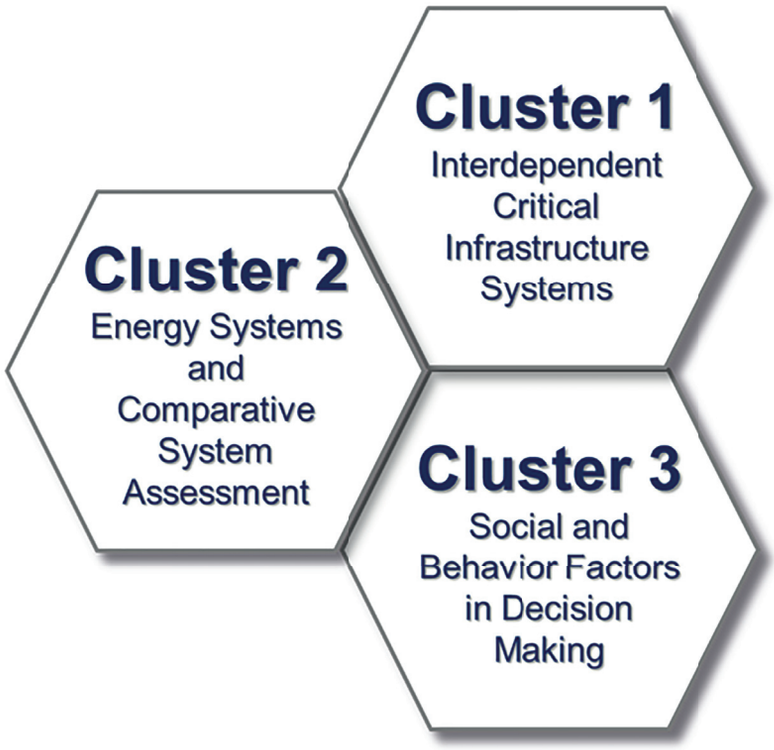
ICRM leads NTU's effort in the CREATE Program on Future Resilient Systems (FRS)

Through the Singapore-ETH Centre (SEC), ETH partnering NTU, NUS and SMU has launched the CREATE program on Future Resilient Systems (FRS) and ICRM is leading the NTU-side effort.

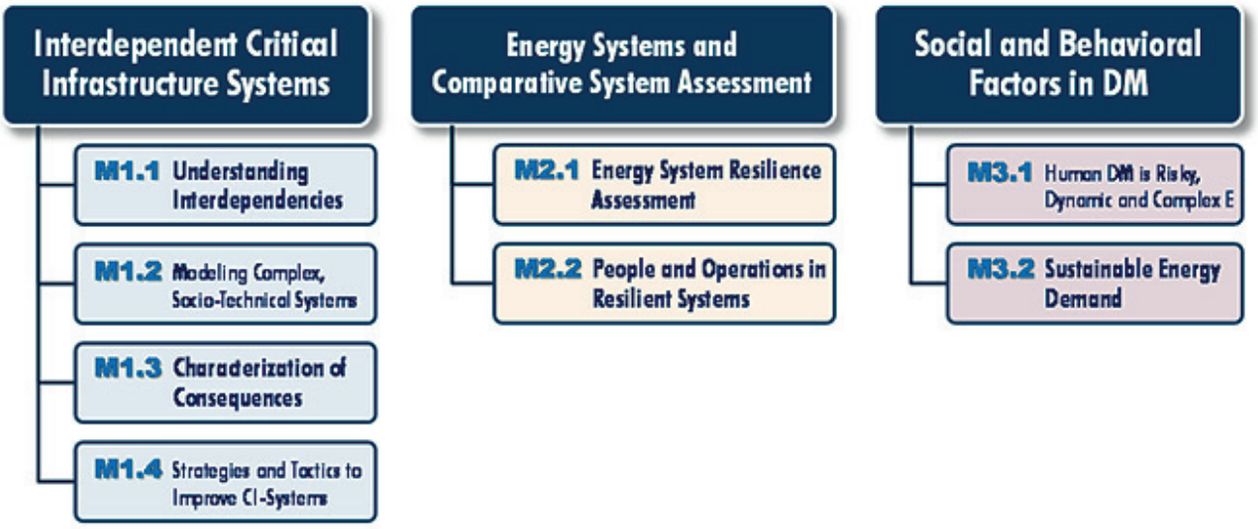
Asia is undergoing massive growth of its urban areas along with corresponding growth of its critical infrastructure systems such as for water, transport, communications and power, all of which are essential for building and supporting societies. The resilience of these infrastructure systems to hazards or shocks, whether naturally triggered or otherwise then becomes critical for ensuring the health and safety of the population. Developing an understanding of the resiliency of infrastructure systems is complex in that the infrastructure systems are individually themselves large and inter-linked and they can exhibit totally unexpected system responses which can even result in cascading failures across the entire system. That such infrastructure systems are also managed by human organizations further brings the element of social-technical interactions in the system response. The development of needed understandings for improving the robustness and resilience of these systems requires novel, integrative and holistic approaches along with coupled social-technical perspectives which the FRS project aims to achieve.



The Three Research Clusters of the FRS Program

ICRM is leading the NTU-side effort in FRS and will further draw upon expertise from other NTU units including those at the Earth Observatory of Singapore and the Complexity Institute in its work. Specifically ICRM will be examining the risk to a city's critical infrastructure and particularly power networks under present and future configurations. The goal is to address challenges faced with interwoven infrastructure networks developing frameworks, concepts and tools to make interconnected infrastructure systems more robust and resilient. The FRS programme is expected to train about 40 PhDs and 25 postdocs, of which 14 PhDs and 10 postdocs will be with NTU and based at ICRM. The FRS program started in Nov 2014 and will run for 5 years.

CREATE Campus for Research Excellence And Technological Enterprise · ETH zürich · NUS National University of Singapore · NANYANG TECHNOLOGICAL UNIVERSITY · PAUL SCHERRER INSTITUT PSI · SMU



Research Modules within the FRS Clusters

NTU FRS RESEARCH TEAM

NTU Faculty under FRS

1. Prof Pan Tso-Chien
2. Prof Euston Quah Teong Ewe
3. A/P Edmond Lo
4. A/P Sulfikar Amir
5. A/P Wang Peng
6. A/P Xiao Gaoxi
7. A/P Yohanes Eko Riyanto
8. Asst/P Chang Youngho
9. Asst/P Cheung Sai Hung
10. Asst/P Georgios Christopoulos

NTU Postdoc under FRS

1. Pradeep Mandapaka Venkata (Dr)
2. Vivek Kant (Dr)
3. Zhai Chao (Dr)

NTU PhD students under FRS

1. Fredy Tantri
2. Justyna Katarzyna Tasic
3. Kamarajugedda Shankar Acharya
4. Lim Kim Loong
5. Tan Tsiat Siong
6. Yao Shuhan
7. Zhang Hehong
8. Zhang Huajun

RESEARCH PROJECTS

CONTACT US:
Executive Director
Institute of Catastrophe Risk Management
N1-B1b-07, 50 Nanyang Avenue
Singapore 639798

TEL +65 - 6592 1866
FAX +65 - 6794 8231
EMAIL ExecDir-ICRM@ntu.edu.sg
ICRM WEBSITE http://icrm.ntu.edu.sg