Etudes et modélisation des techniques de partage et de propagation d’information sur les conditions des routes en utilisant les réseaux VANET

GUEZZI Abdelkader[1],
KORICHI Ahmed[1],
LAKAS Abderrahman[2]

[1]Computer Sciences Department,
Faculty of new technologies of information and communication
Univ Ouargla,Route de Ghardaïa, 30 000 Ouargla, Algeria
[2]Faculty of Information Technology, Al Ain, UAE University

Abstract

Vehicular Ad-hoc Network (VANET) can be envisaged as the network of moving vehicles communicating in asynchronous and autonomous fashion using short-range wireless communications. Designing scalable schemes for information sharing is a major challenge due to the movement of vehicles which causes unpredictable changes in network topology. Peer-to-peer approach can be the most suitable to share information between these nodes in urban or highway environment, We focus in this paper to use the structured peer to peer communication overlay approach to share information between vehicles, the mentioned approach offer interesting benefits such, scalabilities, fault-tolerant and completely self-organizing, in this paper we try to project this method of dissemination in the area of Vanets
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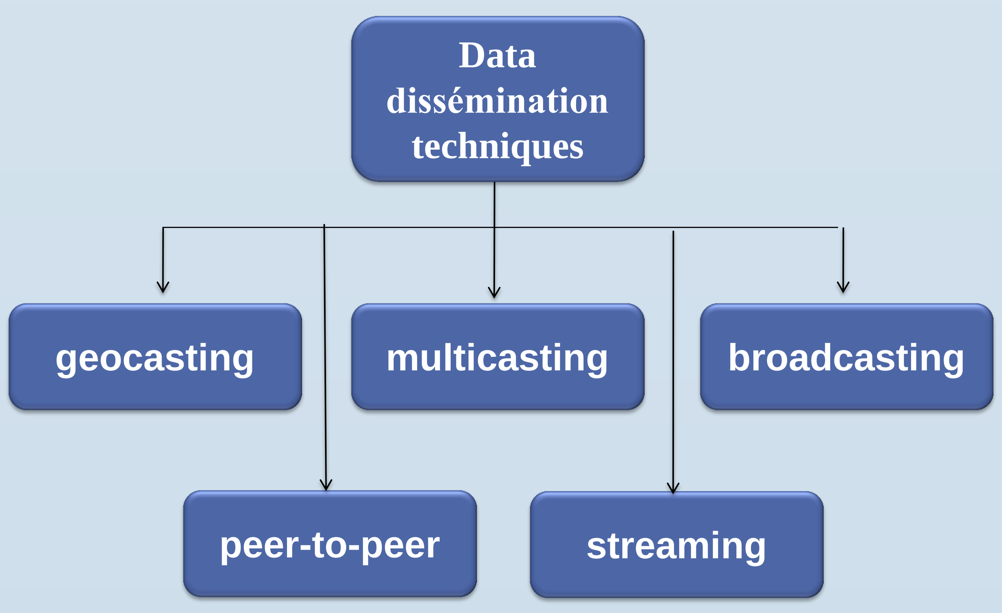
Vanets and Characteristics

Vehicular networks, or VANETs, are considered as a form of MANETs, deployed to
provide communication within a group of vehicles. Vehicles can communicate either with other moving vehicles using V2V communications or with fixed network nodes placed alongside the road.
Here are some properties that characterized vehicular networks:

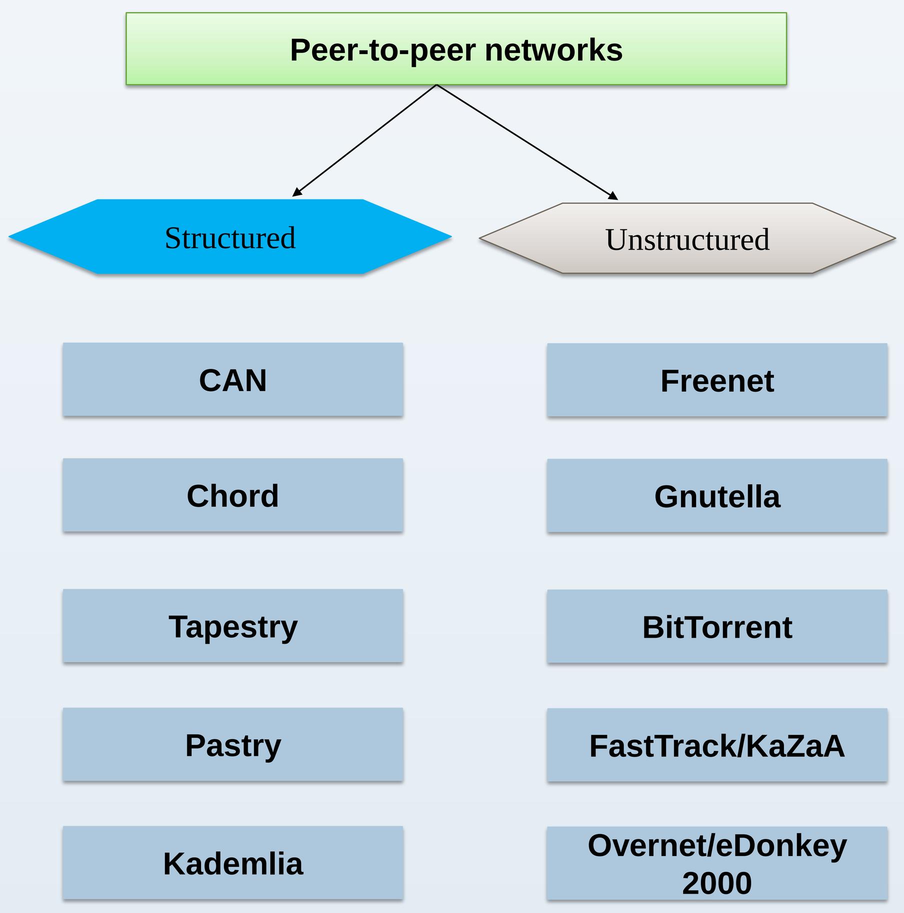
- Network topology and density:
- Mobility model and network distribution:
- Scalability:
- Processing and energy capacities:
- Security and anonymity in the network:

Data dissemination technique



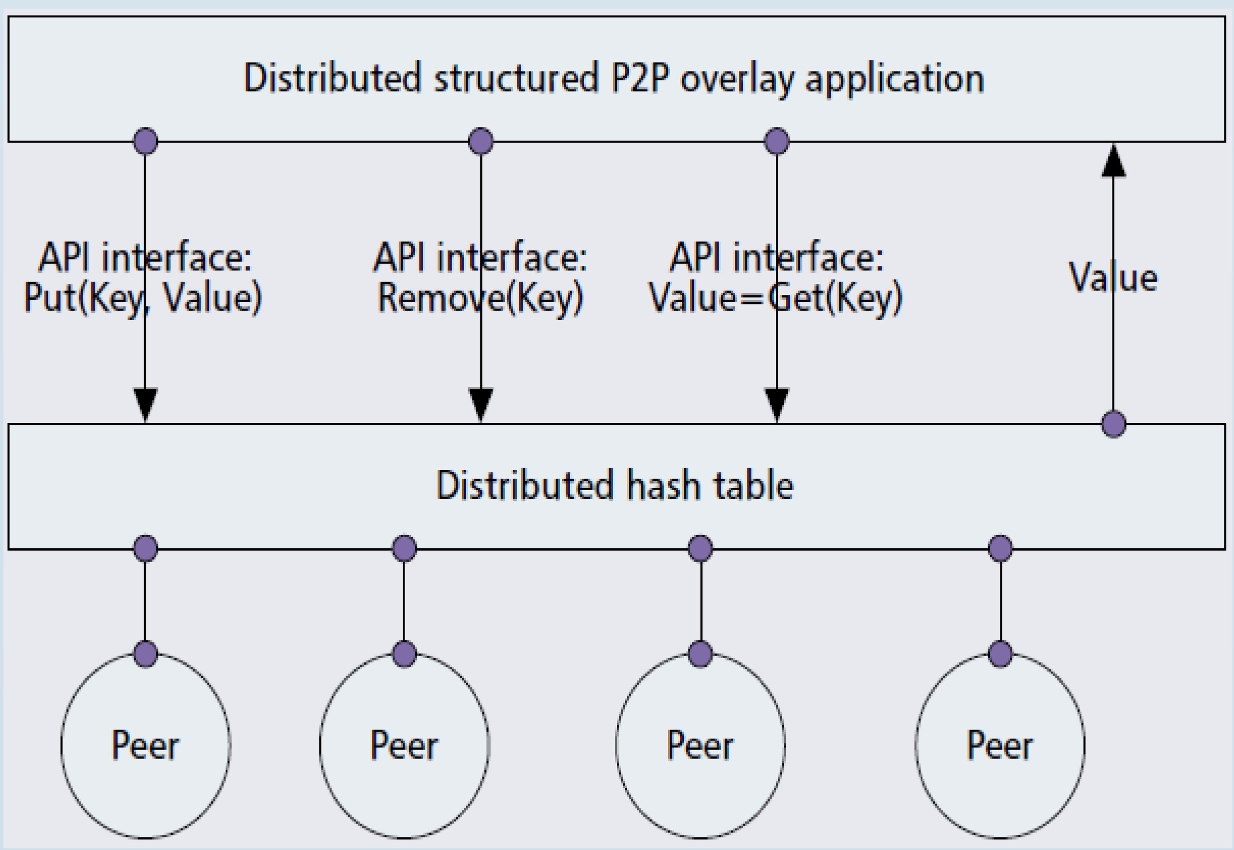
Peer to peer Communications

The peer-to-peer communication paradigm aims for direct collaboration between network nodes, where all parties are equal in rights and duties. Peer-to-peer networks organize the system in a decentralized, distributed manner. Peers are connected to each other to form a communication overlay. Each peer shares some of its resources (bandwidth, storage, CPU power) and makes it available to the others.



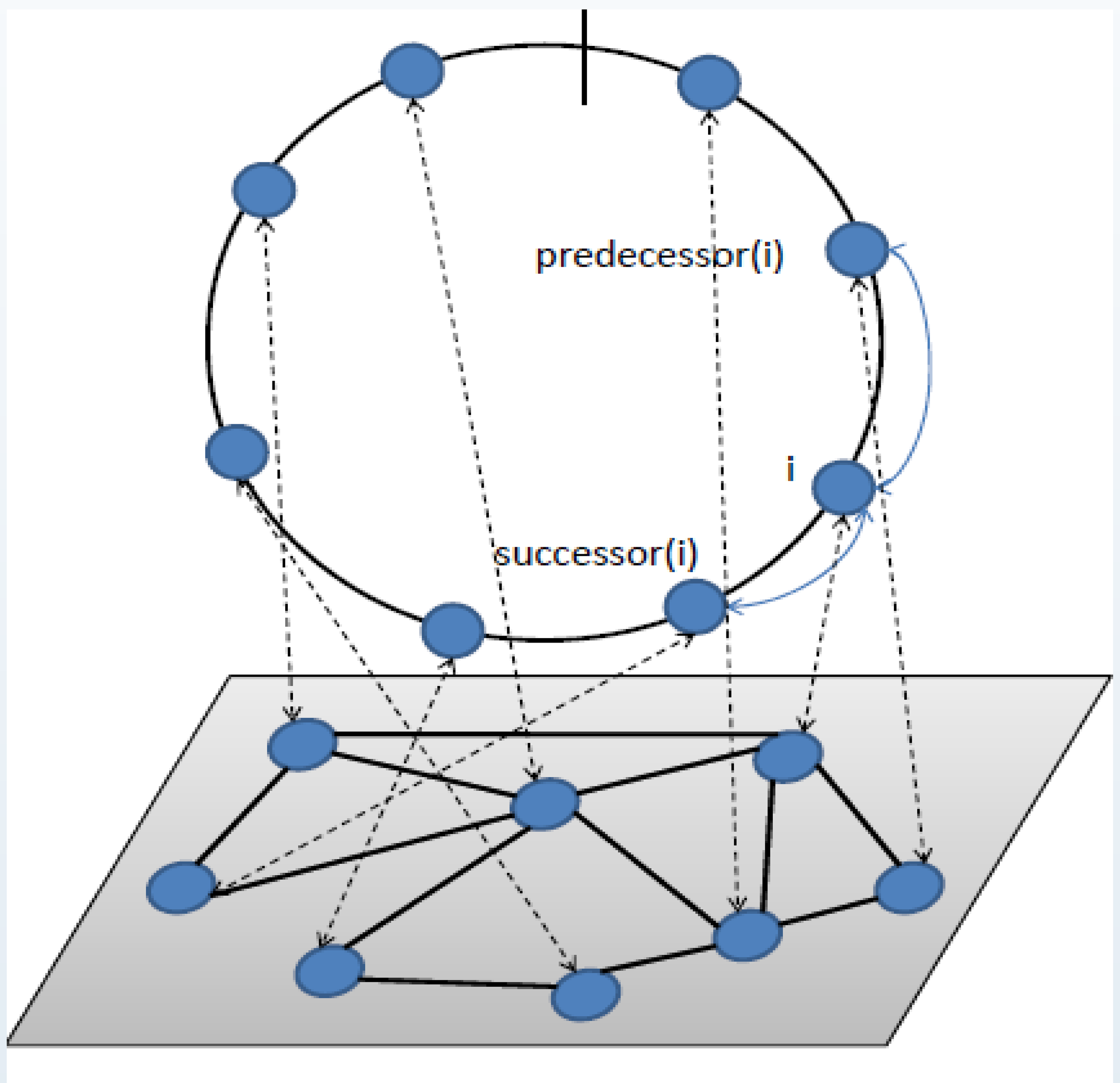
Structured peer to peer communications

In this class, peers organize themselves in a predefined structure, like a ring, a butterfly graph, or a Cartesian space.
Such structured P2P systems use the Distributed Hash Table (DHT) as a substrate, in which data object (or value) location information is placed deterministically, at the peers with identifiers corresponding to the data object’s unique key



Related works

- PeerTIS.
- Mobile Chord
- TMC [3] or Navteq Traffic RDS [4].



Conclusion and perspectives

We have presented a summarize of the state of the art of peer to peer communication over Vanets, In our future work we will analyze these solutions in order to make a perfect comparison between theme to propose an appropriate solution.

References

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Université KASDI-MERBAH OUARGLA