



ASTRI, HKT, Huawei and Qualcomm Technologies work together to build a smart mobility system for Hong Kong using Cellular-V2X technologies

HONG KONG, March 15, 2017 – A Smart Mobility Consortium (the Consortium) on Cellular-Vehicle-to-Everything (C-V2X) technologies has been formed by the Hong Kong Applied Science and Technology Research Institute (ASTRI), HKT Limited (SEHK: 6823) (HKT), Huawei Technologies Co. Limited (Huawei) and Qualcomm Technologies, Inc. (Qualcomm Technologies), a subsidiary of Qualcomm Incorporated.

An MoU on the collaboration, which can potentially revolutionise the transportation sector in Hong Kong, was today signed by Dr. Frank Tong Fuk-kay, CEO of ASTRI, Mr. Alex Arena, Group Managing Director of HKT, Mr. Veni Shone, President TDD and LTE-V Solutions of Huawei Technologies, and Mr. Mantosh Malhotra, Senior Director, Business Development of Qualcomm Technologies. Dr. Jolly Wong, Chief Telecommunications Engineer, Communications Branch, Information Systems Wing of Hong Kong Police Force also attended the ceremony.

As one of the most connected cities in the world and a major global financial hub, Hong Kong is an ideal place to pioneer the implementation of smart mobility system and showcase for the improvement of road safety. The vibrancy of Hong Kong's transport sector is evident from the 10 million-plus passenger journeys in Hong Kong's public and private transport system every day. The city's robust telecommunications infrastructure, as well as its high-adoption rate of digital technologies, offer a strong foundation for businesses, entrepreneurs and innovators to unleash the immense potential of smart mobility. Supporting the Government's endeavour to transform Hong Kong into a Smart City, the collective strengths of ASTRI, HKT, Huawei and Qualcomm Technologies seek to utilise the power of C-V2X technologies to enhance the Smart Mobility pillar with Safe Mobility element beyond the existing aims of Efficient Mobility, Efficient Logistics, Barrier-Free Community and Adoption of Intelligent Technologies.

C-V2X technologies, based upon the 3rd Generation Partnership Project (3GPP) release 14 specification with evolution path towards 5G, operates through both network-based communications on commercial cellular infrastructure, as well as direct communications over the 5.9GHz band¹.

A C-V2X powered smart mobility system not only allows vehicles to connect to the cloud, but also enables vehicles to communicate with one another as well as with pedestrians, and to synchronize with infrastructure. With C-V2X, "co-operative awareness" between vehicles, pedestrians and the road environment makes it possible to realize mobility safety as well as autonomous driving. Furthermore, it can also support law enforcers, traffic and urban management institutions, and transportation companies to plan and monitor the safety and efficiency of traffic movements.

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In Hong Kong, over 60% of all road accidents involve vehicle-to-vehicle (V2V) or vehicle-to-pedestrian (V2P) collision². Over 40% of cyclist casualties involve accidents on or around carriageways³. Some of the most common contributors to traffic accidents include stationary or parked vehicles on busy roads, driving too close to the vehicle in front, inappropriate changing of lanes, careless cycling, jaywalking by pedestrians, and drivers losing control of their vehicles⁴.

The Consortium aims to use C-V2X to introduce a series of Intelligent Transport Services (ITS) in Hong Kong including a warning mechanism for collision and control, assistance for cruise control and parking, and alert systems for speed and lane violations. In addition, it will help drivers and traffic administrators to identify potential loopholes and risks in aspects like road intersections, pedestrian crossings and traffic queues.

The Consortium plans to work alongside the Government, automobile industry, and other relevant industry stakeholders to make this happen. Upon successful completion and rollout, the project is expected to lead to further opportunities for related sectors including shipment, ridesharing, home-delivery, insurance, infotainment, and mobile healthcare, etc.

Mr. Wong Ming-yam, Chairman of ASTRI, said, "Hong Kong is a well-connected city with good infrastructure. If we complement these strengths with the latest innovation in science and technology, Hong Kong can become one of the most sophisticated and advanced smart cities in the world. This Smart Mobility Consortium is a giant step in that leap. ASTRI is developing state-of-the-art applications, platforms and prototypes which can benefit not just Hong Kong, but potentially other cities in this region too. We, as the SAR's largest technological R&D institution, are partnering with three eminent organisations to bring revolutionary changes to the way we manage our city's traffic."

Mr. Alex Arena, Group Managing Director of HKT, said, "Smart Mobility is the key to transform urban transport in a Smart City. With the application of Cellular-V2X technology, assisted driving alerts vehicles and pedestrians in advance about emergency traffic conditions, which will make the roads safer and Hong Kong a better living city. And with the emerging 5G technology, autonomous driving will revolutionize the experience of transport in Hong Kong. Being the leading network operator in Hong Kong, we are glad to initiate the Smart Mobility Consortium with key industry partners in support of the Government's Smart City policy to build a smart mobility system in Hong Kong."

Mr. Veni Shone, President of TDD Product Line and Acting President of Cellular V2X Solutions, Huawei Technologies Co., Ltd., said, "It is a significant moment that we join this Smart Mobility Consortium together with ASTRI, HKT and Qualcomm to push future technologies especially Cellular V2X in Hong Kong. We believe Cellular V2X will bring unique value such as safety, efficiency and friendly environment for the Intelligent Transportation System effectively with other assistant driving technologies. Huawei will provide its expertise in C-V2X with our partners and we will make a big progress in the intelligent transportation in Hong Kong."

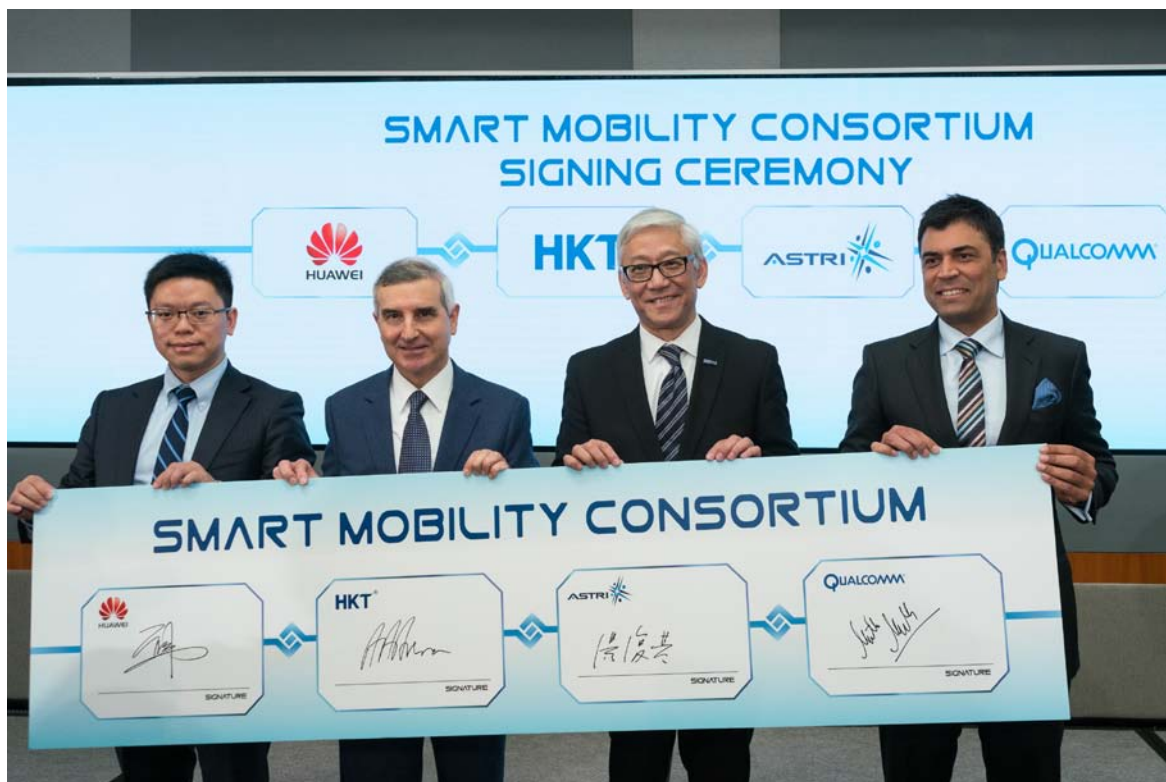
Mr. Mantosh Malhotra, Senior Director, Business Development, Qualcomm Technologies, Inc., said, “We are very excited to work with ASTRI, HKT and Huawei to bring our vision of a Smart City to life here in Hong Kong. With potential in the rise of smart city and automotive technologies, we are busy innovating new advanced capabilities, including C-V2X and precise positioning, to increase transportation efficiencies, improve safety, and support autonomous vehicles in cities across the region, starting with Hong Kong’s progressive urban environment.”

This multi-year project is expected to involve a dedicated team of experts from different areas, who will help accelerate the transformation of Hong Kong’s transportation system into a truly state-of-the-art ecosystem. Designed on the needs of individuals not just in Hong Kong but also cities across the region, the project is expected to be ready for other locations upon completion.

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Remarks:

1. Dedicated range(s) in the 5.9GHz band is allocated to Intelligent Transport System (ITS) services in US, Europe and Japan, and is also being considered for ITS services in other places such as Mainland China.
2. From the statistics of “Road traffic accidents by type of vehicle collision and severity (2005 - 2015)”, Transport Department, HKSAR. http://www.td.gov.hk/filemanager/en/content_4757/f2.2.pdf
3. From the statistics of “Cyclist casualties by location and degree of injury 2015”, Transport Department, HKSAR. http://www.td.gov.hk/filemanager/en/content_4757/f1.14.pdf
4. From the statistics of “Vehicle involvements by driver contributory factor and severity 2015”, Transport Department, HKSAR. http://www.td.gov.hk/filemanager/en/content_4757/f3.8.pdf



Dr. Franklin Tong, Chief Executive Officer of ASTRI (2nd from right); Mr. Alex Arena, Group Managing Director of HKT (2nd from left); Mr. Veni Shone, President of TDD Product Line and Acting President of Cellular V2X Solutions, Huawei Technologies Co., Ltd. (left); and Mr. Mantosh Malhotra, Senior Director, Business Development, Qualcomm Technologies (right); jointly announce the establishment of the Smart Mobility Consortium.

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About ASTRI

Hong Kong Applied Science and Technology Research Institute Company Limited (ASTRI) was founded by the Government of the Hong Kong Special Administrative Region in 2000 with the mission of enhancing Hong Kong's competitiveness in technology-based industries through applied research. ASTRI's core R&D competences in various areas are organised under seven Technology Divisions, namely Communications Technologies, Electronics Components, IC Design (Analog), IC Design (Digital), Opto-electronics, Security and Data Sciences, and Software and Systems. Five areas of applications including financial technologies, intelligent manufacturing, next generation network, health technology, and smart city are identified for major pursuit. Please visit www.astri.org for further information about us.

About HKT

HKT (SEHK: 6823) is Hong Kong's premier telecommunications service provider and leading operator in fixed-line, broadband and mobile communication services. It meets the needs of the Hong Kong public and local and international businesses with a wide range of services including local telephony, local data and broadband, international telecommunications, mobile, and other telecommunications businesses such as customer premises equipment sales, outsourcing, consulting, and contact centers.

HKT offers a unique quadruple-play experience in Hong Kong delivering media content on its fixed-line, broadband Internet access and mobile platforms jointly with its parent company, PCCW Limited.

HKT also provides a range of innovative and smart living services beyond connectivity to make the daily lives of customers more convenient, whether they are at home, in the workplace, or on the go.

For more information, please visit www.hkt.com.

About Huawei

Huawei is a leading global ICT solutions provider. As a responsible and robust business player, innovative information society enabler, and cooperative industry contributor, Huawei is committed to building a Better Connected World. Through our dedication to customer-centric innovation and strong partnerships, we have established end-to-end capabilities and strengths across carrier, enterprise, consumer, and cloud computing domains. Huawei's 180,000 employees worldwide create maximum value for telecom operators, enterprises and consumers. Our innovative ICT solutions, products and services have been deployed in over 170 countries and regions, serving more than one-third of the world's population. Founded in 1987, Huawei is a private company that is fully owned by its employees. For more information, please visit Huawei online at www.huawei.com.

About Qualcomm Technologies

Qualcomm's technologies powered the smartphone revolution and connected billions of people. We pioneered 3G and 4G – and now we are leading the way to 5G and a new era of intelligent, connected devices. Our products are revolutionizing industries, including automotive, computing, IoT, healthcare and data center, and are allowing millions of devices to connect with each other in ways never before imagined. Qualcomm Incorporated includes our licensing business, QTL, and the vast majority of our patent portfolio. Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, all of our engineering, research and development functions, and all of our products and services businesses, including, our QCT semiconductor business. For more information, visit Qualcomm's website (www.qualcomm.com), OnQ blog, Twitter and Facebook pages.

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