Press Release

Wednesday, 8 July 2015

Inaugural CREATE Symposium looks at trends and challenges in urban mobility planning, transportation systems & technologies

1 The inaugural CREATE Symposium 2015: Future Mobility was opened by Mr Pang Kin Keong, Permanent Secretary, Ministry of Transport, Singapore, this morning at the Ngee Ann Kongsi Auditorium, University Town, National University of Singapore (NUS). The event was attended by 200 researchers and scientists, public officers and industry partners from the transport industry.

2 The CREATE Symposium 2015 is a collaborative effort of three research programmes - Singapore-ETH Centre (SEC), Singapore-MIT Alliance for Research and Technology Future Urban Mobility (SMART FM), and TUM CREATE - funded by the National Research Foundation Singapore under its Campus for Research Excellence and Technological Enterprise (CREATE) programme. The gathering brings together expertise of local and international universities to develop thought leadership on issues of societal importance, and solutions applicable to megacities around Singapore. This year, the CREATE research entities will be looking at urban mobility and transportation solutions.

3 The inaugural CREATE Symposium 2015: Future Mobility will run from 8 to 9 July at NUS. The symposium is organised along four tracks: Autonomous Vehicles, E-Mobility, Intelligent Transportation Systems, and Modelling and Simulation. Over the two-day symposium, local and international speakers will present highlights of their research at the plenary sessions and demo sessions where flagship projects of the three CREATE research entities will be exhibited. There will also be discussions on the current state-of-the-art, future research, and potential challenges for applications and market deployment.

4 More information on CREATE Symposium 2015: Future Mobility are available on www.createsymposium.sg.

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Annex A – About CREATE Symposium 2015: Future Mobility
Annex B – Themes and Speakers
Annex C – CREATE Symposium 2015: Future Mobility Programme
Annex D – Co-organisers of CREATE Symposium 2015: Future Mobility

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ANNEX A

ABOUT CREATE SYMPOSIUM 2015: FUTURE MOBILITY

The inaugural CREATE Symposium 2015: Future Mobility is jointly organised by the three CREATE programmes: Singapore-ETH Centre (SEC), Singapore-MIT Alliance for Research and Technology Future Urban Mobility (SMART FM), and TUM CREATE.

The symposium is organised along four tracks: Autonomous Vehicles, E-Mobility, Intelligent Transportation Systems, and Modelling and Simulation. Renowned speakers from CREATE and a range of international speakers will address current issues in practice and present state-of-the-art research. There are demo sessions where flagship projects of CREATE research entities will be exhibited. There will also be discussions on the current state-of-the-art, future research, and potential challenges for applications and market deployment.

The inaugural CREATE Symposium 2015: Urban Mobility is an excellent opportunity to learn more about the exciting research and developments in Future Mobility at CREATE, and to meet other researchers working on future mobility within and beyond CREATE, in Singapore.

Date:	8 to 9 July 2015
Time:	9.00 am to 6.00 pm
Venue:	Ngee Ann Kongsi Auditorium University Town National University of Singapore

ANNEX B

THEMES AND SPEAKERS

Theme: Autonomous Vehicles

The theme focuses on enabling a fleet of autonomous vehicles to provide Mobility-on-Demand, which will complement the existing transportation system, so as to reduce the overall commuting time by solving the "first and last mile" problem. This will thus reduce traveling time from the starting location (e.g. commuter's home) to the start of the transportation network (e.g. MRT station) and reduce traveling time from the end of the transportation network to the final destination (e.g. commuter's workplace).

There are many advantages of autonomous vehicles: improved road safety, increased productivity, greater accessibility to mobility, elevated road efficiency, and increased energy efficiency. The biggest advantage of this technology is reducing the reliance on manpower, while providing an efficient transportation system.

Research at CREATE involves integrating existing technologies with fresh methodologies to allow driverless vehicles to intelligently provide Mobility-on-Demand, with the goal of making this future transportation paradigm an integral component of a smart and connected nation.

<u>Plenary Speakers</u>

Prof Emilio FRAZZOLI, Lead Investigator, SMART Future Urban Mobility

Emilio Frazzoli is a Professor of Aeronautics and Astronautics at the Massachusetts Institute of Technology. He received a Laurea degree in Aerospace Engineering from the University of Rome, "Sapienza", Italy, in 1994, and a Ph. D. degree from the Department of Aeronautics and Astronautics of the Massachusetts Institute of Technology, in 2001. He is currently the Director of the Transportation@MIT initiative and the Lead Principal Investigator of the Future Urban Mobility IRG of the Singapore-MIT Alliance for Research and Technology (SMART).

Kei-Leong HO, Senior Scientist, Energy Research Institute @ NTU

Kei-Leong Ho is a Senior Scientist at Energy Research Institute @ NTU. An Electrical Engineer by education, he is involved in setting the technology focus roadmap in Electro Mobility through collaborative partnerships with public agencies, private industries and institutions. He is also involved in technology commercialisation activities through spin offs and joint ventures.

Dipl. Ing Jörg LÜTZNER, Head of Services & Commercial Vehicles, Continental Automotive GmbH

Dipl. Ing Jörg Lützner studied Electrical & Electronic Engineering at the University of Nottingham and the RWTH Aachen. After stations at Siemens Semiconductors and Siemens Mobile Phones, he moved to Siemens VDO, now Continental Automotive GmbH in 2005. His was initially responsible for Technology & Innovation for the Business Unit Commercial Vehicles & Aftermarket. He subsequently took over responsibility for Portfolio & Innovation Management for the same business unit. Since 2009, he also coordinates the Connected Vehicle activities of the Continental Division Interior. His current position is Head of Services & Commercial Vehicles

Paul TAN, Director, ST ENGINEERING-NTU Corporate Lab

Paul Tan is currently the Director of the ST ENGINEERING-NTU Corporate Lab which focuses on advancing robotics, autonomous vehicles and automation technologies for airport, crisis response and logistics sectors. Prior to this role, Paul has been serving in various capacities under the ST Engineering Group - first as a Group Head in ST Aerospace focusing on aircraft certification, next as Head of Advanced Technology Centre at ST Dynamics where he spearheads the development of unmanned systems, and most recently, in ST Kinetics as a Chief Engineer of Robotics and VP of Technology Development. Paul's current interest is in making AV technologies robust and operational for a tropical mixed-traffic environment.

Theme: Modelling and Simulation

Urban mobility is constantly evolving. In the past, rail corridors enabled cities to growth beyond to their original borders, mass motorisation led to massive suburbanisation and most recently, smartphones enabled the idea of shared mobility.

Today, the convergence of vehicle and information technology to cyber-physical systems carries yet again great potential to radically impact urban mobility. But it also raises a series of questions to planning and policy making: How can Big Data help to plan better transport systems? How can autonomous cars and public transport supplement each other? And how will electric mobility impact existing power systems?

Distinguished international speakers and researchers from three CREATE entities will explore why modelling and simulation are indispensable tools for planners and decision makers and how they help to plan the bright future of urban mobility.

Plenary Speakers

Prof Kay AXHAUSEN, Principal Investigator for Mobility and Transportation, Planning module of Future Cities Laboratory, Singapore-ETH Centre

Kay Axhausen is Professor for Transport Planning at ETH Zurich and Principal Investigator at the Future Cities Laboratory in Singapore. He has been involved in the measurement and modelling of travel behaviour for the last 30 years, contributing especially to the literature on stated preferences, micro-simulation of travel behaviour, valuation of travel time and its components, parking behaviour, activity scheduling and travel diary data collection.

Prof Ennio CASCETTA, Professor of Transportation Systems Planning, University of Naples Federico II

Ennio Cascetta is full professor of Transportation Systems Planning at the University of Naples Federico II. He has taught in several international courses (e.g. Advanced Modelling and Simulation of Transportation Networks at the MIT Cambridge, USA). He is author of several books and more than 150 papers published in international journals and conferences proceedings. Main research areas include planning of HSR and regional metro systems; analysis, modelling and estimation of transport demand; static and dynamic models for traffic assignment. He was Minister of Transport for the Campania Region during 2000-2010. During 2005-2010, he was Chairman of the regional ministers for the transportation and infrastructures of Italy.

Thomas HAUPT, CEO & Founder of th-inc GmbH for innovation and cooperation in Transportation

Thomas Haupt studied Transportation Planning, Computer Science and Operations Research and worked as a research fellow at the University of Karlsruhe. From 1986 to 2012, he held various management positions at PTV Group, from Project Engineer and Head of the Transport Modelling department to member of the Executive Board. In October 2012, he founded th-inc GmbH for innovation and cooperation in Transportation.

Prof Dr-Ing Alois KNOLL, Professor of Computer Science, TUM

Alois Knoll received the Diploma Degree in Electrical/Communications Engineering from the University of Stuttgart, Germany, in 1985 and his PhD (summa cum laude) in Computer Science from the Technical University of Berlin, Germany, in 1988. He is currently a Professor of Computer Science at the Computer Science Department of the Technische Universität München (TUM). He is also on the Board of Directors of the Central Institute of Medical Technology at TUM (IMETUM-Garching); between April 2004 and March 2006, he was Executive Director of the Institute of Computer Science at TUM. Since 2009, he is also Director of Fortiss GmbH and the Graduate School of Information Science in Health (GSISH) at TUM.

Prof Chris ZEGRAS, Principal Investigator, SMART Future Urban Mobility

Chris Zegras is Associate Professor of Transportation and Urban Planning at the Massachusetts Institute of Technology (MIT), USA. He has worked for more than two decades on urban mobility data collection, modelling, planning, design, and policy analysis in the USA, Latin America, Europe, and Asia. He is currently the lead Principal Investigator of the Future Urban Mobility Interdisciplinary Research Group in Singapore. He leads MIT's Mobility Futures Collaborative.

Theme: Intelligent Transport Systems (ITS)

Intelligent Transportation Systems (ITS) involves the application of advanced technologies in electronics, communications, computers, control, sensing and detection in a wide range of transportation systems, in order to improve the effectiveness and efficiency of these systems.

It encompasses a wide range of applications in areas such as infrastructure, vehicles and users, traffic management and mobility management. Such technological innovations enable various users to be better informed and make transportation networks safer, more coordinated, and smarter. ITS can also impact the environment, energy usage, and even social well-being.

Currently, many exciting ITS projects are being developed at CREATE, including innovative mobility data collection, dynamic traffic prediction, traffic light controls, infrastructure-less road pricing systems, and vehicular embedded systems, among others.

Plenary Speakers

Prof António Pais ANTUNES, Professor, Department of Civil Engineering, University of Coimbra

António Pais Antunes is Professor at the University of Coimbra (Portugal). He holds a Diploma in Civil Engineering from that university and a PhD in Applied Sciences from the University of Louvain (Belgium). He has been a Visiting Fellow at Princeton University (1997/98), an Invited Professor at EPF Lausanne (2009/10), and a Visiting Professor at MIT (2013/14). His research focuses on Spatial Planning and Transportation Engineering, and is described in 200 publications, including articles in Environment and Planning A and B, Transportation Research A, B and E, Transportation Science and several other leading journals in his fields of work.

Prof Moshe BEN-AKIVA, Principal Investigator, SMART Future Urban Mobility

Moshe Ben-Akiva is the Edmund K. Turner Professor of Civil and Environmental Engineering and Director of the MIT Intelligent Transportation Systems (ITS) Lab. He holds a PhD degree in Transportation Systems from MIT and honorary degrees from the University of the Aegean, the Université Lumiére Lyon, the Royal Institute of Technology (KTH), and the University of Antwerp. His awards include the Lifetime Achievement Award of the International Association for Travel Behaviour Research and the Institute of Electrical and Electronics Engineers (IEEE) ITS Society Outstanding Application Award for DynaMIT. Ben-Akiva has coauthored the textbook Discrete Choice Analysis and over 200 papers in refereed journals or conference proceedings.

Robin CHASE, Transportation Entrepreneur, Co-founder and former CEO of Zipcar

Robin Chase is a transportation entrepreneur. She is founder and former CEO of Zipcar, the largest carsharing company in the world; Buzzcar, a peer to peer carsharing company in France; and GoLoco, an online ridesharing community. She is also Executive Chairman of Veniam, a vehicle communications company building the networking fabric for the Internet of Moving Things. Her recent book is Peers Inc: How People and Platforms are Inventing the Collaborative Economy and Reinventing Capitalism. Robin lectures widely, has been frequently featured in the major media, and has received many awards in the areas of innovation, design, and environment, including Time 100 Most Influential People, Fast Company Fast 50 Innovators, and BusinessWeek Top 10 Designers.

Nigel CHEN, Bosch Singapore

Nigel Chen is currently the team leader and project manager in Bosch Software Innovation Connected Mobility Business Services and Projects Asia Pacific. His team is responsible for providing consultation, business services and project management for customers in the domain of Connected Mobility and Transportation within Asia Pacific. He joined Bosch group as a management trainee programme in 2010 where he was assigned to worked in China and Germany as part of the programme. Upon returning to Singapore, he held an IT infrastructure operational team lead position, ensuring the critical IT systems such as remote access services and email system are operable at all times within the Bosch Group.

Theme: E-Mobility

Electric vehicles (EV), with on-board electric energy storage and use of electric power-train, are emerging as solution to environmental changes and transportation challenges in growing megacities. Compared to combustion engine vehicles, vehicle concepts have to be fundamentally re-designed and a number of components significantly re-invented for the new type of propulsion system. With increasing complexity in automotive electronics, EV also brings along new challenges in the embedded system design. Electric energy storage solutions with high energy and power density are required as well. A mobility and transport system for megacities including EV as part of sustainable infrastructure has become the main focus of future mobility.

Technische Universität München in partnership with Nanyang Technological University established TUM CREATE – Centre for Electromobility in Megacities to approach the cutting-edge research covering topics from molecule to megacity. Together with international speakers, TUM CREATE will present the latest highlights of E-Mobility at the CREATE symposium.

Plenary Speakers

Dr Grégory BLOKKEEL, Head of PSA Peugeot Citroen Innovation Cell @Singapore

Dr Grégory Blokkeel heads PSA Peugeot Citroen Innovation Cell @Singapore. His background is in Applied Mathematics and Mechanical Engineering. He did his PhD part time at the University of Marseille Méditerranée in France and at the University of Wisconsin, Madison in the United States. After taking on several positions within PSA Peugeot Citroen Innovation and Research Department, he now takes charge of PSA Peugeot Citroen Open Innovation Policy. He is currently moving to Singapore in order to run PSA Peugeot Citroen Innovation Cell @Singapore, which will conduct research and experimentation activities towards Sustainable Mobility Concepts within Smart Cities.

Prof Samarjit CHAKRABORTY, Professor of Electrical Engineering, TUM & Scientific Advisor, TUM CREATE

Samarjit Chakraborty is a Professor of Electrical Engineering at the Technical Univesity Munich (TUM), where he holds the Chair for Real-Time Computer Systems. Prior to joining TUM in 2008, he was an Assistant Professor of Computer Science at the National University of Singapore. He obtained his PhD in Electrical and Computer Engineering from ETH Zurich. His research interests cover all aspects of system level design of embedded systems and software. He has published over 150 journal and conference articles in this area and his work has been funded by several governmental and industry grants, including those from General Motors, Intel, Google, BMW, Audi, Siemens and Bosch.

Prof Fritz FRENKLER, Professor of Industrial Design, TUM & Scientific Advisor, TUM CREATE

Having graduated with a degree in Industrial Design from the Academy of Fine Arts Braunschweig, Fritz Frenkler worked for Frogdesign Germany and USA. in 1986, he set up and lead Frogdesign Asia. from 1992 to 1997, he held the position of General Manager of Wiege Wilkhahn Entwicklungsgesellschaft, before becoming Head of Design at Deutsche Bahn AG and General Manager of Deutsche Bahn Medien Gmbh. in addition to his role as consulting partner of f/p design, Fritz Frenkler holds several positions in organisations and juries. He is a board member of the If Industrie Forum Design, Hanover and Chairman of the If Product Design Award jury. He is Regional Advisor of ICSID (International Council of Societies of Industrial Design), Montreal and Co-Founder and Board Member of the Universal Design E.V., Hanover. In 2005, Fritz Frenkler was nominated as Honorary Professor in the Department of Industrial Design at the Academy of Fine Arts Braunschweig. Since 2006, he holds a Chair as University Professor in Industrial Design at the Technical University Munich.

Prof Carlo RATTI, Principal Investigator, SMART Future Urban Mobility

An architect and engineer by training, Carlo Ratti practices in Italy and teaches at the MIT, where he directs the Senseable City Lab. Ratti has co-authored over 250 publications and holds several patents. His work has been exhibited in several venues worldwide, including the Venice Biennale, MoMA in New York City and MAXXI in Rome. At the 2008 World Expo, his ‘Digital Water Pavilion’ was hailed by Time Magazine as one of the ‘Best Inventions of the Year’. He has been included in Blueprint Magazine's ‘25 People who will Change the World of Design’ and in Wired Magazine’s ‘Smart List 2012: 50 people who will change the world’. He is curator for the ‘Future Food District’ at Expo Milano 2015.

www.project-syndicate.org/columnist/carlo-ratti

ANNEX C

CREATE SYMPOSIUM 2015: FUTURE MOBILITY PROGRAMME

Wednesday, 8 July 2015			
Time	**Event**	**Presenter**	**Venue**
8.30am – 9.00am	Registration	-	Ngee Ann Kongsi Auditorium foyer
9.00am – 9.10am	Opening Remarks by Dr Lim Khiang Wee	Dr Lim Khiang Wee, Executive Director, CREATE	Ngee Ann Kongsi Auditorium
9.10am – 9.15am	Opening Address by Guest of Honour, Mr Pang Kin Keong, Permanent Secretary, Ministry of Transport, Singapore	Mr Pang Kin Keong Permanent Secretary, Ministry of Transport, Singapore	
9.15am – 9.40am	Autonomous Vehicles: Plenary	Yaniv Goder, Uber Singapore	
9.40am – 10.05am	When Autonomy Meets Mobility on Demand	Prof Emilio Frazzoli, SMART Future Urban Mobility	
10.05am – 10.30am	Automated Trucks - Benefits & Technology	Joerg Luetzner, Continental Automotive GmbH	
10.30am – 10.55am	A Pathway for Making AV an Operational Reality	Paul Tan, ST Engineering-NTU	
10.55am – 11.15am	Future mobility system: Autonomous transportation @ NTU	Ho Kei-Leong, Energy Research Institute @ NTU	
11.15am – 11.45am	Discussion on Autonomous Vehicles	Chair: Dr James Fu, SMART Future Urban Mobility	
11.45am – 12.05pm	Break	-	Ngee Ann Kongsi Auditorium foyer
12.05am – 1.05pm	Demo: Intelligent Transportation Systems	SMART Future Urban Mobility, TUM CREATE	Future Urban Mobility Lab, SMART, CREATE Tower Level 9
12.05am – 1.05pm	Demo: Modelling & Simulation	Future Cities Laboratory, SEC, TUM CREATE, SMART Future Urban Mobility	Value Lab, Singapore-ETH Centre, CREATE Tower Level 6
12.05am – 1.05pm	Demo: Autonomous Vehicles	SMART Future Urban Mobility	CREATE Plaza

Wednesday, 8 July 2015			
Time	**Event**	**Presenter**	**Venue**
1.05pm – 2.00pm	Lunch	-	Education Resource Centre Level 3
2.00pm – 2.25pm	A Model for Cooperation and Innovation in Transportation: The Win Win Win Strategy	Thomas Haupt, th-inc GmbH	
2.25pm – 2.50pm	Advanced Trip-related Road Pricing Schemes Based on Transport Accessibility and Their Impacts on Equity	Prof Ennio Cascetta, University of Naples Federico II	
2.50pm – 3.15pm	From Big Data to Smart Data	Prof Kay Axhausen, Future Cities Laboratory, SEC	
3.15pm – 3.40pm	Holistic Electro-mobility Simulation	Prof Dr Ing. Alois Knoll, TUM CREATE	
3.40pm – 4.05pm	SimMobility: Integrated Urban Microsimulation Platform	Prof Chris Zegras, SMART Future Urban Mobility	
4.05pm – 4.35pm	Discussion on Modelling & Simulation	Chair: Dr Alexander Erath, Future Cities Laboratory, SEC	
4.35pm – 5.00pm	Break	-	Ngee Ann Kongsi Auditorium foyer
5.00pm – 6.00pm	Demo: Intelligent Transportation Systems	SMART Future Urban Mobility, TUM CREATE	Future Urban Mobility Lab, SMART, CREATE Tower Level 9
5.00pm – 6.00pm	Demo: Modelling & Simulation	Future Cities Laboratory, SEC, TUM CREATE, SMART Future Urban Mobility	Value Lab, Singapore-ETH Centre, CREATE Tower Level 6
5.00pm – 6.00pm	Demo: Autonomous Vehicles	SMART Future Urban Mobility	CREATE Plaza

Thursday, 9 July 2015			
Time	**Event**	**Presenter**	**Venue**
9.00am – 9.25am	Peers Inc: How a new collaboration is transforming transportation	Robin Chase, Former CEO of Zipcar	Ngee Ann Kongsi Auditorium
9.25am – 9.50am	Setting Supply and Pricing Policies for a Transit Network: An Optimisation Approach	Prof António Pais Antunes, University of Coimbra	
9.50am – 10.15am	Future of Intermodal Mobility Big Data	Nigel Chen, Project Manager, Team leader of Bosch Connected Mobility, Business Services and Projects Asia Pacific Team	
10.15am – 10.40am	Intelligent Transportation Systems (ITS) Tools	Prof Moshe Ben-Akiva, SMART Future Urban Mobility	
10.40am – 11.05am	Singapore Smart Mobility 2030	Dr Kian Keong Chin, Land Transport Authority of Singapore	
11.05am - 11.35am	Discussion on Intelligent Transportation Systems	Chair: Dr Zhao Fang, SMART Future Urban Mobility	
11.35am – 12.00am	Break	-	Ngee Ann Kongsi Auditorium foyer
12.00pm – 1.00pm	Demo: Intelligent Transportation Systems	SMART Future Urban Mobility, TUM CREATE	Future Urban Mobility Lab, SMART, CREATE Tower Level 9
12.00pm – 1.00pm	Demo: Modelling & Simulation	Future Cities Laboratory, SEC, TUM CREATE, SMART Future Urban Mobility	Value Lab, Singapore-ETH Centre, CREATE Tower Level 6
12.00pm – 1.00pm	Demo: e-Mobility EVA - Electric Taxi for Tropical Megacities	TUM CREATE	Education Resource Centre Level 2
1.00pm – 2.00pm	Lunch	-	Education Resource Centre Level 3

Thursday, 9 July 2015			
Time	**Event**	**Presenter**	**Venue**
2.00pm – 2.25pm	Automotive Cyber-Physical Systems: Challenges and Opportunities	Prof Samarjit Chakraborty, TUM	Ngee Ann Kongsi Auditorium
2.25pm - 2.50pm	EVA – Electric Taxi for Tropical Megacities	Prof Fritz Frenkler, TUM	
2.50pm – 3.15pm	Towards a Convergence Between Information and Energy for Tomorrow's e-Mobility	Dr Grégory Blokkeel, PSA Peugeot Citroën	
3.15pm - 3.40pm	Superpedestrian - The Copenhagen Wheel	Prof Carlo Ratti SMART Future Urban Mobility	
3.40pm – 4.05pm	e-Mobility: Plenary	-	
4.05pm - 4.35pm	e-Mobility Discussion	Chair: Prof. Martin Lukasiewycz, TUM CREATE/NTU	
4.35pm – 5.00pm	Break	-	Ngee Ann Kongsi Auditorium foyer
5.00pm – 6.00pm	Demo: Intelligent Transportation Systems	SMART Future Urban Mobility, TUM CREATE	Future Urban Mobility Lab, SMART, CREATE Tower Level 9
5.00pm – 6.00pm	Demo: Modelling & Simulation	Future Cities Laboratory, SEC, TUM CREATE, SMART Future Urban Mobility	Value Lab, Singapore-ETH Centre, CREATE Tower Level 6
5.00pm – 6.00pm	Demo: e-Mobility EVA - Electric Taxi for Tropical Megacities	TUM CREATE	Education Resource Centre Level 2

Note: Visit www.createsymposium.sg for plenary abstracts.

ANNEX D

CO-ORGANISERS OF CREATE SYMPOSIUM 2015: FUTURE MOBILITY

Campus for Research Excellence and Technological Enterprise (CREATE)

The Campus for Research Excellence And Technological Enterprise (CREATE) is an international research campus and innovation hub which houses an international collaboratory of research centres set up by top global universities and research institutes in Singapore. CREATE has about 30,000 square metres of laboratory space in four buildings that house some 1,600 researchers. CREATE's areas of research fall under four major interdisciplinary themes of Environmental Systems, Energy Systems, Human Systems and Urban Systems. CREATE was officially opened by Singapore Prime Minister Lee Hsien Loong on 16 November 2012. Situated in the National University of Singapore's University Town (NUS U-Town), CREATE is in the vicinity of the other Singapore high tech centres such as Biopolis, Fusionopolis and the Science Parks.

Singapore-ETH Centre – Future Cities Laboratory

Combining science and design, the Future Cities Laboratory develops new knowledge, technologies, and approaches for a sustainable urban future with an Asian perspective. In addressing the challenges of rapid urbanisation, the FCL research team has developed innovative urban solutions in areas including: mobility and transportation, the design of vibrant urban neighbourhoods, low-energy cooling systems, sustainable construction materials, and robotic fabrication in construction, among others.

The FCL is the first project of the Singapore-ETH Centre for global environmental sustainability, a joint initiative of ETH Zurich – the Swiss Federal Institute of Technology in Zurich and Singapore's National Research Foundation (NRF). The research centre, which brings together over 100 researchers representing the fields of science, engineering and architecture, is housed within the NRF's Campus for Research Excellence and Technological Enterprise (CREATE).

SMART Future Urban Mobility

The Singapore-MIT Alliance for Research and Technology (SMART) is a major research enterprise established by the Massachusetts Institute of Technology (MIT) in partnership with the National Research Foundation of Singapore (NRF) in 2007. SMART has a mission to identify and carry out research on critical problems of societal significance and develop innovative solutions through its interdisciplinary research groups (IRGs). The Future Urban Mobility (FM) IRG aims to develop new paradigms for the planning, design and operation of future urban mobility systems.

Some highlights of the FM research include:
- Singapore's first autonomous vehicle designed for operation on public roads;
- LIVE Singapore platform for big data analytics and visualization ("Data Collider");
- Simulation suite ("SimMobility") for urban mobility planning;
- Innovative ITS solutions through traffic signals control and scheduling, road pricing, real-time routing and prediction, on-demand operations and novel data collection techniques.

TUM CREATE

TUM CREATE is an electromobility research project undertaken by two world-leading universities, Germany's Technische Universität München (TUM) and Singapore's Nanyang Technological University (NTU), funded by the National Research Foundation of Singapore. TUM CREATE is part of NRF's Campus for Research Excellence And Technological Enterprise.

TUM CREATE aims to support the integration of e-vehicles into Singapore's transportation system:
- Improve energy storage and energy management systems needed for electromobility.
- Designing new e-vehicle concepts for test-bedding innovative technologies.
- Developing models for optimisation towards efficient future transportation systems.

Through its research in Singapore, TUM CREATE will contribute to the local human, intellectual, and industrial capitals by training talents, innovating new technologies, forging partnerships and knowledge-sharing.