ITS CONFERENCE RECOMMENDATIONS

1. **Capacity Building for ITS**

   In India ITS is a new concept and hence it needs huge capacity building program. The program would bring awareness about ITS, Standards and applications for transport infrastructural development. and how can they be utilized to deal with the current issues of transport system, among the decision makers, policy makers, planners and engineers. Also there are not much experts in the field of ITS. Hence, there is a urgent need of capacity building for ITS in India.

   For this we are planning to set up ITS Centre of Excellence and also tie up with the universities to start with courses, graduate programmes and training programmes in ITS. This programmes would help to create more awareness about ITS among decision makers, planners, policy makers, transport engineers, students and transport professionals. This would also help to initiate research and innovation in field of ITS. We also wish to establish *knowledge management system* for ITS as this would accelerate the learning process and the awareness.

2. **Setting up Standards**

   Establishment of National Framework, Architecture and standards is one of the early challenges and would guide ITS development in India and promote interoperability of ITS components i.e. ITS systems should be able to exchange and share information freely across jurisdictional boundaries. The architecture and standards would be provide guideline and functional framework that would support a common understanding among many developers and ITS users, about the parts of the systems and how those parts interact to provide useful services. Developing National Architecture and Standards would strengthen financial system by encouraging sound regulation and supervision, greater transparency and more efficient and robust institutions, markets and infrastructure of ITS technologies.

   Along with the National ITS Architecture plan following framework has to be developed.

   - Business framework – develop our own framework in India context
   - Technological framework – can be adopted from developed countries
   - Implementation framework

3. **Electronic Payment Collection or Electronic Toll collection or Electronic Road Pricing**

   ETC has more than 20 years history from first ETC operation. Now we can see ETC system at many countries as Taiwan, Singapore, Japan and many other countries. In India tolling has increased by 5-7 times in last 3 years and also there are many of new highway projects and expressway projects coming up, which would increase of the scope of ETC implementation in India. Currently ETC is in operation in Chennai, Jaipur, Delhi (Noida), Jalandhar, etc. As a result government of India is on the verge of setting up ETC policy.

Continuous R&D and evaluation of different technologies.

FUNDING MECHANISMS FOR ETC in India

- Government budget
- CESS on diesel and petrol
- Private funding
- User fees

ISSUES related to ETC implementation in India

- **Lack of Common platform for the stakeholders** and actors involved in the process like – government agencies, service providers, operators, equipment manufacturers, users, etc.
- **Lack of standardization on payment collection methods**.
- **Lack of standardization for the "On board Unit "(OBU) and its interoperability** across Indian states.
- **Lack of interoperability among different operators** managing the toll collection. Hence the operators have to be brought to the same platform for better operations. Hence operational organization has to be in place.
- **Cost effectiveness is the critical factor for the market penetration** of OBU.
- Also the technology for **ETC should be economically viable** and cost effective from the available technologies like RFID, Active and passive DSRC, infrared.
- The **design of the toll plaza should be done considering the local context** i.e. in terms of traffic density and amount of users.

POLICY SUGGESTIONS

- Incentives should be provided along with marketing of ETC to encourage the use of the EPC, which would help to increase the market penetration of the OBU.
- Developing Standards for payment methods and OBU, which would improve the interoperability.
- Creating a win- win situation among the stakeholders
- Use of technology which has already captured the market, like use of cell phones, rather than dedicated OBU.
- The technology adoption should be such that it is not restricted to ETC but also electronic vehicle identification and registration, access control, parking management, vehicle spotting, security applications, etc. eg. RFID
- Govt. Investment for R&D on ITS

4. ITS and Climate Change

- ITS applications is one of the tool that can be used to reduce the green house gases emissions.
- We know that transportation sector is one of the largest contributors to green house emission. ITS can help in managing traffic on the road. Also ITS application in public transport can be good options to reduce emissions on the road.