

Application Form of EASTS IRG

Date of Submission: 2018/06/07

<p>1. Name of IRG: Impact of e-Richshaws on Traffic Stream Speed and Safety of Urban Roads</p>
<p>2. List of research members</p> <p>1) a) Name of representative: Dr. Liu Kai b) ID number of EASTS Regular Member: Applying for a member c) Affiliation: Associate Professor and Vice Dean d) E-mail: liukai@dlut.edu.cn e) Tel: : +86-411-84706221, +8615942836868 f) Country/Region & Address: School of Transportation and Logistics, Dalian University of Technology, China</p> <p>2) a) Name: Dr. Chalumuri. Ravi Sekhar b) ID number of :EASTS Regular Member:RM-13-15-0063 c) Affiliation: CSIR-Central Road Research Institute, Principal Scientist d) E-mail: chalumuri.ravisekhar@gmail.com e) Tel: +91-1126312268,+919868501882 f) Country/Region & Address: Transportation Planning and Environment Division, CSIR-Central Road Research Institute , Delhi-Mathura Road, New Delhi, India</p> <p>3) a) Name: Dr. Dimantha De Silva b) ID number of :EASTS Regular Member: Unknown c) Affiliation: University of Moratuwa, Senior Lecturer d) E-mail: dds@hbaspecto.com e) Tel: +94 11 2650567 (2128) Mobile: +94 767639142 +94 711639142 f) Country/Region & Address: Transportation Engineering Division, Department of Civil Engineering, University of Moratuwa, Sri Lanka</p> <p>4) a) Name: Prof. Satish Chandra b) ID number of :EASTS Regular Member: RM-13-15-0071 c) Affiliation: Director d) E-mail: satisfce@gmail.com e) Tel:91(11)26823437(102),+919412394357 f) Country/Region & Address: CSIR-Central Road Research Institute, Delhi - Mathura Road, New Delhi – 110025, India</p> <p>5) a) Name: Dr. S. Velmurugan b) ID number of :EASTS Regular Member: c) Affiliation: Senior Principal Scientist d) E-mail: vmssathya@gmail.com e) Tel: Mobile: 91-9868856522 f) Country/Region & Address: Transportation Engineering and Safety Division, CSIR-Central Road Research Institute, New Delhi 110065, India</p> <p>6) a) Name: Dr. Errampalli. Madhu b) ID number of :EASTS Regular Member: c) Affiliation: Principal Scientist d) E-mail: madhu.crri@nic.in, errampalli.madhu@gmail.com</p>

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3. Name of contact person other than representative:

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4. Keywords (Maximum: 5 words):

e-Rickshaws, stream speed, Capacity, Urban Roads, Safety

5. Purpose and Mission of IRG:

e-Rickshaws have enormous potential as compared to conventional auto rickshaws as it is reckoned to be better alternative when it comes to short distance commutes both in terms of travel cost and travel time. Due to this, the fleet of e-Rickshaws is rapidly growing in most of the Asian cities as it is recognized to be one of the cost effective and eco friendly feeder transport mode to public transportation systems like metro in some of the Indian cities. In this context, even in the case of the medium sized Indian Tier II / III cities, e-Rickshaws are serving as the primary mode in providing last mile connectivity and feeder services. Despite the above, no concrete efforts have been made by the government authorities to provide policy guidelines to this service. As such, due to the physical dimension and associated speed characteristics, e-Rickshaws are considered as a new vehicle category and hence cannot be grouped with the conventional three wheeled / four wheeled auto rickshaws or any other similar vehicle. In most of the Tier - II / III cities, the e-rickshaws runs as a complimentary mode to auto rickshaws and other public transport services. Most of the Asian urban roads consist of mixed traffic flow conditions and hence any further addition of any type of fleet to the existing mixed traffic affect on traffic characteristics, capacity and safety. Therefore, this needs to be investigated in view impact of e-Rickshaws on traffic stream speed and safety on urban roads. To convert the mixed traffic flow into basic traffic flow, Passenger Car Equivalents / Units (*PCUs*) plays an important role in capacity analysis. This study would focus on the estimation of PCU values of e-rickshaws for capacity analysis of urban corridors under mixed traffic flow conditions. Most of the e-Rickshaws are plying on arterial and sub-arterials roads with speeds ranging between 20 and 30 km/hr are not only safety hazards, but also causes traffic congestion on urban corridors, particularly at metro stations. These e-rickshaws run on fixed / designated routes without any form of route rationalization carried out to run this service in an organized way which has led to impact on traffic flow characteristics, capacity of urban corridors, traffic congestion at entry and exit point of transit stations and resulting at times in traffic hazards. As there is no regulation or policy for this e-Rickshaw, most of the drivers are not having proper driving license and behavior.

The main purpose of this study intends to investigate the impact of e-rickshaws on traffic stream on urban roads. The proposed study would address the following critical issues:

- i. To study the traffic flow characteristics due to impact of e-Rickshaws on Urban Roads
- ii. To develop a method for the estimation of passenger car equivalent of e-rickshaws
- iii. To analyze the affects of e- rickshaws on the capacity and safety of Urban Corridors
- iv. To develop guidelines for recommendation of suitable policies for e-Rickshaw on Asian cities

6. Target year for completion (Research period is suitable within four years.): Three Years: October 2018 to October 2021	
7. Research plan: (Oct, 2018 - Sep, 2019): First Year	
<ul style="list-style-type: none"> ▪ Review of the Literature on e-Rickshaws on Urban roads in various selected Asian Cities in terms of impact on traffic characteristics, traffic congestion and safety hazards. ▪ Exploring the possible places for identification of study corridors for case studies ▪ Finalising the research agenda and methodology for the case studies in selected Asian cities ▪ Conducting seminar in CSIR-CRRI, New Delhi ▪ Preparation for the papers submitted to EASTS 2019 Conference 	
(Oct, 2019- Sep, 2020) : Second Year	
<ul style="list-style-type: none"> ▪ Conducting case Studies: Data collection in identified Asian Cities (Covering one city each in India, China and Sri Lanka) ▪ Development and enhancement of Impact Analysis theories ▪ Preparation of study findings the papers for submission to EASTS 2021 Conference 	
(Oct, 2020 - Sep, 2021): Third Year	
<ul style="list-style-type: none"> ▪ Holding a special session at EASTS 2021 conference ▪ Conducting Case Studies ▪ Conducting Seminar or Symposium ▪ Preparation of Final Report 	
8. Research funds:	
Source of research funds(*)	Approximate amount (US\$)
ICRA	US\$ 10,000-60,000
*: (ex.) ICRA (Research grant of EASTS), Grants-in-aid for Scientific Research of Ministry of Education, Culture, Sports, Science and Technology (Japan), and etc..	

All applications are to be delivered to:
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