INTRODUCTION

- Safety issues in the transportation system are the major concerns.
- V2V/V2I are emerging as an efficient solution for achieving road safety.
- Blind Spots, Intersections, and Ghat Sections are the major accident-prone areas where there is no clear visibility of moving vehicles.
- Internet connectivity is the main concern in areas like ghats.

APPLICATION FEATURES

1. Real-time visibility of neighbouring vehicles in the collision domain.
2. Incident Reporting within a certain radius.
3. App has two modes, Cloud and P2P.
4. Application automatically switches from cloud mode to P2P mode when there is no Internet.

OBJECTIVE

- To build a reliable platform that effectively utilizes mobile devices for grasping the traffic situation.
- To develop efficient V2V/V2I communication using cloud technology and P2P.

V2V/V2I COMMUNICATION

INTELLIGENT TRANSPORTATION SYSTEM

Roadside Equipment

Vehicles moving in realtime

LOCATION UPDATES

V2V COMMUNICATION

V2I COMMUNICATION

P2P Mode

- Cloud Mode

- Range is <80m
- No bound on range
- Unreliable due to link breakage
- More reliable
- More time to discover presence of neighbour
- More time to share data i.e. cloud latency
- Multihoping
- Direct Information sharing using centralized cloud

APPLICATION FLOW DIAGRAM

APPLICATION SCREENS

RESULTS AND ANALYSIS

CONCLUSION

- We developed a smartphone-based application that can make use of P2P and cloud technology to detect vehicles in the collision domain.
- Future work comprises of audible beeps/alerts if any vehicle comes into danger zone.
- Developing efficient RF (eg. Bluetooth) scanning methods for estimating traffic congestion and speed.

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