

**INVESTOR DAY 2021** 

# **Smart Cities**

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# **Our Smart City Vision in 2018**



**Pursue Growth Opportunities** 

Needs for Smart Cities enhanced by growing focus on Sustainability



**Smart Cities** 

**Smart City –** smart Environmens **Focus Areas Energy** Management Waste and Water **E** Cybersecurity Rail Public Road **Security** 

Over 700 projects in more than 130 cities







### 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



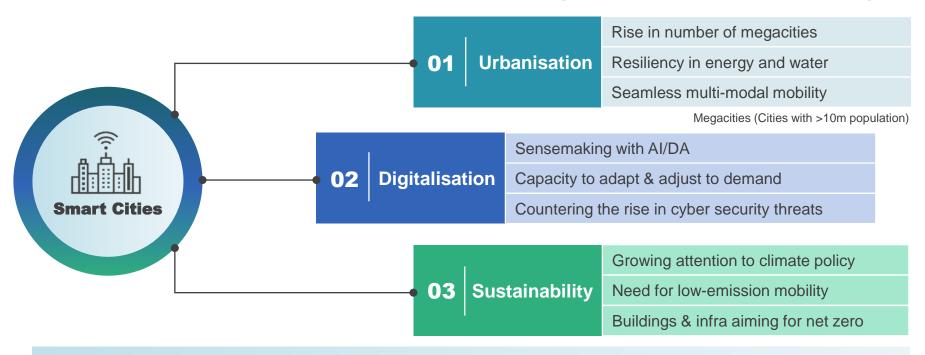
Autonomous Bus Completed 3-mth commercial trial at Jurong Island & Science Park 2



Overseas Customer
Development of next generation of
Emergency Response System



# Urbanisation continues as COVID-19 drives digitalisation & sustainability



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

<sup>&</sup>lt;sup>1</sup> 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

Newtec **Acquisitions & JV** TRANSCORE. Building new Acquired for €250m • JV with SP Group capabilities To acquire at US\$2.68b SG's 1st fully digital GLOWLINK' Software Defined Network (SDN) for Service Providers Acquired for US\$20m 2021 2017 2018 2019 2020 Venture Investments ride0S Radiflow Nurture strategic **JANUS** CloudSphere capabilities in highgrowth areas Az*i*ndian SAFERIDE Vehicle Insights, Al Driven.

**Domains:** 

**Mobility** 

Cybersecurity

**Digital Connectivity & Cloud** 

**Data Analytics** 



# Accelerating growth with new capabilities

#### **Lines of Business**



Rail and Bus **Electronics** 



**Autonomous Vehicles** 



**Road Traffic Management** 



**Smart Parking** 

### **Services**



C3 & Smart **Metro System** 



**Asset Management System** 



Fleet **Telematics**  **Growth Areas driven** by Digitalisation



**Digital Mobility** Congestion Management **Payments** 

# **Technology Enablers**



**Communications** 



Cloud



Maps



Navigation/ **Journey Planner** 



Aggregator

for Sustainable **Transportation** 

**Supports drive** 

### Positioning for Smart Mobility



# 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



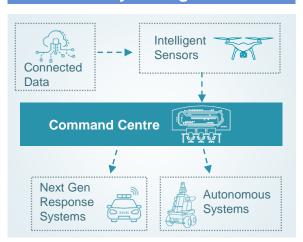
# **Smart Security solutions for Smart Cities**

# Integrated Security Management Platform



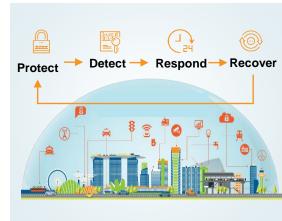
- Platform for situational awareness
- Scalable; allows centralised or distributed controls

# 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

### Positioning for Smart Digital Connectivity



# **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











2 Best-in-class Satcom Solutions







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** 

#### ST Engineering – Smart City Focus

# **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, Al 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** 



