Annual Activity Report of IRG

1. Basic information (See the link: http://www.easts.info/activities/irg/list.html)

(1) Code of the IRG (example) IRG - 20 – 2012

IRG - 22 - 2013

(2) Name of IRG

Integrated sign systems for non-motorized transport and transit users

(3) Representative

(Name) Hiroshi Tsukaguchi
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(4) Contact person other than representative

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2. Progress of research in 2014-2015

In 2014-2015, mainly the following research activities have been carried out, in relation to two pedestrian projects and two cyclist projects. These ongoing studies are conducted in Japan, China and Indonesia.

IRG progress review meetings were held several times between Prof. Tsuakguchi and Dr. Vandebona. Communications with the broader group had to be conducted via e-mail.

The four ongoing projects are at different stages of development. Two studies in Japan have progressed to a considerable extent whereas the other two studies are at early stages of development. These studies were designed to investigate non-motorized transport facilities in tourist areas and large scale transport terminals.

Brief summary of activities of each project during 2014-2015 are as follows:

Project 1 – Pedestrians in tourist areas

Information system design has to pay attention to supplying the appropriate amount of information using a suitable layout, since route guidance information is important to two different types of visitors to tourist areas. Some persons have some familiarity with the area and the others are not familiar with the area. These two groups impose different requirements on the sign systems.

The primary objective of the sign system in a tourist area is to maximize the user satisfaction in terms of visiting desired attractions within the budgeted time period. The methodology followed is based on a case study using before and after data of a major tourist area, a historical Nara Park, Japan, that has recently modernized the sign system. The main focus of the analysis has been to identify changes to circulation patterns within the site from the view point of quantity and distribution of visitors getting lost.

This project is led by Prof. Tsukaguchi and Dr. Vandebona.

Project 2 - Pedestrian route choice

In China, non-motorized transportation plan and design is paid much attention but the sign system is yet to attract professional attention. Therefore, pedestrian studies from the view point of network design and

the user perception are considered in this project. This study attempts to demonstrate potential field methodologies for pedestrian route choice investigations considering partial vision. Pilot investigations have been carried out in potential case study areas.

This project is led by Prof. Weijie Wang.

Project 3 - Cyclist lane control

The increased probability that bicycles traveling on the wrong side of a sidewalk that could cause accidents is seen as justification for regulating the location and direction of bicycle travel in Japan. However, it has been noticed that accident density is uneven along the routes. There is a high probability of accidents near intersections and less probability of such events in-between intersections.

This investigation focusses on comparison of traffic accident probability levels when provisions have been made to restrict bicycles to the left side of a street and situations where bicycles are allowed to use sidewalks on both sides of the road.

Preliminary observations suggest there is evidence of higher level of accidents when bicycles are restricted to one way operation on one side of road links in the network

This project is led by Prof. Keiichi Ogawa.

Project 4 - Cyclist behavior survey

This project attempts to investigate improvement methods for signage and way finding system in a city in Indonesia. The survey design aspects have been discussed and feasibility has been investigated it has been decided to conduct two different surveys, a field observation survey and stakeholder survey. The stakeholder survey has been divided into three kinds of respondents. They are council authorities, designers and externals that include other stakeholders such as maintenance teams, and contractor. Field survey is planned to cover cyclists as well as non-bike users.

This project is still at initial stages of development and in the current year, the basic structure of the survey and the methodology has been determined.

This project is led by Dr. Widyarini Weningtyas.This IRG has also made an effort to attract participation of young researchers and a graduate student actively participated in a project mentioned above joined EASTS membership (as named later under item 7 in this report).

IRG has also submitted an application for an ICRA grant.

3. Research activities in 2014-2015

(1)Paper (Authors, Title, Name of the Journal, Year, etc.)

- Papers submitted to the 2015 EASTS conference
  - “Analysis of Path Finding Errors of Pedestrians with a new Direction Sign System”, by Hiroshi Tsukaguchi, Upali VVandebona, Hayato Mukai, Yoongho Ahn, submitted paper to 2015 EASTS conference
  - “Evaluation of Pedestrian Sign System in a Shopping and Business Tower Complex”, by Wataru Oniki, Hiroshi Tsukaguchi, and Upali Vandebona, submitted paper to 2015 EASTS conference
  - “An Extended Potential Field Method for Pedestrian Route Choices Considering Partial Vision”, by Weijie Wang, 2015 EASTS conference poster
  - “Comparative Analysis of Traffic Accident Probability based on Location and Bicycle Travel Direction Considering Number of Intersections between Origin and Destination for Bicycle Users”, by Keiichi Ogawa, submitted paper to 2015 EASTS conference

- Others
  - “Modification of visitor's way finding behavior based on sign system improvement in a historical park”,

by YoshikazuTanaka, Hayato Mukai, Hiroshi Tsukaguchi, Yoogho Ahn, and Hisao Hayashi, Proceedings of Infrastructure Planning, Vol.50, 2014 (in Japanese)

"Circulation and Way Finding Behavior of Tourists in a Historical Park", by Hiroshi Tsukaguchi, Takashi Miyamoto, Yoongho Ahn and Isao Hayashi, Proceedings of Infrastructure Planning, Vol.51, 2015 (in Japanese)

"Analysis on tourists behavior of getting lost" Proceedings of Infrastructure Planning, by Takashi Miyamoto, Hiroshi Tsukaguchi, and Yoongho Ahn, Vol.52, 2015 (in Japanese).

(2) Report and book

none

(3) Seminar, symposium and special session: (Title, Date, Venue & abstract)

none

(4) Group meeting: (Date, Venue & abstract)

Group meeting 1: December 24-27, 2013, at Gold Coast

Prof. Tsukaguchi and Dr. Vandebona discussed the process to manage the IRG. At the same time the final outcome of the former IRG (IRG-05-2005) was discussed and agreed to aim for similar research outcomes (seminars, workshops, monograph) where applicable.

Group meeting 2: September 2-3, 2014, at National Cheng kung University, Taiwan

Prof. Yeh and Prof. Tsuakgchi discussed proposed papers to the EASTS conference in Cebu and ways to advance the IRG.

Group meeting 3:September 14-16, 2014, at University of New South Wales

Dr. Vandebona and Prof. Tsukaguchi discussed structural details of the papers planned for the EASTS conference in Cebu.

Group meeting 4: December 26-31,2014, at University of New South Wales

Dr. Vandebona and Prof. Tsukaguchi discussed technical details of papers planned for the EASTS conference in Cebu.

Group meeting 5: May 19-26, 2015, at Ritsumeikan University

Prof. Tsukaguchi and Dr. Vandebona discussed final details of papers and agenda for the group meeting to be held at the EASTS conference in Cebu.

(5) Result of application for research grants:(Name & result)

Grants-in-Aid for Scientific Research in Japan (2014-2016)

"Advanced pedestrian sign system based on analysis of way-finding behavior"

Representative: Hiroshi Tsukaguchi

Grant of National Science Foundation of the local province

"Pedestrian sign system location planning and evaluation from the users' perspective"

Representative: Weijie Wang

(6) Promotional activities of the IRG (Homepage, Newsletter, Mailing list etc.)

Homepage and Mailing list will be prepared and hosted at a Ritsumeikan University site.

(7) Other matters to be reported (if any) (ex.) addition of members, development of young researchers

New graduate student member joined the IRG and EASTS:
Wataru Oniki, Graduate school of Ritsumeikan University, (ID number: JP-15-15-3223)

4. Points to be improved to complete the purpose and mission of the IRG (if any).

Each group meeting was carried out by a subgroup made of a small selection of members. In order to exchange experience and ideas, a meeting for all group members is planned at the coming EASTS conference in Cebu. It is important and useful to hold a meeting at that stage when each researcher has mature research plans with a follow up gathering planned for 2016 in Indonesia.

5. Action plan in 2015-2016

(1) Confirmation of the continuation of research activities in 2015-2016

(Please choose Yes/No.) Yes

Yes (Continuation) → Please fill in only the next item: (2) action plan in 2015-2016

or

No (Conclusion) → Please fill in only the item: 6. Summary of IRG

(2)Action plan in 2015-2016

Projects that have already started will continue to their next phases in the next year. Field surveys and stakeholder surveys of the studies in Indonesia (Bandung) and China (Nanjing) will be commenced. Japanese team will embark on an extension to investigate pedestrian flow guidance in transport terminal with a case study of the Osaka terminal.

The IRG has proposed a meeting of all group members during the EASTS conference in Cebu to exchange the experiences and lessons.

The IRG encourages the members to propose new projects. There is a proposal for a relevant study in Malaysia that will be discussed in our next meeting.

The study team will attempt to complete field studies and demonstration projects with the intention of documenting and sharing findings soon. Integrated sign systems for non-motorized traffic and transit users will be covered in some analysis. Different modes need their own sign systems, and at the same time it is essential to integrate these systems so the users can arrive at their destination safely and efficiently. At the completion of the IRG effort we aim to have developed specific standards and a series of practical guides to establish good practice in signage systems for urban networks. The intention is to develop outcomes that provide scientific guides and tools necessary for urban planners.

Subject to availability of funding, there is also a plan to hold a workshop seminar in Bandung, Indonesia, primarily targeting young researchers in second half of 2016. The workshop will showcase recent findings related to sign systems to provide a different perspective to a world preoccupied with mobile electronic devices for way-finding.

6. Summary of IRG over the whole research period (maximum 500 words)

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