INTELLIGENT TRANSPORTATION SYSTEMS

1. **Traffic Management**
   1.1 Traffic Control and Congestion Management
   1.2 Traffic Surveillance and Enforcement
   1.3 Intelligent Demand Management
   1.4 Traffic Incident and Work Zone Management
   1.5 Emission / Climate / Weather Related Traffic Management
   1.6 Parking Management and Access Control
   1.1.7 Modeling and Simulation

2. **Payment Systems**
   2.1 Electronic Toll Collection
   2.2 Public Transportation Payment
   2.3 Road Pricing and Congestion Charging

3. **Traveller Information**
   3.1 Traveller Information Services
   3.2 Trip Planning
   3.3 Route Guidance and Navigation
   3.4 Traffic Information Integration
   3.5 Personalized Information Services
   3.6 Radio-based Information Services
   3.7 Travel Time Forecasting

4. **Public Transport**
   4.1 Public Transport Planning and Scheduling
   4.2 Inter-Urban Public Transport Operation
   4.3 Public Transport Information Services
   4.4 HOV Priority Services and Derivatives
   4.5 Light-rail & Taxi Operation
   4.6 Inter-modal Passenger Transfer Services

5. **Freight and Commercial Transport**
   5.1 Hazardous Materials Transportation
   5.2 Fleet Management
   5.3 Electronic Cargo Information and Management
   5.4 Automated Clearance and Border Crossing Operations
   5.5 Freight and Terminal Security
   5.6 Inter-modal Freight Transport Services

6. **Intelligent Vehicle Safety**
   6.1 Advanced Driver Assistance Systems
   6.2 In-vehicle Safety Technology
   6.3 Autonomous Vehicle Systems
   6.4 Human-Machine Interface

7. **Vehicle-Infrastructure Cooperation**
   7.1 Cooperative Systems
   7.2 Vehicle-to-Vehicle Communication
7.3 Vehicle-to-Infra Communication
7.4 Applications: Smart Road Information, E-call, Infra-based Safety, etc.

8. Intelligent Road Infrastructure
8.1 Intelligent Road Safety Features
8.2 Infrastructure Maintenance
8.3 Integrated Highway Information Management
8.4 Road Hazard Detection, Reporting and Clearance
8.5 Emergency and Disaster Management

9. Communications and Technology Emerging
9.1 Interface Protocols and Applications
9.2 Privacy and Security in Communication
9.3 Advanced Positioning Systems
9.4 Geographic Information System. Transportation (GIS-T) and Digital Maps
9.5 Upcoming Technologies in Sensors and Detectors