



# Alstom Investor Day

May 11<sup>th</sup>, 2022

**ALSTOM**  
• mobility by nature •

# Agenda

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## ➤ ➤ Introduction

Henri Poupart-Lafarge, *Chairman and Chief Executive Officer*

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## ➤ ➤ Rolling Stock and Components

Danny Di Perna, *Executive VP and Chief Operating Officer*

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### ➤ ➤ Stabilise

Danny Di Perna, *Executive VP and Chief Operating Officer*

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### ➤ ➤ Integrate

Benjamin Fitoussi, *President Rolling Stock and Components – Development & Operations*

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### ➤ ➤ Transform

Benjamin Fitoussi, *President Rolling Stock and Components – Development & Operations*

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## Questions & Answers

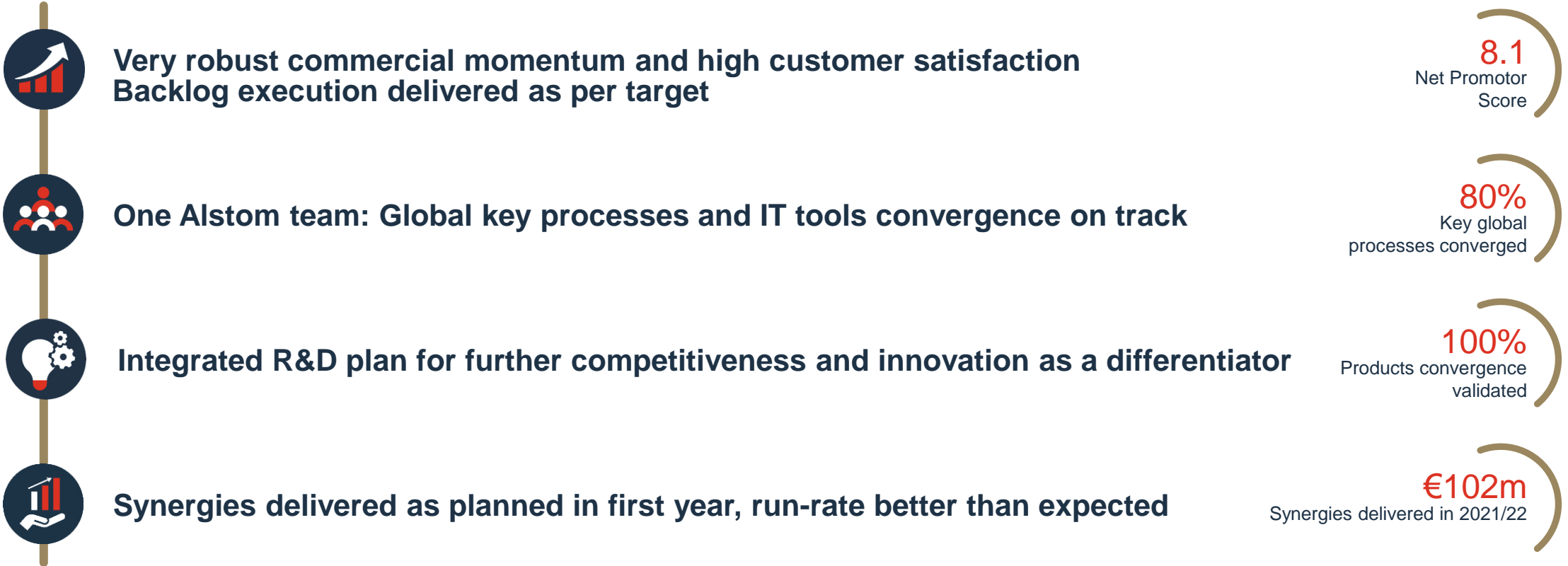
1



## Introduction

Henri Poupart-Lafarge,  
Chairman  
and Chief Executive Officer

# A successful first year integrating Bombardier Transportation, setting foundation for effective turnaround



**Integration acceleration, synergies on-track and confirmed financial trajectory**

# Our One Alstom team at the heart of our journey

## A SUCCESSFUL FIRST YEAR OF INTEGRATION

- 1 million connections to our learning platforms in 6 months
- 86% employees are aware of the new Alstom Values<sup>1</sup>
- 80% employees are proud to work for Alstom<sup>1</sup>



## SOLID PEOPLE FOUNDATION AND A GREAT DYNAMIC

- An attractive employer, with 9,000 permanent new hires in 2021/22
- A learning organization grooming talents and reaching 4,500 experts & +750 internal trainers



1. Alstom Employee engagement survey 2021

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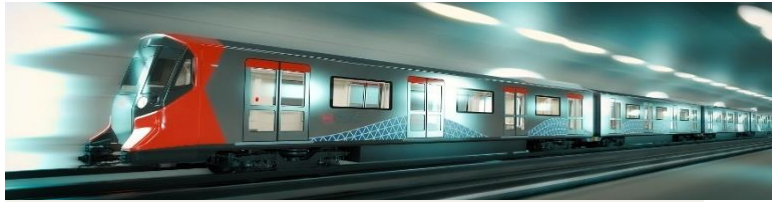
# Services

## Our strong order booking demonstrates customer confidence

**€4.2 BILLION** OF SERVICES ORDERS BOOKED IN 2021/22



**DALLAS** (10 YEARS OPERATION & MAINTENANCE – US)



**SANTIAGO M7** (20 YEARS FULL MAINTENANCE – Chile)



**TRANSDEV** (10 YEARS MAINTENANCE SUPPORT – France)



**METROLINX** (94 BiLevel OVERHAUL– Canada)

... SECURING FUTURE SALES AND MAINTAINING GROWTH

**> 1.1** Book-To-Bill Ratio each year over the past 5 years

**50+** Contracts **20+** years in length

## ILLUSTRATION OF LONG TERM PARTNERSHIP: METROREX (Romania)



**Since 2004**  
**MAINTENANCE AND OVERHAUL**

- Over 60 different types of refurbishment
- **Increasing train availability from 56% to 99.96%**

**Contract renewed in 2022**  
**15 YEARS FULL MAINTENANCE AND OVERHAUL**

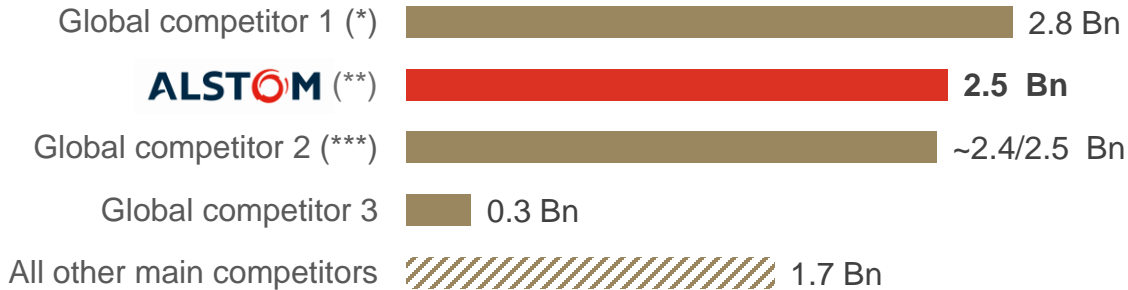
- 82 Metro trains
- 8.5 million km per year in average

# Signalling

## Progressing well, in line with our ambition

### #2 IN A MARKET UNDER CONSOLIDATION

In € - Sales linked to all Signalling activities (estimated)



Accessible UNIFE market for European Companies (70% of total market, excluding Russia, China)

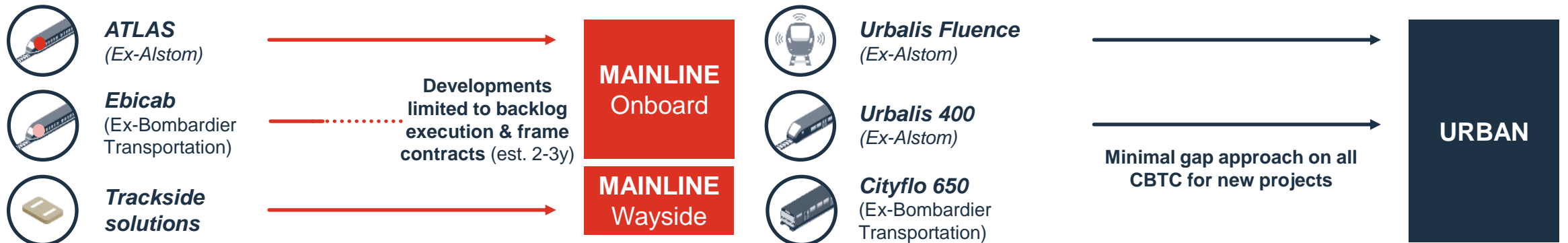
(\*) Proforma figure based on Alstom estimation and FY 2021 results for Global competitor 1 (subject to EU approval and pending closing of M&A transaction) (\*\*) including Signalling activities into Systems (\*\*\*) Alstom estimation

### STRONG COMMERCIAL ACHIEVEMENTS IN 2021/22

- **Mainline:** Cambridge (UK), Bursa– Yenisehir–Osmaneli (Turkey), Stuttgart (Germany)
- **Supporting new products for Urban CBTC:** Urbalis Fluence\* introduced through Grand-Paris L18 (France) & Torino L1 (Italy)
- **Captured long-term service contract:** BHP Billiton (Australia)

\* Urbalis Fluence, train-to-train communication based control system, world-first implementation for Métropole Européenne de Lille

### CONVERGING PRODUCTS AND SOLUTIONS CONVERGENCE



# Turnkey

## Sustain our leadership and deliver strong results

### STRONG MARKET DRIVERS

-  Strong underlying urban railway transportation market
-  Increasing complexity of railway solutions
-  New turnkey projects in some emerging countries

### ALSTOM'S KEY ASSETS

- **Metro Turnkey leader for several years**
- **Proven track record** in system integration and optimization activities
- **Largest portfolio** of solutions on the market
- Bundling with **long-term service contracts**
- Established **local partners network** (e.g. Tren Maya & Tel Aviv tram)



### STRONG ACHIEVEMENTS IN 2021/22

- **Strong commercial performance** with record order intake and 100% hit rate
- **Back on the tram Turnkey market** – preferred bidder of Tel Aviv Green Line
- **Automated People Mover brownfield solid commercial performance** (Miami, Tampa, Atlanta)





2



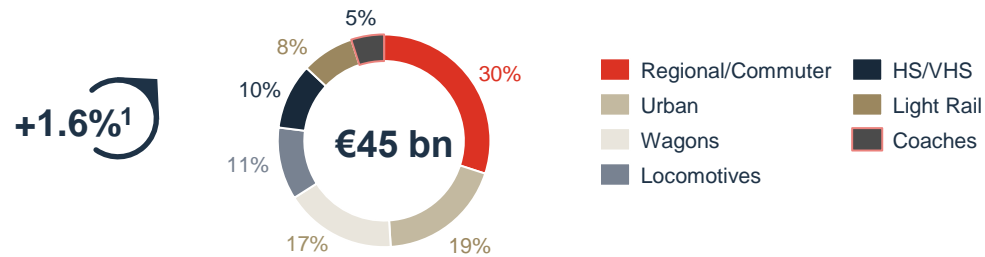
## Rolling Stock and Components

Danny Di Perna  
Executive VP and  
Chief Operating Officer

# Alstom is the market leader in Rolling Stock & Components

## RSC IS A LARGE AND STEADY MARKET

UNIFE accessible market 2020-2022  
(WRMS 2020) – Average in € Bn / year



## RECENT WINS



**AUSTRALIA**  
100 Flexity™ low-floor Next generation Trams  
**€700 MILLION**



**SWEDEN**  
25 Zefiro Express high-speed trains  
**€650 MILLION**



**NORWAY**  
30 Coradia Nordic™  
**€380 MILLION**



**CHILE**  
37 Metropolis™ trains, signalling system and 20-year maintenance  
**€355 MILLION**



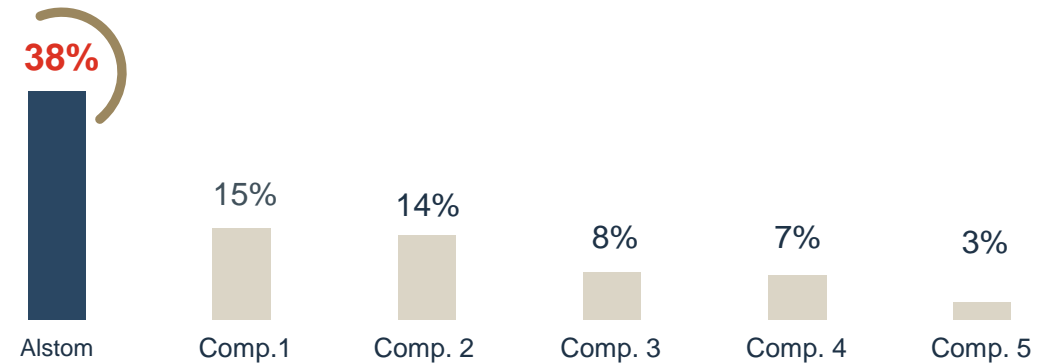
**GERMANY**  
130 Coradia Stream™ inter-regional trains and 30-year maintenance  
**€2.5 BILLION**



**UK**  
HS2 Very high Speed 54 trains & 12-year maintenance  
**€1.1 BILLION**

## ALSTOM: A CLEAR RSC MARKET LEADER

RSC Market shares 2019-2021, in % including turnkey share



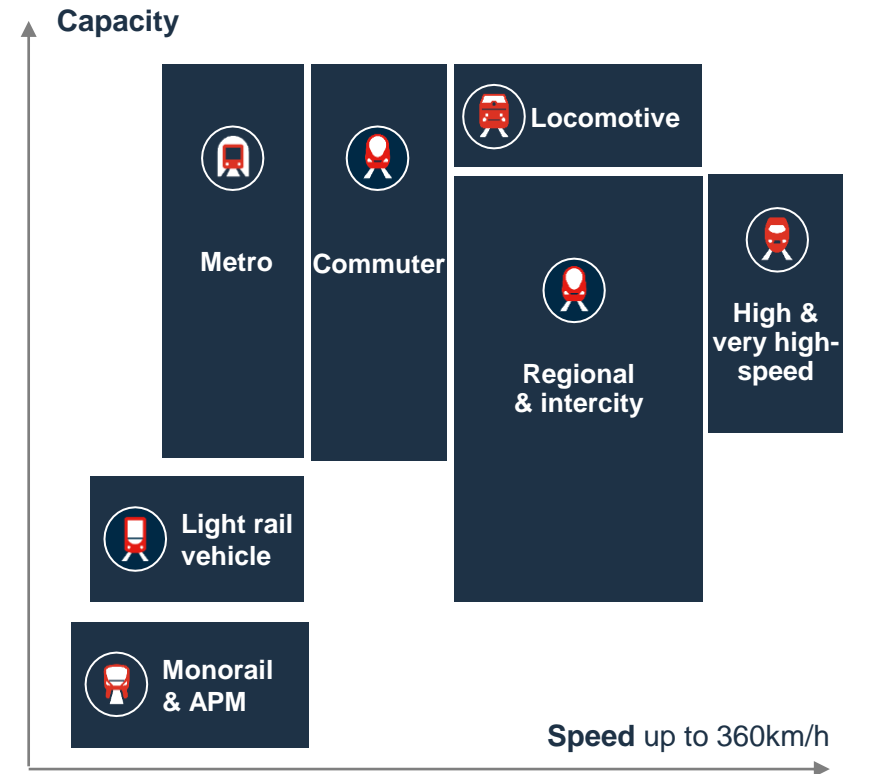
1. CAGR of 1.6% based on 2020-2022 to 2023-2025 period

# An industry leading product portfolio

PLATFORM & TECHNOLOGIES ENABLE CUSTOMISATION & STANDARDISATION



## COVERING ALL SEGMENTS



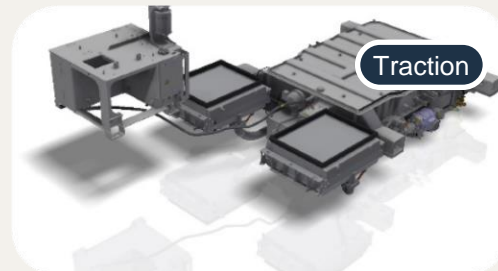
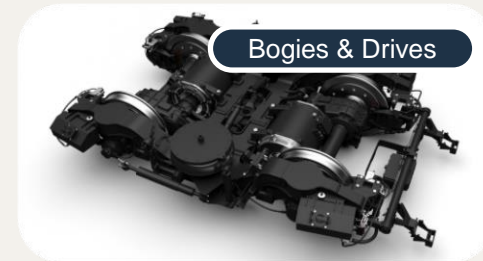
A significant installed base : ~30% of global installed fleet

# Component building blocks drive competitiveness and product performance

## COMPLETE SPECTRUM OF GREEN & CLEAN SOLUTIONS



## BROADEST COMPONENT PORTFOLIO IN THE INDUSTRY



## VERTICALISED WITH SELECTIVE M&A



Vertical integration of core components and key technology bricks to further leverage service business & enhance competitiveness



- Brakes pads specialist (*major consumable*)
- Disk brakes specialist



Medium power H<sub>2</sub> fuel cell specialist allowing Alstom to master this key technology brick throughout its whole lifecycle

# A unique global-local presence and capability

## WORLD-CLASS COMPETENCIES

**+50 Production sites** in 22 countries

**24m hours manufacturing** across all key regions

**16m hours engineering delivered** in our Excellence hubs

## WELL BALANCED CAPABILITIES BETWEEN CUSTOMER PROXIMITY AND COST COMPETITIVENESS

### Rolling Stock & Components Key Sites



SIEGEN



KATOWICE



DERBY



BARCELONA



SAHAGUN



HORNELL



LA ROCHELLE



QINGDAO



MADHEPURA



SAVIGLIANO

# Technology investments targeted for a greener, smarter and more inclusive mobility

## KEEPING THE EDGE IN ZERO EMISSION SOLUTION

- Partnership to decarbonise freight with an H2 solution
- First battery train tested in passenger operation with Deutsche Bahn



- Hybrid Régiolis tested in France

**-20%**  
Energy consumption

## OPTIMIZING TOTAL COST OF OWNERSHIP

- Avelia Horizon under dynamic test in H2 2022 in Velim test center

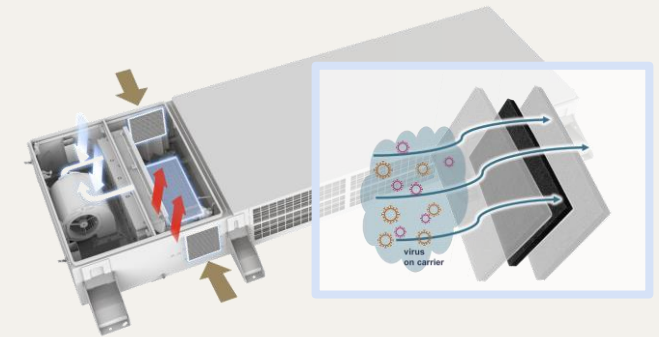


**+20%**  
Capacity

**-20%**  
Energy consumption

## ENHANCING PASSENGER COMFORT

- PEPA™ filter, an antiviral HVAC filter that catches and kills viruses, including the coronavirus



**-99.8%**  
Virus reduction

**-99.9%**  
Bacteria reduction

Unrivalled core R&D capabilities

# Ambition to grow profitability and strengthen our leading market position

## GROW PROFITABLY AND DELIVER TO CUSTOMER COMMITMENTS

✔ **Market share target**  
by FY2024/25

+3 to 4pp

✔ **aEBIT target**  
by FY2024/25

High single  
digit



## STRATEGIC ORIENTATION AND KEY INITIATIVES

### PLATFORMS

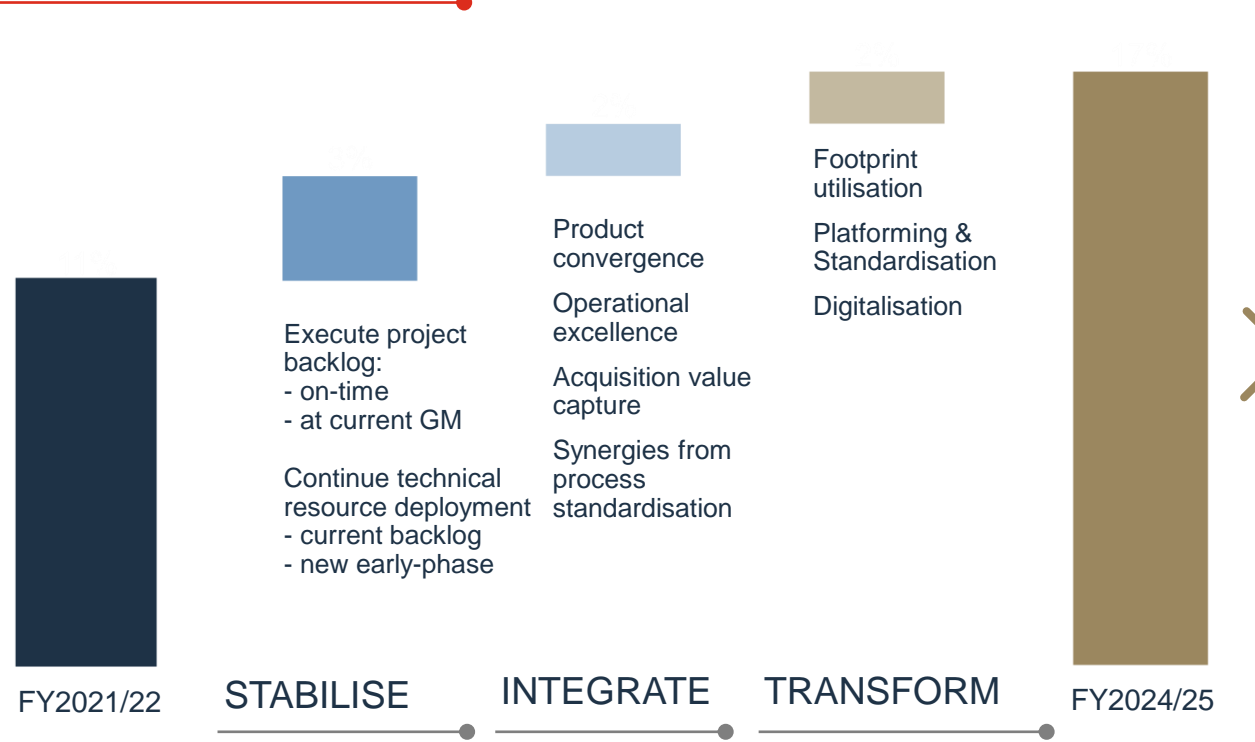
- Platforming standardisation & components building blocks
- Tendering focused on optimizing design solutions driving profitable growth
- Green mobility innovation and technology roadmap

### DEVELOPMENT & OPERATIONS

- Leverage best-cost engineering hubs & manufacturing sites
- Cost reduction enabled with new supply chain scale
- Use Design-to-Cost methodology for design efficiency
- Adherence to Quality Gate process

# A clear path towards growth and profitability restoration

## GROW PROFITABLY...



## ... MITIGATE GLOBAL HEADWINDS

- 1 Manage industrial & **material & labor inflation**
- 2 Secure delivery of **electronic component material** & plan for longer order lead-times
- 3 Continue to mitigate **supply chain & logistics risk** of material supply

**Three steps to get to high single digit aEBIT by 2024/25**



# Process rigour and execution focus create value for customers and stakeholders



2.1



## STABILISE

Turning around  
difficult projects

Danny Di Perna  
Executive VP and  
Chief Operating Officer



# A Rolling Stock and Components backlog of €41bn, comprising ~130 active projects



## PROJECT BACKLOG BREAKDOWN PER SEGMENT



**Light Rail**

**26**  
projects

**~€3bn**  
backlog




**Regional**

**27**  
projects

**~€10bn**  
backlog




**Urban**

**26**  
projects

**~€7bn**  
backlog




**High-Speed**

**9**  
projects

**~€5bn**  
backlog




**Commuter**

**22**  
projects

**~€12bn**  
backlog




**Locomotives**

**16**  
projects

**~€4bn**  
backlog

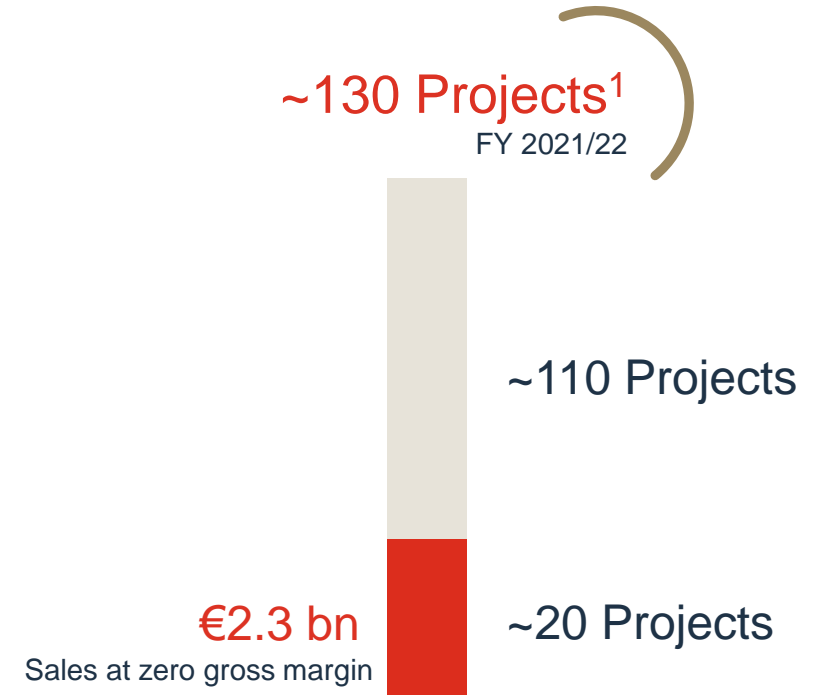
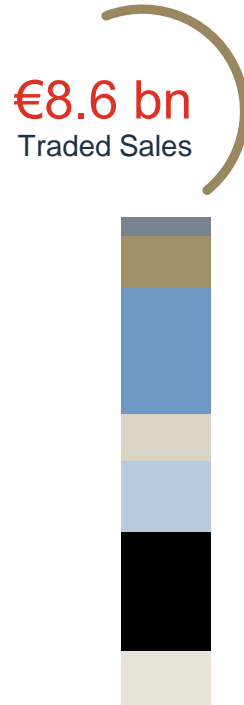


**~130 projects screened to define actions for turnaround**

# FY2021/22 key Rolling Stock and Components backlog and sales information



- Urban
- High-speed
- Regional
- Locomotive
- Commuter
- Light Rail
- Components



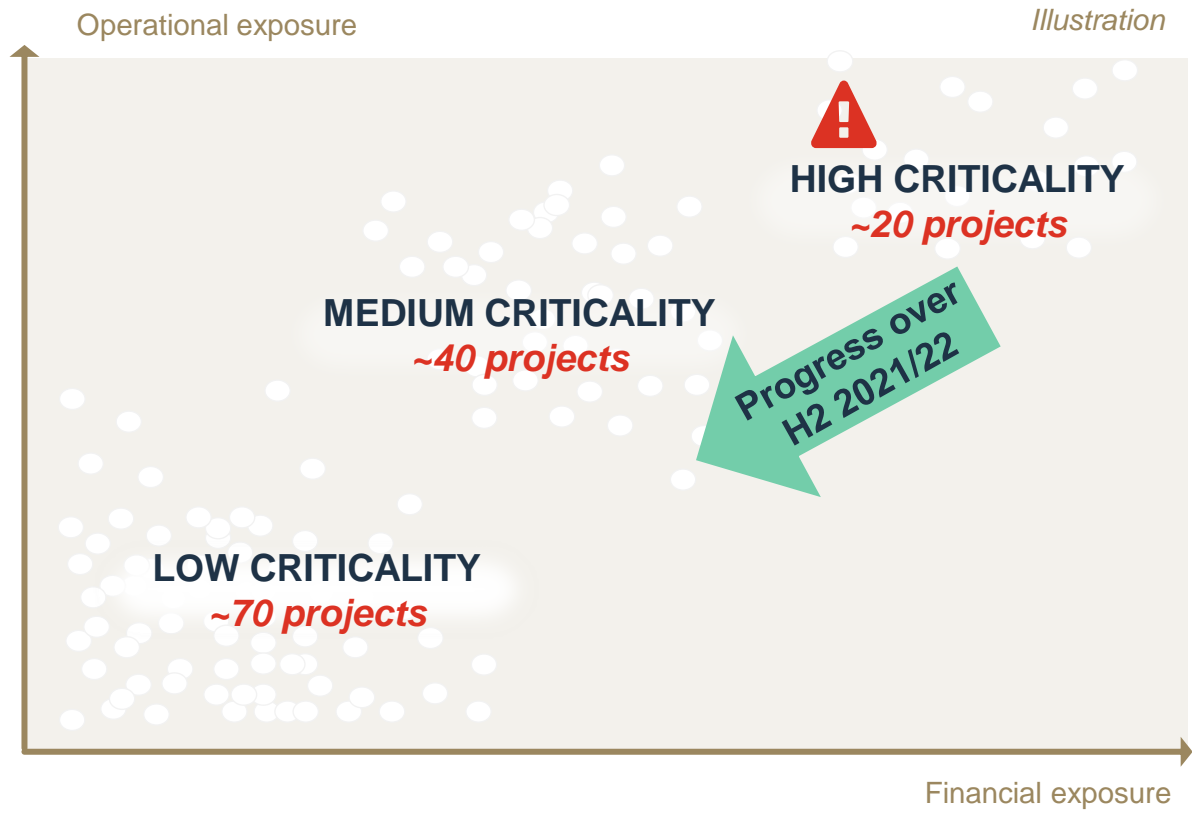
**A portion of the backlog needs technical expertise and project management support**

1. Projects with Residual Value above €50m as of 31 March of 2022

# A comprehensive portfolio risk assessment completed



## 130 PROJECTS THOROUGHLY ASSESSED (H1 2021/22)



## HIGHLIGHTING MAIN ROOT CAUSES

- Incomplete or partial compliance in **requirements management** process
- Inadequate **project planning, scheduling and gate management** process
- **Resource and competencies** not sufficiently focused on critical project execution
- **Supply management** – more focus on requirements and quality control
- **Product policy** not sufficiently aligned to meet customer requirements

**Significant progress achieved to reduce High Criticality project risks**

# Project stabilisation action plan deployed with expert task forces



## TASK FORCE EXPERT GROUPS LAUNCHED

-  Inject **development experts**
-  Review all **customer requirements**
-  Align **project scheduling and resources**
-  Enforce **Design for Quality and Project Management standards**
-  Punctual **support on demand** and **extensive visibility** on critical project progress



# Systematic process and actions deployed to reduce project risks are yielding results

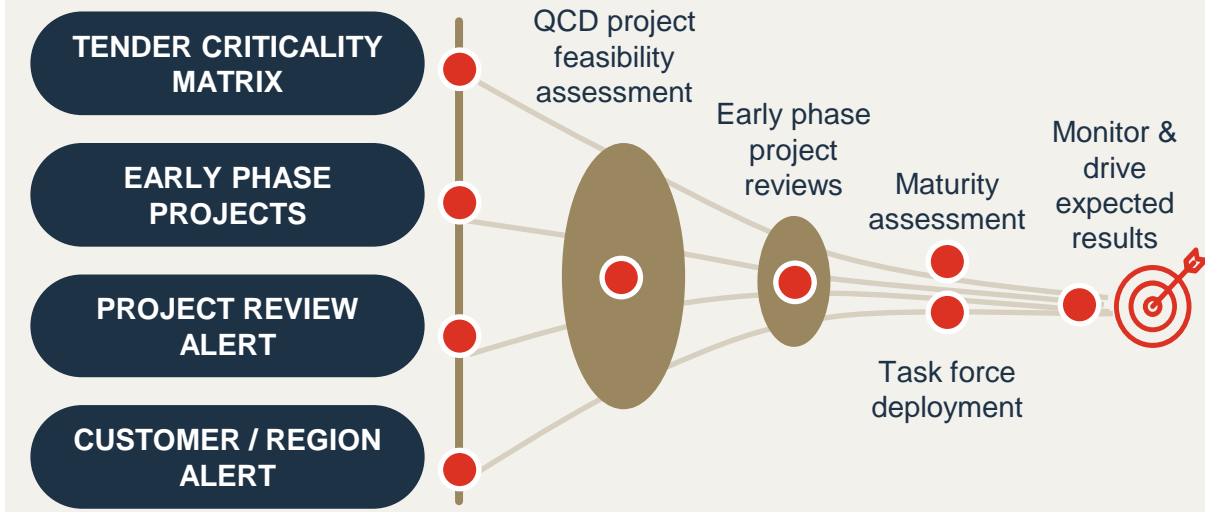


## APPROACH TO SUPPORT CRITICAL PROJECTS

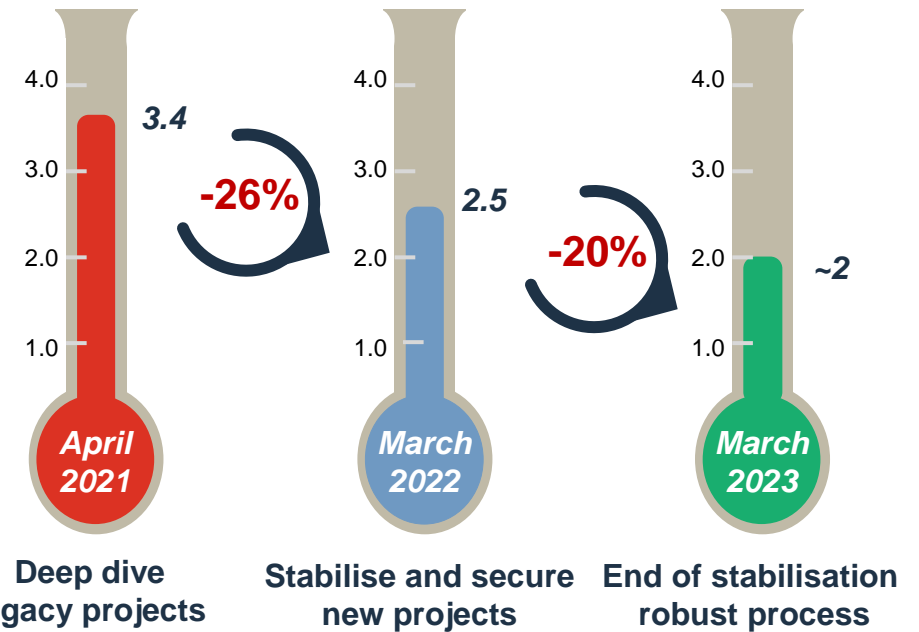
Theme	PROJECT 1		PROJECT 2		PROJECT 3		PROJECT 4		PROJECT 5		PROJECT 6	
	Apr-22	Apr-22	Feb-22	Apr-22	Apr-22	Apr-22	Mar-22	Apr-22	Mar-22	Apr-22	Mar-22	Apr-22
Schedule (vs. DTS)	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Resources	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Ready to work & perform	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Configuration	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Requirement	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Main technical performance (weight, energy consumption, noise, gttts)	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Design vs. P&ID, PIC, Operations, Serviceability)	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Architectures & Interfaces	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Mechanical	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Functional	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Electrical	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Software	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Validation	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Collaboration with Suppliers	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3
Collaboration with Customer	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3	Top 3

Systematic and comprehensive maturity assessment based on common set of 15 criteria

Illustration



## RISK CRITICALITY INDEX EVOLUTION



### Risk Criticality Index score methodology

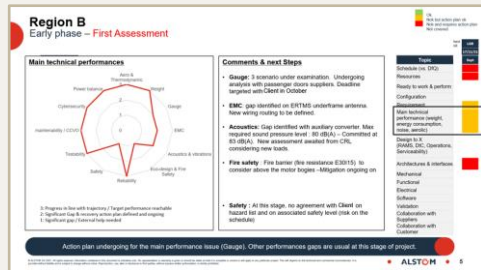
- 1: Project on track as per requirements and plan
- 2: Minor gaps impacting project objectives with a secured action plan
- 3: Significant gaps impacting project objectives
- 4: Project schedule and financial performance not to plan

# Project Management best practices being deployed on all new projects

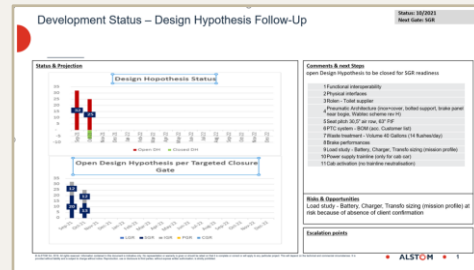


## LEVERAGING STANDARD DEVELOPMENT PROCESS TOOLS...

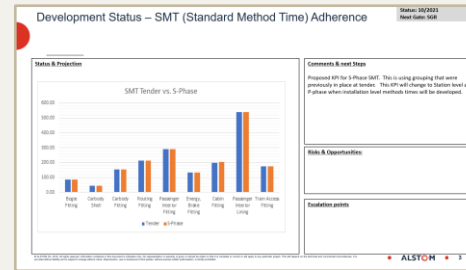
### Compliance to main Technical Performance targets



### Requirements Coverage & Validation of Dev. Assumptions



### Design for Operation & Services



Illustrations

## CLEAR OBJECTIVES

100%  
Launch Gate Review  
on time

12 weeks  
Critical Project Review 0  
with 1<sup>st</sup> maturity assessment

## ...AND LESSONS LEARNED FROM DIAGNOSIS AND PROBLEM SOLVING

- ✔ Project **staffing** core team
- ✔ **Contract** awareness
- ✔ **Savings** review
- ✔ **Risk & Opportunities** review
- ✔ Establish clear **KPIs dashboard**
- ✔ Configuration management discipline
- ✔ End-to-end project schedule optimization
- ✔ Validation strategy optimization





# Video

## Keywords which will appear on the screen

### Stabilisation on tracks

#### VALIDATED WITH PIERRE MIRAMONT

#### 1/ Twindexx for SBB

10 fold improvement in reliability

Lowest demerit ever reached

100% on time delivery in the last 12 months

“Twindexx is now the best quality at delivery across all other OEMs”  
SBB project director

#### TO BE REVIEWED

#### 2/ CRESPIEN, France

Ramp-up "Plan 1000"

New production line (for Regio 2N)

Increased capacity/productivity

New logistics investments

## SEQUENCE OF MESSAGES TO BE RE-ARRANGED

### 3/ DERBY, UK

First customer acceptance of SW and WM trains (mettre en dernier)  
20 fold improvement in customer demerit score - ~~No more safety and~~  
~~Functionnal issues~~ (avant dernier)

Test faults recorded by trainset reduced by 90%

50% reduction in manufacturing lead time

70% of retrofit activity completed

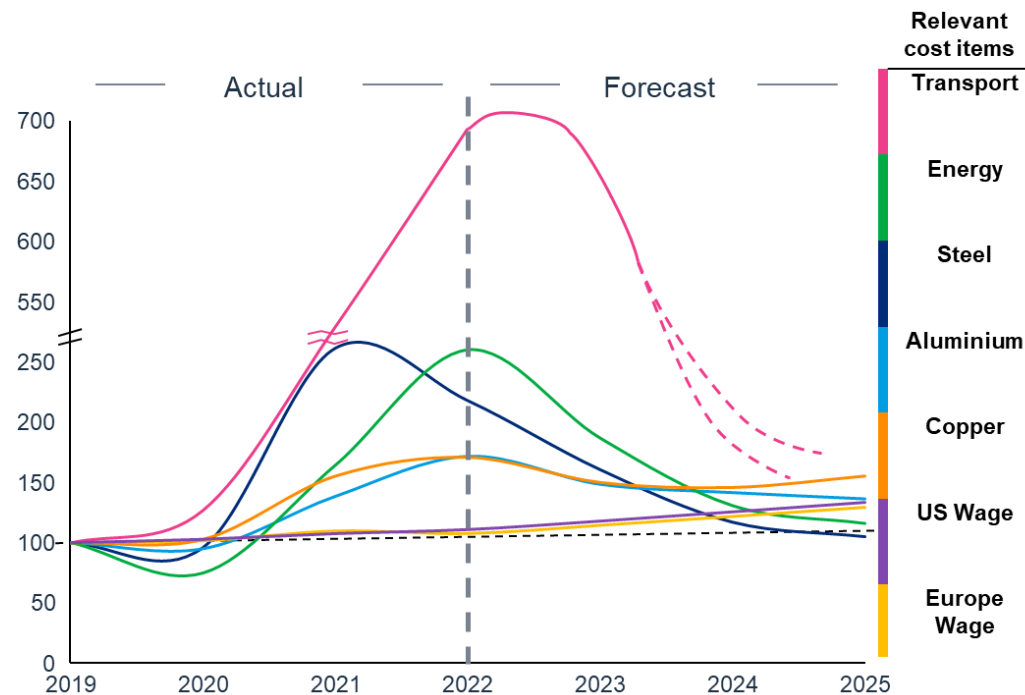
# Reinforced action plan to mitigate inflation cost effect



## INCREASED PRESSURE OVER H2 2021/22

### Evolution of relevant cost items indexes

Indexed, Yearly evolution 2019-2025E, Base = 2019



## MULTI-DISCIPLINARY ACTION PLAN

- 1 **Price adjustment** on new **tenders** mirroring cost increase
- 2 Commercial contract **pricing adjustment formulas**
- 3 Reinforced **selectivity** for fix and firm price contracts
- 4 **Back-to-back** with suppliers for fix and firm contracts
- 5 **Long term** planning and secure material supplies
- 6 Apply stringent cost measures to mitigate headwinds

# Supply chain turbulence mitigated in 2021/22



## SUPPLY CHAIN CONSTRAINTS

### Electronic components material capacity issues

- Semiconductor chip shortages aggravated by the pandemic
- Electronic components and systems deliveries potentially impacting production flow
- Ordering lead times significantly expanded

### Disruption on goods delivery

- International freight activities under pressure
- Delays on freight activities increasing

## DOUBLE DOWN ON ACTION PLAN IN FY 2022/23

- 1** Crisis cell to optimise scarce material allocation
- 2** In-depth analysis of semiconductor **needs across the complete value chain**
- 3** **Longer-term planning** and commitments with suppliers to **secure allocation**
- 4** Develop and use **alternate sources**
- 5** **Product adaptation and redesign for interchangeability** to reduce dependencies
- 6** **Adapt production process** (i.e. re-sequencing) to mitigate component shortage

2.2



## INTEGRATE Working as One

Benjamin Fitoussi  
President Rolling Stock  
and Components –  
Development & Operations





## OUR TARGET

Bring back the operational performance to nominal in March 2023 and deliver the committed synergies

1

WORK AS ONE ALSTOM



2

ALIGN AND OPTIMISE OUR PRODUCT PORTFOLIO



3

BRING OUR OPERATIONS TO THE REQUIRED LEVEL OF PERFORMANCE



4

PURSUE CASH FOCUS PROGRAM



# 1 Now able to operate as ONE COMPANY



March 2021

March 2022

March 2023

March 2025

80% convergence

Full deployment

Full digitalisation

✓ **KPIS & DATA MANAGEMENT** aligned

✓ **>80% RSC PROCESSES** converged

✓ **REGIONAL and SITE** deployment at full speed

✓ **>90% RSC sites** engaged



as backbone to sustain process & competence development.



**Digital systems boosting process alignment & performance**

**Engineering:**

- Digital suite with PLM (Delmia/Catia)
- Worldwide connected network



**Manufacturing:**

- Advanced Operations System powered by **SAP**

**Supply Chain & Procurement:**

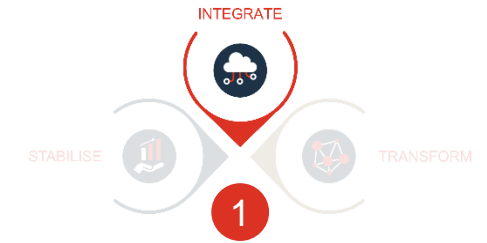
- Powered by **SAP Ariba**

**GSI roll-out** **SAP**  
*Global Single Instance*

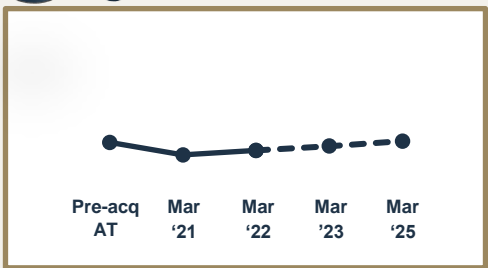
15,000 users  
Today

+12,000 users in 35 additional sites  
By 2025

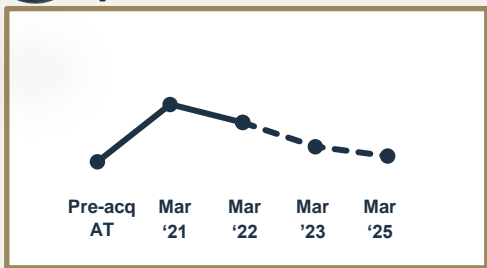
# 1 Operational performance growing with integration



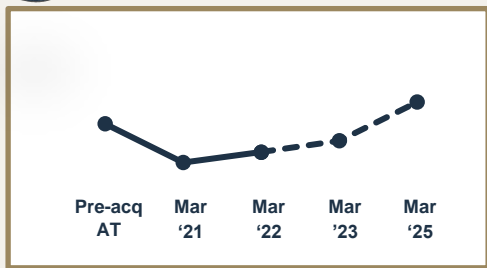
**Gate review go on time**



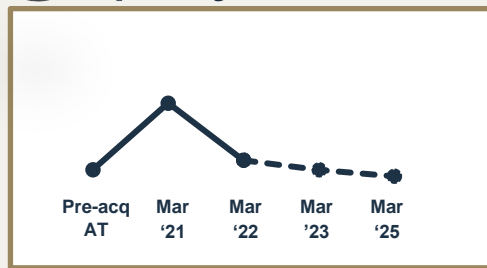
**Defects per unit**



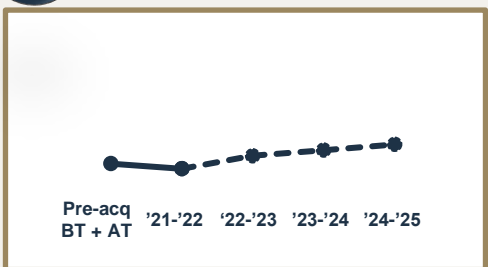
**Delivery on time**



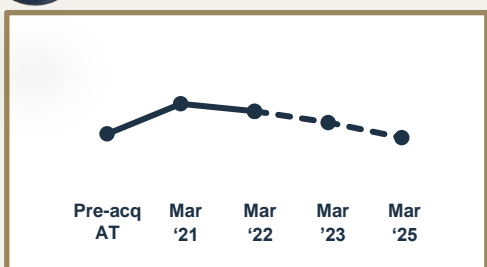
**Key open quality issues**



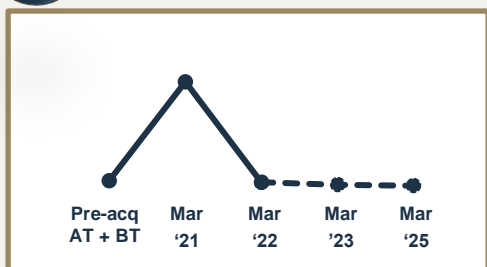
**Manufacturing throughput**



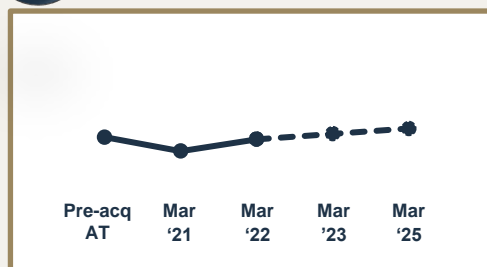
**Physical inventory**



**First article inspection**



**Engineering on-time**

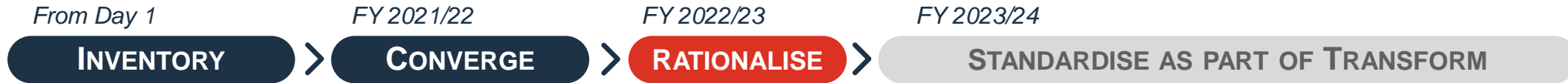


**Operational performance back to nominal by March 2023**

## 2 Align and optimize our product portfolio



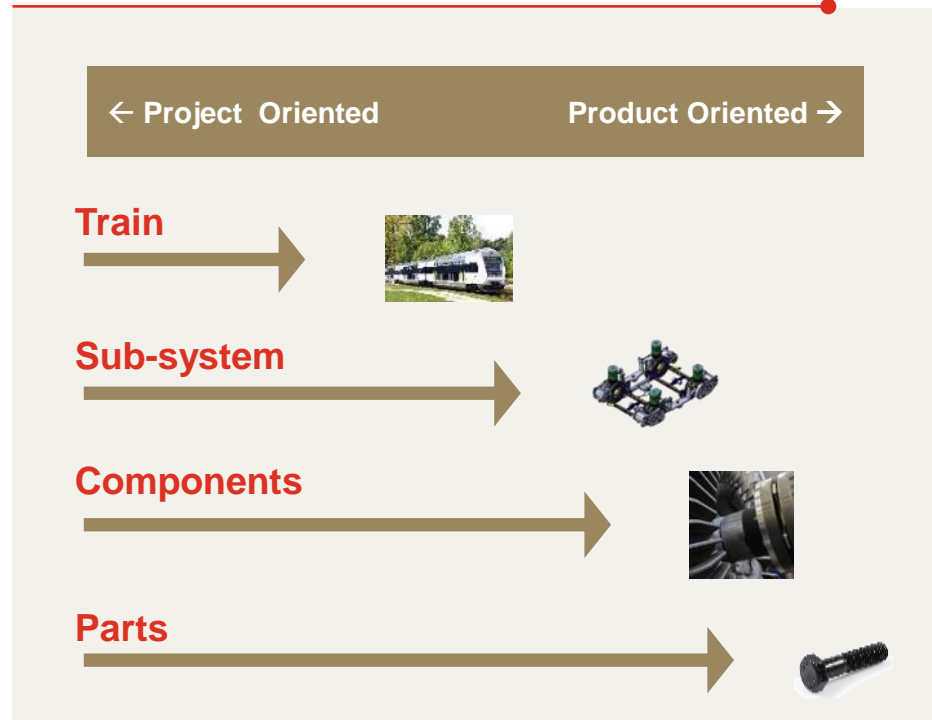
A CLEAR ROADMAP TO EXTEND MARKET COVERAGE AND TIME-TO-MARKET WHILE IMPROVING COSTS



### A DEFINED DECISION TREE

- Option A**  
Confirm obvious platform choices
- Option B**  
Optimize through “best-of-both” approach
- Option C**  
Maintain specific product approach

### AT ALL LEVELS OF THE BILL OF MATERIAL



- Improved market coverage
- Best product selection for tenders and on-going project to drive costs reduction

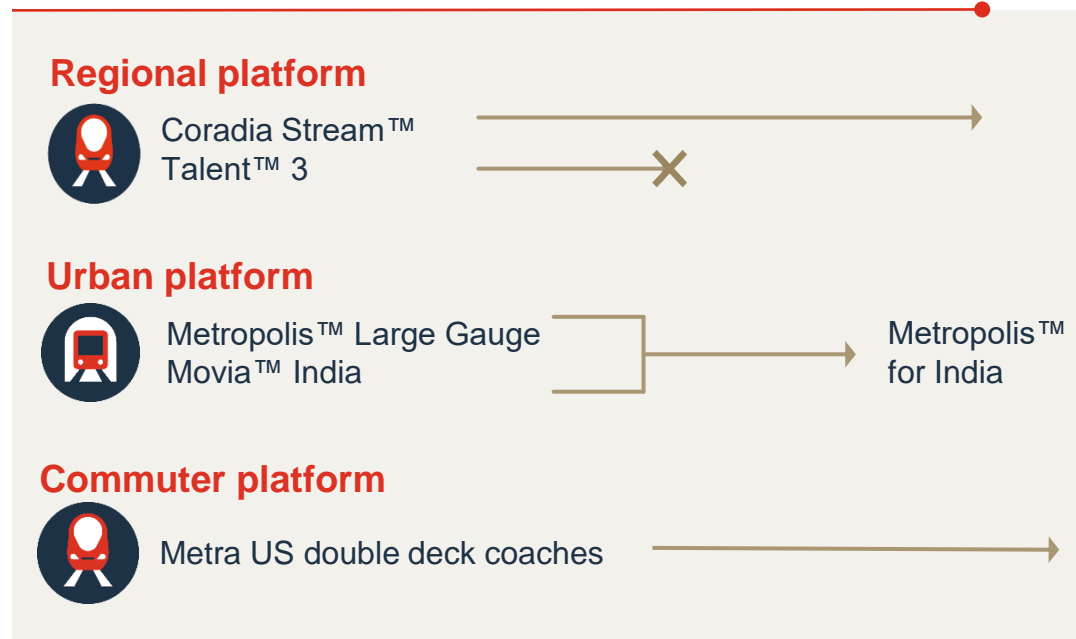
10%  
R&D  
Optimization



# 2 Convergence finalised, rationalisation on-going on tenders

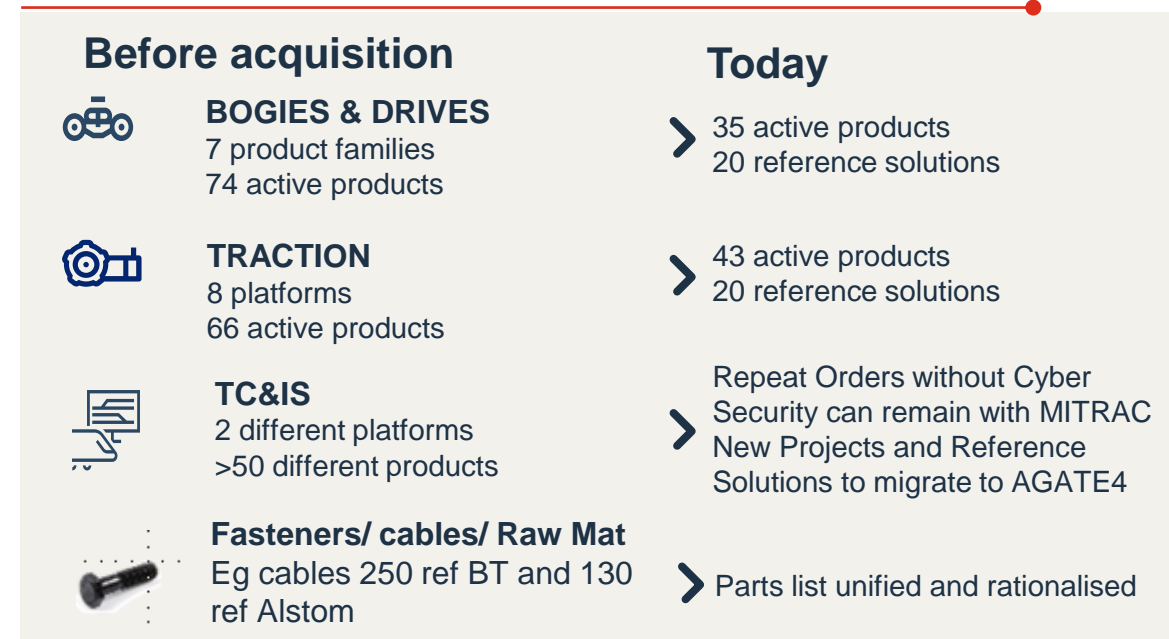


## ILLUSTRATION AT ROLLING STOCK LEVEL



**100%**  
Platform convergence  
already validated

## ILLUSTRATION AT SUB-SYSTEM AND COMPONENT LEVEL



**-47%**  
Converters

**-42%**  
Bogies references

**-50%**  
TCMS references

**-50%**  
Preferred Parts list

# 3 Establish best-in-class project execution and capabilities



Achieve **excellence** in our tender and project execution



Continuous improvement focus and **right-first-time culture**



**Best-in-class** partner for our customers

## 2025 Targets

**90%**  
Gate Reviews Go On Time

**90%**  
Delivery On Time

**90%**  
Manufacturing Throughput

## PM2020: FROM A METIER BASED TO A SUB-SYSTEM BASED ORGANISATION

**TREN MAYA**

Complete deployment

**NORSKE TOG**

Currently onboarding

**PROJECT MANAGEMENT**

**ARCHITECTURE & INTEGRATION**

**SUB-SYSTEMS MANAGEMENT**

**CAIRO**

Ready to deploy

**~12 projects**  
On-boarded by March 2022

**~30 projects**  
On-boarded by March 2023

# 3 Procurement on-track to capture value, leveraging Group size



<p><b>SOURCING SUMMITS</b></p>  <ul style="list-style-type: none"> <li>• Understanding of ex-AT and ex-BT <b>strategies, spend and supplier base</b></li> <li>• Initial <b>Value Capture ambition</b></li> </ul>	<p><b>SUPPLIER DAY</b></p>  <ul style="list-style-type: none"> <li>• <b>300 suppliers</b> invited</li> <li>• Introduction to Value Capture <b>objectives</b> and <b>processes</b></li> </ul>	<p><b>NEGOTIATIONS DONE WITH TOP 600 SUPPLIERS</b></p> <ul style="list-style-type: none"> <li>• <b>3 waves</b></li> <li>• <b>Great success</b> despite difficult context of inflation</li> </ul>
---	---	--

## 4 LEVERS MOVING FORWARD

- Co-development
- Design-to-cost
- Standardisation specifications
- Demand management

**55%**  
BCC PURCHASING IN 2021/22

- Panel optimization based on QCD performance
- Claim settlement on legacy projects
- Recurring value capture, one-off specific efforts

# 3 Driving the right quality standards across our value chain



## STRENGTHEN QUALITY COMPETENCE

- Engineering (**Right First Time**)
- Industrial (**Zero Defect Program**)
- **Supplier** Quality in Region

### Quality Academy



Year 2021/22 :  
 2,655 trainers  
 2,565 training sessions  
 49,011 people trained

## LEAN AND EFFICIENT PROCESSES

- Development For Quality
- Focus **major** production **Ramp-Ups**
- **First Article Inspection**, Statistic Control **Critical Processes**

### Lean 6σ Belt Program



Year 2021/22 :  
 25 6σ Ambassadors  
 1060 people qualified

## CUSTOMER SATISFACTION

- **Reliability Growth & Warranty**
- **Reactivity**, Return of **Experience**
- **Prevention** in **Tender Phase**

### Customer survey program



Customer Satisfaction

Pre-aq Mar'21 Mar'22 Mar'23 Mar'25

# 4 Pursue Cash Focus programme



## AMBITION

- Optimise Cash across Alstom entire value chain



## KEY INITIATIVES

- Cash-based **selectivity** in tenders
- **Alignment strategic & tactical planning**
- **Cash conscious supplier contracts**
- **Optimise hard inventories level**
- **Increased CAPEX planning**
- **Enhance cash culture through training and personal objectives**

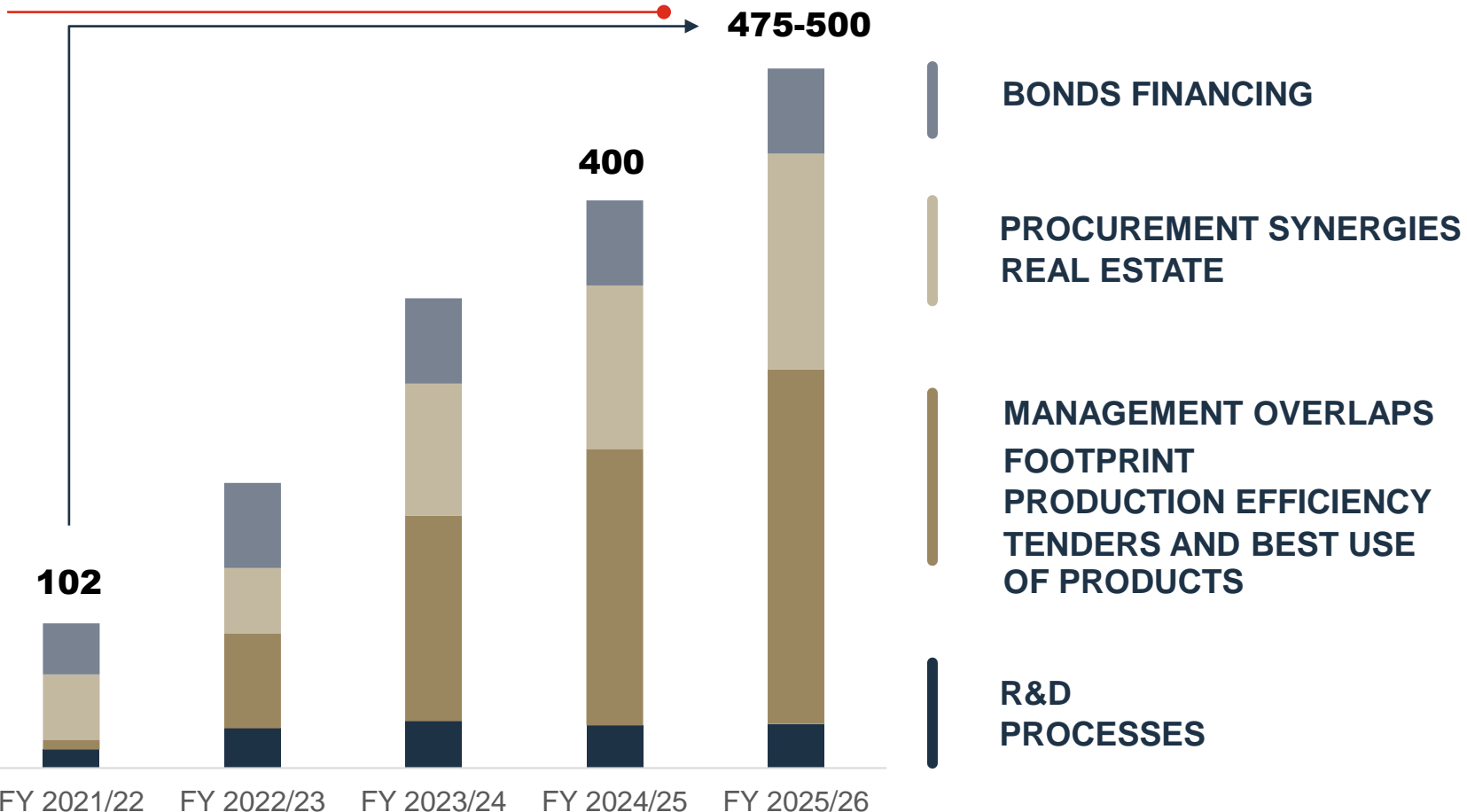
## 2024/25 OBJECTIVES

**Free Cash Flow: 80%**  
conversion from adjusted net income

# Synergies on-track and run-rate target<sup>1</sup> uplifted to €475 – 500m from FY 2025/26 onwards



SYNERGIES RUN RATE (IN € MILLION)<sup>2</sup>

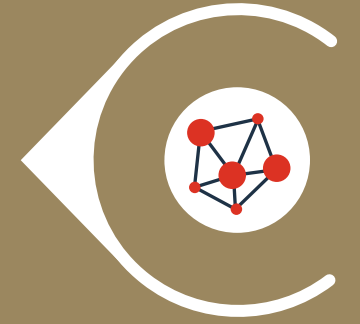


2025/26 SOURCES OF UPLIFT

- Incremental **industrial efficiency** and **best use of products** through massification
- Incremental **procurement synergies**

1. Initial target was annual run rate of €400m by the fourth to fifth year after closing 2. graph for illustrative purpose, not at scale

2.3

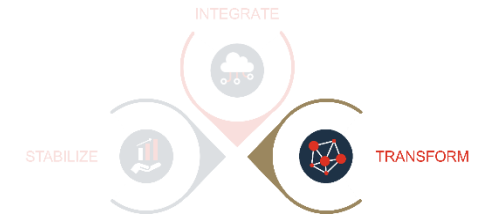


## TRANSFORM

Growing profitably

Benjamin Fitoussi  
President Rolling Stock  
and Components –  
Development & Operations

# TRANSFORM



1

ACCELERATE THE EFFORT OF **STANDARDISATION / MODULARIZATION**



2

GET THE BEST OF OUR **DIVERSE FOOTPRINT AND SCALE ADVANTAGE**



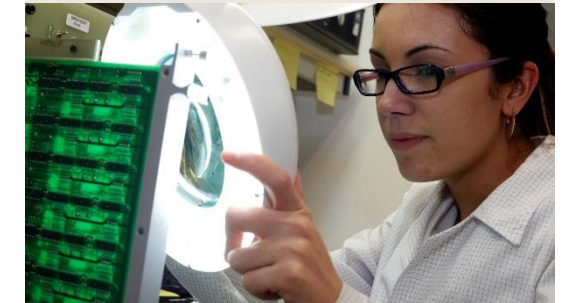
3

FURTHER DIGITALIZE OUR OPERATIONS



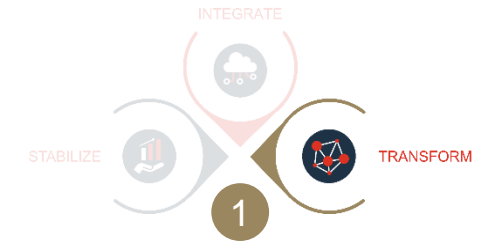
4

LEVERAGE OUR **PEOPLE SKILLS AND CAPABILITIES**





# 1 Recent RSC orders are based on standardised, reliable and proven platforms



## Illustration of major 2021/22 wins based on “best-seller” products

### CORADIA STREAM™

- 29 High-Capacity electric double-deck multiple units for DB Regio
- Up to 40 electric inter-regional trains to Romanian Railway Reform Authority

**More than 700 Coradia Stream™ sold within 5 years**



### METROPOLIS™

- 55 large gauge Metros for Cairo L1
- 36 Metropolis trains for São Paulo Metropolitan Train System L 8 / 9
- 29 fully automated Metropolis trains to Taipei as part of a turnkey project

**More than 60 customers worldwide**



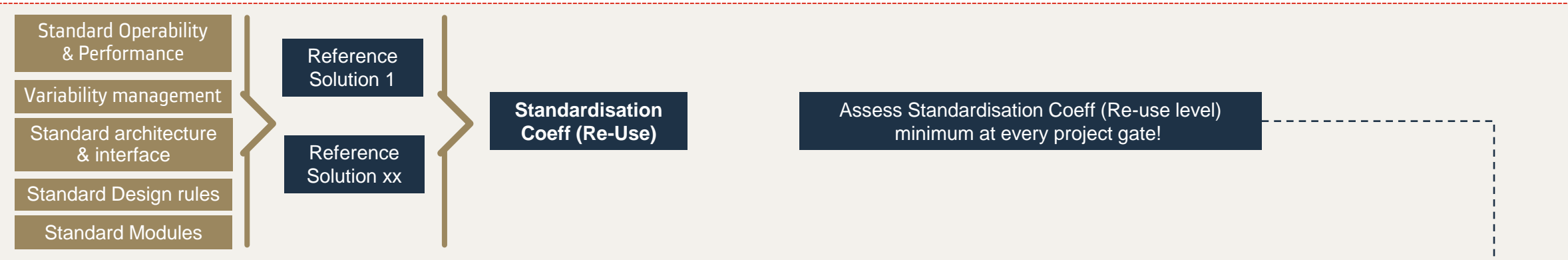
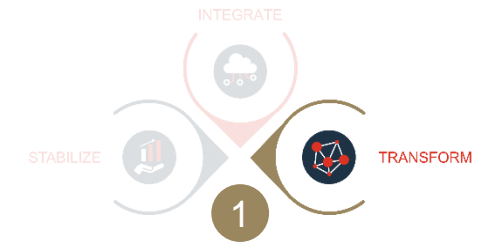
### X'TRAPOLIS™

- Up to 750 new commuter rail cars for Ireland's DART
- 25 six-car trains for Melbourne's suburban rail network
- 42 trains for Tren Maya

**5,500 X'trapolis™ cars ordered so far in the world**

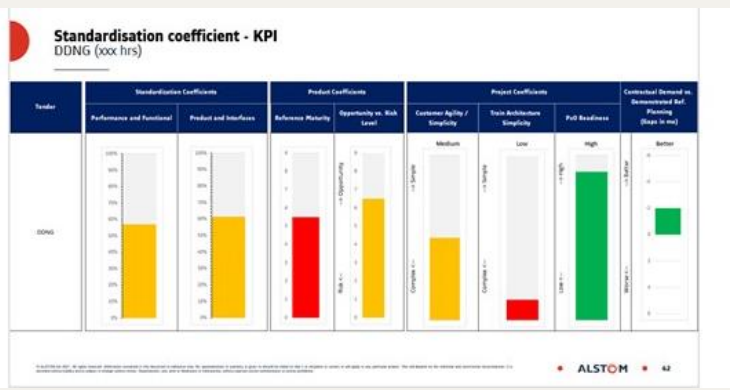


# 1 Platform product management and standardisation 68 components, 48 buy modules



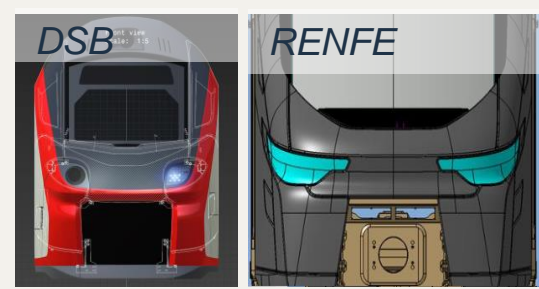
## STANDARDISATION COEFF

Measurement in tender & project.  
Deviation per red Sol (%)



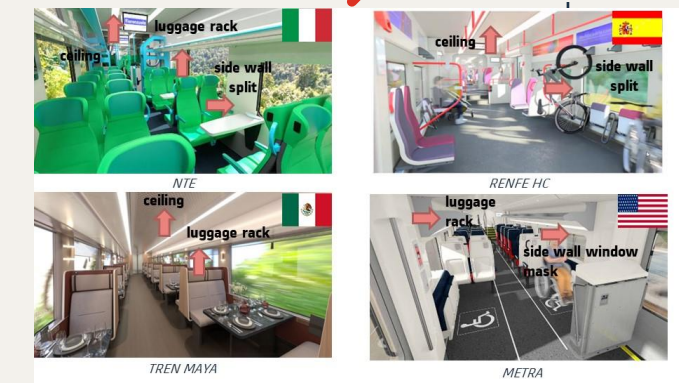
## ILLUSTRATION - INTERIOR

Front end architectural design

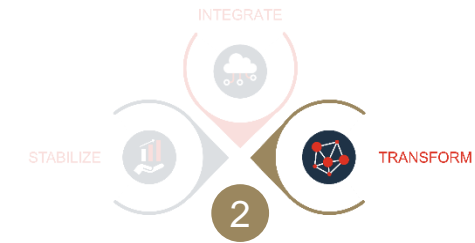


## Interior design

Generic concept

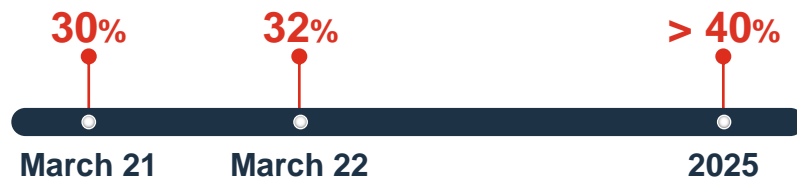


## 2 Increased Engineering efficiency by leveraging Best Cost Countries (BCC) site specialisation



- ✔ Aligned organisation model
- ✔ Deployed target processes
- ✔ Massify specialisation & return of experience :
  - New development sites **organized by product**
  - 10 train sites & 9 components sites

✔ BCC capacity today at 32% ahead of Plan



✔ Continuous built up of BCC sites e.g. in Poland, India and Mexico

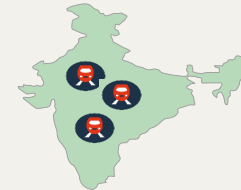
### POLAND | EUROPEAN PROJECT SUPPORT

> Katowice



### INDIA | GLOBAL RSC DEVELOPMENT

> Bangalore  
> Hyderabad  
> Vadodara



**+500 engineers**  
Per year til March 2025

### MEXICO | LOCAL PROJECT SUPPORT

> Sahagun



# 2 A unique global-local manufacturing footprint to meet growing demand for localisation while delivering competitiveness



Customers are looking for reliable, tailored and competitive solutions **delivered close to them**

## PROXIMITY

- Commercial reach in 70+ countries
- Delivery sites located in strategic markets
- Manufacturing hubs in all key regions


## WORLD-CLASS CAPABILITIES

- Excellence hubs in key geographies
- Sharing our worldwide expertise with our customers
- Global competencies networks



**CUSTOMER INTIMACY**

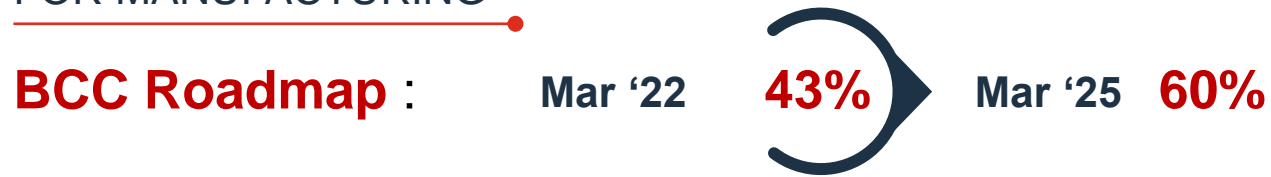
## TENDERS WON THANKS TO ABILITY TO DELIVER LOCAL CONTENT

<p><b>TREN MAYA (MEXICO)</b></p>  <p><b>ALSTOM SAHAGUN PLANT</b></p>	<p><b>AMTRAK HIGH-SPEED (BUY AMERICAN ACT)</b></p>  <p><b>ALSTOM HORNELL PLANT</b></p>
<p><b>HS2 VERY HIGH SPEED (UK)</b></p>  <p><b>ALSTOM DERBY &amp; CREWE PLANTS</b></p>	<p><b>LIGHT RAIL TRAMS (AUSTRALIA)</b></p>  <p><b>ALSTOM DANDENONG PLANT</b></p>

## 2 Leveraging Best Cost Countries (BCC) footprint boosts competitiveness

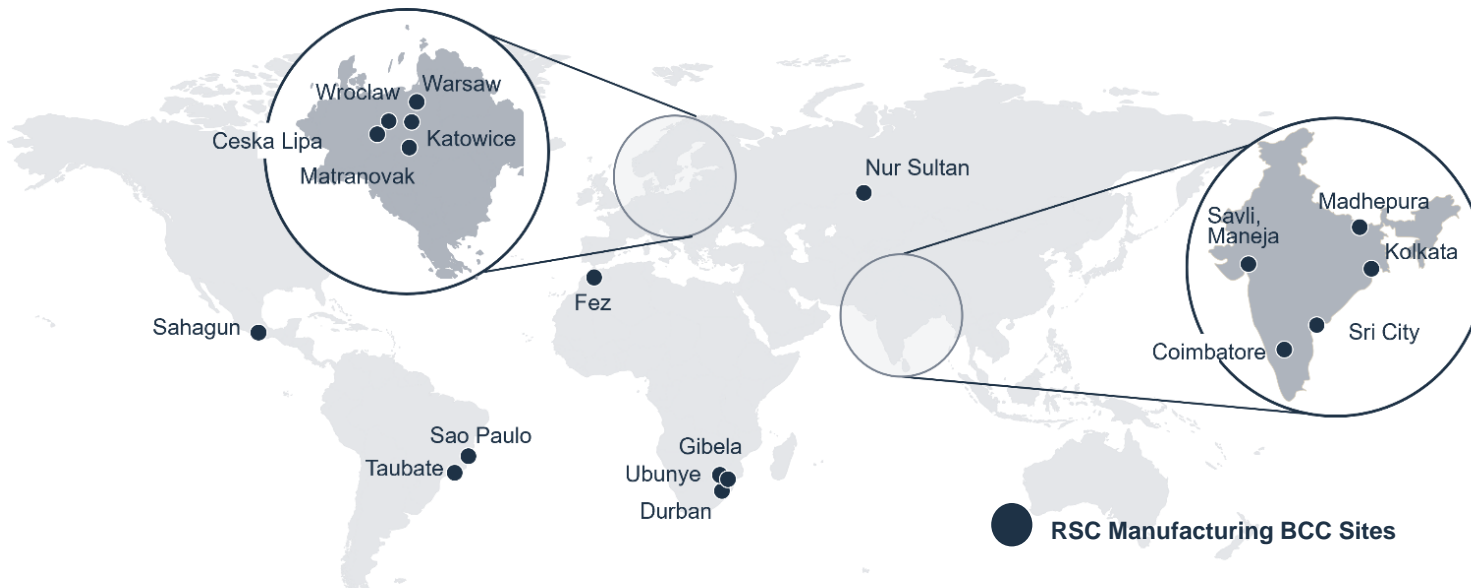


### AN AMBITIOUS BEST COST COUNTRIES ROADMAP FOR MANUFACTURING



### A FOOTPRINT ENABLING TO MANUFACTURE AT THE BEST COSTS CLOSE TO OUR CUSTOMERS

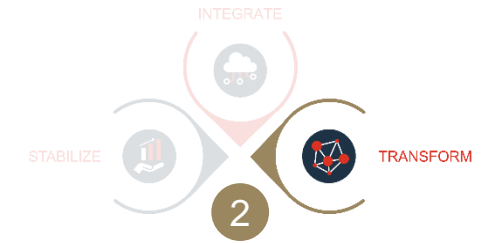
#### Illustration – Engineering and manufacturing BCC footprint



### EXAMPLES OF RECENT INVESTMENTS

<p><b>Light Rail Carbody</b></p> <p><b>CESKA LIPA</b></p>	<p><b>Locos assembly</b></p> <p><b>NUR SULTAN</b></p>
<p><b>Bogie frames</b></p> <p><b>MATRANOVAK</b></p>	<p><b>Metro assembly</b></p> <p><b>SAVLI</b></p>
<p><b>Transformers</b></p> <p><b>FEZ</b></p>	<p><b>Alu Carbody</b></p> <p><b>WROCLAW</b></p>

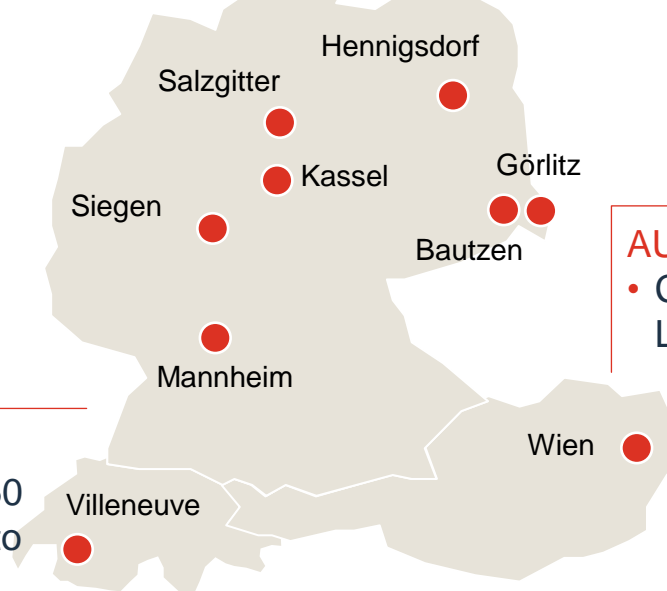
## 2 Roadmap to transformation in Germany, Austria and Switzerland



- **Maintain market position** through competitive offering & strengthened project execution.
- **Invest in innovation, engineering, digitalisation and software**
- **Competitiveness** with adapted manufacturing capacity & leverage of Eastern Europe
- **Develop Services** business

### GERMANY

- Planned reduction of around 900 to 1300 manufacturing positions over next 3 years
- Over 700 new positions in engineering, digitalization and software



### AUSTRIA

- Concentrate & specialize on Light Rail product platform

### SWITZERLAND

- Reduction of ~150 positions & shift to Services

€150M RESTRUCTURING COSTS FOLLOWED BY €100M OF COSTS AVOIDANCE PER YEAR FROM 2024/25 ONWARDS

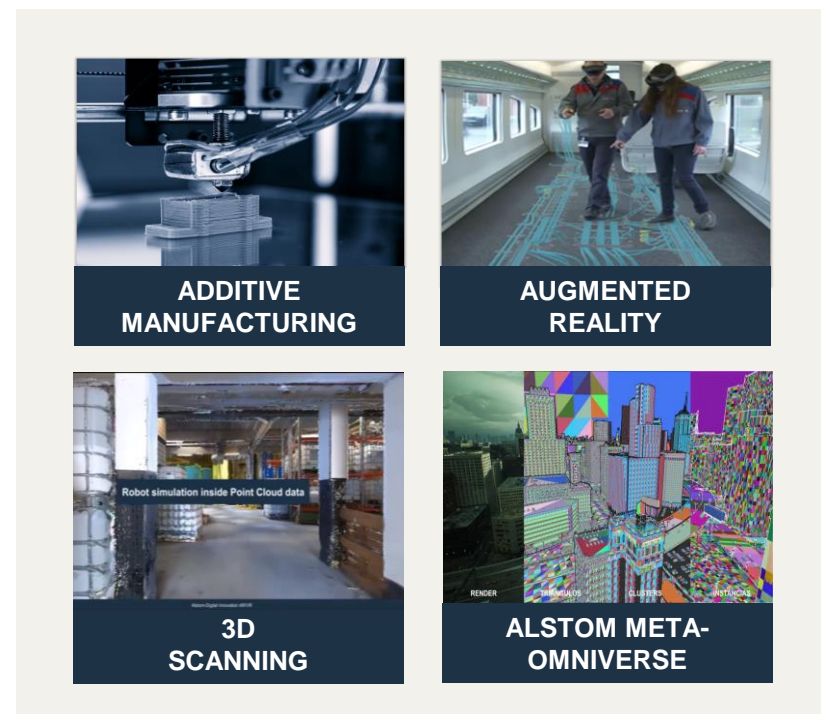
# 3 Drive the digital transformation journey



**Increase automation and digitalisation**



**Deploy innovative digital reality scope**



**PLM4A: an enterprise-wide programme to enable ONE product lifecycle management**

## 2025 Targets

**-6%<sup>1</sup>**  
RSC Engineering hours

**-10%<sup>1</sup>**  
RSC Manufacturing hours

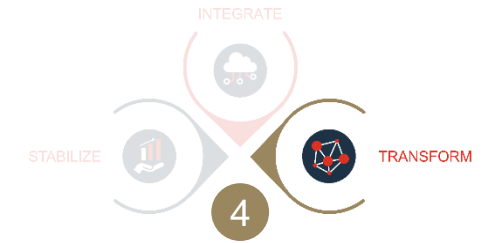
**100%<sup>1</sup>**  
Converged processes

**75%<sup>1</sup>**  
Business process digitalisation

1. compared to March 2021

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# 4 Investing in people with World Class Engineering & Manufacturing programme



**AMERICAS :**  
25 Manufacturing experts  
87 Engineering experts

**DACH :**  
13 Manufacturing experts  
103 Engineering experts

**EUROPE :**  
61 Manufacturing experts  
204 Engineering experts

**FRANCE :**  
86 Manufacturing experts  
282 Engineering experts

**APAC :**  
16 Manufacturing experts  
56 Engineering experts

**AMECA :**  
3 Manufacturing experts  
6 Engineering experts

**Expertise is key for Alstom's success and development**





# Rolling Stock and Components journey ahead



- **1** Significant **improvement in project stabilization** achieved in 2021/22 - back to nominal performance expected by March 2023
- **2** Operating already as One Team, with **best-in-class converged processes and product portfolio** by March 2025
- **3** Clear plan to deliver the targeted operational recovery, **synergies fully on-track**
- **4** **Uniquely positioned to capture market growth** thanks to product, market reach and scale