BlueTTT – A Bluetooth Based P2P Tic Tac Toe Game

Developed as a partial fulfillment of the requirements of ID2216

Sumanta Saha
Md Sakhawat Hossen
Md Safiqul Islam
sumanta, hossen, islam3 @kth.se

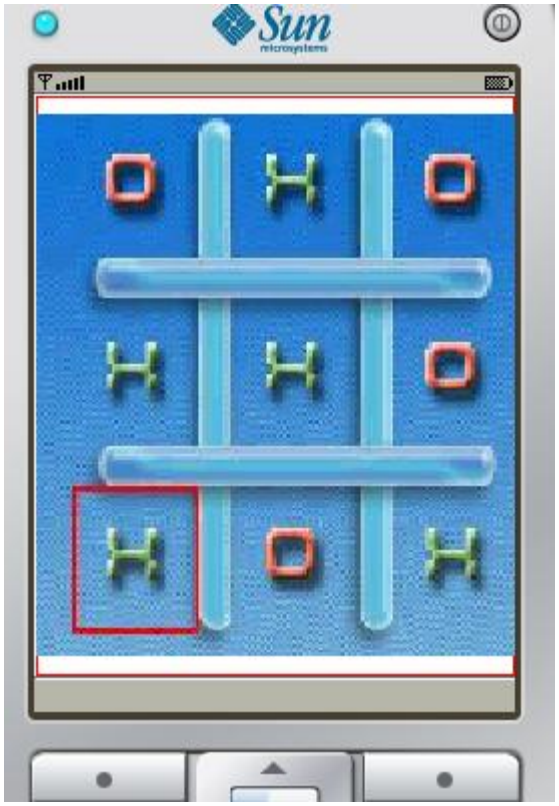
Project Target

- Main objectives of the game was
  - The communication part of the game is the main focus and other parts are recommended
  - The communications part can be in Bluetooth, SMS or Client-Server based
  - The game has to run seamlessly in variety of small-screen devices
  - Optional work includes:
    - Push registry
    - Flash lite presentation
    - OTA download
    - Dynamically adaptable project web site

Technical Design of BlueTTT

- Communication part was done by Bluetooth
- The whole game was MIDP 1.0, CLDC 1.0 compliant
- For push registry, MIDP 2.0 was included
- Two player turn based board game
- MMAPI 1.0, Bluetooth & OBEX API and WMA has been used

Game Overview

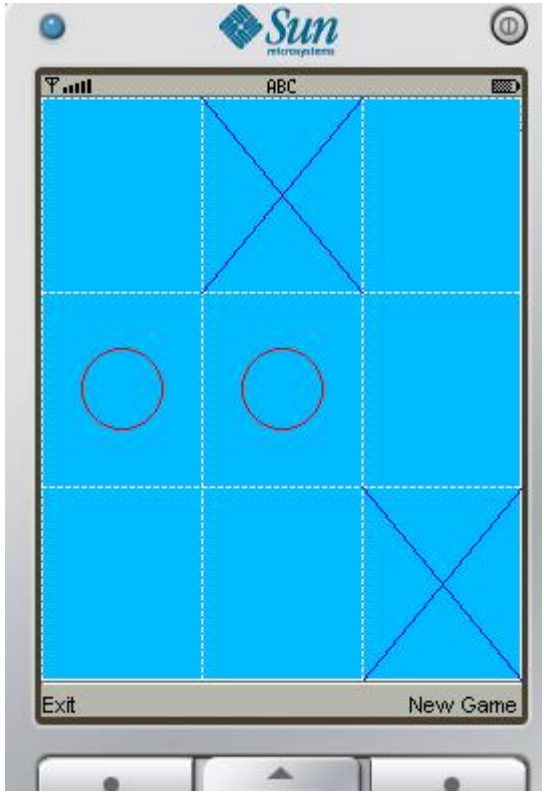


- Famous Tic Tac Toe game
- 3 X 3 board
- Each player has to fill a box with his mark
- Alternate turn based game
- Target is to match your mark horizontally, vertically or diagonally
- Played over Bluetooth in a P2P PAN

Device discovery & Communication

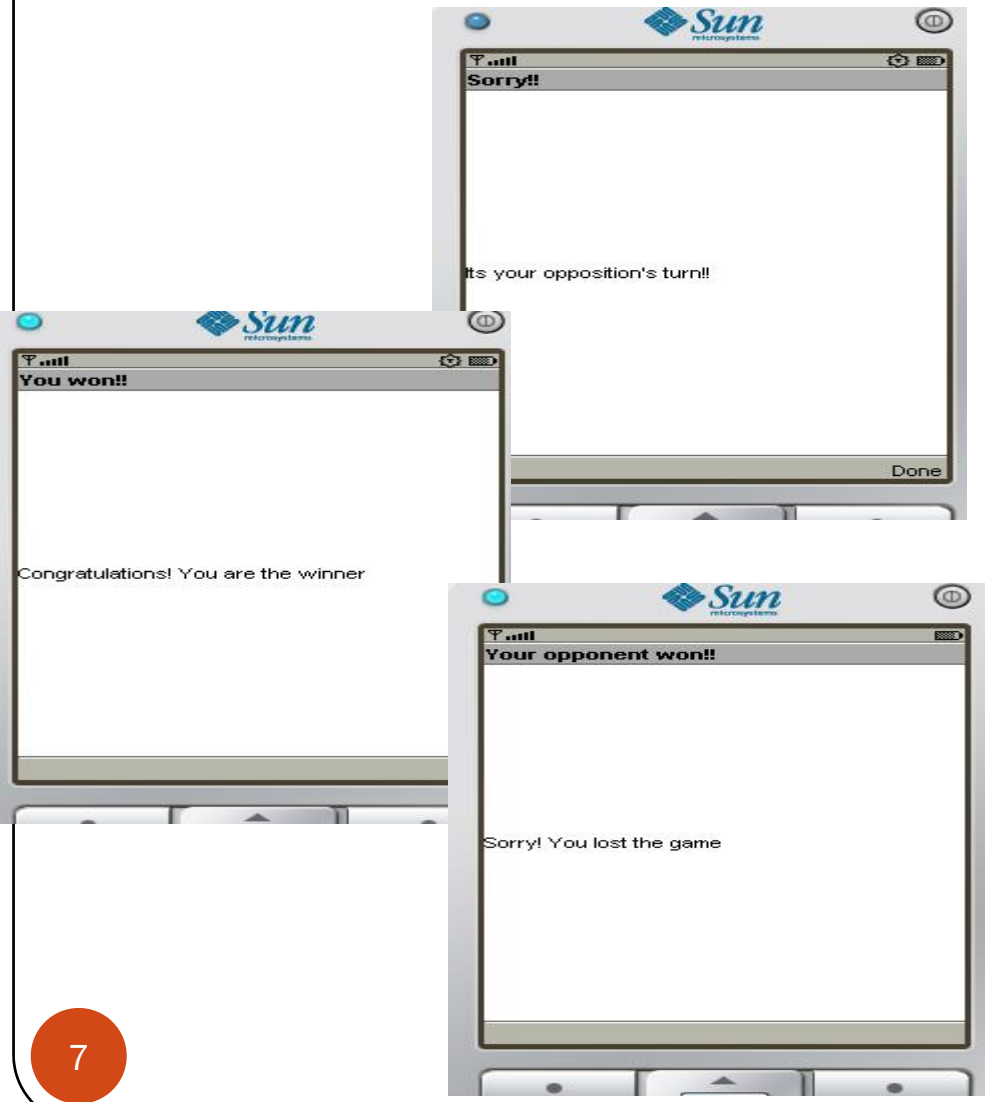
- Java Bluetooth API has been used for discovering neighboring devices
- One device waits for connection in server mode and another connects to it
- After discovery the Device name is shown to user
- The server device has been made discoverable
  - device.setDiscoverable(DiscoveryAgent.GIAC);

Device Discovery & Communication



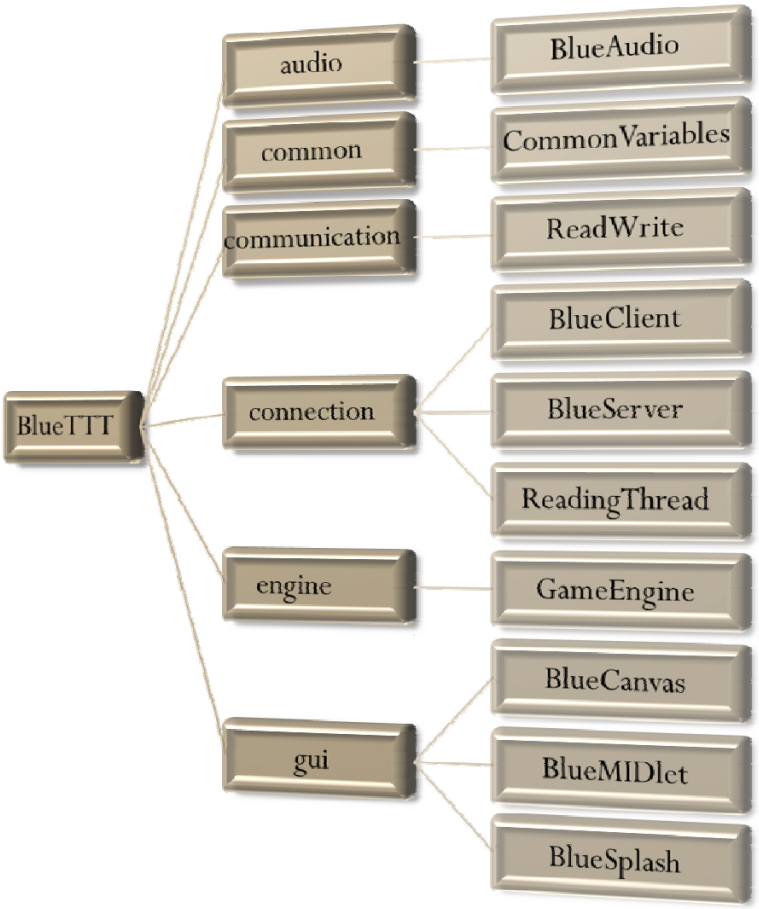
- A custom protocol has been laid out to communicate between the devices
- Position of a player's move as well as the status of the game is communicated
- All the communications are done asynchronously in a separate thread

Game Engine



- A game engine is always monitoring the game
- After each move the status of the game is computed and reported
- The game can be a tie, win or lose
- The engine also detects invalid or wrong move

Game Properties and Architecture

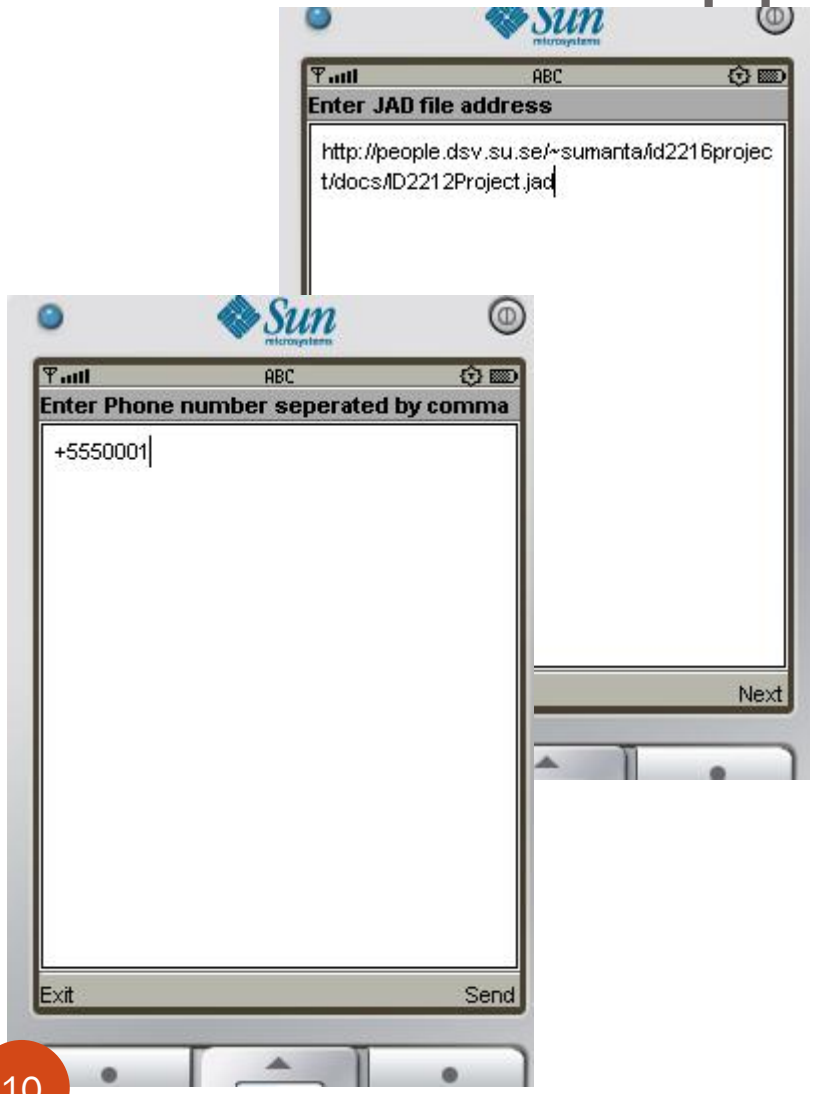


- Security Policy added to avoid wrong platform installation
- Push registry wake up for critical update and information
- Except push registry, fully MIDP 1.0 compliant
- Audio visual experience with MMAPI
- Modular design for complete reuse

Push Registry

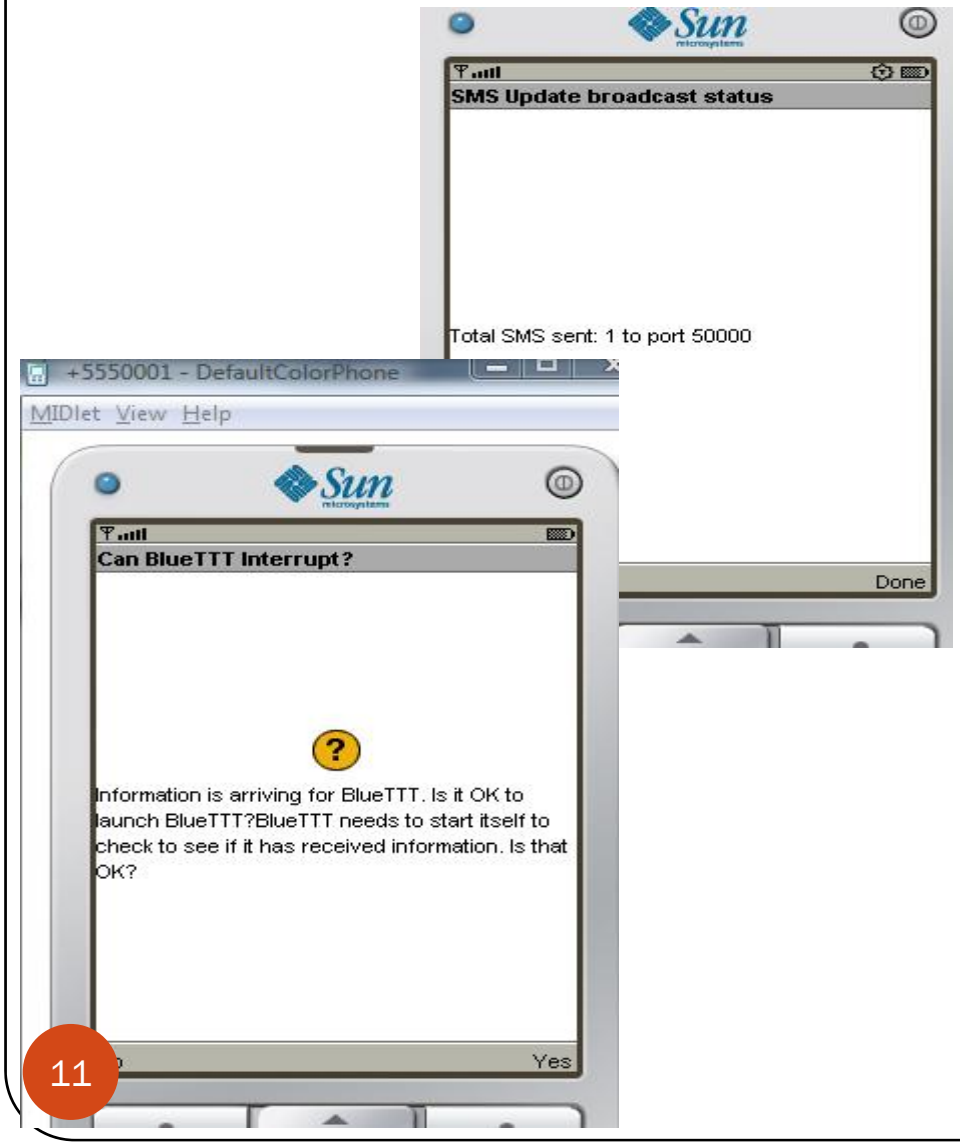
- The application is configured and programmed to wake up in response to SMS at a particular port
- The SMS can be an update request or some notification
- To automate the SMS push to particular port a J2ME application has been developed using WMA
- The game takes appropriate action to install the update from the SMS

SMS Push Application



- Content provider has to enter the URL of the updated JAD file in a textbox
- And the comma separated client phone numbers in the second screen
- And push "Send" button

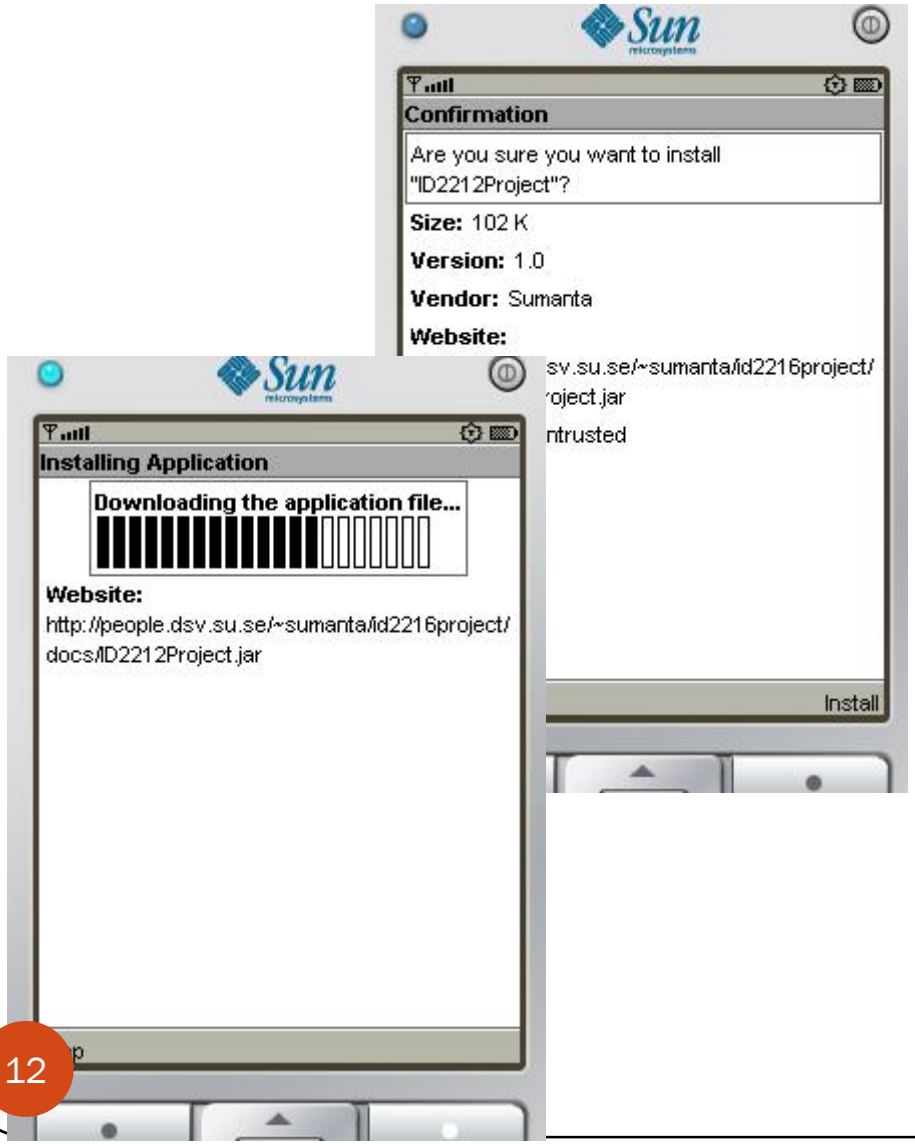
SMS Push Application (Contd..)



- Provider will then see the confirmation that the URL has been sent to the port of the phone numbers

- And consequently the BlueTTT application will wake up in client's machine

SMS Push Update Mechanism



- Upon receiving the SMS BlueTTT will start the update process
- Installation of the new version will be started
- The previous version will be overwritten
- Security policy has been applied so it will not be installed in wrong platform

Bored at TunnelBana??

- Try BlueTTT
- Connect with your friend instantly
- Don’t pay anything to your service provider for communicating
- Enjoy your time!!!!

Thanks to all

Questions?