D addressed. CER process started, approval needed end of Q2/21

Decisions Required

- Escalation of CER approval for Value Stream B to Sr. Management

leverage of existing | in progress (approved) | decision open | FTE (approved) | FTE (not approved) | Latest point for decision

New Action items

#	Topic	Location/ Value Stream	CR from	Owner	Status	Comment
1	CER for 1 CNC Milling incl. Robot Handling	Location 4/ Value Stream D	30th Apr 21	Unit Manager	Approved in CR	
2	CER for Value Stream B will be escalated at next ERR for approval	Location 4/ Value Stream B	15th Dec 20	Unit Manager	CER pending	
…						

Author

Introduction summary

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MBA (Business Integration) – Julius-Maximilians-University Würzburg

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Professional Background

- Supply Chain Management, Planning & Execution
- Operations & Plant Management
- Business Process Development, Implementation & Validation
- ERP & IT Solutions
- Quality Management
- 20+ years in Metal Processing & Medical Device Industry

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