

Design considerations for the Cooperative ITS Vulnerable Road Users Service



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About TU Ilmenau

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Car 2 Car Communication Consortium member



Generic VRU Safety System Architecture

- V2VRU system operation
 - Detection
 - Tracking and trajectory prediction
 - Action
- V2VRU system components
 - VRU Device
 - Vehicle Device
 - Infrastructure
 - Information Processing Unit
- Safety messages

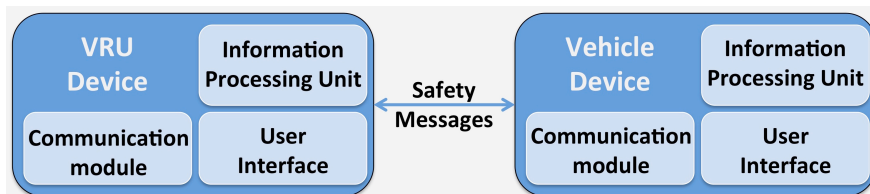


Fig. I. V2P System - Direct Communication

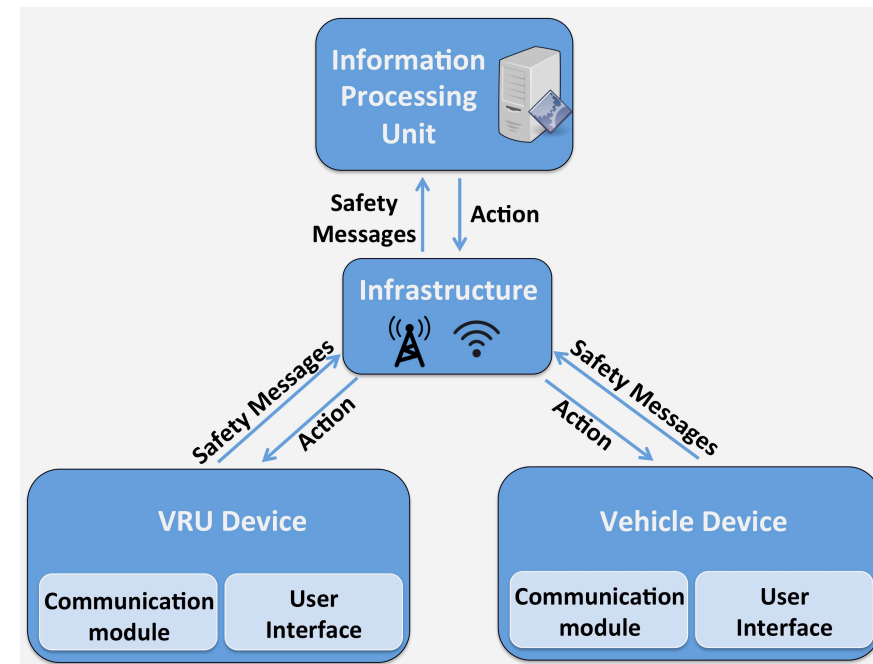


Fig. II. V2P System - Indirect Communication

Design Considerations

- Design considerations for an effective VRU service
 - I. Type of VRUs
 - II. Pre-crash scenarios
 - III. Mode of Communication
 - IV. Type of application
 - V. Notification Recipients and means of notification
 - VI. Communication technologies
 - VII. Potential VRU devices
 - VIII. Role of VRU devices
 - IX. Response time requirements
- Recommended Reference: P. Sewalkar and J. Seitz, “Vehicle-to-Pedestrian Communication for Vulnerable Road Users: Survey, Design Considerations, and Challenges”, MDPI Sensors, Jan 2019.