**Objective**

Exchange and manage imperfect information in Inter-Vehicle Communication using belief functions.

**Context**

- Have intelligent, reliable and clean vehicles.
  - Lead developed research to industrialization.
- Share different types of events, and guide drivers to find a parking place or to get traffic information.

**Belief Functions**

- Transferable Belief Model (Smets 1994).

**Dynamic Part: Conjunctive Rule of Combination**

\[ m_1 \otimes m_2 (A) = \sum_{B \cap C = A} m_1 (B) \cdot m_2 (C), \forall A \subseteq \Omega \]

\[ m_1 \] and \[ m_2 \] obtained from distinct and reliable sources.

**Decision Level: Pignistic Probability**

\[ \text{BetP}(\omega) = \sum_{A \subseteq \Omega, \omega \in A} m(A) \frac{1}{|A|} (1 - m(\emptyset)), \forall \omega \in \Omega \]

**Static Part: Mass Function Definition**

Knowledge regarding the answer to a given question, where:

\[ \sum_{A \subseteq \Omega} m_\Omega (A) = 1 \]

**Application and Scenario**

Embarked in HTC Touch Diamond mobiles: Windows Mobile, Wi-Fi and GPS equipped. It allows sending messages where:

- \[ m(\{\text{ev}\}) = 1 - m(\Omega) \] if user perceived the event;
- \[ m(\{\neg\text{ev}\}) = 1 - m(\Omega) \] if not.

**Conclusion and Future Work**

- The method allows the management of uncertain events.
- This application is useful also for pedestrians to share other kind of events.

Reflections and Future work:
- Consider relation between events.
- Consider more than two states in the frame of discernment.