

INVESTOR DAY 2021

Driving the Next Bound of Growth

Vincent Chong
Group President & CEO

16 November 2021

Disclaimer

Amounts stated in this presentation are denominated in Singapore Dollars unless stated otherwise.

The forward-looking statements in this presentation reflect the Company's current intentions, plans, expectations, assumptions and beliefs about future events. Actual future performance, outcomes and results may differ materially from those expressed in forward-looking statements as a result of a number of risks, uncertainties and assumptions especially given the evolving COVID-19 situation and its impact globally. Representative examples of these factors include (without limitation) travel and border restrictions, governmental orders on business closures, lock-down and movement restrictions, quarantines, disruption to global supply chains, general industry and economic conditions, interest rate trends, cost of capital and capital availability, competition from other companies and venues for the sale/distribution of goods and services, shifts in customer demands, customers and partners, changes in operating expenses, including employee wages, benefits and training, and governmental and public policy changes, as well as natural disasters which may negatively impact business activities of the ST Engineering Group.

You are cautioned not to place undue reliance on these forward-looking statements, which are based on the current view of management on future events.

2018 Focus Growth Areas - Recap

Strengthen core businesses



Aerospace



Marine



Electronics



Land Systems

Pursue growth opportunities



International
Defence Business



Smart City

Underpinned by strong capabilities



People
& Culture



Customers
& Marketing

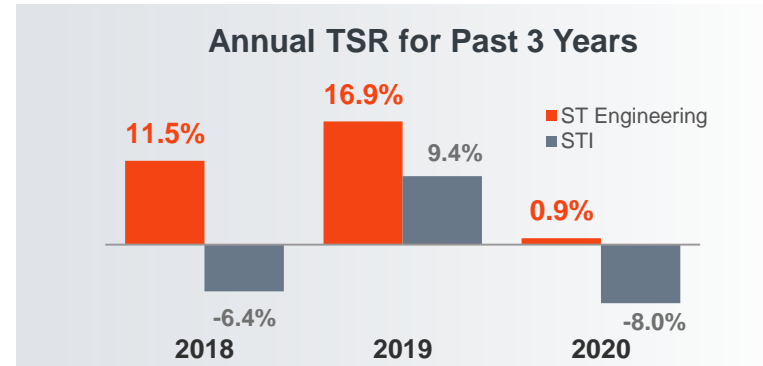
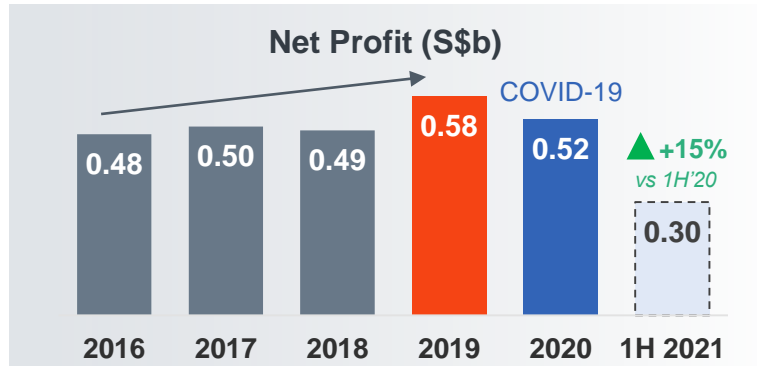
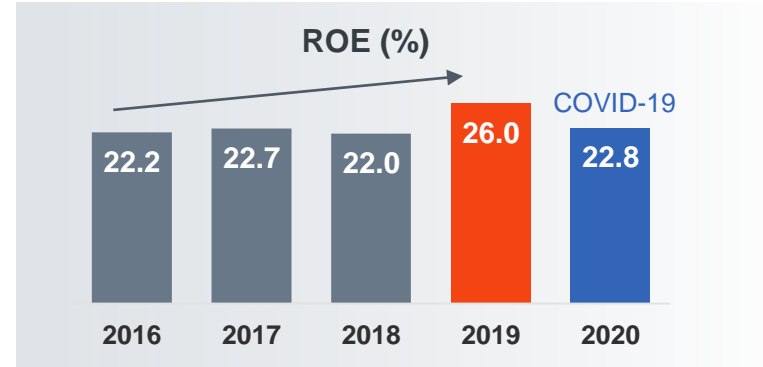
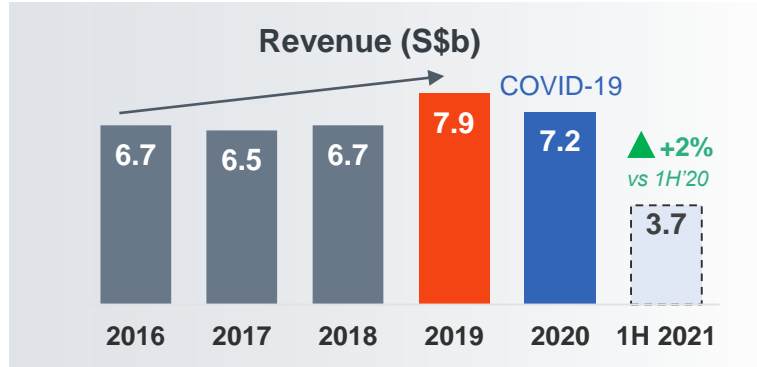


Technology
& Innovation



Capacity
for Growth

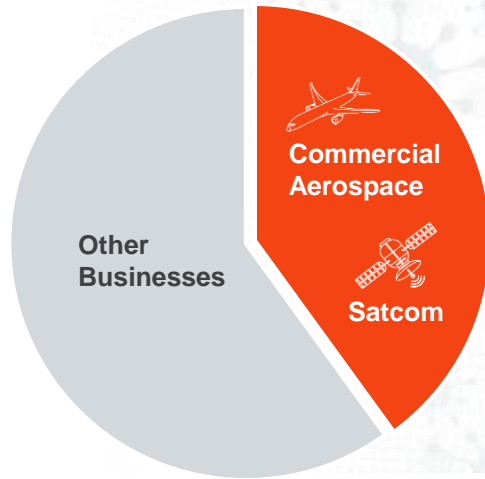
Results reaffirm strategy - credible 2020 despite COVID-19



Reflections

Weathered COVID-19

COVID-19 impacted key businesses



Impact of COVID-19

Disruption to air travel and maritime cruise activity impacted **~40% of our business**



We remain resilient

Outperformed peers in Aerospace MRO, seized opportunities in P2F and continued to invest for the long-term

Supported by



Diversity of portfolio and revenue



Strong order book



Government support



Cost efficiency initiatives

Update on 2018 Investor Day Ambitions

Our 2022 Ambitions

Achievement timeline

Two-thirds of our revenue growth will be from global markets



On Target
(By 2022)

Smart City revenue of **S\$1b** to more than double by 2022



~1 year delay

Core and other businesses CAGR **2 to 3 times** global GDP growth rate over the next 5 years



~1 year delay

Net profits to grow in tandem with revenues



~1-2 year delay

Recent trends continue to support and accelerate our strategy

Digitalisation

Technology acceleration and disruption on a global scale



Key Trends & Opportunities

Sustainability

Heightened awareness leading to significant emphasis and opportunities

Urbanisation

Governments investing in smart and sustainable infrastructure

Security

Focus to ensure citizens and institutions protected from unconventional threats (cyber, physical, etc.)

Continued investments to drive our strategy forward



2018-19

Move up the value chain to components / OEM



2019

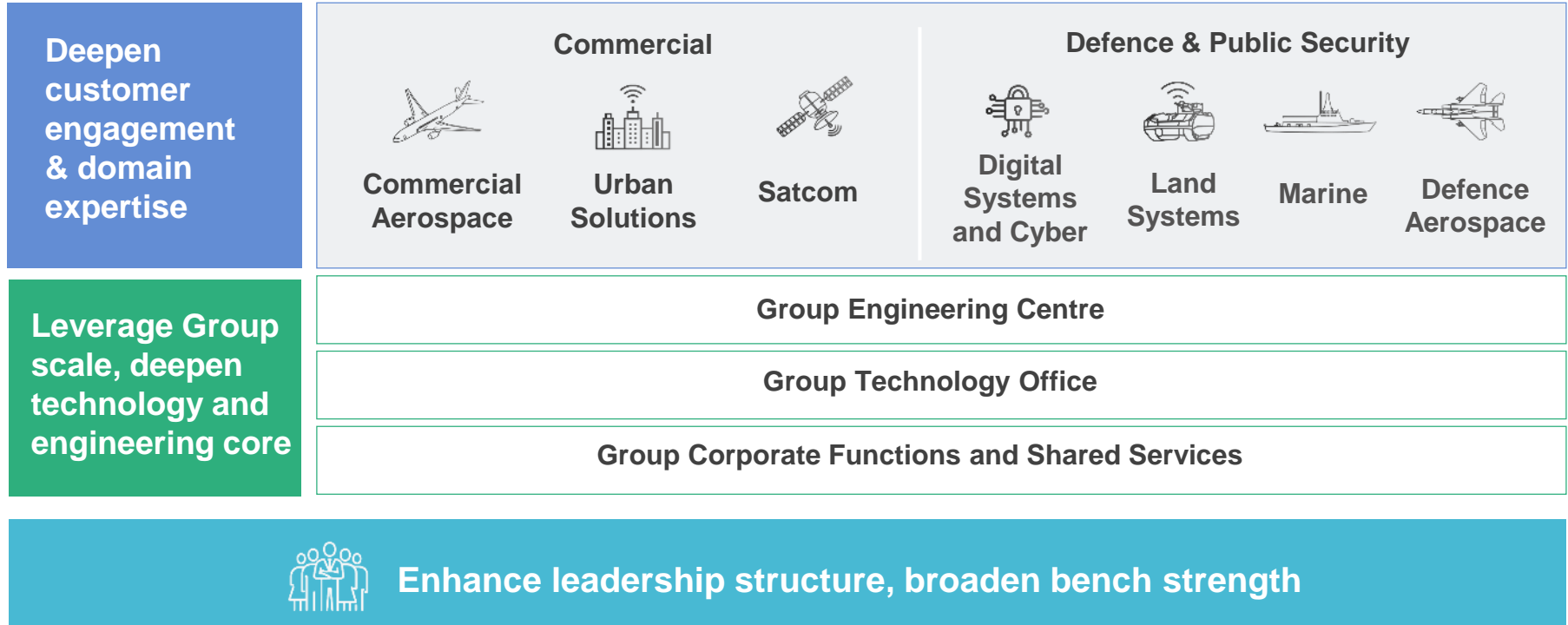
Solidify leadership in Satcom Ground Segment
Enhance anti-jam capabilities



2021-22

Enhance suite of Smart Mobility road solutions
Access to North America

Reorganised to better achieve strategic objectives




Strategic focus areas



 **Grow Digital Business – Cloud, AI Analytics, Cyber**

 **People & Culture**

 **Customers & Marketing**

 **Capacity for Growth**

Growth Vector: Ride the recovery in Commercial Aerospace

Near-term challenges persist; recovery in 2-3 years

- Unprecedented COVID-19 impact on aviation industry
- Commercial Aerospace revenue to recover by 2024
- Continue to invest for long-term growth



* Source: IATA forecast, Aviation Week, ST Engineering in-house analysis

Growth Vector: Ride the recovery in Commercial Aerospace

Remained resilient, invest and position strongly for recovery



**Secured
\$4.4b New
Contracts***

*Between Mar 2020 and Sep 2021



Expand MRO capabilities and capacity. Strengthen OEM position

Scale aviation asset management portfolio

Capture strong demand in Passenger-to-Freighter conversion

Seed the future – leverage autonomous and robotics technologies

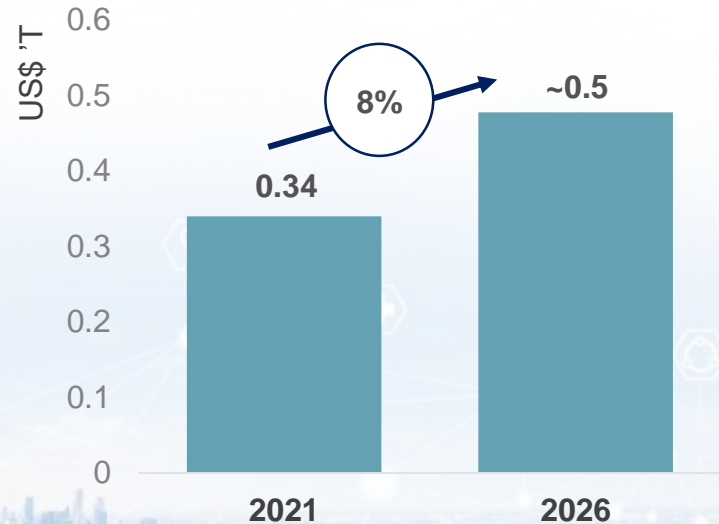
Growth Vector: Drive Growth in Smart City

Opportunity: Continued strong demand for Smart City solutions

- Relevant smart city market to grow at CAGR 8% to reach ~US\$0.5T in 2026

- Growth in demand at intersection of urbanisation, digitalisation and sustainability

Relevant Smart City Market Size Forecast* (in US\$'T)



*Markets we have solutions for (specific segments within Mobility, Environment, Security)

Source: LEK Consulting, Homeland Security Corp Research, Northeast Research, KBV Research, ST Engineering in-house Analysis

Growth Vector: Drive Growth in Smart City

Track Record: Robust suite of leading solutions to capture opportunities

Commercial Cluster

Smart Mobility

- Smart Metro Solutions
- Traffic Management Solutions
- Autonomous Solutions
- Electric Vehicles

Smart Environment

- IoT Solutions for Municipalities
- Smart Water & Waste Mgmt.
- Building Energy Management
- Environmental Engineering

Platforms

- Satellite Communications
- Open Digital Platforms – Estate
- Fibre Connectivity



**More than 700
successful smart
city projects in
over 130 cities
globally**

Defence & Public Security Cluster

Smart Security

- Physical Security Solutions
- Cybersecurity Solutions
- Identity Management Platforms
- Security Management Systems

Platforms

- Cloud Services and Platforms
- Data Centre Services

Growth Vector: Drive Growth in Smart City

Build on strong momentum to accelerate growth



**More than double
our Smart City
revenue from 2020
to 2026**



Reorganised to sharpen focus –
formation of URS and Satcom
GBAs



Accelerated growth through
acquisitions – Newtec and
TransCore



Continued base business growth
momentum

Growth Vector: Expand International Defence

Driving success in international defence business

- ✓ Digital acceleration drives adoption of dual-use technologies in military
- ✓ Legacy platforms being upgraded
- ✓ Pursue more opportunities through overseas partnerships

Attractive
Addressable Market

~US\$5b

Over next 5 years

Enabler: Grow Sustainability-linked Revenues

Sustainability – Core to our business; exploring new opportunities

Core Businesses

Commercial Aerospace



Engine Eco-wash



P2F Conversion

Smart City



Smart Mobility



Smart Environment



Smart Security

Defence & Public Security



Training & Simulation



Hybrid Electric Drive

New Opportunities



Materials



Products



System Solutions



Solve urban and city issues



Reduce GHG emissions



Circular economy



Enabler: Invest in Digitalisation Technologies

Consistently invest 4-5% revenue in R&D annually

> 75% of R&D in Digital Technologies

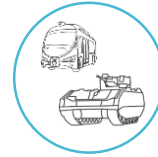
- Advanced networks
- Cybersecurity
- Cloud management software
- AI & Data/Video Analytics
- Robotics & Autonomous Technologies



MRO analytics -
Condition monitoring



Autonomous systems
management



Strengthen dual-use
capabilities



Enhance product
offerings and solutions



Scale operations
and processes



Save cost and
improve productivity

Drive growth in digital businesses



Cloud

- Drive growth in Cloud Managed and Professional Services
- Expand cloud business into Commercial Enterprises (e.g. Healthcare, Education...)



AI Analytics

Expand capabilities in cognitive capacity and resource optimisation via AI-ML and Data Analytics



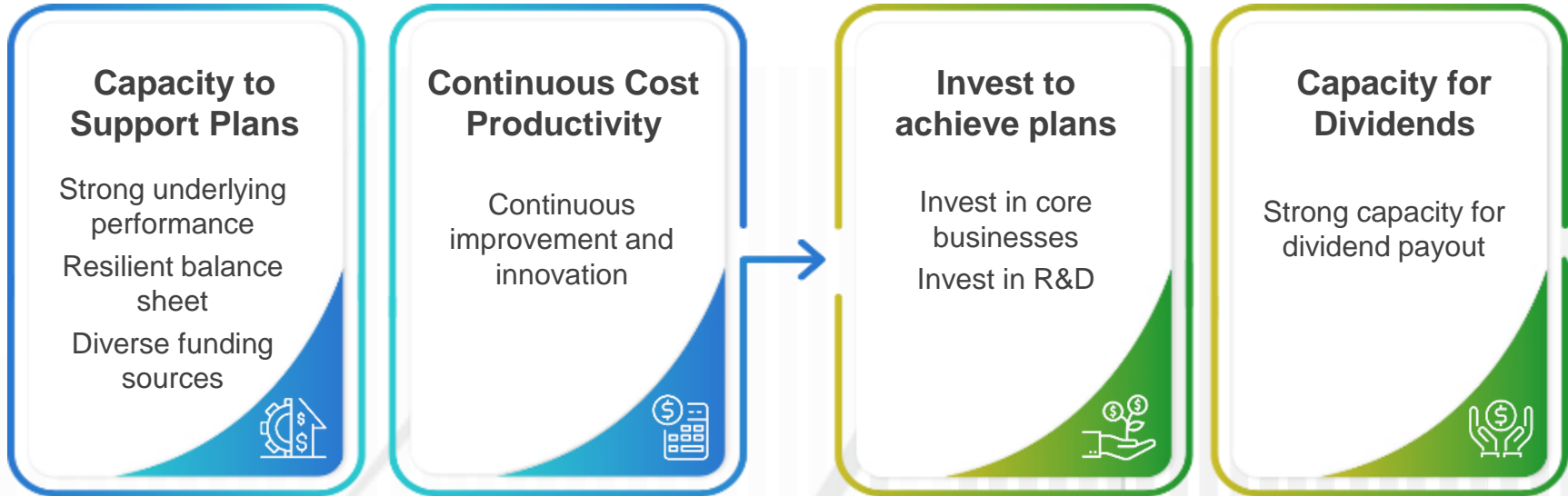
Cybersecurity

- Expand cybersecurity product suite to capture opportunities from IT & OT cybersecurity convergence.
- Deepen cybersecurity capabilities - threat hunting, digital forensic and incident response

Cloud, AI Analytics, Cyber business to triple to >\$500m by 2026

Capacity for Growth

Strong capacity to fund our journey and deliver dividends



Deliver steady ROE above 20%

Annual revenue to grow at 2 to 3 times
global GDP growth rate to >\$11b¹

Sustainability-
linked revenue to
grow to >\$3b

Commercial
Aerospace to
achieve >\$3.5b
in revenue²

Smart City revenue to more
than double to \$3.5b¹

Other Core
Businesses



Grow Digital Business – Cloud, AI Analytics, Cyber

Net profits to grow in
tandem with revenue



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Commercial Cluster

Tan Lee Chew
President Commercial

16 November 2021

Global presence and revenue

Commercial Cluster



Commercial Aerospace

Aerospace MRO

Aerostructures & Systems

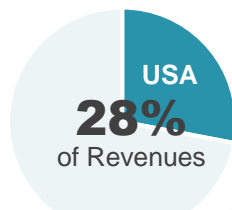
Aviation Asset Management



Urban Solutions & Satellite Communications

Urban Solutions

Satcom



AMERICAS

Aerospace MRO

San Antonio, Mobile, Pensacola, Wethersfield, Baltimore – U.S.

Aerostructures & Sys.

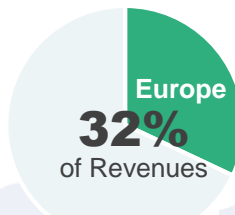
Baltimore – U.S.

Urban Solutions

Pittsburgh – U.S.
Sao Paulo – Brazil

Satcom

Herndon, Mountain View – U.S.
Ottawa – Canada
Sao Paulo – Brazil



EUROPE

Aerospace MRO

Kodersdorf, Dresden - Germany | Stockholm - Sweden | Copenhagen – Denmark

Aerostructures & Sys.

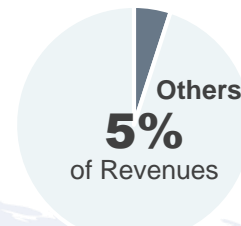
Dresden - Germany

Aviation Asset Mgmt.

Dublin – Ireland

Satcom

Sint-Niklass, Erpe-Mere – Belgium | Berlin – Germany | Brest - France | Killarney – Ireland | Farnborough – UK



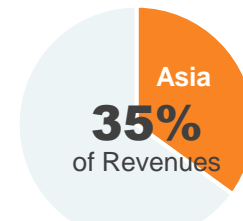
OTHERS

Urban Solutions

Dubai, Abu Dhabi – UAE | Riyadh - Saudi Arabia | Tel Aviv – Israel

Satcom

Dubai – UAE



ASIA

Aerospace MRO

Singapore, Shanghai, Xiamen, Guangzhou, Hanoi, Ho Chi Minh City

Aerostructures & Sys. Aviation Asset Mgmt.

Singapore

Urban Solutions

Singapore, Hong Kong, Shanghai, Chong Qing, Wuxi, Taipei, Kaohsiung, Taoyuan, Taichung, Bangkok, Kuala Lumpur, Melbourne, Sydney

Satcom

Singapore, Beijing, Hong Kong, New Delhi



Location of ST Engineering Commercial Business Entities

Opportunities in technology acceleration and disruption



Ride the recovery in Commercial Aerospace



Aerospace MRO Air Travel recovery

- Expand capabilities and capacity to position for services recovery



Aerostructures & Systems High Air Cargo demand & recovery in Aircraft production

- Scale Passenger-to-Freighter conversions
- Grow OEM services and programmes



Aviation Asset Management Attractive asset valuations and financing

- Build asset base and expand business



Drive growth in Smart City



Urban Solutions

Urbanisation, Digitalisation and Sustainability trends

- Capture Smart Mobility and Smart Environment opportunities
- Expand sustainability-enabled solutions



Satcom

Convergence of Satcom-5G, Cloud and IoT

- Develop Next Generation Satcom-5G and cloud-enabled virtualised platforms

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Commercial Aerospace

Jeffrey Lam

President, Commercial Aerospace

16 November 2021

Navigating the Turbulence

Short-term challenges with recovery anticipated in the next 2 – 3 years

FY2021 Forecast



40%

Air travel demand vs. 2019



50%

Total available seats vs. 2019



108%

Cargo demand vs. 2019

Recovery Trajectory



2023

Domestic travel to 2019 levels



2024

International travel to 2019 levels



2023

Total fleet to 2019 levels

Taking the Long View

Healthy long-term demand for air travel and cargo, MRO & services

20 year demand



4.0% CAGR
Passenger Traffic Growth



4.0% CAGR
Air Cargo Growth

20 year fleet growth

3.2% CAGR
Passenger Fleet Growth

46K
passenger fleet

43K
deliveries

2.6% CAGR
Freighter Fleet Growth

3.4K
freighter fleet

1.7K
conversions

Growth in Services



MRO

5.9% CAGR
US\$115b by 2030



Leasing

50% aircraft leased in 2021 and growing

Supporting Customer's Recovery

Resilience in COVID-19

Continuing investments & customer-focused value creation while outperforming peers

Delivering our Solutions



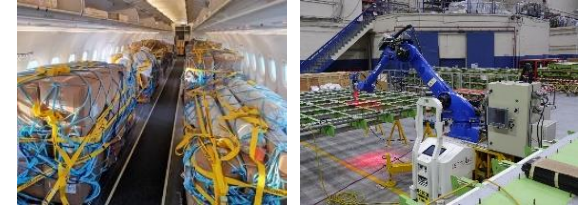
- Redelivered “Head of Version” A321P2F
- Expanded MRO capability for nacelles, engines and components
- Securitised portfolio of 30 engines, recycling capital for expansion

Securing Wins



- \$4.4b of new contracts despite COVID-19 (Mar 2020 – Sep 2021)
- Freighter leasing strategy including JV with Temasek
- Unmanned air systems across multiple applications

Innovating



- Cargo conversion solutions
- Increased automation use cases – P2F drilling, engines MRO, additive manufacturing

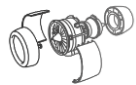
Reorganising for Success

Growth Levers in Lines of Business Groups

Expanding life cycle nose-to-tail solutions supported by new organisation structure



**Aerostructures &
Systems**



Nacelles



Freighter
Conversions



Aerospace MRO



Airframe Services



Engine Services



**Aviation Asset
Management**



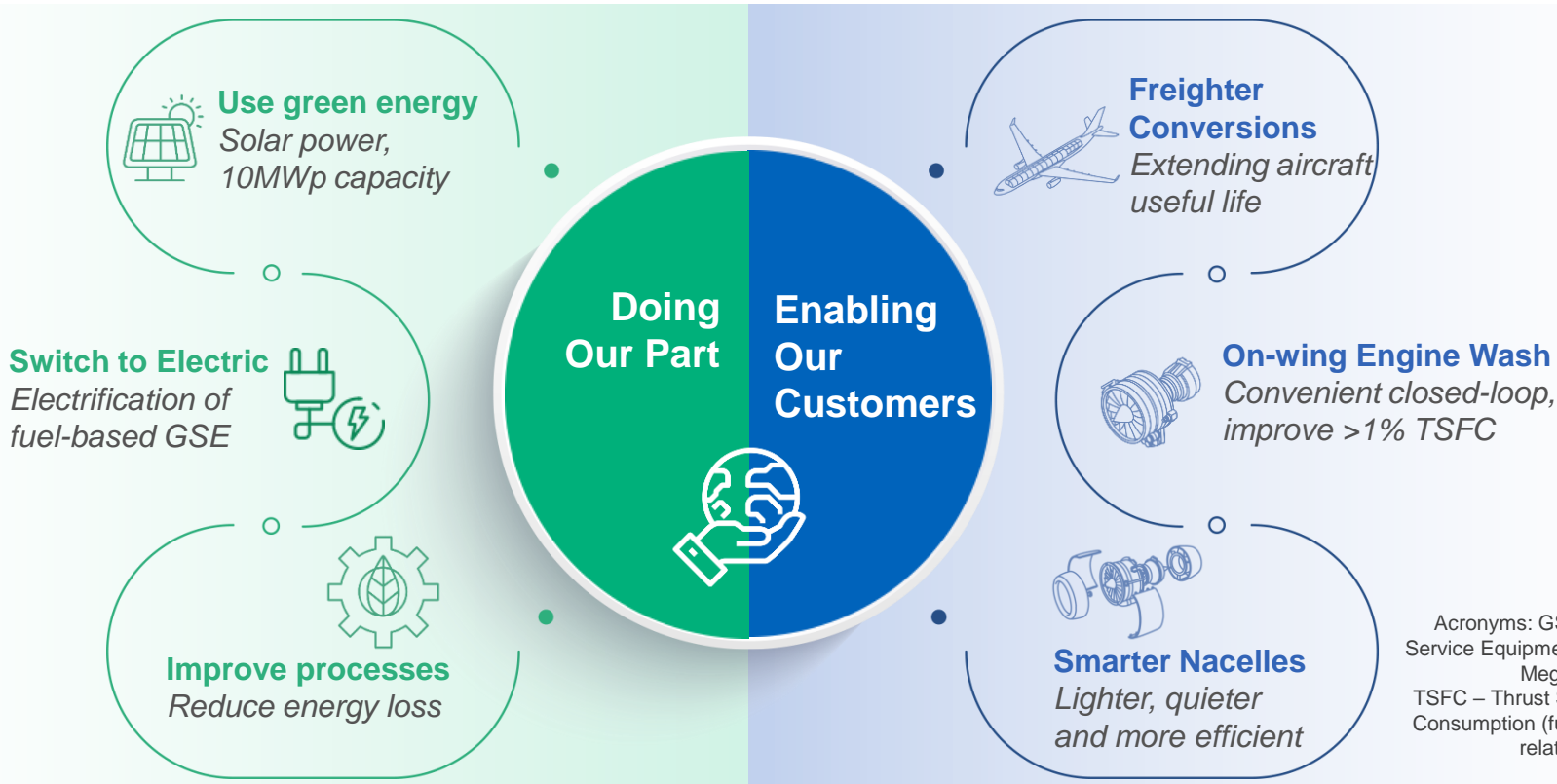
Freighter Leasing



Engine Leasing

Towards a Greener Journey

Becoming a Sustainability-focused business and supplier to our customers



Acronyms: GSE – Ground Service Equipment | MWp – Megawatts Peak
TSFC – Thrust Specific Fuel Consumption (fuel efficiency relative to thrust)

Key Strategic Initiatives



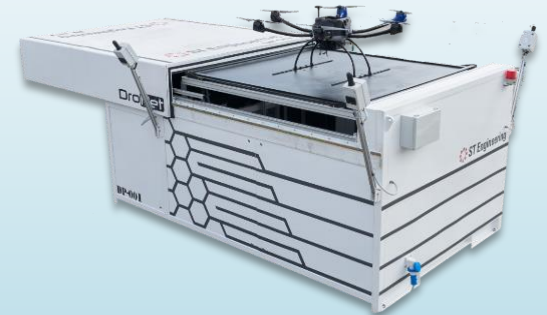
**Strengthen
OEM and MRO
position**



**Seed the future
through smart
technologies**



**Invest for
growth in P2F
and asset
management**

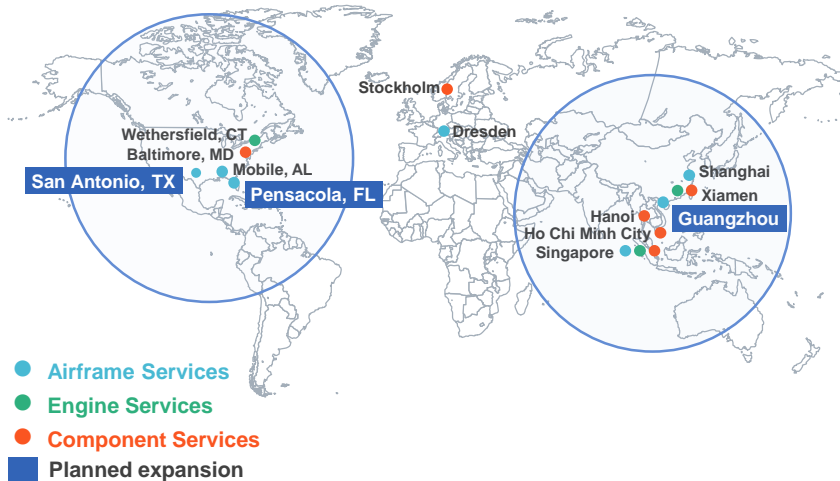


Strengthen OEM and MRO Position

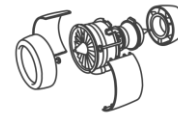
Leveraging global footprint and positioning for future demand

Expanding MRO Regional Presence

Locating close to customers in key aviation hubs, providing >13 million manhours annually



Capability Building



Capture acquisition synergies via Nacelle MRO

- 6 types & growing, including ARJ21, A320 and B737











Build future capabilities

- MRO for new generation aircraft
- Improving nacelle technologies

Invest for Growth – Asset Management

Strategic portfolio growth synergising markets & capabilities

Consistent Leasing Strategy Execution		
		
Engines	Pax Aircraft	Freighters
<p>JV – Aircraft engines (2011)</p> <p>Engine ABS (2020)</p> <ul style="list-style-type: none"> • Unlock capital, retain asset management 	<p>JV – commercial aircraft (2016)</p>	<p>Temasek JV (2021)</p> <ul style="list-style-type: none"> • US\$600m AUM • Acquire aircraft, P2F, lease, MRO
<p>Double AUM to US\$2b by 2026 with securitisation*</p>		

Scaling Asset Management Capabilities	
	<p>Adding value and business synergies</p> <ul style="list-style-type: none"> - Asset securitisation - Focus on mid-life aircraft - MRO & conversion services
	<p>Building track record and capabilities</p>
 <p>Deal of the Year (Sunbird ABS)</p>	 <p>APAC Structured Finance Issue of the Year (Sunbird ABS)</p>
	 <p>Operating Lease Deal of the Year (A321P2F Lease to Qantas)</p>

Invest for Growth – P2F

Building momentum to increase leadership position in freighter conversion solutions

Our Next Generation Conversions*

Narrowbody P2F



A321P2F

5 redelivered since 2020



A320P2F (EIS 2022)

>60 on order

Medium Widebody P2F



A330P2F

12 redelivered since 2018

>80 on order

Delivering at Scale



>60

Annual Conversions, 3X of current capacity



6

Global Sites – Singapore, China, Germany and the U.S.



>S\$0.7b

Steady state annual revenue by 2026

Seed the Future – Smart Technologies

Operationalising autonomy & robotics for internal & customer value creation

Increase DroNet Penetration



Expand Robotics Use Cases



**Robotic drilling for
P2F floorgrids**

-30% production leadtime

**Engine blade
mapping & profiling
system**

>2k manhour savings p.a.

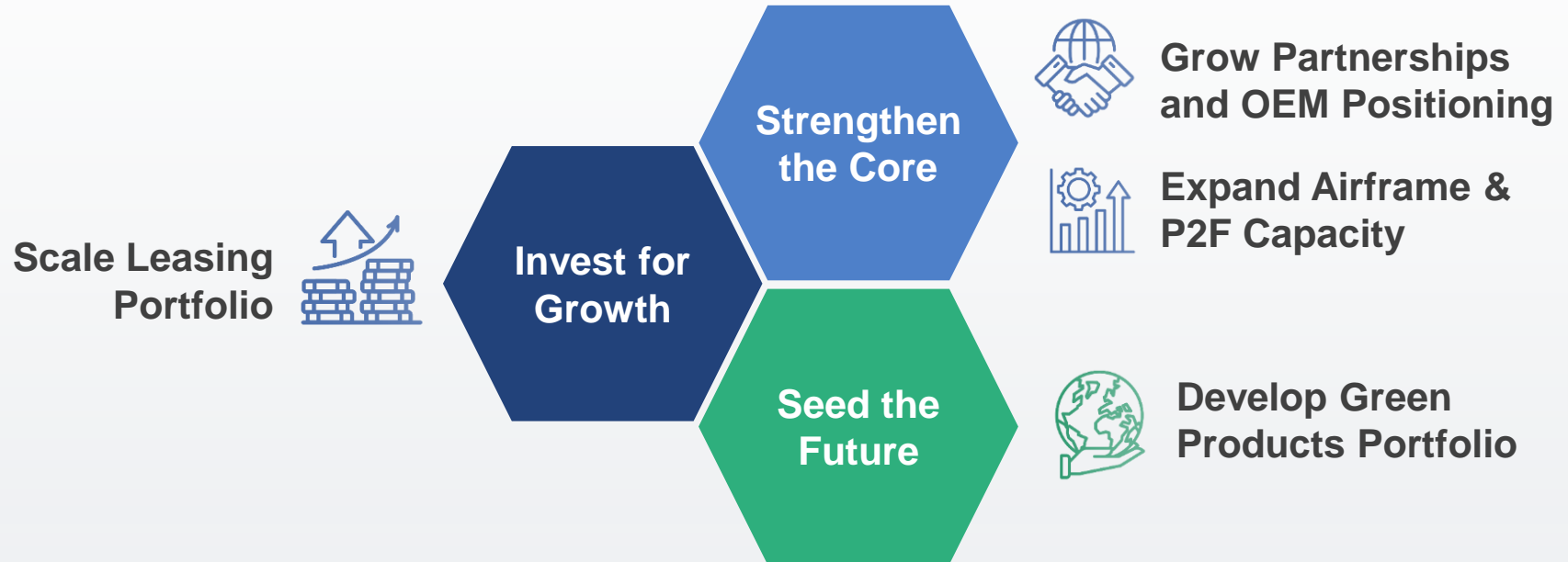


Acronym: P2F – Passenger-to-Freighter

Commercial Aerospace

Looking Ahead

Delivering, Positioning & Investing





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Smart Cities

Chew Men Leong

President, Urban Solutions

16 November 2021

Our Smart City Vision in 2018




A grid of four panels illustrating urban challenges, with a grey city skyline silhouette at the top. Each panel has a title, an image, and a text box below.

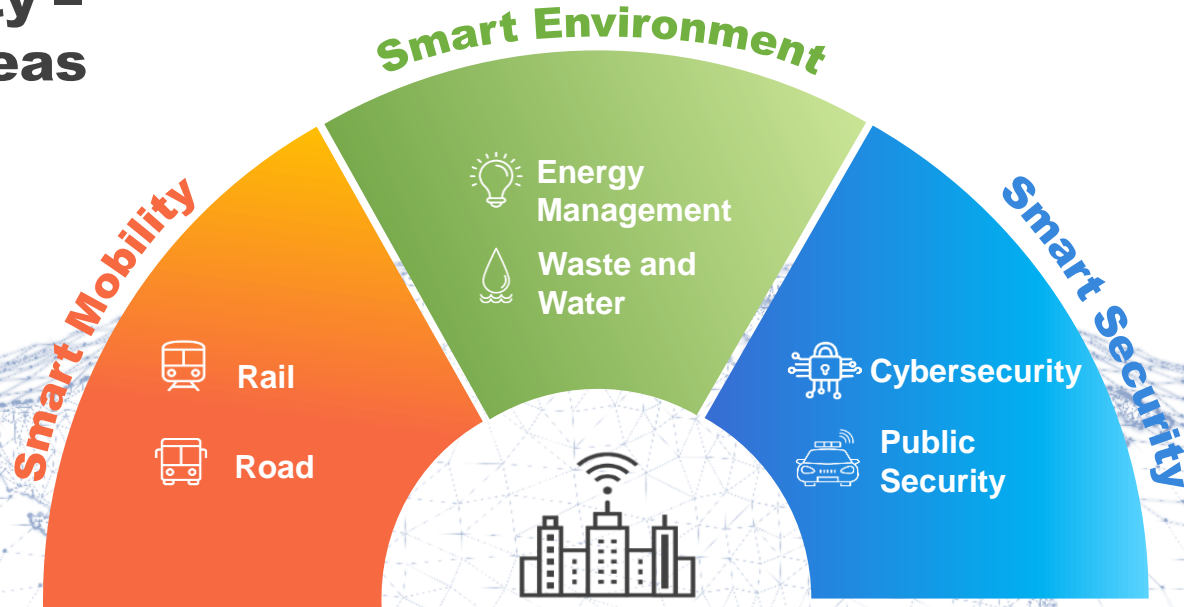
Demographic Change	Urbanisation	Resource Scarcity	Climate Change
			
By 2050, population aged over 60 is set to double to over 2 billion Significant increase in dependency ratio while birth rate continues to fall	By 2050, 86% of the developed world and 64% of developing world will be urbanised Strain on essential public services	By 2040, developing countries will consume 65% of energy By 2025, two-thirds of the world's population would face water shortages	Rising global average temperature Extreme weather conditions

Pursue Growth Opportunities

Needs for Smart Cities enhanced by growing focus on Sustainability

Smart Cities

Smart City – Focus Areas



Over **700 projects** in more than **130 cities**



Data Analytics
& Artificial
Intelligence



Digital
Connectivity
& Cloud



Autonomous

Smart Cities - Significant Wins and Successes

Good progress despite impact from COVID-19

New Market Expansion



Queensland's Cross River Rail
1st Mobility Rail win
in Australia



Rio de Janeiro
>300k Smart Street Lighting
controls with AGIL IoT platform

New Business Areas



**Kaohsiung MRT
Red Line Extension**
Delivered turnkey Electrical &
Mechanical (E&M) systems



Land Transport Authority
Delivered 1st batch of
Electric Buses



Public Agency
One of the largest deployments of
a Smart Lift Monitoring solution

Data Analytics | Artificial Intelligence Enabled Solutions



Rail Enterprise Asset Mgmt Sys
Asset performance tracking with
data analytics



Punggol Digital District
Co-develop Open Digital
Platform for Smart Estate



Dubai iTraffic
Road Command & Control Centre
with state-of-art technologies

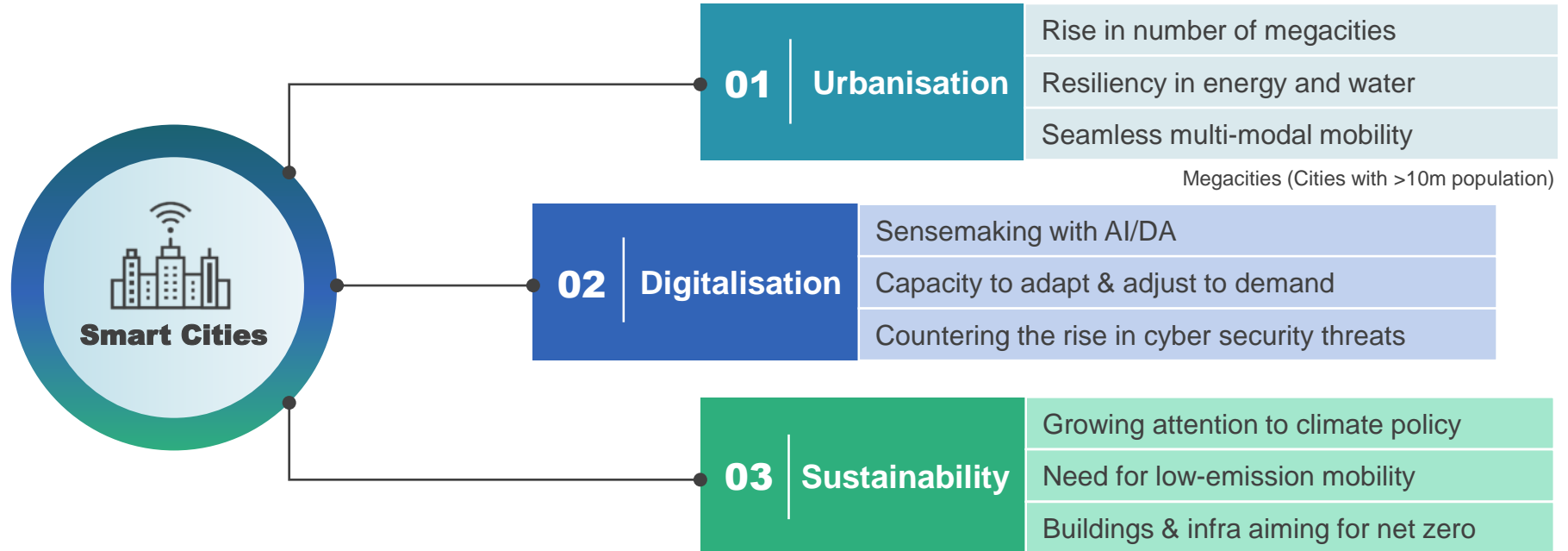


Autonomous Bus
Completed 3-mth commercial trial
at Jurong Island & Science Park 2



Overseas Customer
Development of next generation of
Emergency Response System

Urbanisation continues as COVID-19 drives digitalisation & sustainability



Relevant Smart City Market Size of ~US\$500B¹ in 2026

42 | ¹ Markets we have solutions for (specific segments within Mobility, Environment, Security)
 Source: LEK Consulting, Homeland Security Corp Research, Northeast Research, KBV Research, ST Engineering in-house analysis, Deloitte Smart City Solution Centre

Doubling down on Smart Cities

Accelerating growth with new capabilities

Acquisitions & JV
Building new capabilities

sptel

- JV with SP Group
- SG's 1st fully digital Software Defined Network (SDN) for Service Providers

Newtec

Acquired for €250m

GLOWLINK

Acquired for US\$20m

TRANSCORE

To acquire at US\$2.68b

Venture Investments
Nurture strategic capabilities in high-growth areas



Domains:

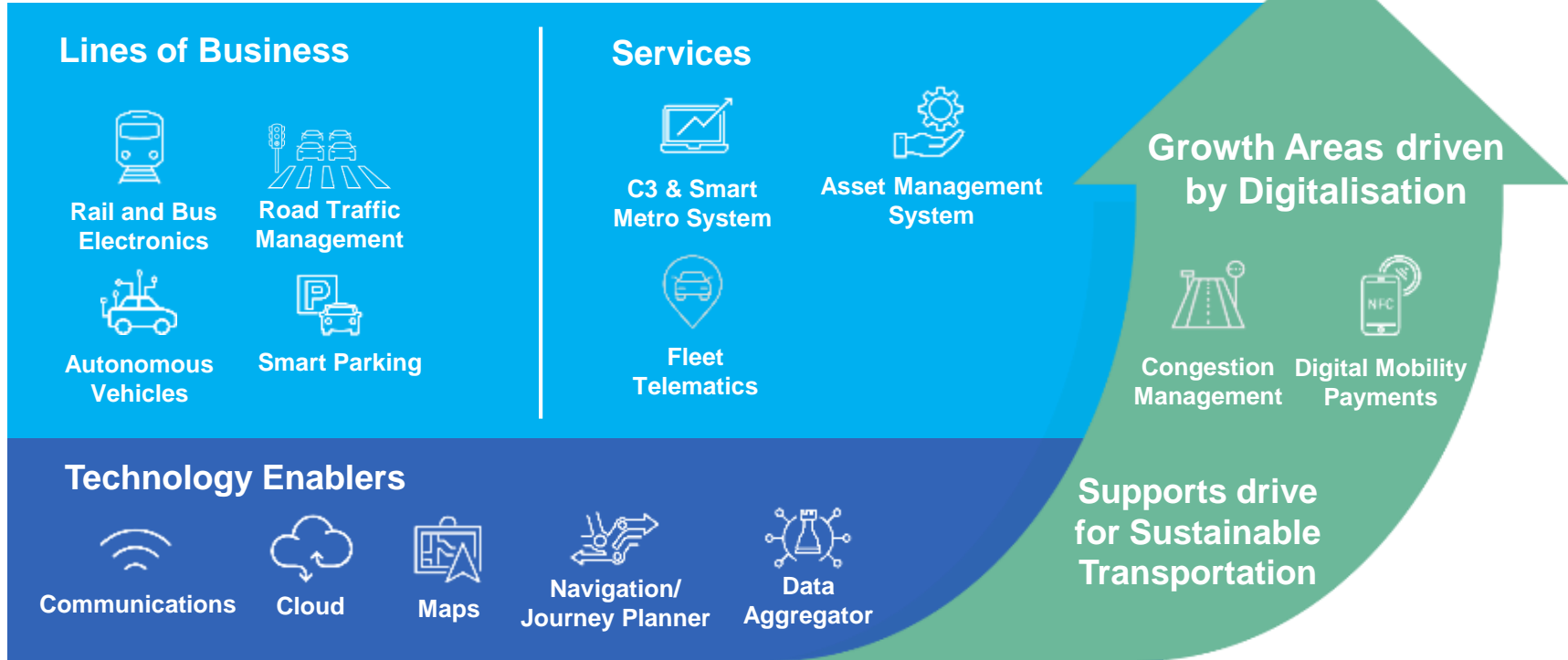
Mobility

Cybersecurity

Digital Connectivity & Cloud

Data Analytics

Accelerating growth with new capabilities



ST Engineering to acquire TransCore for US\$2.68b

Creating a Smart Mobility market leader and accelerating Smart City growth



- U.S. market leader in Electronic Toll Collection (ETC) solutions and Intelligent Transportation Systems
- Outstanding track record of project execution, customer retention and renewal
- Strong management team with deep industry experience
- Contracted to deliver first congestion charging project in the U.S. – Manhattan, New York



Combined portfolio positions us as a Smart Mobility Market Leader

- ✓ Enhance offerings through a **comprehensive suite of Smart Mobility products**
- ✓ Strengthen commitment to **sustainability** – **reduce traffic congestion** and **lower vehicle emissions**
- ✓ Achieve **synergies** through cross-selling **complementary products and solutions**
- ✓ Entry into **North American ETC** and **congestion pricing market**

Smart Environment enables greener & more sustainable cities

Enhance Operational & Energy Efficiencies

Utilities | Buildings | Estates | Campuses | Cities

- Platforms to monitor, communicate and control multiple IoT devices and sensors
- Support interoperability, cloud hosting and scalability



Support Transition to Electric Fleet

PTO | Commercial Fleet

- End-to-end suite: Charger – Charger Mgmt – Fleet Mgmt software
- Retrofit diesel to electric bus

PTO – Public Transport Operators



Provide IoT for Data Collection

Utilities | Buildings

- Front-end sensors to collect data
- Back-end platform to collate, analyse and decide



Positioning for Smart Security

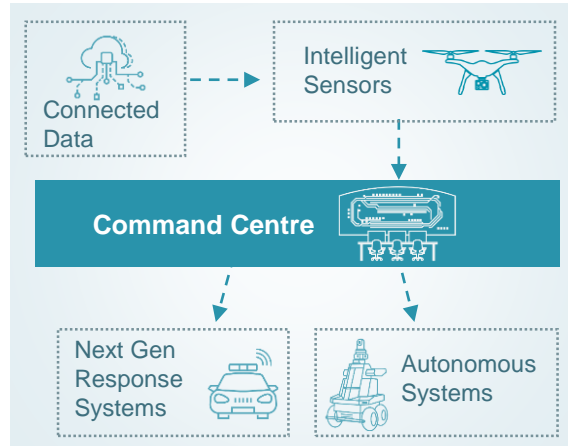
Smart Security solutions for Smart Cities

Integrated Security Management Platform



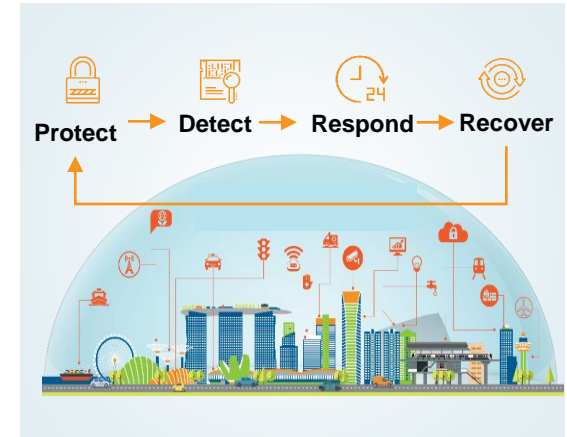
- Platform for situational awareness
- Scalable; allows centralised or distributed controls

Smart Sense & Response for City Management



- Observe-Orient-Decide-Act (OODA) with DA/AI enabled systems
- Support collaborative and predictive decision making

Smart Cybersecurity





- Build resilient and secured digital future
- Protect critical information infrastructures

Industry leading Satcom ground segment technology provider



Acquisition of Newtec Group NV



-  Unique ultra-high throughput capabilities & industry-leading bandwidth efficiency technology
-  Enlarged IP and differentiated product portfolio addressing all market segments

Acquisition of Glowlink Communications Technology



-  Complementary product suite to existing advanced bandwidth-efficient, highly secured satellite solutions
-  Enhanced resilience against signal interference

- 1 Platform of choice with **Market leadership** across key segments



Maritime



Aero



Enterprise



Military



Broadcast

- 2 **Best-in-class** Satcom Solutions



Ground System for
03b mPOWER Next-Gen
MEO Constellation



Industry's Most Efficient
Dynamic Return Technology

Well-positioned to capitalise on growth opportunities

Significant Increase in Capacity

- >24,000 new satellites to be launched by 2030¹ (GEO / MEO/ LEO)
- Reduced bandwidth costs and lower latency

New Demand and Use Cases

- Growing demand for connectivity
- Increased focus on secure, resilient Defence Satcom
- Satellite interoperability with terrestrial Cloud and 5G networks unlocks new use cases

Development of Next-Generation Platform



End-to-end network management and optimisation for multi-constellations across multi-orbits



Take advantage of opportunities in hybrid satellite and terrestrial Cloud and 5G networks

Digital Business as a new growth pillar

Leverage strong track record in Cyber, Cloud & Analytics

OT / IT Cyber Services & Products



Cloud



Data Analytics Applications



Build deep capabilities through R&D and strategic Investments

Quantum Cryptography



Professional & Managed Services for Hybrid & Multi Cloud



Artificial Intelligence



Expand into local and overseas Enterprise Customers

Healthcare



Financial Services



Other Enterprises



Critical Infrastructure



Cyber Secure



High Trust

Accelerating Smart City growth

Smart Mobility

- Building a Smart Mobility market leader
- Harness mobility data, digital payment capabilities

Smart Environment & Sustainability

- Enabling smarter utilities and infrastructure
- Support fleet operators' electrification journey

Smart Security

- Provide scalable security platforms enabled by DA, AI and 5G
- Empower a secured digital future

Smart Digital Connectivity

- Strengthen Satcom market leadership; roll-out of next-gen platform
- Offer cloud management platform / services for enterprise applications
- Offer resilient & flexible Software-Defined Networks



Capture growth at the intersection of **Urbanisation, Digitalisation & Sustainability**



Adopt Global Outlook, Local Implementation



Integrate Global Workforce & Talents



Leverage Group Engineering & Tech capabilities



Provide Thought Leadership on Smart Cities



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Sustainability

Cheryl Chan

Group Chief Strategy and Sustainability Officer

16 November 2021

Global trends shaping the role of sustainability in businesses



Global Warming



Resource Scarcity



Energy Transition



Urbanisation

Business Implications



Increase
decarbonisation
effort



Develop
energy efficient
infrastructures



Leverage
technology to
improve response

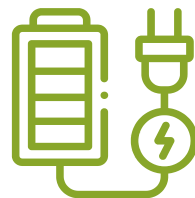


Business
continuity

Our approach to sustainability-linked revenue



Reduce GHG emissions



Solve urban and city issues



Circular economy

Enabling Our Customers

Our products and solutions begin with sustainability in mind

Energy Management

Smart Cities

- IoT
- Smart Utilities & Buildings
- Waste & Water Treatment

Congestion Management

Smart Cities

- ITS (Road/Rail)
- Tolling Solutions
- Congestion Pricing

Decarbonisation

- Passenger-to-Freighter Conversion
- Engine Eco-wash
- Nacelles

Digital Solutions

- Robotics & Automation
- Connectivity
- Training & Simulation



**Sustainability-linked
revenue**

Enabling Our Customers: Commercial Aerospace

P2F conversions reduce environmental impact and improve asset efficiency



Useful Life Extension

Recycling passenger aircraft to freighters for 2nd lease of life



Automation

Increase productivity and reduce material consumption



New generation, Fuel efficient Aircraft

Replacement of old freighters with newer converted freighters



One-stop Solution

Reduce aircraft downtime and improve operational flexibility

Benefits:

Optimising asset utilisation and creating customer value in a sustainable way

Enabling Our Customers: Smart Mobility & Smart Street Lighting

Reduce urban traffic congestion & enable smart street lighting with our smart integrated solutions and predictive maintenance capabilities



Urban Traffic Management

>20% reduction in traffic congestion



Incident detection, advisory & enforcement

>50% reduction in incident handling time



Intelligent control

Energy efficient, cost effective street lighting



Motion sensing, on-demand lighting

Wireless network sensors saves >15% energy on top of LED savings

Enabling Our Customers: Marine

DigiShip: Design and build more sustainable vessels for the future

Green Ship

↓ GHG emissions with higher power and energy efficiency

Connected Ship

Enhanced connectivity with robust cybersecurity systems

Autonomous Operations

Reduce manpower and physical loading needs

Smart Maintenance

Increase ship availability and maintenance flexibility



Enabling Our Customers: Training & Simulation Systems

Reduce consumption of resources and GHG emissions for live events through digitalisation



Significant reduction in GHG emissions versus live training



Value-add **training flexibility** regardless of weather conditions

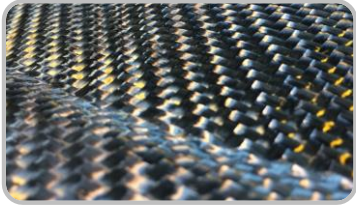


Advanced simulation systems capable of modelling and simulating large scale real-life scenarios

Enabling Our Customers: New Opportunities

Exploring new opportunities in sustainability

Materials



Products



System Solutions



Doing Our Part

Manage our environmental footprint and build trust with our community

Doing our part



Environment



Social



Governance



Sustainability is value creation and core to our business



Seize new opportunities in sustainability and enable customers to benefit through our products and solutions



Continual efforts to **halve GHG emission levels by 2030** and have **purposeful engagement** with the community



Committed to **Doing our Part** and **Enabling our Customers** in our sustainability journey

Our Corporate Purpose

**Harnessing technology and
innovation to enable a more
secure and sustainable world**

INVESTOR DAY 2021

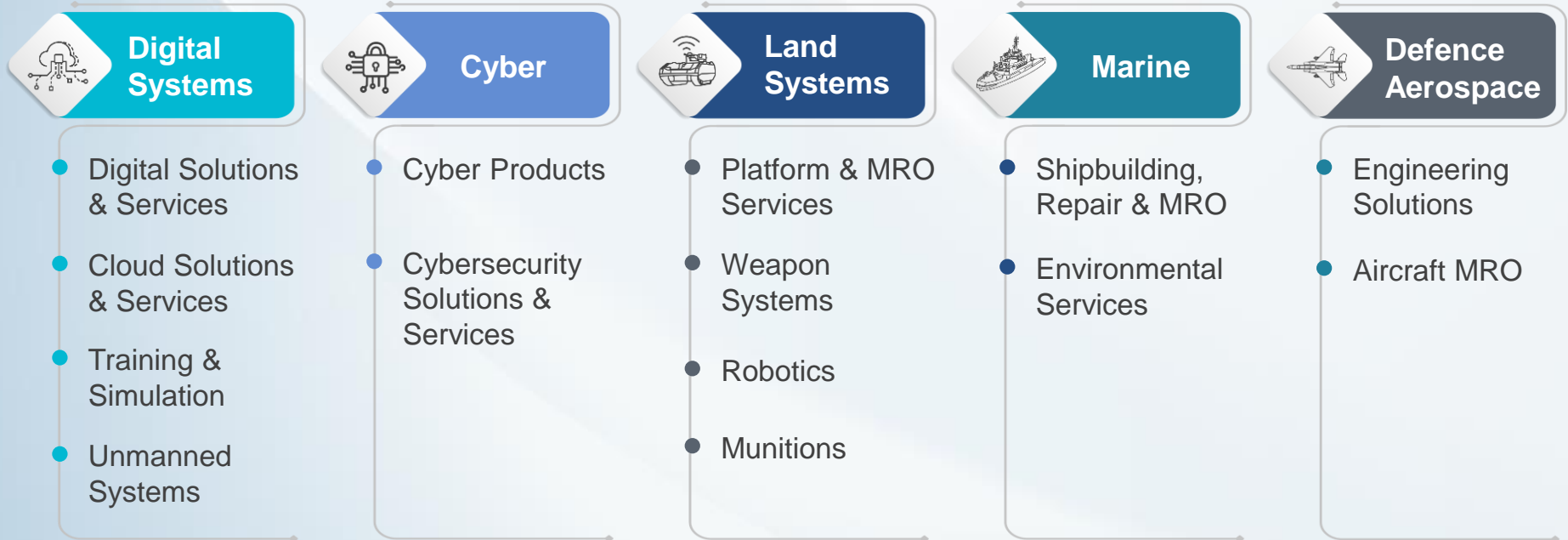
International Defence

Ravinder Singh

Group Chief Operating Officer (Technology & Innovation),
President, Defence & Public Security

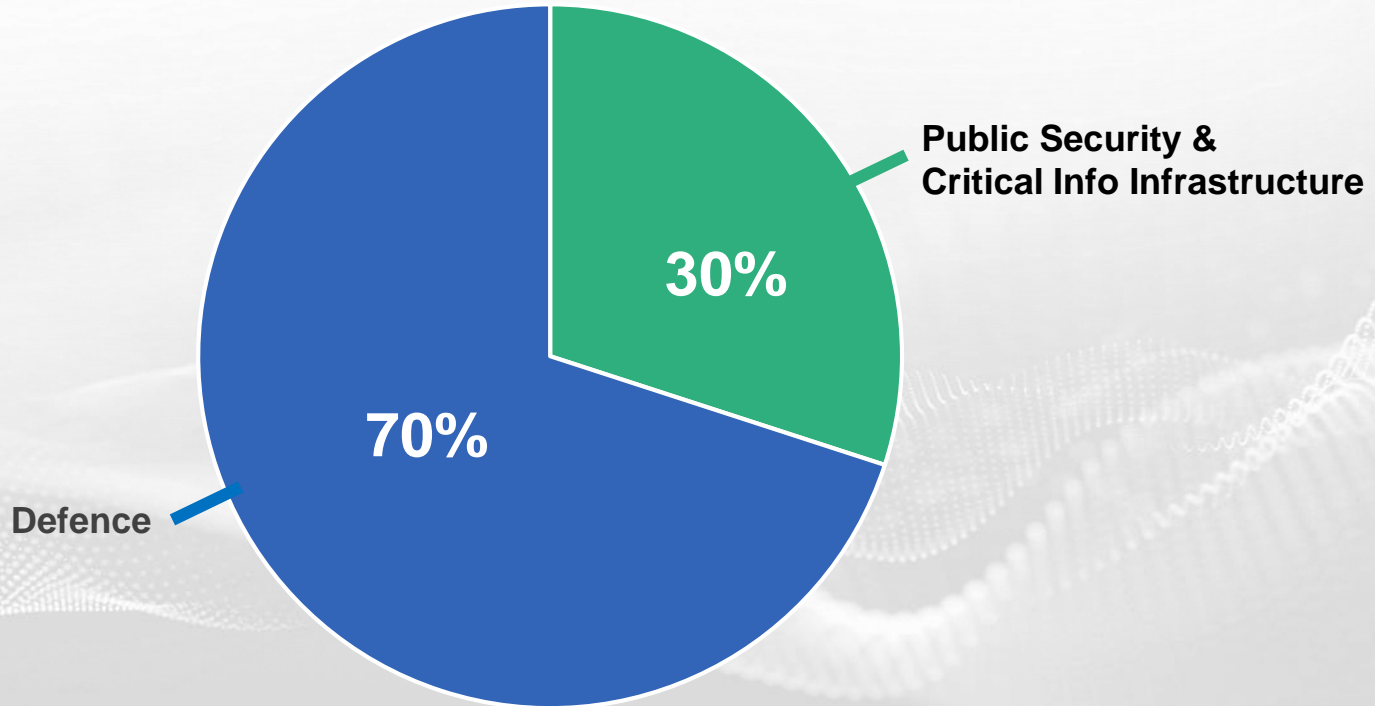
16 November 2021

Overview of Defence & Public Security (DPS) – Major Lines of Business



DPS Revenue FY2020

By Business Categories



Successes in Global Market

**Cold-Weather All
Terrain Vehicle**
Prototype for US Army



**Offshore Patrol
Vessel for UAE Navy**



**C130 MRO (RAFO/Gulf
Air/Lynden)**



Polar Security Cutter
for US Coast Guard



World leader for
40mm ammunition
(sold to 44 countries)



Naval MRO

Global Market Trends and Opportunities

Trends



Military transformation through technology innovation



Upgrade / replacement of platforms



Markets increasingly require localisation, technology transfers and offsets

**Attractive
Addressable Market**

~ US\$5b

Over next 5 years

Opportunities



Accelerated adoption of technology



Strong defence budget in the U.S.



Middle East building up their local defence industry (Leverage Singapore's reputation and our ability to localise production)

Growing International Defence Business

Future Operating Concepts

Enhanced Situational Awareness & Decision Making

Interoperability across Air-Land-Sea

Manned-Unmanned Teaming

Technology Enablers & Product Offerings

Data Analytics And Cloud



Emergency Response System



DA-enabled Medical System on Cloud

Smart Surveillance System

Cybersecurity



Cyber Products

5G & Connectivity



VeCom



5G, IoT solutions

Autonomous Technology



Unmanned Surface Vessel



Robotics

Sustainability



ExtremV (HADR* Ops)

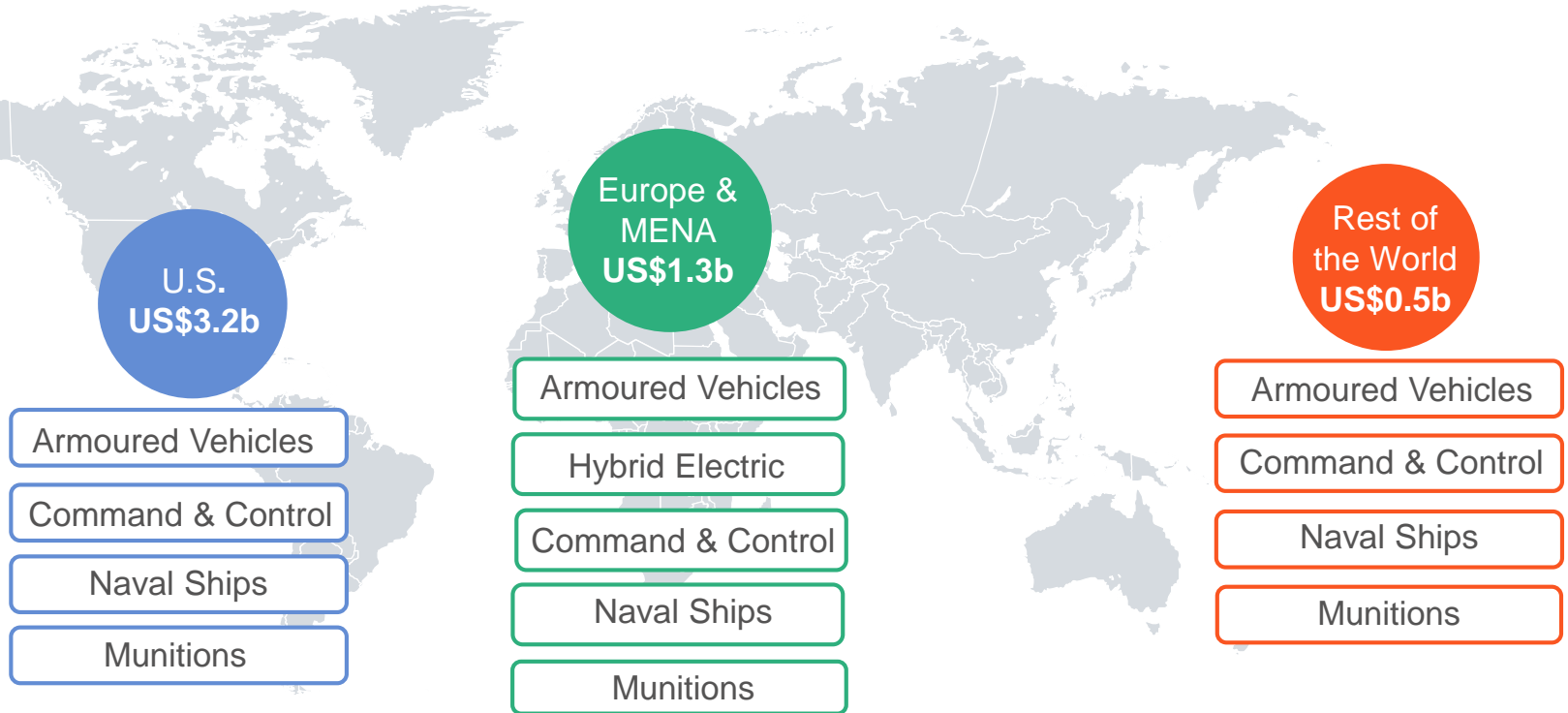


Hybrid Drive



Training Simulator

Addressable Markets for International Defence



INVESTOR DAY 2021

Technology & Innovation

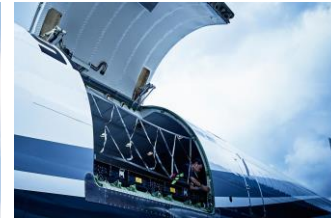
Dr Lee Shiang Long

Group Chief Technology & Digital Officer

16 November 2021

Technology & Innovation

The Bedrock of ST Engineering



Technology & Innovation Strategy

Business Driven Technology / Innovation Roadmaps

							
Digital Systems	Cyber	Land Systems	Marine	Defence Aerospace	Urban Solutions	Satcom	Commercial Aerospace

Strong Technology, Engineering & Innovation Community

<p>4 – 5% of Revenue</p> <p>Annual R&D spending, including external funding</p>	<p>> 75% of R&D</p> <p>on digital technologies</p>	<p>~ 16,000 Engineers</p> <p>& technology talents globally</p>
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Positioned for Future Growth

Build New Capabilities	Leverage R&D Ecosystem	Digitalisation
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Definition

R&D Activities and Accounting Classifications

	R&D Activity	Funding Sources	Classification in Financial Statement
1.	Research Projects	Internal / External	shown as <i>R&D expenses</i>
2.	Development Projects / IP Rights and Licenses	Internal / External	shown as <i>Intangible Assets</i>
3.	Customer funded R&D Projects	External	part of <i>Cost of Sales</i>

Total R&D is 4 to 5% of Revenue



R&D Achievements Contribute to Business Outcomes



Cybersecurity

R&D with universities led to development of customised cyber detection AI algorithms

Won multiple contracts for Security Operations Centres



AV Bus

Autonomous technology successfully tested in Singapore
First commercial deployment of AV Bus in Singapore



Autonomast

Jointly funded by Maritime Port Authority (Singapore) and Mitsui
First-of-its-kind effort to digitalise navigation intelligence on an ocean-going ship



Passenger-to-Freighter (P2F) Conversion

The only Global Engineering and Conversion house for Airbus-endorsed Freighter Conversion Solutions
Successfully converted 12 A330s and 5 A321s



Digital MRO

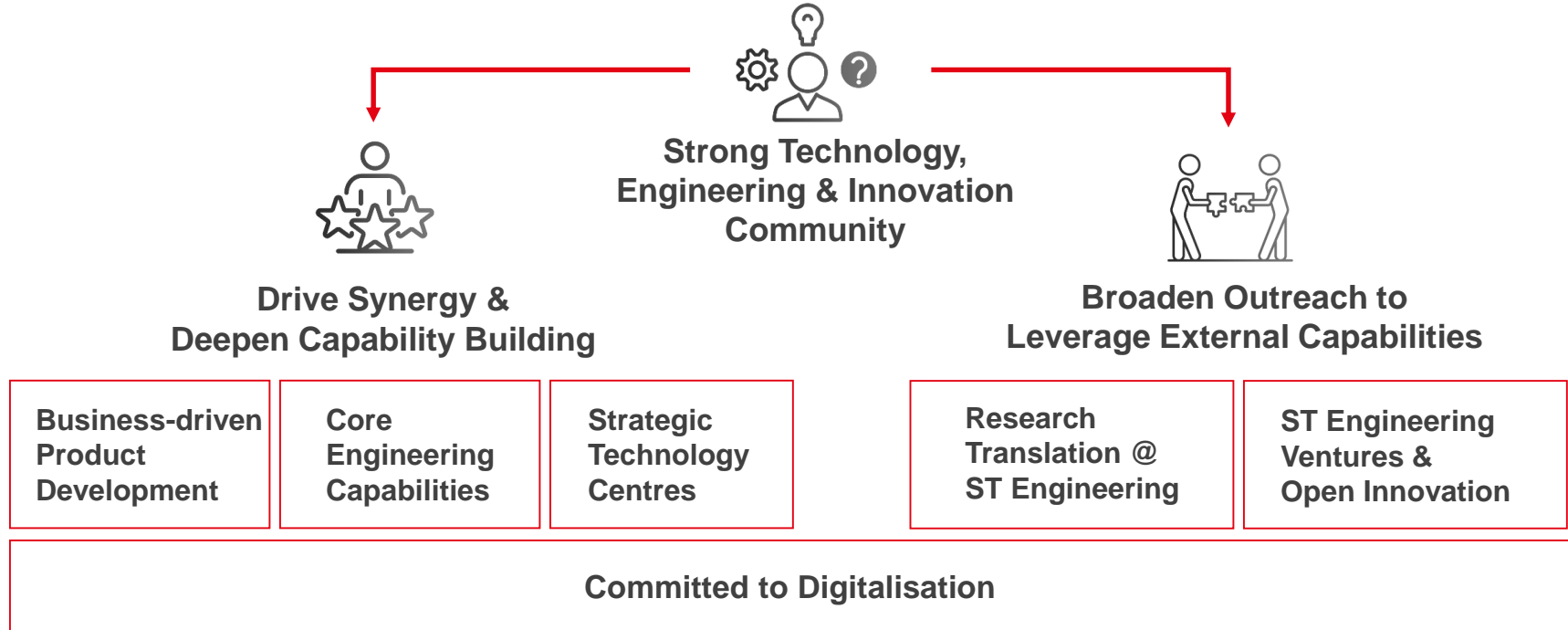
Applications of predictive maintenance to minimise downtime and improve reliability
Increased land, air and sea fleet availability and maintainability



Hunter Digitalisation

World's first fully digitalised platform and Drive-by-Wire ready, paving way for unmanned and autonomous operations
Improved operational effectiveness including maintainability

Greater & Quicker Access to Technology and Talents



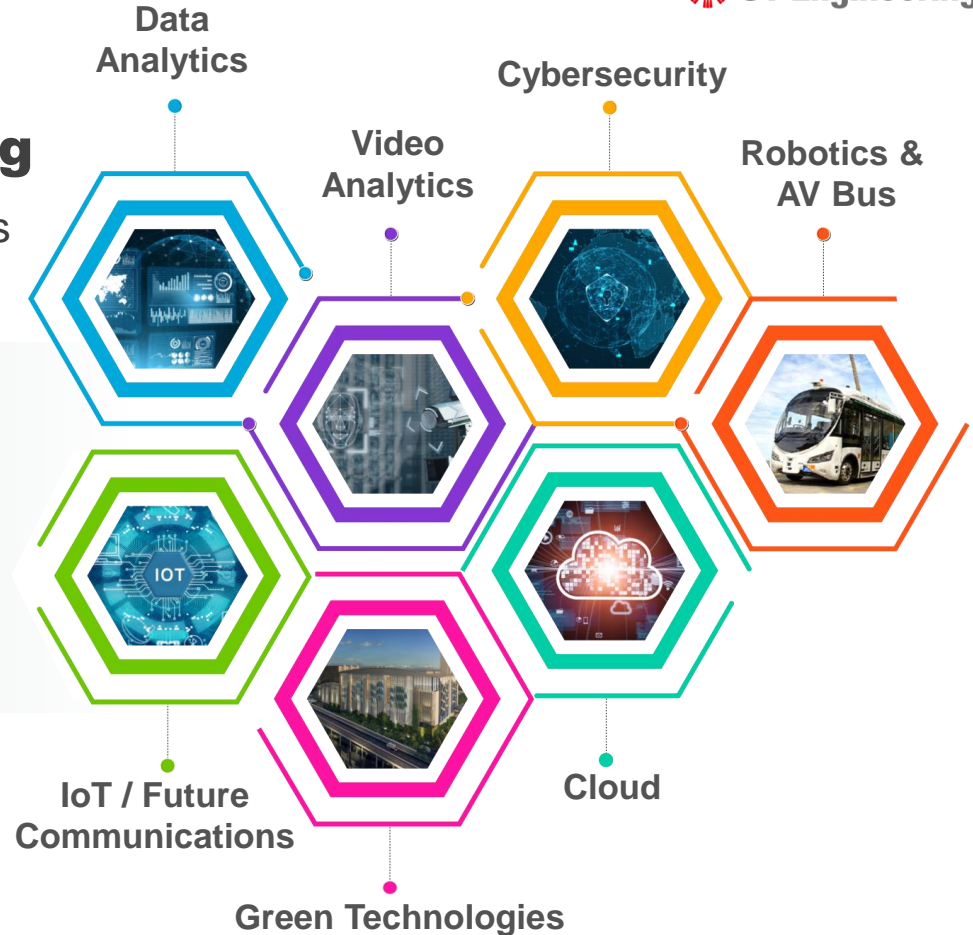
Technology & Innovation

Drive Synergy and Deepen Capability Building

Capabilities to drive Business Outcomes

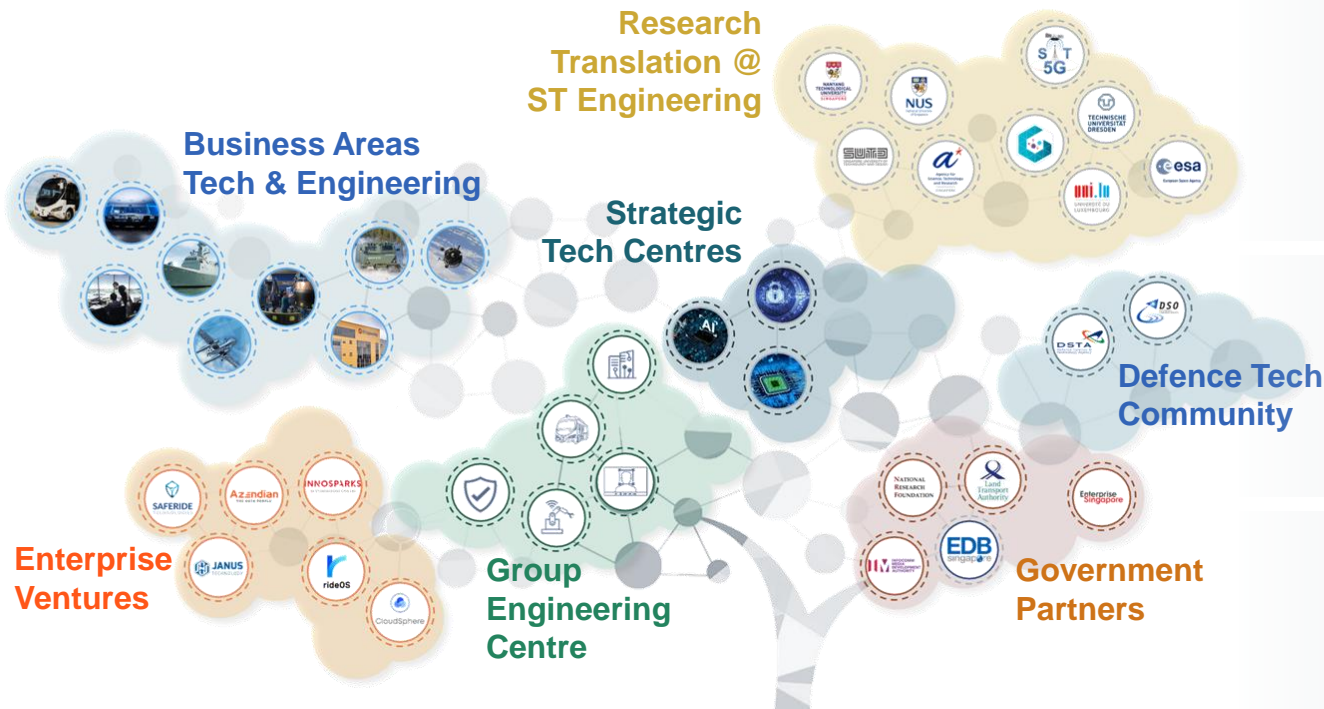


Dual-use capabilities that benefit both Commercial and Defence businesses



Accelerate Innovation through Broader Ecosystem

Focus on innovation and development of technologies with real-world impact



R&D collaborations with universities, research institutes, government agencies and start-ups

New research collaboration model for effective translation of research outcomes for commercialisation

Core engineering platforms build strong capabilities across the Group

Accelerating Innovation

Co-creating differentiated products & building new businesses via corporate venture investing

ST Engineering Ventures – Dedicated Corporate Venture Capital Unit



US\$150m
Committed Capital



Specialised Domains

Autonomous Systems, Cyber,
Data Analytics, Cloud, & other
Emerging Technologies



Global Outreach

Based in Singapore, scouting
offices in Silicon Valley & Tel Aviv

Leading Autonomous Bus Transition



rideOS



SAFERIDE
TECHNOLOGIES

Empowering Cyber Resilience



ISRAEL

radiflow
Secure your Assets



USA

JANUS
TECHNOLOGIES

Transforming Businesses with Cloud & Data



IRELAND

CloudSphere



SINGAPORE

Azendian
THE DATA PEOPLE

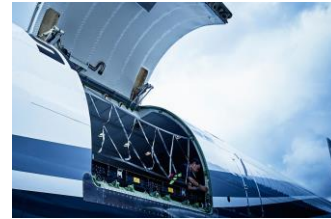
Technology and Innovation for Sustainable Business Growth



**REALISING
SUSTAINABILITY**



**DRIVING
BUSINESS
GROWTH**



AGILE INNOVATION



INVESTOR DAY 2021

Funding Capacity for Growth

Cedric Foo

Group Chief Financial Officer

16 November 2021

Recap

2018 Investor Day Focus Growth Areas

Strengthen core businesses



Aerospace



Marine



Electronics



Land Systems

Pursue growth opportunities



International
Defence Business



Smart City

Underpinned by strong capabilities



People
& Culture



Customers
& Marketing

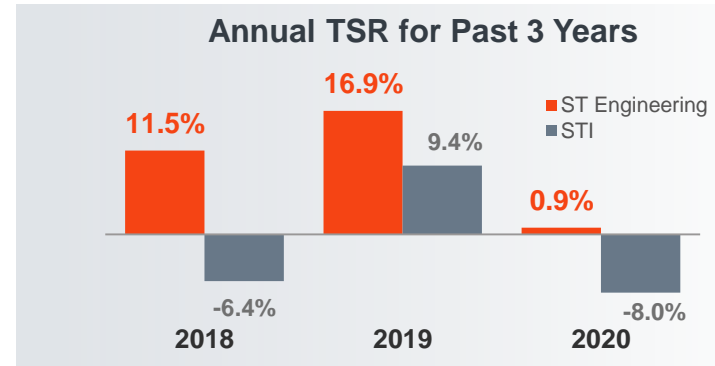
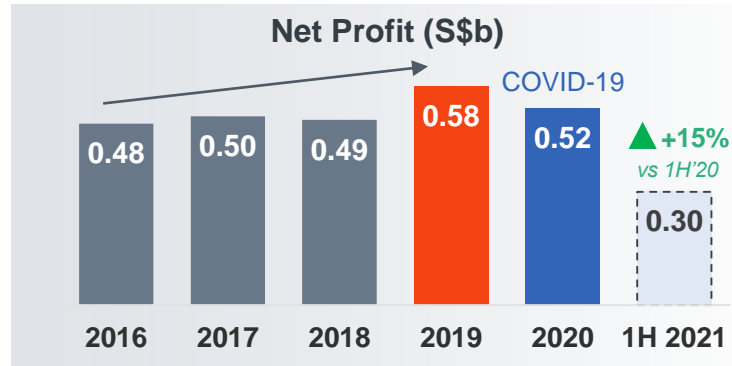
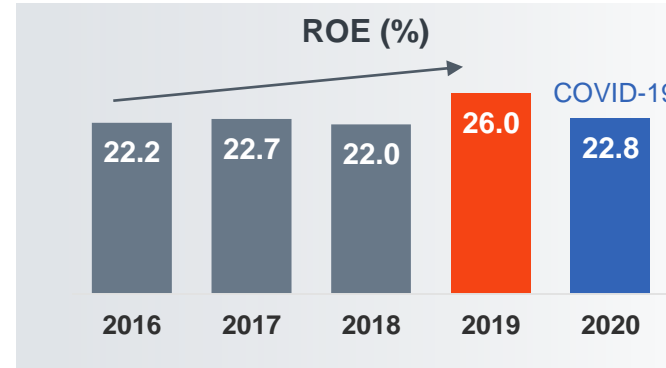
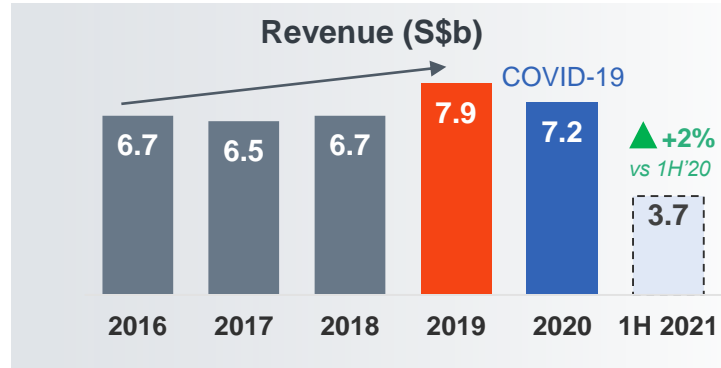


Technology
& Innovation



Capacity
for Growth

Performing on track in 2019 before COVID-19 hit



Update on 2018 Investor Day Ambitions

Our 2022 Ambitions

Achievement timeline

Two-thirds of our revenue growth will be from global markets



On Target
(By 2022)

Smart City revenue of **S\$1b** to more than double by 2022



~1 year delay

Core and other businesses CAGR **2 to 3 times** global GDP growth rate over the next 5 years



~1 year delay

Net profits to grow in tandem with revenues



~1-2 year delay

Our Journey



Investments

- Portfolio management
 - Acquisitions
 - Cessation of business / divestments



Operations

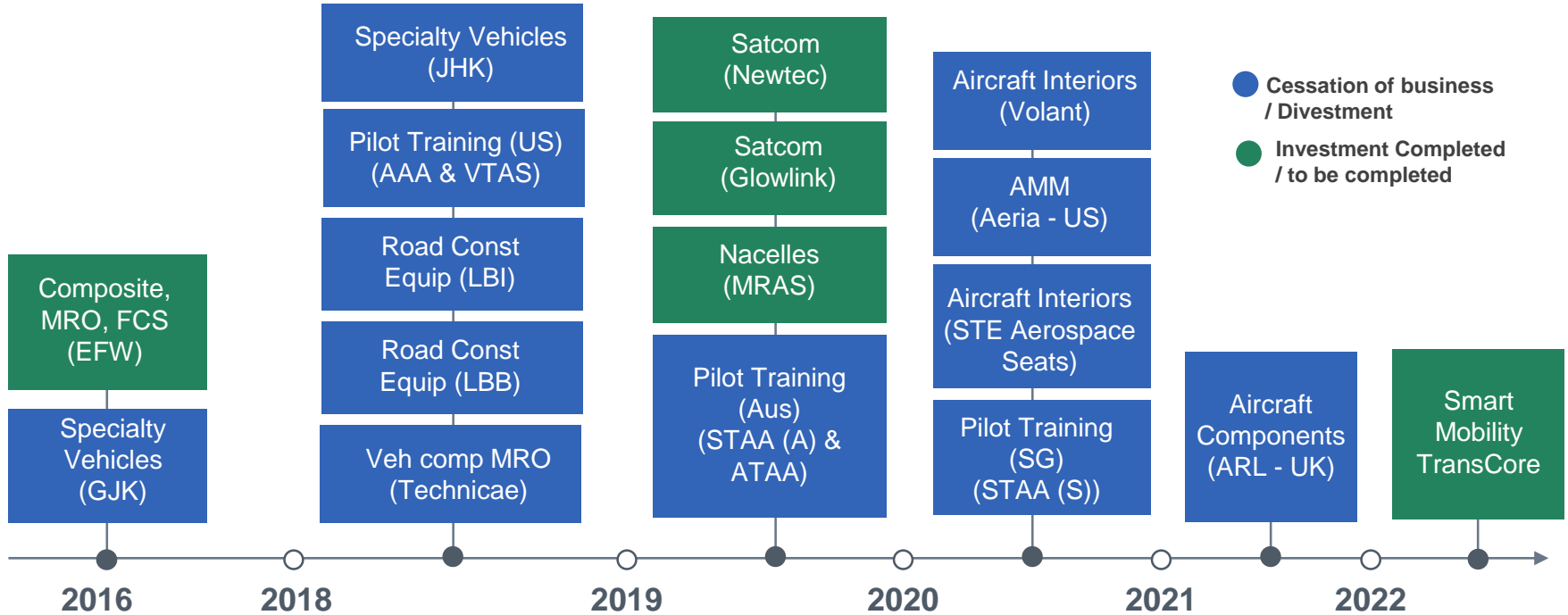
- Continuous improvement and innovation
 - Shared services
 - Joint procurement



Financial Capacity

- Strong underlying performance
- Innovative financing solutions
- Resilient balance sheet
- Strong capacity for dividend payout

Portfolio Rationalised



Business units:

AAA – Aviation Academy of America
 ARL-UK – Airline Rotables (UK Holdings) Limited
 ATAA – Aviation Training Academy Australia
 EFW – Elbe Flugzeugwerke GmbH (became subsidiary in 2016)

GJK – Guizhou Zhongyang Kinetics
 JHK - Jiangsu Hutong
 LBB – LeeBoy Brazil
 LBI – LeeBoy India

STAA (A) – ST Aerospace Academy (Aus)
 STAA (S) – ST Aerospace Academy (Sg)
 STS – Singapore Test Services
 VTAS – VT Aviation Services

Our Journey

Portfolio Management

Major Acquisitions

2018/19



Move up the
value chain



2019



Solidify
leadership



Newtec



2021/22

Acquire market
leader in tolling
Extensive channel
network in US



Our Journey

Divestment

Asset Backed Securitisation



Unlock value



First Aircraft Engine Lease securitisation originated by lessor headquartered in Asia



Capital recycling

Scale up management and MRO fees with minimal capital employed

Our Journey

Continuous Improvement and Innovation



Shared services centre



Maintaining focus on procurement savings



Other productivity and process improvement

Our Journey

Strong Underlying Performance

Robust Order Book



Order book trends (\$b)



Our Journey

Innovative Financing Solution

U.S. Commercial Paper Programme



1st non-bank issuer in Singapore

Way Forward

Resilient Balance Sheet



Credit rating post COVID-19 / TransCore announcement

- AAA (credit watch negative) by S&P¹
- Aaa (outlook negative) by Moody's¹

¹As of reports dated 6 Oct 2021 for Moody's and 7 Oct 2021 for S&P

Way Forward

Strong Capacity for Dividend Payout



- **High retained earnings**
- **Strong cashflow**
- **Resilient balance sheet**

Our Ambitions

2026
targets

Annual revenue to grow at 2 to 3 times
global GDP growth rate to >\$11b¹

Sustainability-
linked revenue to
grow to >\$3b

Commercial
Aerospace to
achieve >\$3.5b
in revenue²

Smart City revenue to more
than double to \$3.5b¹

Other Core
Businesses



Grow Digital Business – Cloud, AI Analytics, Cyber

Net profits to grow in
tandem with revenue



Thank you