NONET
AD HOC NETWORK FOR EMERGENCY COMMUNICATION

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OUTLINE

- Introduction
- Main Requirements
- Implemented Scenarios
- Techniques & Algorithms
- Application Architecture
INTRODUCTION

- What is our motivation?
  Communication infrastructure collapse in disaster areas.

- Our solution
  Enabling mobile devices to communicate with each other without using GSM and the Internet connection.
MAIN REQUIREMENTS

- Unicast, multicast and broadcast text messages,
- Delivered unicast messages will be ACKed,
- Not delivered messages will give time out,
- Send current location by a click,
- If the battery is low, user can choose not to attend the Ad Hoc Network.
- Bluetooth technology is used to meet this requirements.
IMPLEMENTED SCENARIOS
SCENARIO 1

PEER TO PEER COMMUNICATION
SCENARIO 2
DATA FLOODING

BROADCAST A MESSAGE
SCENARIO 3

AODV ROUTING PROTOCOL

SEND A MESSAGE TO A DISTANT PEER
TECHNIQUES & ALGORITHMS
A MOBILE AD HOC NETWORK
(MANET)

- is a continuously self-configuring,
- infrastructure-less,
- wirelessly connected,
- network of mobile devices.
- Devices with no direct link may communicate, using other devices in the network to transfer their data.
AODV (AD HOC ON DEMAND DISTANCE VECTOR) ROUTING PROTOCOL

- AODV is a routing protocol designed for wireless and mobile ad hoc networks. This protocol establishes routes to destinations on demand and supports both unicast and multicast routing.

- Why we choose AODV as a routing protocol?
  - High mobility
  - Shortest transfer time
APPLICATION ARCHITECTURE
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DATAGRAM

- Unique identifier of data:
  1. Destination address,
  2. Source address,
  3. The time that data was created

- Data types:
  Message, Control, ACK
APPLICATION MESSAGE FLOW

Message to Orange

Message to Orange

Message to Orange

Message to Orange

ACK to Green

ACK to Green

ACK to Orange

ACK to Orange

Incoming message
One can register to the system by his/her phone number.
In order to send messages to distant devices, we use phone numbers as a destination address.

- We can check the sender's phone number from our contact list and retrieve the contact name.
- We can unicast, multicast and broadcast messages by selecting the check mark next to user names and broadcast.
INBOX

Received messages are shown here.

OUTBOX

- Sent messages are shown here.
- Delivered messages,
- Timed out messages and
- Broadcasted messages have special symbols.
REFERENCES
