



A Vehicle for Analytical Thinking to Improve the Unique Urban Issues

MESSAGE BY SHRI.SUBIR HARI SINGH, IAS
ADDL CHIEF SECRETARY, GOVT OF KARNATAKA.



“Coming together is a beginning; keeping together is progress; working together is success.”

True to the meaning of the above adage CiSTUP was the outcome of the Govt. of Karnataka and Indian Institute of Science coming together. This has been continued since January 2009 and now the center has been involving the stakeholders continuously in various activities and writing some success stories. The first issue of the 2nd Volume of the NEWSLETTER gives a vivid picture of the variety of successful activities conducted by the center. Activities in the future will cover more areas in the urban space.

My hearty congratulations to the Chairman, Prof. T.G. Sitharam and his colleagues who are making it possible.

Wishing the center many more laurels in the coming years and my best wishes to all for the New Year 2011.

MESSAGE BY CHAIRMAN,
PROF. T. G. SITHARAM



The year 2010 is coming to a close and looking back I am glad that it has been a very eventful year for CiSTUP—the centre could, true to the mandate, commence the new M.Tech., course in Transportation & Infrastructure Engineering. Also we have taken research candidates, Post Doctoral Fellows

and commenced the CiSTUP Summer Young Research Fellowship programmes. A grand conference on Infrastructure, Sustainable Transportation and Urban Planning (CiSTUP @ CiSTUP 2010) spread over three days was held from 18th To 20th October 2010. All these achievements were possible due to the kind cooperation of the entire Faculty associated with CiSTUP, the stakeholders and most importantly the active involvement of all concerned in the Institute.

It gives me pleasure to share with one & all the activities, that have taken place and those which are slated for the coming year, in CiSTUP through the medium of this Newsletter.

Wishing all the readers a VERY HAPPY & EVENTFUL NEW YEAR 2011.



Venue: J.N. Tata Auditorium,
Indian Institute of Science,
Bangalore-560012

Organized by:

Centre for Infrastructure, Sustainable
Transportation, and Urban Planning (CiSTUP),
Indian Institute of Science
Bangalore, India

Organizing committee of the Conference

CHAIRMAN: PROF T. G. SITHARAM, CHAIRMAN,
CiSTUP

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AND PROF.D. NAGESH KUMAR, IISc

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PROF. ANURAG KUMAR, IISc
MR. HEMANTH KUMAR, KSCST, IISc



Summary of the Conference

In India the supply of efficient and reliable urban transport systems and infrastructure are crucial to sustain a high growth rate. An equally important role of urban transport in India is the alleviation of poverty, both through its indirect effects as a stimulator of poverty reducing growth and through its direct effects on the quality of life of people. In order to address emerging issues of urban governance and infrastructure development and create a forum where experts from India and abroad can share knowledge & experience, CiSTUP recently organised a 3 day Conference titled CISTUP@ CiSTUP between 18th - 20th October 2010 at JN Tata Auditorium, Indian Institute of Science, Bangalore, India.



Innaugral Function of the conference



Chief Guests lighting the candle

The conference covered as many as 3 plenary sessions, technical sessions and a well laid out exhibition throughout all the days. A plethora of issues within the interdisciplinary and applied research domain of infrastructure, transportation and urban planning were meticulously presented, discussed and debated by the Session chairs, invited speakers, authors and audience. The Conference witnessed the participation of nearly 300 delegates representing various Indian and Foreign academic institutions, Indian Government departments, NGOs, multilateral agencies, consulting firms and the industry.



Conference was innaugrated by Mr.S.K Lohia ; Mr.Pasha M.D BMTc; Gaurav Gupta,MD,KSRTC; This was presided by Prof. N. Balakrishna,Associate Director, IISc, Bangalore.



Volunteers with chairman CiSTUP

The Plenary sessions were marked by eminent speakers from government, industry and academia. The opening keynote session had an impressive speaker list comprising of senior officer – Mr. S.K. Lohia, Officer on Special Duty (Urban Transport) Ministry of Urban Development, GoI and Prof. Chandra Bhat, Dept. of Civil, Architectural and Environmental Engineering University of Texas at Austin (USA). Other plenary session speakers included Prof. P. Mujumdar (IISc Bangalore), Prof. Ananth Ramaswamy (IISc, Bangalore), Prof. Dimitrios A. Tsamboulas (National Technical University of Athens, Greece) and Dr. Ashwin Mahesh (IIM Bangalore).

The technical sessions had a series of interesting deliberations on multitude of issues relating to present challenges, opportunities and practical solutions of urban planning, transportation and infrastructure development. A variety of perspectives emerging from a wide range of speakers across government, private and the development sector made for a good hearing and a unique learning experience. The broad spectrum of topics covered through these sessions was rightfully pertinent and suitably relevant to the present developmental needs of Government in India as well as abroad. Apart from this, some special sessions were conducted like video conference workshop with LCPC, France, which showcased OrbGIS, an open source GIS modeling, simulation and planning, measurement and estimation of road skid resistance and simulation of accident scenarios of two wheeled vehicles. Other special sessions were:-

- Building livable cities 2010 (Urban Vision Group)
- Water Infrastructure Session (Karnataka State Council for Science and Technology)
- Data Infrastructure Session (Karnataka State Council for Science and Technology)



Stalls from the Gold Sponsors – BMTC



Stalls from Silver Sponsors- KSRTC



Cultural Programs held at the conference



**Bharatnatyam Performance
from cini-artist Sridhar and Company**



**Music Programme
by Dr.Krishna Raghavendra.**

Activities at the Centre

● Lecture on "Towards a Digital Earth: are we there yet?" on August 27th , 2010

Awase Khirni Syed,

A researcher in Geographic Information Science and Remote Sensing.

Visiting faculty of GIScience at IIIT, Bangalore.

About the Speaker: Dr. Awase Khirni Syed has earned his PhD from the University of Zurich, Department of Geography, GIS Division. His research focused on "Exploratory Representations for Geographic Information Retrieved from the Internet", embedded with in the EU Vth Framework Project -SPIRIT (www.geo-spirit.org). He has been a visiting faculty of GI Science at IIIT-Bangalore.

Abstract: In this talk, Awase presented his research contributions within the SPIRIT project (www.geo-spirit.org) and the relevance of his research towards a digital earth initiative: a knowledge base to search, discover, share and analyze geospatial information. The talk outline the U.S vice president Al-gore's vision to create a Digital Earth Knowledge Base and establishes a timeline of research contributions towards achieving this vision. A significantly evolved technological landscape enables us to extract, acquire and represent spatial and non-spatial data available on the web. Currently major players (i.e Microsoft, Yahoo!, Google etc..) have provided a web-based common access platform for users to integrate social and environmental information by using geo-browser interfaces that are more market driven. Looking beyond with an improved technological landscape, infrastructure, social networking, semantic web(linked data), virtual globes and volunteered geographic information; we discuss some of the challenges towards achieving this objective.

● Namma Railu Round Table Event- August 30th 2010

CISTUP, IISc, and Praja.in organized a round table event, Namma Railu 2010 to discuss Commuter Rail System (CRS) as a mobility solution to enable growth of Bengaluru Metropolitan Region (BMR). The event was chaired by Dr A Ravindra, Advisor to the CM. Mr Krishna Byregowda, MLA, several senior officials from transportation and infrastructure departments of Government of Karnataka (GoK), and senior officials from Bangalore division of South Western Railway were present. The group agreed that a CRS run on existing railway tracks can help connect Bengaluru to surrounding towns like Bangarapet, Chikballapur, Tumkur, Anekal or Ramanagara, etc. Fast and reliable connectivity to surrounding towns can help in de-congestion of the city as well as better planning of BMR.



Photos of Namma Railu Round Table Event

● Lecture on "Unique Identification Authority of India: Strategy & Approach" held on September 07th , 2010

Dr. Ashok Dalwai, IAS

Dy. Director General

Unique Identification

Authority of India

About the Speaker: Dr. Ashok Dalwai, joined the Indian Administrative Service in 1984 after his Masters in Agricultural Economics. He subsequently did his Doctorate in Economics. He has served in the States of Orissa and Karnataka and has held various assignments. Some important assignments include: a) Commissioner, Bangalore Mahanagara Palike b) Secretary, Commerce and Industries, Govt. Of Karnataka c) Principal Secretary, Industries, Orissa d) Principal Secretary, Steels and Mines, Orissa He has been the Chairman of various Corporations including Orissa Mining Corporation (OMC), Industrial development corporation of Orissa(IDCOL), Industrial infrastructure development corporation(IDCO), Industry promotion and Investment corporation of orissa(IPICOL).He is currently serving as the Deputy Director General, UIDAI Bangalore Region which covers Karnataka, Kerala, Tamil Nadu, Pondicherry & Lakshadweep.



Abstract: The talk highlighted the Unique Implementation Strategy adopted by UIDAI to rollout the Aadhaar number to every resident of India. It focused on the means to achieve voluntary universal coverage through a benefits-led programme. Coverage will include the challenges involved in demographic and biometric identification, the technology adopted, the enrollment process and the critical role played by both State and non-State Registrars. The address also covered the UIDAI approach to reach the bottom of the pyramid.

● Lecture on "ON SITE VISUALIZATION AS A NEW PARADIGM FOR FIELD MEASUREMENT IN ROCK ENGINEERING

Speaker: Prof. S. Akutagawa Professor, Department of Civil Engineering, Kobe University, Japan on October 28, 2010

Abstract: A new scheme for field measure in rock engineering is proposed. The core technology in the new scheme is the use of light emitting sensors capable of 1) measuring data and 2) presenting them simultaneously by color of light using LED or other form of light emitting devices Unlike in a conventional method of data acquisition, the use of these new devices enables real-time data processing and visualization on-site, so that the state of deformation, strain, inclination and etc. for a

rock structure in concern is grasped with no delay in time and is shown visually to anyone nearby. Rational use of the new scheme On Site Visualization offers a new stage whereby visually shared real-time information about the rock structures in concern could lead to a new paradigm of field measurement in rock engineering.

About the Speaker: Professor Shinichi Akutagawa graduated from the Department of Civil Engineering, Kobe University, Japan in 1983. In the final year for his bachelor's degree, he was enrolled in the research group of Professor S. Sakurai, who served as President of the International Society for Rock Mechanics between 1995 and 1999. His theme for graduation thesis was to establish a strain based failure criteria for rock masses, part of which has become a world-famous plot between uniaxial compressive strength and critical strain of rocks. He then applied for enrollment for the graduate school of engineering at the University of Washington, USA, where he obtained the MSCE degree in 1984 in the field of concrete structure engineering. For his Ph.D. program, he was given scholarship from the University of Queensland, Australia, both from the Department of Civil Engineering and Mining Engineering. The computer program he authored during his Ph.D. program was described in his Ph.D. thesis, "Back Analysis Program System for Geomechanics Applications", for which a prestigious international prize "Manuel Rocha Medal" was awarded in 1994 from the International Society for Rock Mechanics.

● MEETING TO EASE TRAFFIC SNARLS

CiSTUP in line with the mandate & vision is getting connected with various activities of the Government of Karnataka for easing the traffic scenario in Bangalore city. One such meeting took place on 22nd December at the centre. This meeting is a precursor to the collaboration with City Connect, Govt. of Karnataka, Infosys and CiSTUP to come up with a system to collect data at regular intervals using sensor technology. There is need for systematic and periodic study of traffic to determine origin to destination flows and congestion patterns. While conventional traffic studies can give limited data, sensor based studies can help in collecting and analyzing the data on an ongoing basis.



● **Symposium focusing on lakes popularly known as "Lake symposium"** was initiated by the Energy & Wetlands Research Group at Centre for Ecological Sciences, Indian Institute of Science, Bangalore in the year 1998. The theme was broadened in 2000 (Lake 2000) with a wider participation of organisations such as Karnataka Environment Research Foundation, etc. The basic idea of the symposium was to bring out the trends in ecosystem conservation, restoration and management including the hydrological, bio-physical, people's participation and the role of non-governmental, educational and the governmental organizations and the future research needs. Lake 2010 will be the 7th Biennial Lake Conference would focus on **"Wetlands, Biodiversity and Climate Change"** to commemorate the International Year of Biodiversity. **CiSTUP joined with CES for** organizing this symposium as per its broad



Lake 2010 : Wetlands, Biodiversity and Climate Change 22nd-24th December 2010

**Venue: Satish Dhawan Auditorium,
Indian Institute of Science, Bangalore**

Organised by: Energy & Wetlands Research Group,
Centre for Ecological Sciences (CES),
Centre for infrastructure, Sustainable Transportation and
Urban Planning (CiSTUP), IISc
Centre for Sustainable Technologies (CST),
Indian Institute of Science
Karnataka State Council for Science and Technology
(KSCST), Bangalore
K.K. High School, Varthur, Bangalore,
Vidyaniketan Public School, Ullal, Bangalore 560 056

mandate covering the Environment, Climate change etc., and also due to the association of Dr. T. V. Ramachandra, who is the Associate Faculty at CiSTUP, and the man behind this huge symposium. The United Nations has declared **year 2010** as the **International Year of Biodiversity** and this provides a unique opportunity to increase understanding of the vital role that biodiversity plays in sustaining life on Earth.

Symposium focusing on lakes popularly known as "Lake symposium" was initiated by the Energy & Wetlands Research Group at Centre for Ecological Sciences, Indian Institute of Science, Bangalore in the year 1998. Lake 2010 is the 7th Biennial Lake Conference focussed on "Wetlands, Biodiversity and Climate Change" commemorating the International Year of Biodiversity. The United Nations has declared year 2010 as the International Year of Biodiversity and the symposium provided a unique opportunity to increase understanding of the vital role that biodiversity plays in sustaining life on Earth. There is growing evidence that the biological diversity is being severely threatened by rapid climate change. Also, hydrological changes could be dominant effect of climate change, as snow melt increases, as evaporation rates increases and as droughts, storms and floods intensifies. Conservation of natural resources through sustainable ecosystem management and development is the key to our secured future. Formulation and implementation of action plan that best conserve the aquatic resources

Activities at the Centre



Inaugural Function

requires an understanding of issues, concerns and threats to water resources are identified, and cause and effect relationships.

LAKE 2010 provided a platform for interaction among the researchers, policy makers, academicians and NGO's and has addressed issues related to wetlands and biodiversity in the era of climate change. There were 97 oral presentations and 48 poster presentations in this symposium covering 13 different sub-themes. Participants from all over the country and abroad came forward to present their research findings. The three day symposium proved to be an appropriate venue for raising the critical water issues and bring forth the severity of the problems faced by the water bodies. The beginning of the symposium was marked by the key note lectures from experts highlighting the issues of biodiversity, ecology and hydrology. Dr. T. V. Ramachandra of Energy and Wetlands Research Group, Centre for Ecological Sciences, IISc asserted the poorly maintained condition of the Bangalore water bodies and emphasized that if immediate remedial measures are not taken, the water crisis could be more severe. He also pointed out of the poor environmental literacy level (3.5% environment literates) and opined that the ecological awareness among the civilians in Bangalore is very low and hence, more literacy and awareness programmes are needed to ensure the protection and sustainable maintenance of the water bodies. He also pressed the need for developing more water bodies and increasing the water table for quenching the thirst of Bangalore. Dr. M. D. Subhash Chandran highlighted the importance of the Gondwana relics and emphasized on the conservation of the primeval forests of Uttara Kannada district. He also warned that if these relics are not conserved, the entire peninsular India including Bangalore will be in dire straits. The members of the Energy and Wetlands Research Group at CES highlighted the researches carried out by the

group which spread across different themes like biodiversity, ecology, hydrology, climate change, remote sensing, etc. Rishabh Jain presented Solar Hotspots in India and showed the areas in the country having good solar potential.

Lake 2010 provided a unique opportunity to increase understanding of the vital role that biodiversity plays in sustaining life on the earth. Three parallel sessions were arranged on the second day wherein the participants from across the country shared their research knowledge. The issues pertaining to the water quality status, documentation of biotic resources and sustainable management of water bodies like lakes, rivers and estuaries were highlighted in the sessions conducted at Satish Dhawan auditorium. The need for biomonitoring the water bodies, studying the pollution levels and its effects on the aquatic biota and application of remedial steps like phytoremediation were also brought out effectively. The first session at Centre for Sustainable Technologies (astra) was dedicated to the sacred groves which support a large number of endemic biodiversity and plays a key role in the ecosystem. The emphasis was laid on the ecosystem services of the sacred groves, its importance as an abode of relic species and developing conservation strategies for its sustainable management. The subsequent sessions witnessed the presentations pertaining to documentation of terrestrial and aquatic biodiversity and its importance, understanding the impacts of climate change on biodiversity and its adaptations, developing strategies for conservation (ex situ and in situ), restoration and management of ecosystems and also understanding the impacts of urbanization on the ecosystems. The first session at Centre for infrastructure, Sustainable Transportation and Urban Planning (CiSTUP) pointed out the importance and usefulness of Geoinformatics in monitoring the ecosystems and developing conservation strategies for their sustainable management. The following session dealt with the problems caused by unplanned disposal of solid wastes in the city and the steps to deal with it. The competition for the undergraduate research presentations was also held which provided a boost for the young researchers to come up with innovative ideas and work on them.

On the third day, Dr. Sankara Rao emphasised the role of plants, especially trees, in the urban areas as they act as carbon sinks and help in reducing the pollution levels. Next session entitled 'My Village Biodiversity' drew wide attention and appreciation by the audience. The students from Uttara Kannada district presented their respective village biodiversity based on their observations. The school students

from Bangalore gave impressive presentations on 'Ecology, Biodiversity and Environment'. A competition for the school teachers of Bangalore and Uttara Kannada was also arranged. The key recommendations of Lake 2010 forum are:

1. Documentation of biodiversity:
2. Combating Climate Change:
3. Protection and maintaining sacredness of Sacred groves -
4. Valuation of the ecosystem goods and services:
5. Carrying capacity studies for all macro cities:
6. Demarcation of the boundary of water bodies:
7. Mapping of water-bodies:
8. Holistic and Integrated Approaches.
9. Preparation of management plans for individual water bodies:
10. Implementation of sanitation facilities
11. Management of polluted lakes
12. Restoration of lakes
13. Regulation of boating
14. Protection of riparian and buffer zone vegetation
15. Restoration of linkages between water bodies
16. Rainwater harvesting Adopt Inter-disciplinary Approach
17. Waste management:
18. Environment Education

These recommendations after deliberation in Lake 2010 were handed over on 24th Dec 2010 evening to The Chairman, Western Ghats Task Force and the Member Secretary, Karnataka Biodiversity Board with a request to initiate appropriate actions for implementation of suggestions.

● Two Lecture by Prof. Jose Manuel Viegas as part of Foundation Day celebrations.

Prof. José Viegas who is a Full Professor in Transportation at the Department of Civil Engineering and Architecture of the Instituto Superior Técnico, since 1992 and is Founder and Chairman of the Board of TIS.pt, consultants in Transport, Innovation and Systems has delivered Two lectures as part of the Foundation Day celebrations of CISTUP. These lecture were at the Seminar hall of Management Studies, IISc on 6th January 2011 from 2.30pm till 5.00 pm. The lecture have elicited good response from the Institute community and there was a good gathering to listen to his experiences in developing a fuzzy-set based method for generation of a synthetic trip table including all persons and trips in the universe, based on the survey sample and including a minimum of behavioral assumptions.

The two lecture were dedicated to modeling, but with a critical approach, on optimal zoning and working with very fine space and time resolutions. The first lecture was titled-- REVISITING SOME OF THE FUNDAMENTALS OF TRANSPORT MODELING: OPTIMIZING TRANSPORTATION ANALYSIS ZONES AND GETTING RID OF THEM and this was followed by a 2nd Lecture titled: THE HIDDEN COSTS OF LONG CONCESSION CONTRACTS FOR INFRASTRUCTURE after a 15 minute break for Tea.

Abstract:

In this lecture he presented two pieces of work developed in collaboration with one of our very good students, now a PhD in our group, Dr. Luis Martinez. We start by looking at one of the most common tasks underlying most transport models, that of defining Transport Analysis Zones. Most authors recognize that in practice this has been more art than science, but even if we try to make a scientific approach we see that there is a fundamental tension between geographical error between the zone centroids and the real origins and destinations of the trips – calling for many small zones – and the statistical error of the traffic estimates – calling for a few large zones. Our analysis has shown that traditional zoning



easily throws away significant fractions of the travel information available, while the bi-criterion optimization algorithm we develop and is briefly presented here fares much better. In spite of this optimization, as we started trying to develop and test more refined offers of public transport systems, we concluded that the traditional method of statistical inference from the sample to the universe, with each interviewee represented by so many equal copies of himself, no longer fitted the bill. So we developed a fuzzy-set based method for generation of a synthetic trip table including all persons and trips in the universe, based on the survey sample and including a minimum of behavioral assumptions. In this case, each origin and destination is described at the city block level, and times described in

Activities at the Centre



minutes, so we have virtually continuous time and space representation. Each simulation run produces a different trip table, just like each day in real life is a bit different from the next day. Refinement of the calibration parameters is still going on, but the variances of traffic volumes in the different types of links are in line with what we observe in the field. This result is now a fundamental piece of our work with intermediate public transport modes in urban areas, where the search for trip matches is central to the construction of solutions.

Lecture II:

Abstract:

Concession and Public Private Partnership (PPP) contracts for new transport infrastructure often have durations of at least 30 years, sometimes even longer. The main reason is the wish of the Public side to include in the contract many years of revenue generation to fully amortize the investment made by the private partner.

The most feared type of uncertainty in these contracts is demand (and revenue), but two other very important types exist: the transaction costs and the socially desirable scope and specification of the services to be offered as technology and social preferences evolve; and the policy guidelines relative to the total quantity and the social distribution of those services. These evolutions are impossible to foresee at the time of writing the contract for such a long lifetime, but by signing it the State may be locked in a very costly affair.

Here we look at an alternative way: adopting contracts with shorter lives (say 15 years), and using a sequence of contracts over the lifecycle of the infrastructure, each time reviewing the technology and policy preferences, and enjoying a better view of the likely evolution of demand. The first contract would still face the full cost of the construction, but the private partner would receive the unamortized part at the end of that contract, to be paid by the State, directly from the public budget if public management becomes preferable, or indirectly through the acquisition fee for the second contract to be paid by the winner of the tender.



Cistup Foundation Day 2nd Annual Lecture by

Prof. Jose' Manuel Viegas
Full Professor in Transportation at
Institute Superior Tecnico
Lisbon, Portugal

Date : Friday, 07th January 2011

Time : 4.00 PM

Venue : Faculty Hall, Indian Institute of Science,
Bangalore - 560 012

CISTUP Foundation Day 2nd Annual Lecture was delivered on **Friday, 07 January 2011, at 04.00 PM at the Faculty Hall ,IISc By Prof. Jose' Manuel Viegas** , (Full Professor in Transportation at Institute Superior Tecnico LISBON, PORTUGAL). The title of his talk was **PROMOTING EFFICIENCY AND EQUITY IN URBAN MOBILITY**. A brief synopsis of the lecture is given separately.

Prof. T.G. Sitharam, Chairman CISTUP welcomed the speaker and gave a brief introduction of the speaker and the work that is being carried out by him in the area of Urban Mobility.

Professor B.N. Raghunandan Divisional Chairman, Earth & Environmental Sciences Indian Institute of Science, Bangalore has presided over the function. In his presidential remarks Prof. Raghunandan remarked that the bucketful of ideas mentioned by the speaker are very relevant to the present day scenario of the Mobility issues facing the Urban Development.

Prof. M.S. Mohan Kumar of Civil Engineering and faculty at CISTUP gave the vote of thanks.

About the Speaker: Prof. Jose Viegas has been a Full Professor in Transportation at the Department of Civil Engineering and Architecture of the Instituto Superior Técnico since 1992 and is Founder and Chairman of the Board of TIS.pt, consultants in Transport, Innovation and Systems, s.a., 2000. He was Vice-President of the Scientific Committee of the World Conference on Transport Research Society, 1998-2007, and has been a member of the Scientific and Steering Committee of the "Institut pour la Ville en Movement", Paris, since its formation in 2000. Since 2007, Prof. Viegas has been co-Director of the Transportation Systems area in the MIT-Portugal Program (higher education, research and industry collaboration).

Synopsis: In this lecture, several contributions were presented, associated with policy interventions based on technology, pricing and regulation. The first concept is that of Intermittent Bus Lane, which achieves the maximum efficiency for all travelers, by providing a Bus Lane statute only where and when the bus is approaching and traveling. The next concept is that of Modal Alternation, by which it is proposed that favorable fare regimes in public transport do not assume that the client makes an all-or-nothing decision about using transit. To make

Activities at the Centre

allocations accessible in a short time for all that don't have a car, a solution of high potential is that of shared taxis. Taking advantage of telematics, we can now show that it is feasible to find in real time a taxi that is either empty or not fully occupied, which can take the passenger based on his embarking and disembarking points. Finally, the issue of urban road charging is treated, through the concept of Mobility Rations (or cre-dits). We should not be against the use of the car in the city, but rather against the abuse of the city by the car, and that should be translated into accepting moderate use, but charging for use above a certain threshold. This would allow everybody – even the less rich – to still use the car in the city – but make those that use it more (above that Ration) pay for it. And possibly with a progressive rate, in stages, like many cities do for consumption of water, another scarce resource. This is a concept that is not too different from that of odd-and-even plates allowed to circulate on odd-and-even days, but with the advantage that policy makers can decide on the amount of free access they wish to grant (not necessarily 50% of the days), and that citizens can choose the days in which it is most advantageous to drive in the city.

Workshop on Urban Mobility on 10th January 2011.

In order to address urban mobility challenges in Bangalore, CiSTUP organised a one day Workshop on Urban Mobility on the 10th of January 2011 at Satish Dhawan Auditorium, Indian Institute of Science, Bangalore, India jointly with Praja members. The main objectives were:

- To provide a platform for international experts, policymakers, private sector representatives, society and academicians in constructive dialogue on urban mobility.
- to be aware of urban mobility solutions
- to promote interaction with public / citizens of Bangalore
- to address urban related issues

The Workshop was inaugurated by Mr. S.V. Ranganath (Jt. Secretary Govt. of Karnataka) and presided by Prof. Anurag Kumar (Div. Chairman ECE Dept, IISc.). Mr. Ranganath stressed the role of CiSTUP to plan and guide policymakers and



Karnataka Government with effective and sustainable solutions to Bangalore's transport problems. After the Inaugural Function, six presentations by invited speakers covered a plethora of issues and solutions on urban transportation. The speakers were:

Prof. T.G. Sitharam (Chairman CiSTUP) set the context for the Urban Mobility Workshop by identifying the many issues of Bangalore's urban transport problems and touched upon the many infrastructure projects underway.

Prof. José Viegas (Professor at Instituto Superior Técnico, Portugal) presented the common challenges urban cities world over experience. He stressed the importance of finding sustainable solutions by adopting an integrated and holistic approach to planning and implementation of transport policy measures.

Prof. Peter Newman (Professor at Curtin University, Australia) presented concepts and features of low carbon future cities through best practice case studies. He also highlighted emerging trends in urban transport, especially the shift away from automobiles and modes of transport.

Prof. Ashwin Mahesh (Professor at IIM, Bangalore) presented the activities of Mapunity and explored implementable solutions through people participation. He highlighted the role Mapunity played in finding technological solutions to aid government departments and civil society organisations in tackling social problems and developmental challenges in Bangalore.

Dr. HS Sudhira (Founder Director Gubbi Labs) spoke about the first-ever city level assessment and benchmarking of various indicators concerning congestion, mobility and accessibility initiated by the Directorate of Urban Land Transport, Govt. of Karnataka in 2008. The indicators also captured a wide range of statistics on commuting statistics and other measures linked to mobility in the city. The talk highlighted some of these indicators identifying the gaps and potential regions requiring policy interventions.

Activities at the Centre & Up Comming Events

Ms. Ritu Verma, Founder Director of M/S Urban Explorers, presented a framework of analysis for integrated paradigm for mobility in Bangalore from the lessons drawn from BMPs in Brazil and ABC model of mobility, Netherlands.

In the afternoon session, 2 parallel panel discussions were held at Satish Dhawan Auditorium and Seminar Hall, Management Studies Department, IISc. These sessions were moderated by praja representatives. The selected topics were as follows:

Session 1: Bus Priority System. The panellists included Dr. A Ravindra (Advisor CM, GoK), Mr. S. Z. Pasha (BMTC, GoK), Mr. Gaurav Gupta (KSRTC, GoK), Mr. Balachandran (Urban Alchemy), Mr. R K Misra (GoK, GoK) & Prof. M.N. Sreehari (RV College, Bangalore)

Session 2: Cycling & Pedestrian Priority Policies. Here, the panellists were Mr. Bhaskar Rao (Transport Commissioner), Ms. Manjula (DULT Commissioner), Prof. Ashwin Mahesh (IIM Bangalore), Mr. Murali (Ride A Cycle Foundation)

Both the panel discussions witnessed a thorough brainstorming among the audience and speakers. The discussions had interesting viewpoints to challenges of planning and implementing bus priority system and cycling and pedestrian friendly policies for the city of Bangalore.

At the end of the panel discussions, all the Workshop participants gathered at the Satish Dhawan Auditorium where the moderators of each of the above panel sessions presented a summary of the discussions and identified the steps forward. All the panellists resolved to meet again to take this process forward. The Workshop ended with a valedictory address by Prof. T. G. Sitharam, Chairman CiSTUP.

The Workshop witnessed the participation of around 200 delegates representing faculty and students of transport from academic institutions in Bangalore, State Government representatives, NGOs, multilateral agencies, consulting firms and the industry.

8th Annual Conference of the International Association for History of Transport, Traffic and Mobility 2-5 December 2010 held in National Rail Museum, New Delhi Dr. Deepak Baindur, Post Doc Fellow attended the conference. Details of the conference are below.

T2M, the International Association for the History of Transport, Traffic and Mobility, emerged from the shared agenda of a number of different groups who increasingly came to the conclusion that a new field of analysis and interpretation was required. T2M's mission is the establishment of a collegial association of scholars, practitioners and concerned citizens to encourage and promote an understanding of the historical interaction between transport traffic and the mobility of

people, material objects and ideas.

Papers were presented in parallel sessions under the topics Wings of Empire: Aviation and development in colonial and postcolonial settings, railways in Ottoman Empire and Iran, Long Distance Bus Networks, Transport Politics, Car and City, Railway Tourism in Western Europe, Spaces and Spheres of Public Transport, Transport before the Railways, Public Transport in Megacities, Transport Infrastructure in Transport Museums, Railways and Economic Growth, Transport in Literature, Mobility Theory, Rail Road Services, Road Transport, World's Transportation Networks, Bicycles and Effects of New Vehicles

● **Proposed AIR QUALITY Management Initiative & Workshop on February 28th 2011.**

This will be a workshop to take up initiative for developing a comprehensive Air Quality Forecasting System for metropolitan Bangalore. Having a high level of pollution this topic and the need for a quality mechanism is a need of the hour. Participation from all the relevant agencies like KSRTC, BMRTC, KSPCB, NGO & other academic institutions is envisaged. Shri. Mahesh Kashyap having an experience of over 25 years and presently associated with Environment Canada expressed interest in participating in this event along with Prof. Puttanna who is presently the faculty of Don Basco Institute of Technology.

● **"GRIP IT Symposium on Smart cities" being organized by CiSTUP jointly with Deutsche Akademie Der Technikwissenschaften, Germany, on 19th May 2011.**

● **Programme attended by CiSTUP Chairman**

Cycling for Pollution Free Environment - Bangalore to Chennai Flag off Function - Chief Guest Prof. T.G. Sitharam, Chairman CiSTUP Prof. T. G. Sitharam was one of the chief guests in the Flag off ceremony called "Cycling for Pollution Free Environment" on 22nd November at Department of Microbiology and Biotechnology, Bangalore University. This event was to flag off the cycling by Mr. Anil Kumar, Department of Microbiology and Biotechnology, Bangalore University from Bangalore to Chennai. This was an event organized to create awareness about air pollution and its effect on our environment. This also tells everyone that all have equal responsibility to protect our environment by controlling pollution and joining hands in saving the earth.

● **Workshop on Open source geospatial tools in May- June 2011**

(CiSTUP jointly with KSCST, OSGEO, IIIT (Hyderabad) and SACON (Hyderabad)). Prof. Sharada from IIT B and two officials from NSDI are likely resource persons.

GRIP IT workshop with focus on Smart cities in Bangalore

Bangalore, 12. November 2010



Prof. Otthein Herzog, Project lead for the GRIP IT project at acatech led the second full day GRIP IT workshop focus on 'Smart cities' on 12th November 2010 at Bangalore. The workshop was hosted in the corporate campus of Robert Bosch Engineering and Business Solutions Limited (RBEI), Bangalore. In addition to providing a platform for networking within the research and industry community from India and Germany, the breakout sessions at the workshop focused on the potential research and collaboration opportunities within the research and industry communities in both Germany and India. Representatives from the Industry and some of the prominent research and educational institutes from within Germany and India together with participants from other related fields of interest set the right platform for intensive discussions and interactions at the workshop. The workshop team consisted of 37 members.

Mr. Vijay Rathnaparkhe, Managing Director at Robert Bosch Engineering and Business Solutions Limited (RBEI) provided the welcome note. He welcomed all participants to the workshop and also provided a very brief overview on RBEI. The forenoon session of the workshop had its focus on Mobility with two presentations and breakout sessions. Prof. Hansjörg Schönharting, CEO TRC-Transportation Research Consulting GmbH, Germany presented the evolution of the urban transportation in Germany over the past 50 years and the new objectives, strategies, trends and concepts which are evolving in urban transportation in Europe. An added challenge to the new concepts and trends is the necessity to reduce the emissions.

Prof. T.G Sitharam, Chairman CISTUP and professor at Indian Institute of Science, Bangalore, provided an overview on the urban transportation in India and the challenges for urban transportation in India. The presentations also provided a brief overview on some of the initiatives taken by various Indian cities

including Bangalore to improve the urban transportation systems and emphasized the importance of further initiatives and investments in infrastructure to face the challenges of urban transportation in India.

The breakout sessions on 'IT research frontiers that are steering the future of electric vehicles in urban transport' and 'Research issues for safety and sustainability in urban road transport' was moderated by Ms. Latha Chembrakalam of RBEI and Prof Dinesh Mohan of IIT, Delhi respectively. The results of the intensive discussions and interactions at the breakout sessions were summarized by the moderators of the respective breakout sessions.

The afternoon session of the workshop had its focus on Energy with two presentations and breakout sessions.

Dr. Venkateshwaran Narayanan, Head, Research department, ABB India corporate research, Bangalore presented on the energy distribution in Urban areas. The presentations provided a brief overview on the current challenges of the energy sector, the potentials and of smart grids in the urban scenario and some of the recent trends in the energy distribution.

Mr. Vikesh Metha, General Manager Innovations at Wipro Technologies, Bangalore presented on the energy management for Enterprises. The presentation provided a brief overview on the energy savings potential of enterprises through dynamic energy management in the future and the challenges to efficient energy management.

The breakout sessions on 'Green IT - preparing the conditions for responsible energy consumption' and 'IT research to build resiliency in energy grids' were moderated by Prof. Wolfgang Nebel, Chairman, OFFIS - Institute for Information technology, Oldenburg and Dr. Srinivasan Ramaswamy, Group Manager, Research, ABB India Corporate Research respectively. The results of the intensive discussions and interactions at the breakout sessions were summarized by the moderators of the respective breakout sessions. Conclusions and next steps

The intensive interactive sessions at the workshop has led to the identification of various fields within the topics of mobility and energy where the academic and the industry community in India and Germany could work together in generating projects. Prof. Herzog suggested the possibility of the project GRIP-IT providing the platform for consolidating the competencies of the industry and research institutes in India and Germany for potential EU project applications. The network and contacts among the Industry and the research and educational institutions in both

CALL FOR RESEARCH PROPOSALS-2011-12

Centre for infrastructure, Sustainable Transportation and Urban Planning, Indian Institute of Science, Bangalore - 560 012

Invited from IISc Faculty

Research Proposals in the area of infrastructure, transportation and urban planning issues for financial support under the Sponsored Research Programme.

The projects are usually of 6 months to 2 years duration. The usual budget is in the range of Rs 3-5 lakhs. In some justified cases a slightly higher budget may also be allowed.

Till date 15 project proposals have been received covering the theme areas of CiSTUP.

For further information phone: 080 23468207/22932521 or Email: mlvs@cistup.iisc.ernet.in

CALL FOR FACULTY POSITIONS IN CiSTUP

Centre for infrastructure, Sustainable Transportation and Urban Planning, Indian Institute of Science, Bangalore - 560 012 invites

1. GIS Technology Manager
2. Urban Planner
3. Transport Planner
4. Pavement Expert

These posts are on contract appointment and will be for a period of THREE Years with an annual review of the performance.

For more details visit the centre's website:

<http://cistup.iisc.ernet.in/positions> or

IISc Website

<http://iisc.ernet.in>

Awards and Accolades for BMTC

BMTC one of the main stakeholders of CiSTUP has been in the forefront for receiving accolades from all quarters .

- Prime Minister Civil Service Excellence Award-2009
- Chief Minister's Annual Ratna Award for 2009-10
- UITP – ITF outstanding International Award for Innovation in public transport -2010.
- Urban Mobility India – 2010 - Award for Excellence – 5th December 2010, New Delhi
- 2010 Award for Outstanding Innovation in Public Transport by International Transport Forum & UITP.
- Safety Convention Award by The Institute of Engineers (India) under the aegis of Safety Quality Forum.
- BMTC also received 96% overall citizens satisfaction rated by an independent body called “Public Affairs Center”.



Other Meetings held:

1. EC held on 21st September 2010
2. RAAC meeting held on 19th November 2010
3. Faculty Meeting held on 15th December 2010
4. Organizing committee CiSTUP@CiSTUP 2010 held on 15th December 2010

This Newsletter is for limited Circulation only.

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Chairman CiSTUP,
Prof. T. G. Sitharam and all the
members of the Centre Wish you all
A VERY HAPPY & PROSPEROUS
2011.