ST Engineering

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.

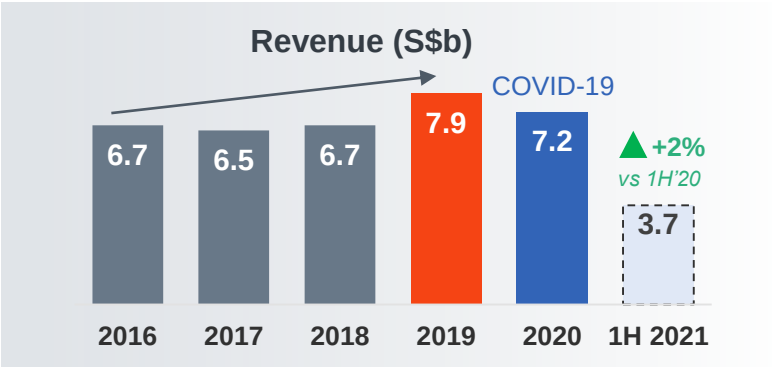
The forward-looking statements in this presentation reflect the Company's current intentions, plans, expectations, assumptions and beliefs about future events. Actual future performance, outcomes and results may differ materially from those expressed in forward-looking statements as a result of a number 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.

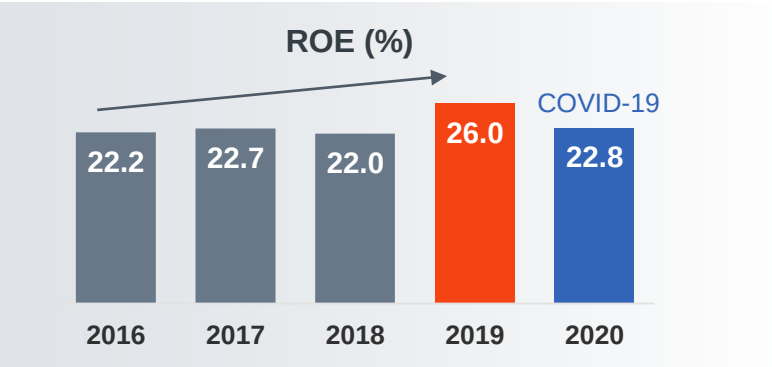
You are cautioned not to place undue reliance on these forward-looking statements, which are based on the current view of management on future events.

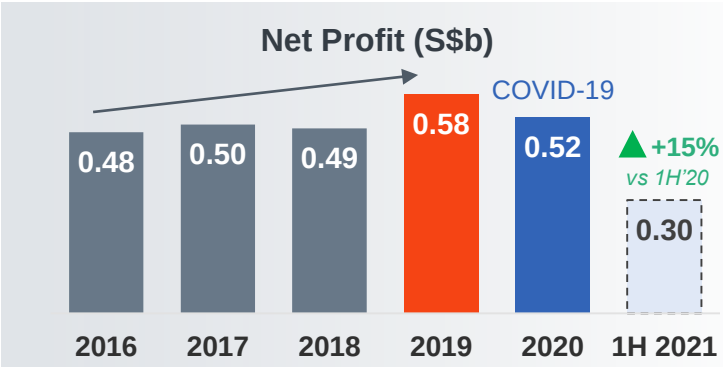
2018 Focus Growth Areas - Recap

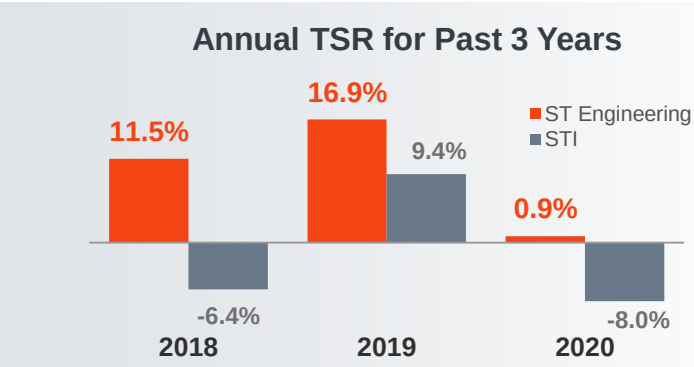


Results reaffirm strategy - credible 2020 despite COVID-19





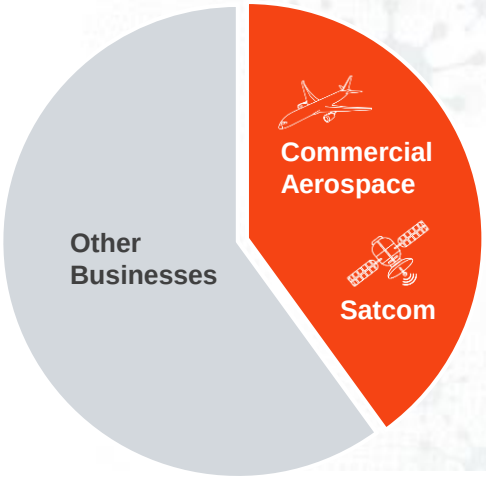




Reflections

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

Acronym: P2F - Passenger-to-Freighter

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

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

MRA



2018-19

Move up the value chain to components / OEM

Newtec

GLOWLINK
Deliver on Promise



2019

Solidify leadership in Satcom Ground Segment

Enhance anti-jam capabilities

TRANSCORE





2021-22

Enhance suite of Smart Mobility road solutions

Access to North America

Reorganised to better achieve strategic objectives

Deepen customer engagement & domain expertise

Commercial



Commercial Aerospace



Urban Solutions



Satcom

Defence & Public Security



Digital Systems and Cyber



Land Systems



Marine



Defence Aerospace

Leverage Group scale, deepen technology and engineering core

- Group Engineering Centre
- Group Technology Office
- Group Corporate Functions and Shared Services



Enhance leadership structure, broaden bench strength

Strategic focus areas



Ride the recovery in Commercial Aerospace

Drive Growth in Smart City

Expand International Defence

Strengthen core businesses

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



Domestic Air Travel recovers
2023*

International Air Travel recovers
2024*

Total Fleet to 2019 levels
2023*

* **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

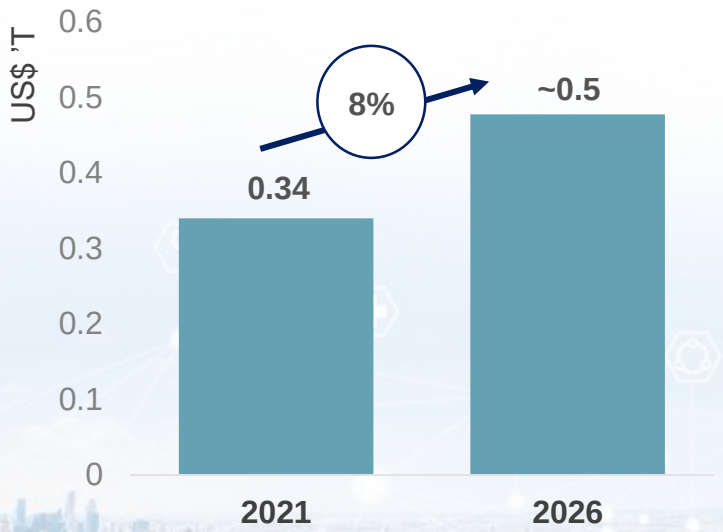
Capture strong demand in Passenger-to-Freighter conversion

Seed the future – leverage autonomous and robotics technologies

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



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

People and Culture

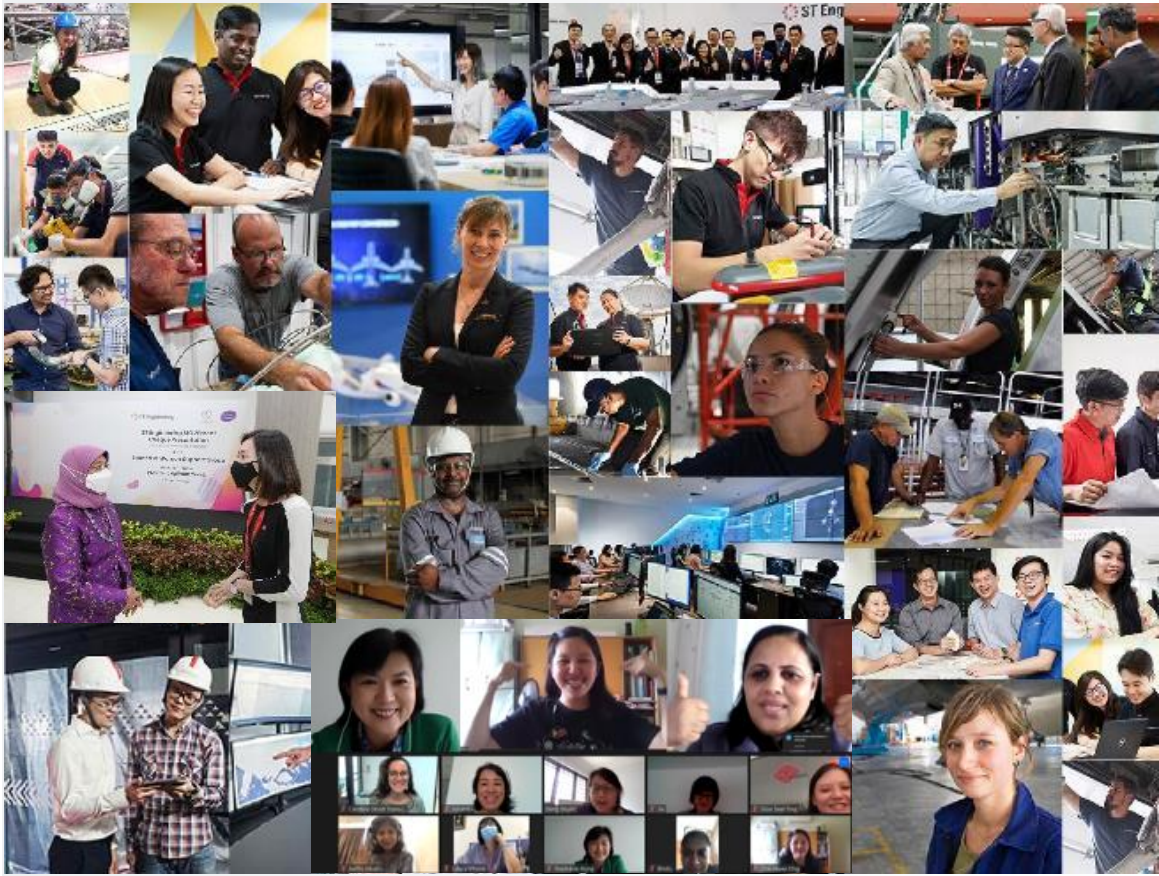
Investing in key assets – Our People

Strengthen technology and engineering core

Grow diverse and global talents

Foster diversity & inclusion

- Women@ST Engineering
- Women Support Group



Strong capacity to fund our journey and deliver dividends

Capacity to Support Plans

Strong underlying performance

Resilient balance sheet

Diverse funding sources



Continuous Cost Productivity

Continuous improvement and innovation



Invest to achieve plans

Invest in core businesses

Invest in R&D



Capacity for Dividends

Strong capacity for dividend payout



Deliver steady ROE above 20%

2026 targets

Annual revenue to grow at 2 to 3 times global GDP growth rate to >$11b[1]



Sustainability-linked revenue to grow to >$3b

Commercial Aerospace to achieve >$3.5b in revenue[2]

Smart City revenue to more than double to $3.5b[1]

Other Core Businesses

Grow Digital Business – Cloud, AI Analytics, Cyber

Net profits to grow in tandem with revenue



 | *Notes: 1. 2020 Base Year; TransCore closes in 1Q2022. 2. Assume Aerospace recovery as per Commercial Aerospace slide 11*

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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



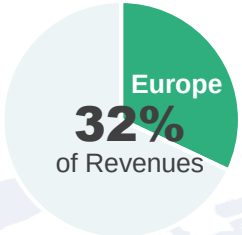
AMERICAS

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

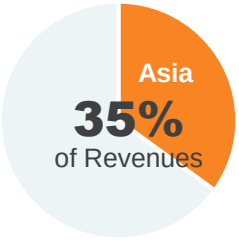


OTHERS

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

Satcom
Dubai – UAE

Singapore – HQ



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

Note: Revenue % reflects customer locations in FY2020 and excludes TransCore

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



Commercial Aerospace

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

Sources: IATA, ICAO, Boeing, Aviation Week
Note: Air travel and cargo demand measured in RPKs and CTKs respectively

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	**43K**
passenger fleet	deliveries

2.6% CAGR

Freighter Fleet Growth

3.4K	**1.7K**
freighter fleet	conversions

Growth in Services



MRO

5.9% CAGR

US$115b by 2030



Leasing

50% aircraft leased in 2021 and growing

Sources: Boeing, Oliver Wyman, Cirium

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

Acronym: P2F - Passenger-to-Freighter

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

Doing Our Part

Use green energy
Solar power, 10MWp capacity

Switch to Electric
Electrification of fuel-based GSE

Improve processes
Reduce energy loss

Enabling Our Customers

Freighter Conversions
Extending aircraft useful life

On-wing Engine Wash
Convenient closed-loop, improve >1% TSFC

Smarter Nacelles
Lighter, quieter and more efficient

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



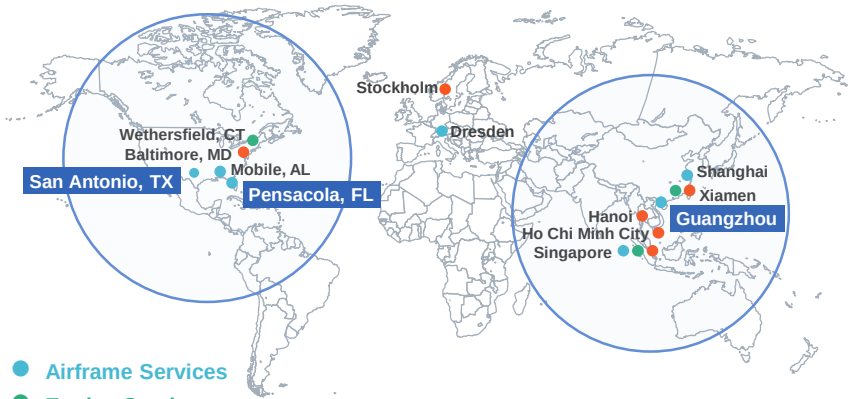
Acronym: P2F – Passenger-to-Freighter

Strengthen OEM and MRO Position

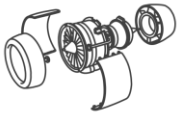
Leveraging global footprint and positioning for future demand

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
JV – Aircraft engines (2011) **Engine ABS** (2020) • Unlock capital, retain asset management	**JV** – commercial aircraft (2016)	**Temasek JV** (2021) • US$600m AUM • Acquire aircraft, P2F, lease, MRO

Double AUM to US$2b by 2026 with securitisation*

Scaling Asset Management Capabilities

Adding value and business synergies
- Asset securitisation
- Focus on mid-life aircraft
- MRO & conversion services

Building track record and capabilities

Deal of the Year (Sunbird ABS)

APAC Structured Finance Issue of the Year (Sunbird ABS)

Operating Lease Deal of the Year (A321P2F Lease to Qantas)

*Target based on base year of 2020. AUM target comprises of approx. ~50 aircraft, ~100 engines

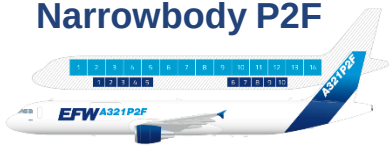
Acronyms: ABS – Asset-backed Securitisation | AUM – Assets Under Management | P2F – Passenger-to-Freighter

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

*Data correct as at 31-Oct-21

Acronyms: EIS – Entry into Service | P2F – Passenger-to-Freighter

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

Looking Ahead

Delivering, Positioning & Investing

Scale Leasing Portfolio



Invest for Growth

Strengthen the Core

Seed the Future



Grow Partnerships and OEM Positioning



Expand Airframe & P2F Capacity



Develop Green Products Portfolio

Acronym: P2F – Passenger-to-Freighter

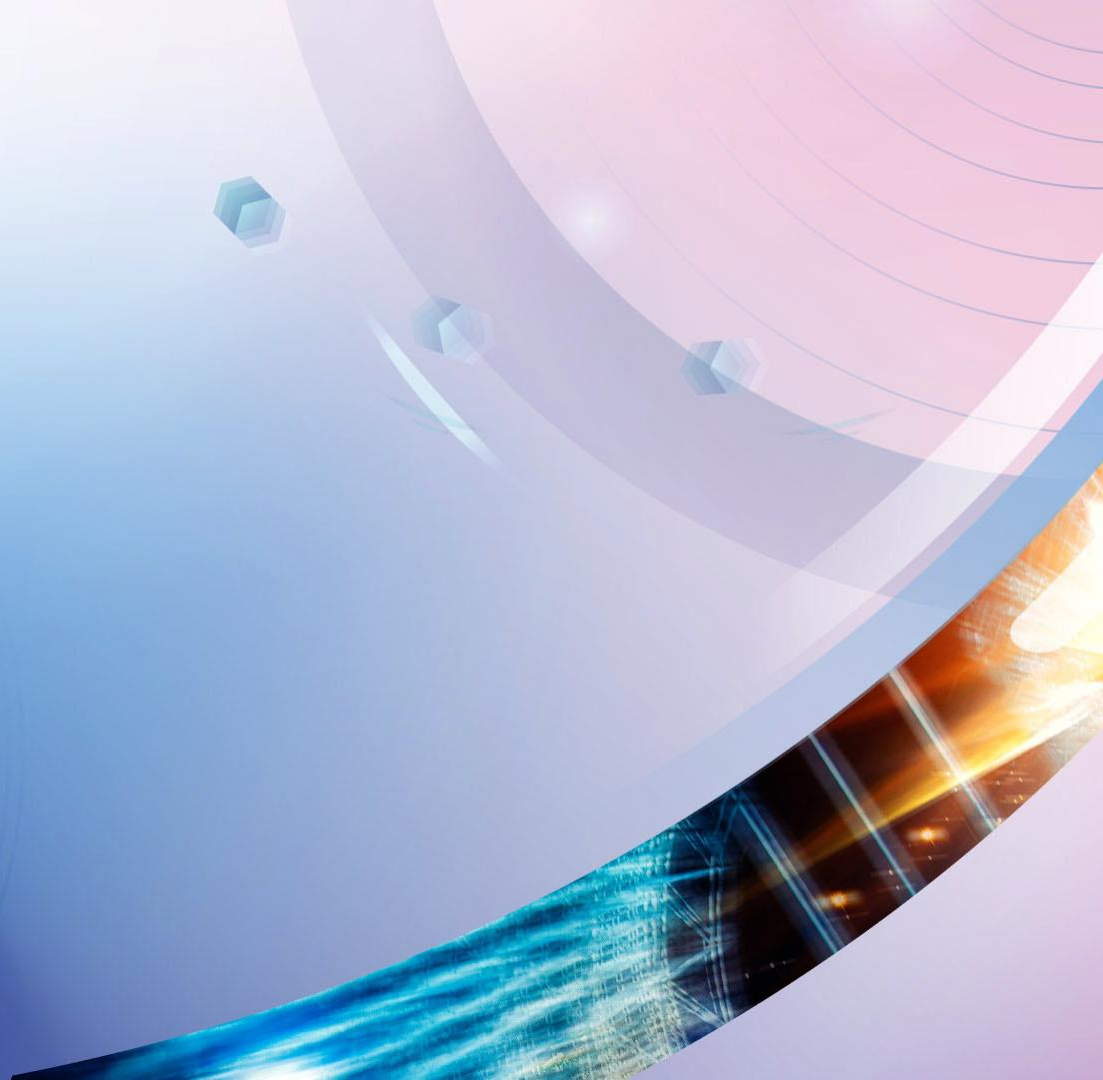
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Smart Cities

Chew Men Leong
President, Urban Solutions

16 November 2021



Our Smart City Vision in 2018



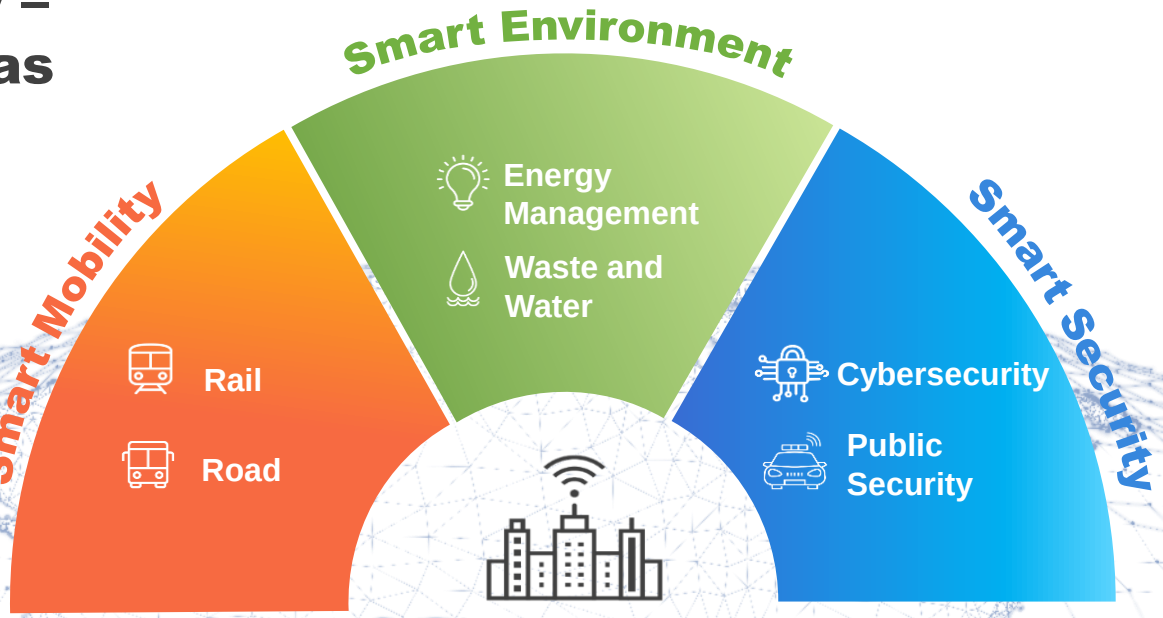


Pursue Growth Opportunities

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 Janerio
>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



01 Urbanisation
- Rise in number of megacities
- Resiliency in energy and water
- Seamless multi-modal mobility

Megacities (Cities with >10m population)

02 Digitalisation
- Sensemaking with AI/DA
- Capacity to adapt & adjust to demand
- Countering the rise in cyber security threats

03 Sustainability
- Growing attention to climate policy
- Need for low-emission mobility
- Buildings & infra aiming for net zero

Relevant Smart City Market Size of ~US$500B[1] in 2026

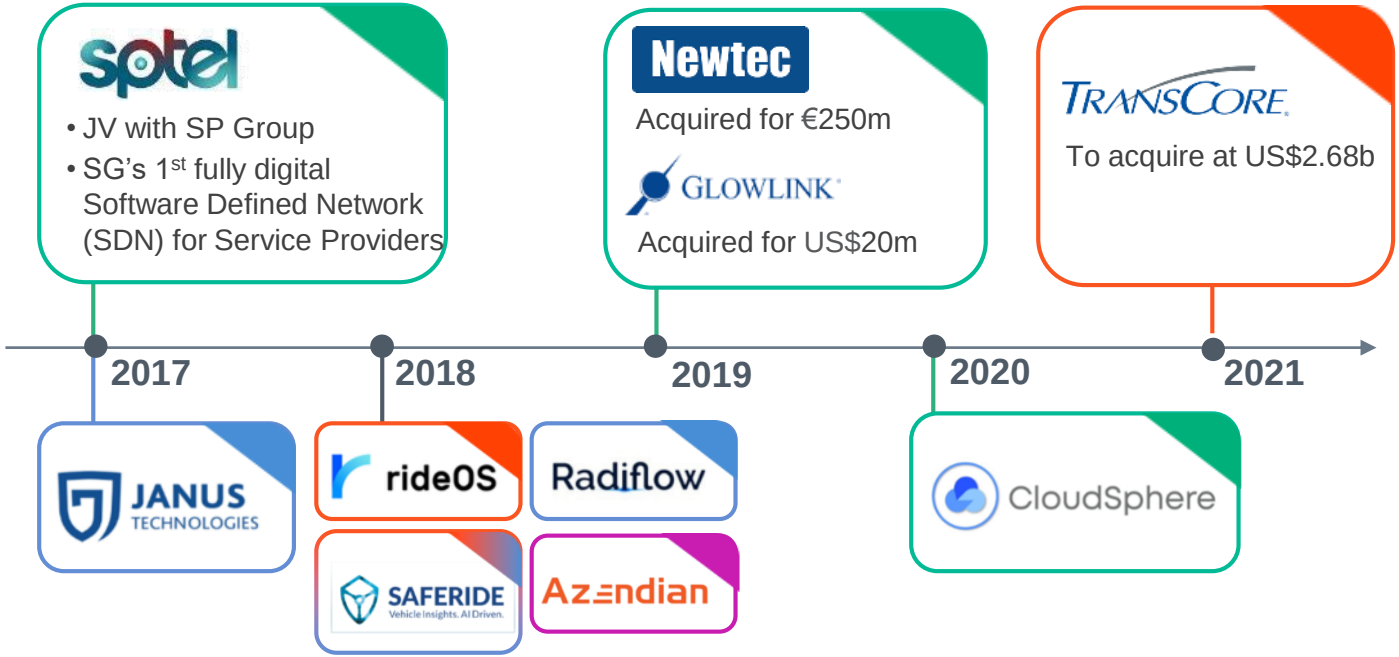
[1] Markets we have solutions for (specific segments within Mobility, Environment, Security)

Source: LEK Consulting, Homeland Security Corp Research, Northeast Research, KBV Research, ST Engineering in-house analysis, Deloitte Smart City Solution Centre

Accelerating growth with new capabilities

Acquisitions & JV
Building new capabilities

Venture Investments
Nurture strategic capabilities in high-growth areas



Domains: Mobility | Cybersecurity | Digital Connectivity & Cloud | Data Analytics

Accelerating growth with new capabilities

Lines of Business

- Rail and Bus Electronics
- Road Traffic Management
- Autonomous Vehicles
- Smart Parking

Services

- C3 & Smart Metro System
- Asset Management System
- Fleet Telematics

Technology Enablers

- Communications
- Cloud
- Maps
- Navigation/ Journey Planner
- Data Aggregator

Growth Areas driven by Digitalisation

- Congestion Management
- Digital Mobility Payments

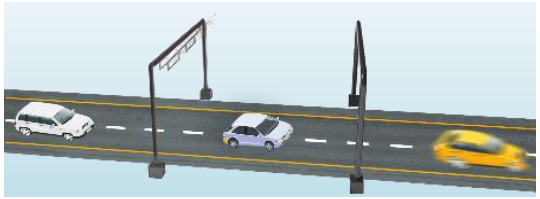
Supports drive for Sustainable Transportation

ST Engineering to acquire TransCore for US$2.68b

Creating a Smart Mobility market leader and accelerating Smart City growth

TRANSCORE

- 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



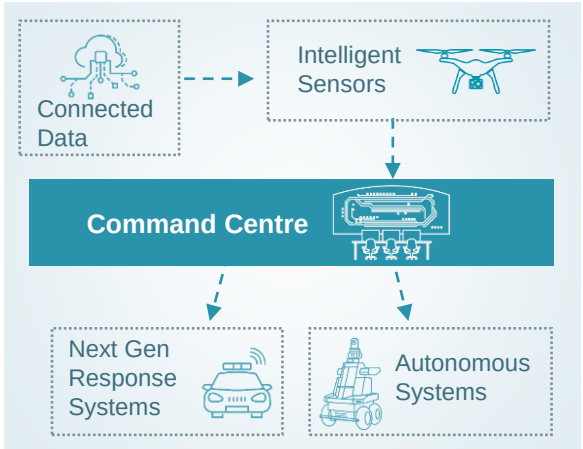
Smart Security solutions for Smart Cities

Integrated Security Management Platform



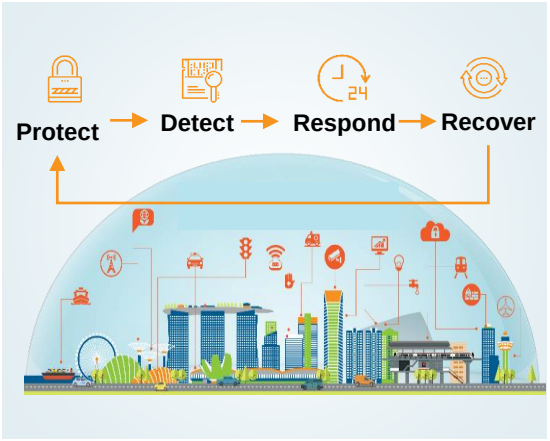
- Platform for situational awareness
- Scalable; allows centralised or distributed controls

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 O3b 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 2030[1] (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

 Source: [1]NSR

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

ST Engineering

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

Adopt Global Outlook, Local Implementation

Integrate Global Workforce & Talents

Leverage Group Engineering & Tech capabilities

Provide Thought Leadership on Smart Cities

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



INVESTOR DAY 2021

Sustainability

Cheryl Chan
Group Chief Strategy and Sustainability Officer

16 November 2021

Global trends shaping the role of sustainability in businesses



Global Warming



Energy Transition



Resource Scarcity



Urbanisation

Business Implications

Increase decarbonisation effort

Develop energy efficient infrastructures

Leverage technology to improve response

Business continuity

Our approach to sustainability-linked revenue



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



Sustainability-linked revenue

Decarbonisation

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

Digital Solutions

- Robotics & Automation
- Connectivity
- Training & Simulation

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

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

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



Smart Maintenance
Increase ship availability and maintenance flexibility

Autonomous Operations
Reduce manpower and physical loading needs

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

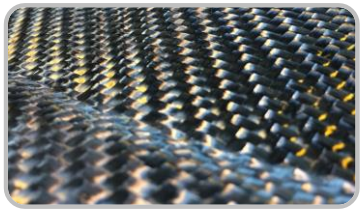


- **Significant reduction in GHG emissions** versus live training
- Value-add **training flexibility** regardless of weather conditions
- **Advanced simulation systems** capable of modelling and simulating large scale real-life scenarios

Enabling Our Customers: New Opportunities

Exploring new opportunities in sustainability

Materials





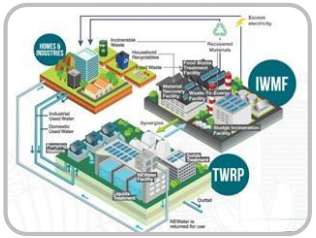
Products





System Solutions





Doing Our Part

Manage our environmental footprint and build trust with our community

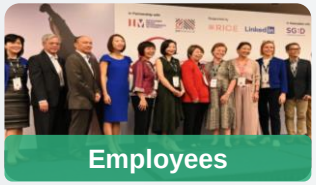
Doing our part

Environment

2010 (Baseline)	2020 (Current)	2030 (Target)
164 $ktCO_2e$	117 $ktCO_2e$	82 $ktCO_2e$

↓ 50% GHG

Social







Governance

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

GRI Empowering Sustainable Decisions

SUSTAINABLE DEVELOPMENT GOALS

SASB SUSTAINABILITY ACCOUNTING STANDARDS BOARD



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



ST Engineering

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

Digital Systems

- Digital Solutions & Services
- Cloud Solutions & Services
- Training & Simulation
- Unmanned Systems

Cyber

- Cyber Products
- Cybersecurity Solutions & Services

Land Systems

- Platform & MRO Services
- Weapon Systems
- Robotics
- Munitions

Marine

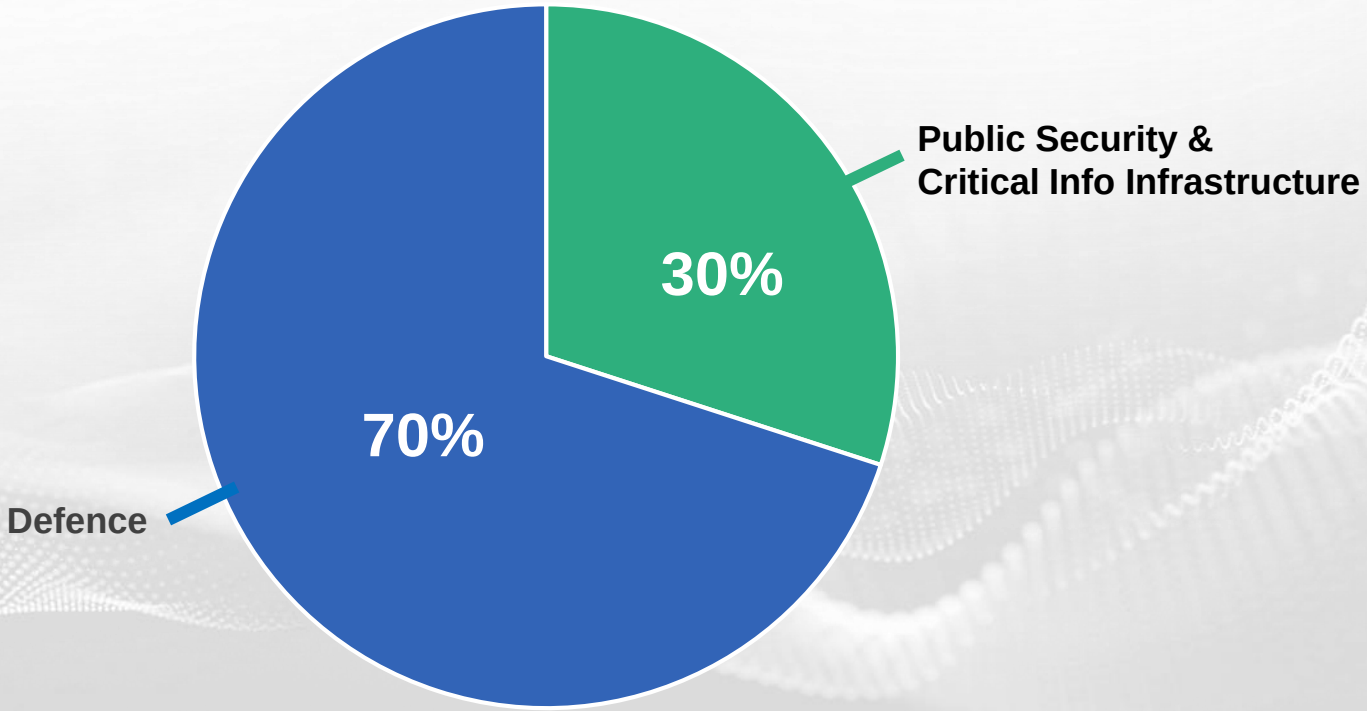
- Shipbuilding, Repair & MRO
- Environmental Services

Defence Aerospace

- Engineering Solutions
- Aircraft MRO

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

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)

Attractive Addressable Market

~ US$5b

Over next 5 years

Growing International Defence Business

ST Engineering

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



Platform Electronics

Vecom



5G, IoT solutions

Autonomous Technology



Unmanned Surface Vessel



Robotics

Sustainability



ExtremV (HADR* Ops)



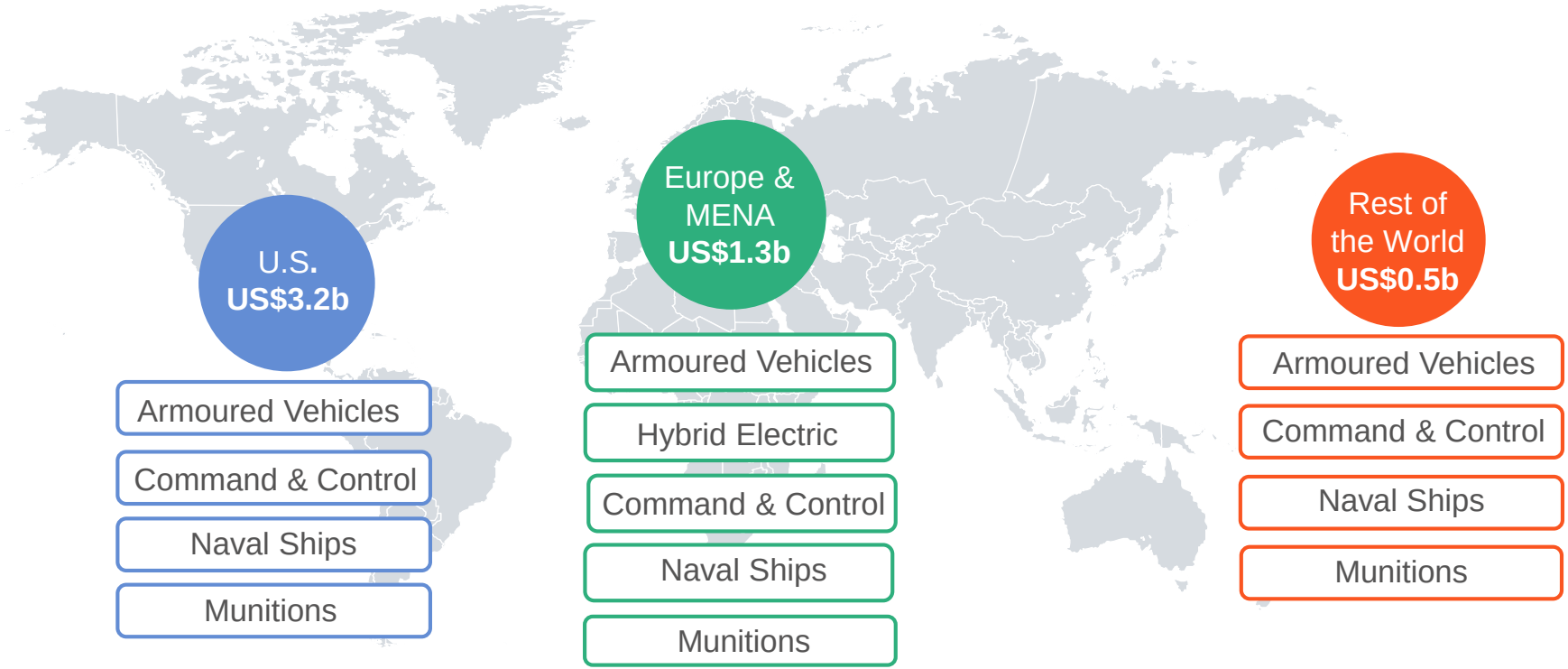
Hybrid Drive



Training Simulator

*Humanitarian Assistance Disaster Relief

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









REALISING SUSTAINABILITY



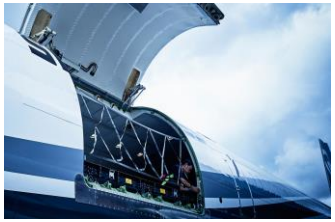




DRIVING BUSINESS GROWTH















AGILE INNOVATION







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

4 – 5% of Revenue
Annual R&D spending, including external funding

> 75% of R&D
on digital technologies

~ 16,000 Engineers
& technology talents globally

Positioned for Future Growth

Build New Capabilities

Leverage R&D Ecosystem

Digitalisation

R&D Activities and Accounting Classifications

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

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



Strong Technology, Engineering & Innovation Community

Drive Synergy & Deepen Capability Building

- Business-driven Product Development
- Core Engineering Capabilities
- Strategic Technology Centres

Broaden Outreach to Leverage External Capabilities

- Research Translation @ ST Engineering
- ST Engineering Ventures & Open Innovation

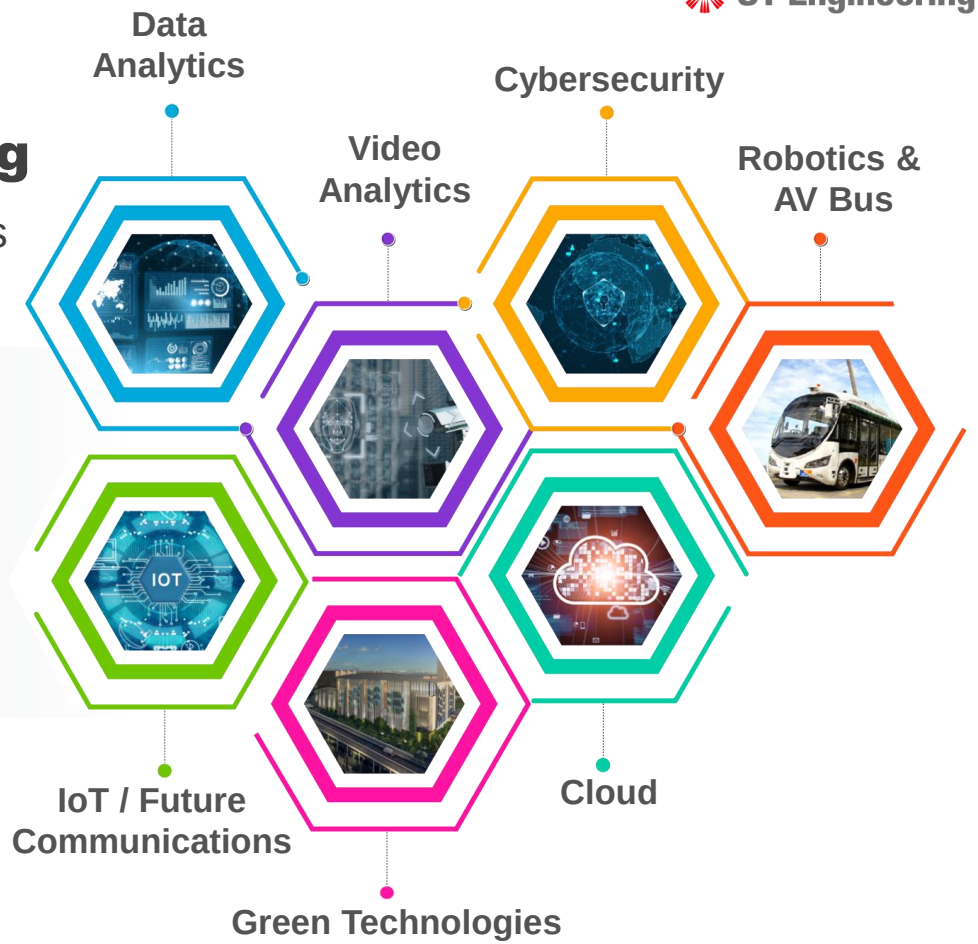
Committed to Digitalisation

Technology & Innovation

Drive Synergy and Deepen Capability Building

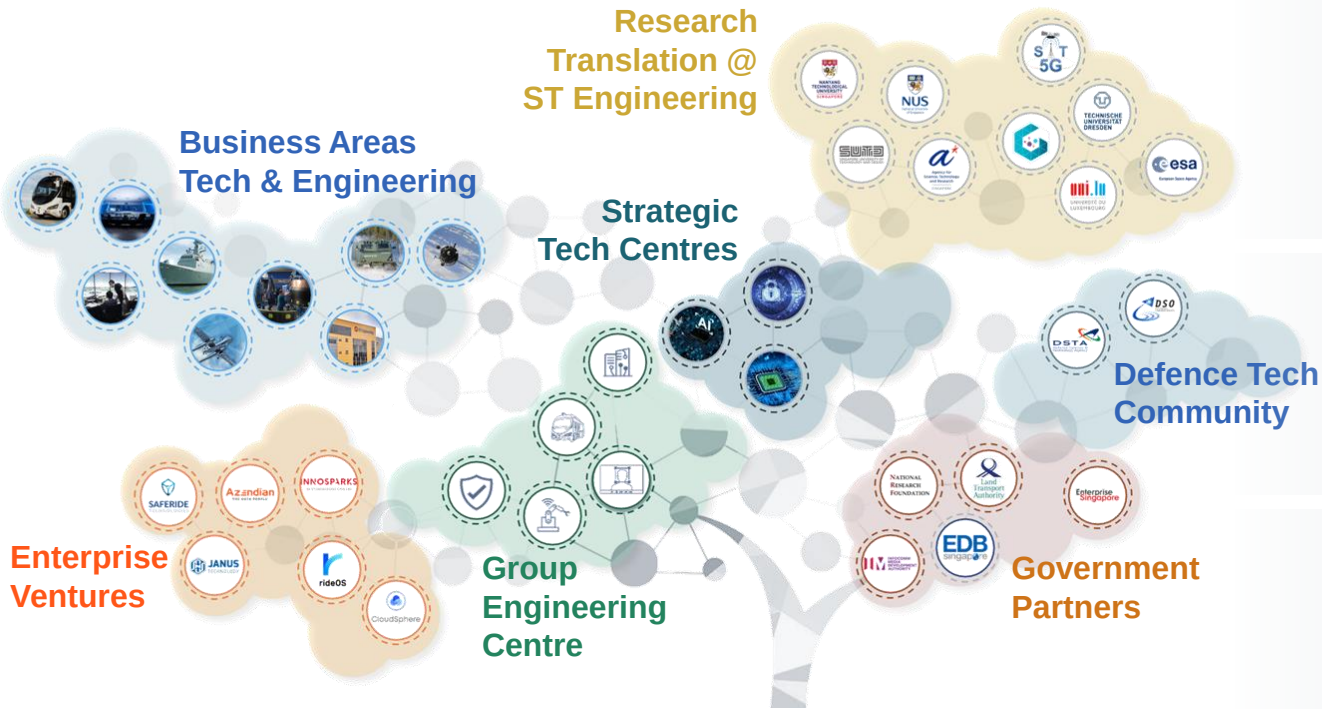
Capabilities to drive Business Outcomes

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





radiflow
Secure your Assets

JANUS TECHNOLOGIES

Transforming Businesses with Cloud & Data



CloudSphere

Azendian
THE DATA PEOPLE

Technology and Innovation for Sustainable Business Growth









REALISING SUSTAINABILITY



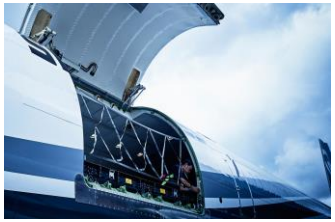




DRIVING BUSINESS GROWTH















AGILE INNOVATION







ST Engineering

INVESTOR DAY 2021

Funding Capacity for Growth

Cedric Foo
Group Chief Financial Officer

16 November 2021

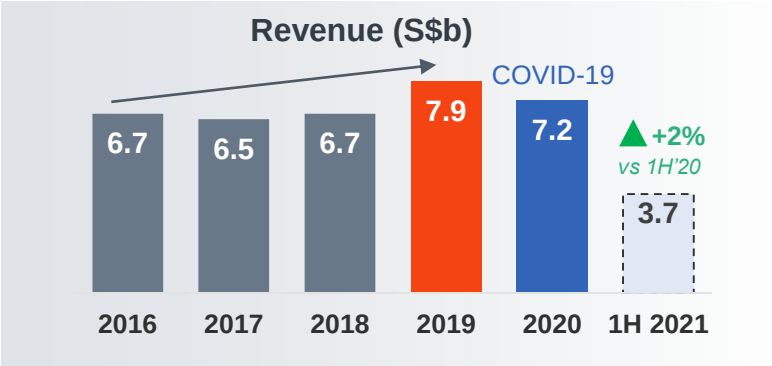


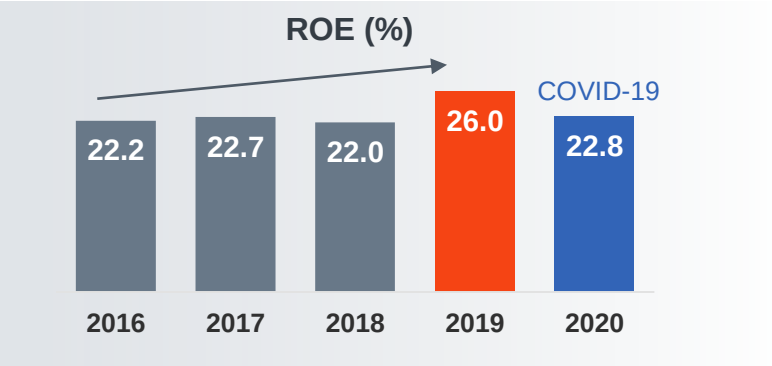
Recap

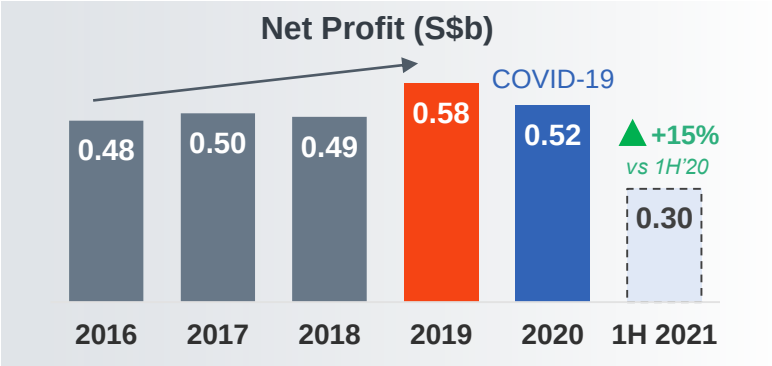
2018 Investor Day Focus Growth Areas

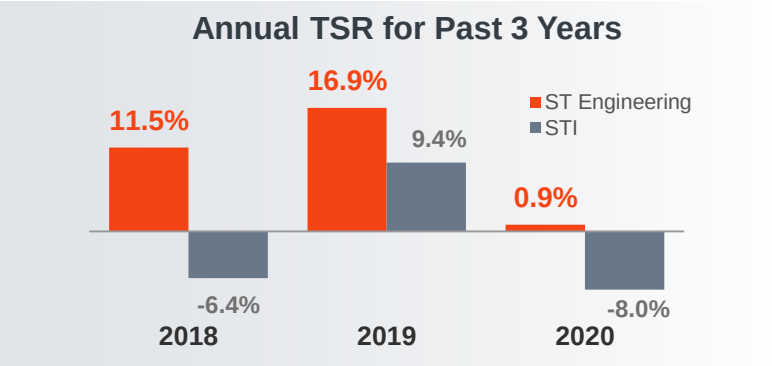


Performing on track in 2019 before COVID-19 hit





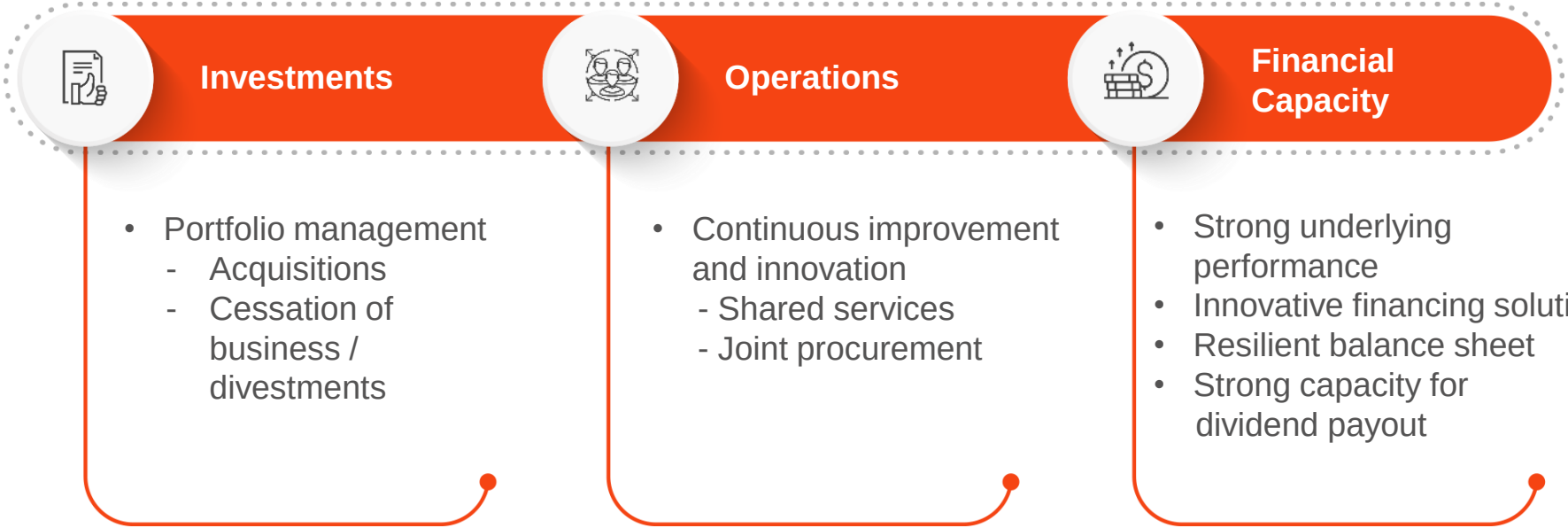




Update on 2018 Investor Day Ambitions

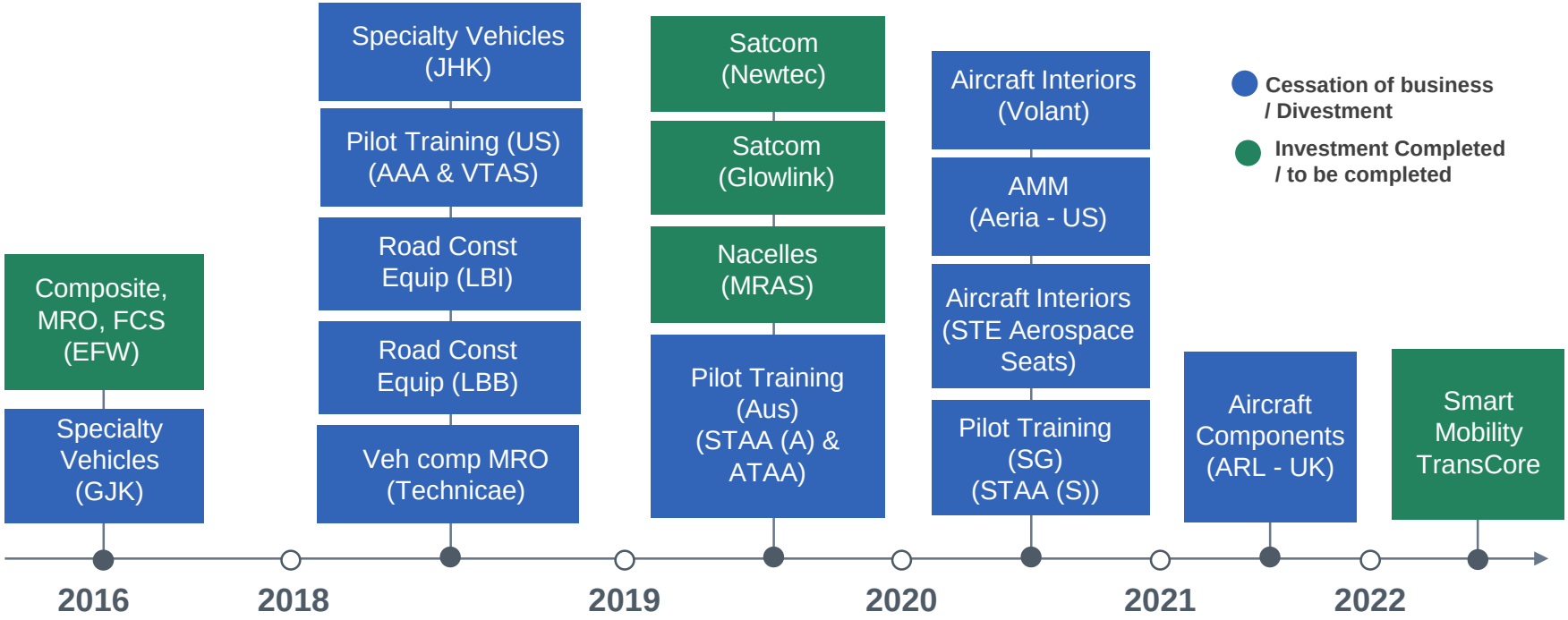
Our 2022 Ambitions	Achievement timeline
Two-thirds of our revenue growth will be from global markets	**On Target (By 2022)**
Smart City revenue of **S$1b** to more than double by 2022	**~1 year delay**
Core and other businesses CAGR **2 to 3 times** global GDP growth rate over the next 5 years	**~1 year delay**
Net profits to grow in tandem with revenues	**~1-2 year delay**

Our Journey


Investments
Operations
Financial Capacity
• Portfolio management
- Acquisitions
- Cessation of business / divestments
• Continuous improvement and innovation
- Shared services
- Joint procurement
• Strong underlying performance
• Innovative financing solutions
• Resilient balance sheet
• Strong capacity for dividend payout

Our Journey

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

2021/22

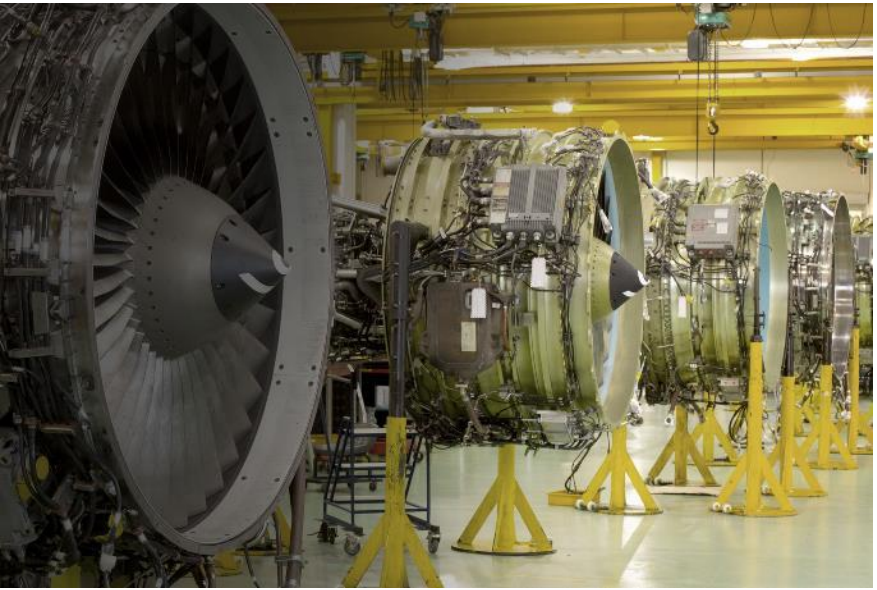
Acquire market leader in tolling

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

Continuous Improvement and Innovation

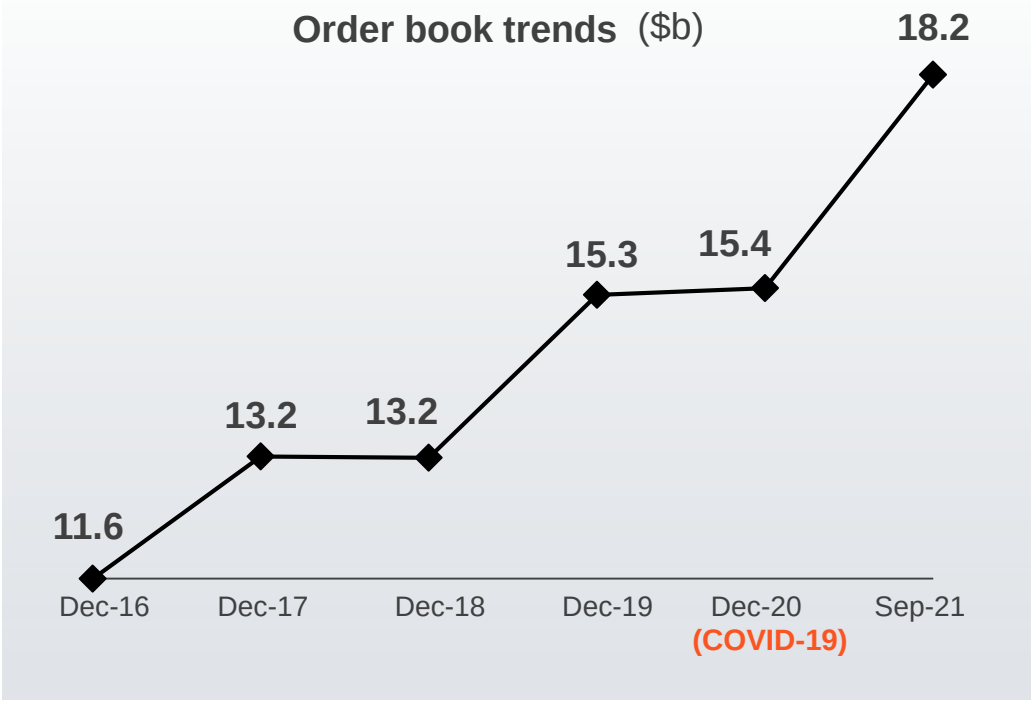


- Shared services centre
- Maintaining focus on procurement savings
- Other productivity and process improvement

Strong Underlying Performance

Robust Order Book





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&P[1]
- Aaa (outlook negative) by Moody's[1]

[1]*As 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 >$11b[1]



Sustainability-linked revenue to grow to >$3b

Commercial Aerospace to achieve >$3.5b in revenue[2]

Smart City revenue to more than double to $3.5b[1]

Other Core Businesses

Grow Digital Business – Cloud, AI Analytics, Cyber

Net profits to grow in tandem with revenue



 Notes: 1. 2020 Base Year; TransCore closes in 1Q2022. 2. Assume Aerospace recovery as per Commercial Aerospace slide 11

ST Engineering

Thank you

