



Changing the way we commute

Faster, quieter and more fuel-efficient transportation could be an everyday part of life for commuters in the future. Magnetic levitation technology is already in use for electromagnetic suspension system trains. Soon, road safety could be assured by using magnetic sensors to guide vehicles along GPS determined routes.

Nurturing a commercial automotive business that builds on its defence experience

ST Kinetics continues to leverage dual use technologies and investments in various technology companies to develop cost effective solutions for commercial and defence applications.

ST Kinetics was formed in 2000 after the acquisition of Chartered Industries of Singapore by ST Automotive, resulting in a larger and more comprehensive land systems arm for the Group. ST Kinetics' headquarters and major facilities are in Singapore, while its commercial operations are in China and the US.

ST Kinetics provides integrated systems, specialty vehicles and related services for various specialised applications in the defence, government and commercial business sectors. This includes design and development, systems integration, production, operations and support and life cycle management. It is organised into two groups:

Integrated Systems and Services (ISS) Group

The ISS group is primarily responsible for the sector's defence business and supports the Singapore Armed Forces (SAF) in its quest for a leaner and more potent 3G army. Its capabilities include multi role platform and weapon system design and engineering – exemplified in cutting edge products such as the Bronco all terrain tracked carrier, 120mm super rapid advanced



(previous page) ST Kinetics' Pegasus lightweight howitzer offers unprecedented mobility coupled with enhanced lethality, capability and performance for the Singapore Army

mortar system, the 40mm air bursting munition system and the Pegasus lightweight heli-portable 155mm howitzer. It also offers system integration, maintenance, repair and overhaul and other lifecycle management services for a wide range of military platforms, related subsystems and components.

From its roots in conventional defence equipment, ST Kinetics has embarked on new technologies that emphasise smarter, network-centric solutions to meet the needs of modern armed forces. Today, its capabilities extend from remote operations to integrated surveillance and vetronics systems and state-of-the-art protection solutions for multi role platforms, as well as lighter weapon systems and advanced munitions.

ST Kinetics prides itself on its ability to leverage dual use technologies and capabilities for both defence and commercial applications. It has invested in various technology companies to tap available intellectual properties to develop exacting solutions for both military and commercial applications.

The global shift in homeland security needs has presented new opportunities for ST Kinetics to embark on R&D and collaborate with industry allies to develop and market solutions for homeland security applications. Building on its experience with ordnance products, the ISS group now offers expertise in blast mitigation and protection solutions, and surveillance as well as emergency response equipment from mobile crash barriers

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to ambulances and HAZMAT (hazardous materials) support vehicles. Its subsidiary, Chartered Ammunition Industries, was renamed Advanced Material Engineering in March to reflect its increased product and service offerings to meet new demands for homeland security and protective materials.

In defence exports, the ISS group continued to secure recurring sales in existing markets and is actively involved in major vehicle programmes for potential customers around the world. Building on its success in Singapore, the ISS group is also exploring new markets for its homeland security and emergency response products.

Specialty Vehicles and Services (SVS) Group

The SVS group is focused on commercial specialty vehicles and automotive services. While it continues to grow its automotive services in Singapore, it has also taken aggressive steps to venture into commercial vehicle markets overseas.

In Beijing, its Joint Venture (JV) company, Beijing Zhonghuan



Kinetics Heavy Vehicles (BZK), designs and produces specialised heavy commercial and industrial vehicles such as off-road dump trucks, bulk cement tankers, concrete mixers and terminal port tractors. In the short time since its conception, BZK has obtained the coveted ISO 9002:2000 quality certification and also expanded its marketing network outside of China. In Guiyang, it holds a majority stake in Guizhou Jonyang Kinetics (GJK), which designs, manufactures and distributes construction excavators. BZK and GJK will work together to secure a foothold in the construction and industrial vehicle market in China.

In Hangzhou and Guangzhou, ST Kinetics' JV automotive services companies under STAR Automotive Centre commenced operations in July and December respectively. The centres have been strategically located to service the provinces of Guangdong, Jiangsu and Zhejiang, and enable ST Kinetics to export its service expertise as a one stop automotive centre.

The newly acquired US-based Specialized Vehicles Corporation (SVC) is ST Kinetics' maiden entry into the North American commercial specialty vehicle market. Through its two divisions, Hackney and Kidron, it services a customer base that includes major fleet and truck leasing operators, food service providers, beer and soft drink distributors, as well as municipal authorities such as the West Virginia Office of Emergency Services and the New York City Fire Department.

ST Kinetics will continue to embrace new opportunities and strengthen core capabilities to stay relevant to its customers. In particular, it will commit resources to grow its commercial specialty vehicle and related business areas.

The SVS group will leverage the experience of ST Kinetics in the defence and commercial automotive industry and its growing network with ongoing efforts in China and the US to realise its vision of becoming a significant player in the global specialty vehicle market. By working together with its overseas ventures, ST Kinetics can harness additional value through economies of scale, better material sourcing and lower cost Asian components; sharing of intellectual property and engineering resources to widen the range of products; and improved efficiencies in manufacturing, distribution and support services of one another's products.

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(left and middle) SVC's wide range of specialised truck bodies and trailers will boost ST Kinetics' strategy to become a global specialty vehicle player

(right) ST Kinetics established STAR's flagship automotive centre in the city of Hangzhou, China – the first of two locations opened during the year

Performance of the Land Systems Sector

Half Yearly Performance

Compared to 1H2005, 2H2005 turnover increased by 13% or \$37m to \$319m. This was due mainly to the higher delivery of Primus and munitions sales as well as specialty vehicles sales from new subsidiaries SVC and GJK, partially offset by the absence of Bionix delivery.

Compared to 1H2005, 2H2005 PBT decreased by 49% or \$21.4m to \$21.8m despite higher turnover. This was due mainly to different product mix, higher operating expenses and share of lower profits from an associated company, CityCab. Additionally, there was a gain on disposal of associated company, Solectria, in exchange for shares in Azure Dynamics Corporation in 1H2005.

Full Year Performance

Land Systems sector's FY2005 turnover of \$600m was marginally higher than that of FY2004 by 1% or \$9m. Higher turnover was recorded in the Automotive (Auto) and Services, Trading & Others (S&T) business groups, but these were largely offset by lower turnover of the Munitions & Weapon (M&W) business group. The Auto business group's higher turnover was due mainly to higher delivery of Bionix and specialty vehicles sales from the new subsidiaries SVC and GJK, but these were partially offset by lower delivery of Bronco,

while the higher turnover of the S&T business group was mainly attributable to higher engine and trading sales. The M&W business group's lower turnover was the result of lower munitions sales.

Compared to FY2004, Land Systems sector's PBT of \$65m for FY2005 was lower by 9% or \$6.5m. The lower PBT was mainly due to lower PBT of the S&T business group, but this was partially offset by higher PBT of the Auto business group. Despite higher turnover, the S&T business group was impacted by the share of lower profit from CityCab arising from increased competition. The Auto business group's higher profit mainly came from higher turnover as well as gain on disposal of Solectria, in exchange for shares in Azure Dynamics Corporation, but these were partially offset by higher operating expenses.

Major Acquisitions

In October, ST Engineering, through Vision Technologies Land Systems, acquired Specialized Vehicles Corporation for approximately US\$52.5m (\$87m). The newly acquired entity, to be renamed VT Specialized Vehicles Corporation, is a leading manufacturer of specialised truck bodies and trailers for food and beverage distributors and emergency rescue departments. The acquisition underscores the Group's strategy to grow the commercial automotive business of its Land Systems sector and to become a global specialty vehicle player.

In November, through its wholly-owned subsidiary, Autonomous Technology, ST Kinetics entered into an agreement with Guiyang City Industrial Investment Holding Corporation (GIIHC) to set up a JV company. Named Guizhou Jonyang Kinetics, the new JV is based in Guiyang, China, and has a total registered capital of US\$20m (approximately \$33m). ST Kinetics holds the majority equity interest of 60%, while GIIHC holds the balance of 40%. GJK designs, manufactures and distributes a range of excavators, specialty vehicles and engineering products for construction, mining and related industries, as well as provides after sales service support. Together with BZK in Beijing, and SVC in the US, GJK will extend ST Kinetics' range of products, capabilities and opportunities as a global specialty vehicle designer and manufacturer.



(left) GJK is ST Kinetics' latest JV to further its commercial automotive business in China

(middle) The Bronco continues to attract interest from many overseas customers

(right) The Spider light strike vehicle does Singapore proud as a finalist in the prestigious US DARPA Grand Challenge

Major Projects

2005 saw the contractual delivery of major projects such as the Bronco, Bionix, SAR 21, Primus, Pegasus and munitions products to the SAF.

In March, ST Kinetics completed a developmental feasibility study for the Finnish Defence Force's (FDF) Future All Terrain Vehicle (FATV) programme. This is the first of several evaluation phases to help the FDF decide on its future needs. As part of the evaluation, the Bronco was subjected to several months of mobility trials under Finland's harsh arctic conditions. A request for proposal for a prototype vehicle is expected soon. The FATV programme was initiated to find a suitable replacement for the current FDF fleet of articulated vehicles. ST Kinetics has also completed user trials for the Bronco in another European country and expects to respond to a further request for proposal before the award announcement next year.

In March, ST Kinetics launched a series of homeland security products and solutions at the inaugural Global Security Asia exhibition in Singapore. Cutting edge solutions, ranging from blast mitigation to protection and surveillance systems as well as less-than-lethal solutions and emergency response vehicles, were displayed.

In April and July, through its STAR Automotive Centre in Singapore, ST Kinetics secured taxi fleet maintenance contracts from Smart Automobile and SMRT Corporation respectively.

In July, STAR Automotive Centre commenced operations in Hangzhou – a significant milestone that marked STAR's debut and the introduction of Singapore's first independent automotive repair centre in China. This was shortly followed by the commencement of a second operation in Guangzhou in December.

In October, ST Kinetics' Spider light strike vehicle was named one of 23 finalists in the prestigious US Defense Advanced Research Projects Agency (DARPA) Grand Challenge. Although the Spider did not complete the gruelling 175-mile course, it proved its exceptional mobility under the competition's challenging conditions.

Also in October, the Pegasus 155mm 39 calibre lightweight howitzer, designed and manufactured by ST Kinetics, was commissioned into service with the Singapore Artillery by the Defence Minister. The Pegasus offers an unprecedented combination of firepower and mobility for future light forces. It is also the world's first and only 155mm 39 calibre howitzer with a self-propelled capability that can be transported in CH47 aircraft together with its munitions.