

Bluetooth usage on Android platform for mHealth development

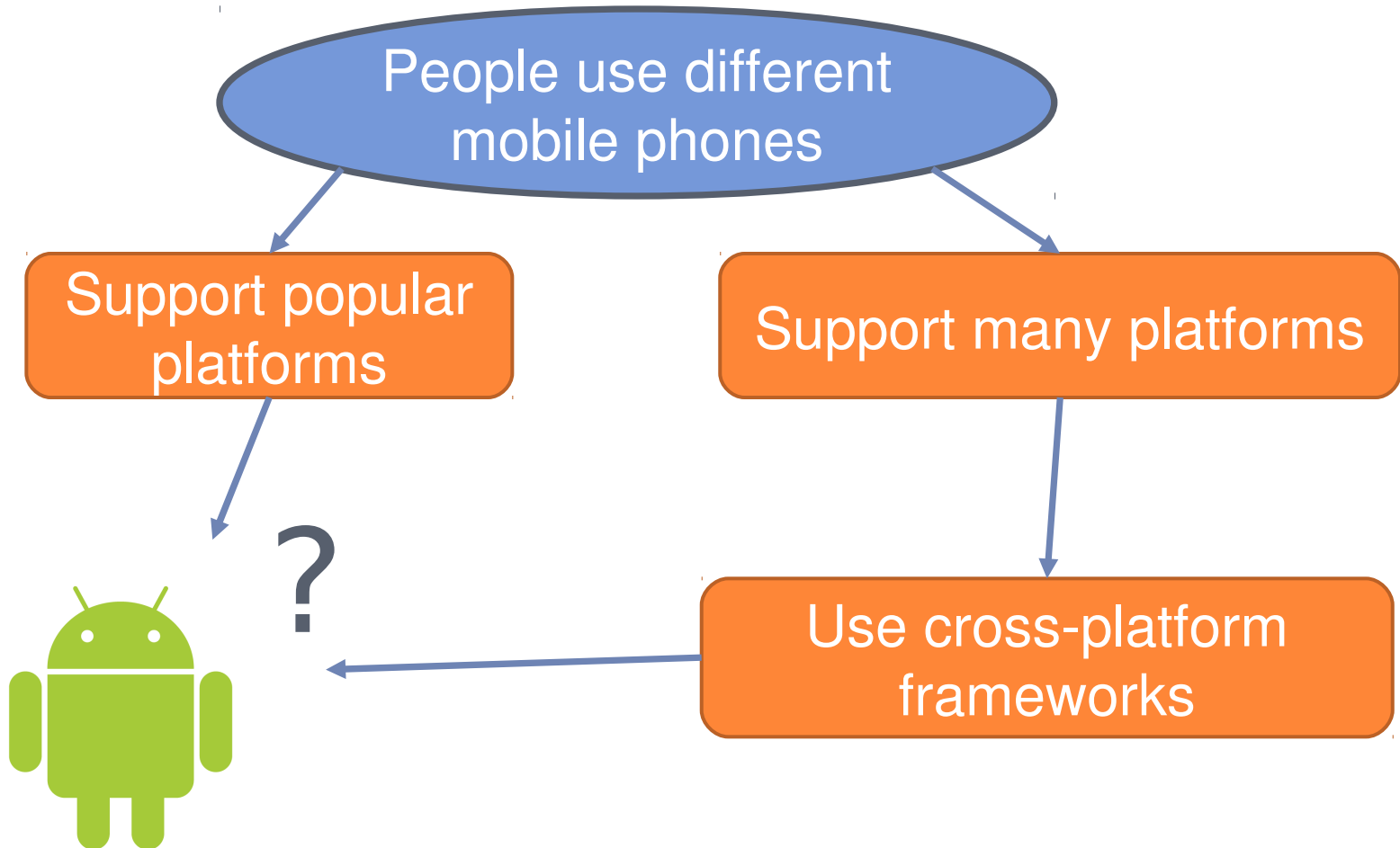
Evgeny Stankevich

Ilya Paramonov

Yaroslavl State University (YarSU)

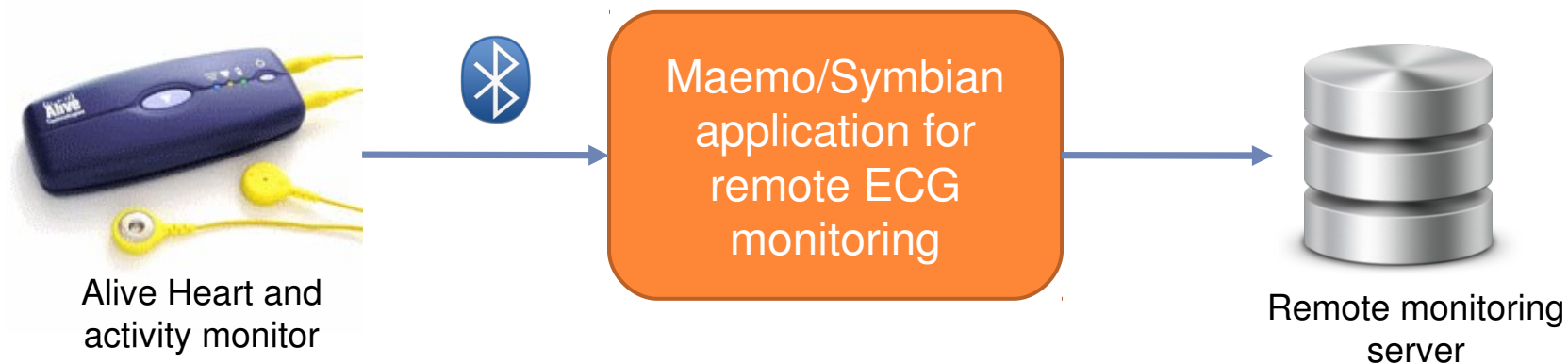
Russia

MHealth development for Android



Remote ECG monitoring application

Porting the existing remote ECG monitoring application to Android

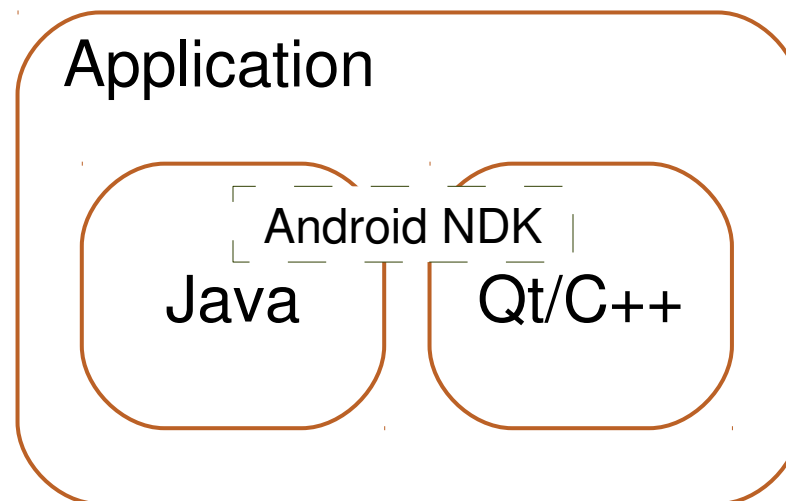


- Receive data from ECG monitor by Bluetooth (Bluez)
- Calculate heart rate
- Send data to remote server

Necessitas



- Open source project based on lighthouse
- Aimed to port Qt to Android

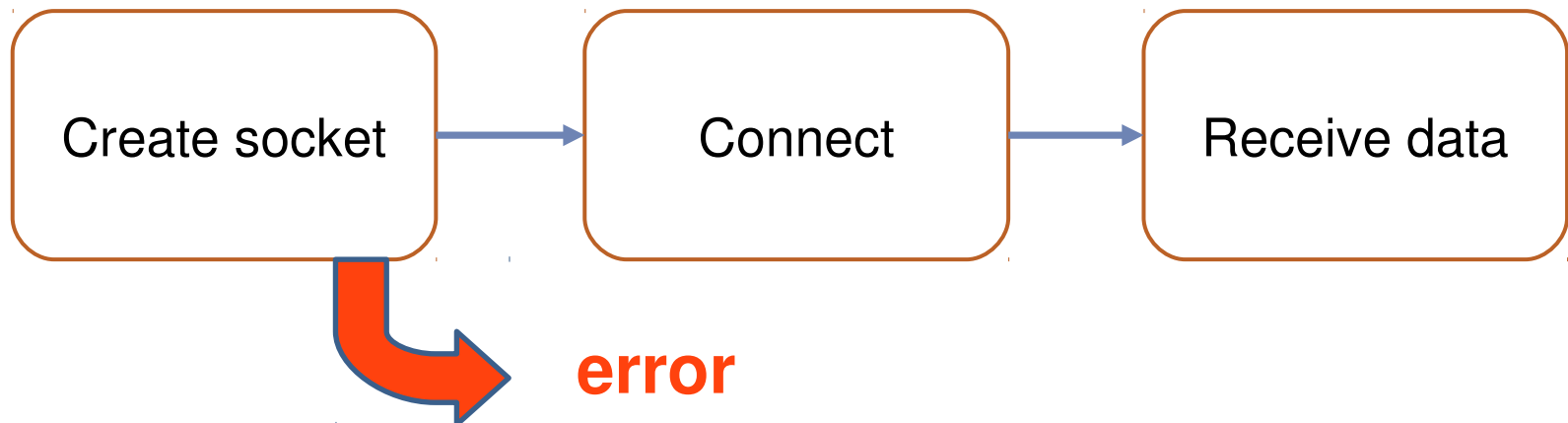


Problem with Bluetooth

- The application uses Bluez library API to communicate via Bluetooth
- Android uses Bluez library as Maemo/MeeGo does

But!

- The same mechanism as on Maemo does not work on some Android devices

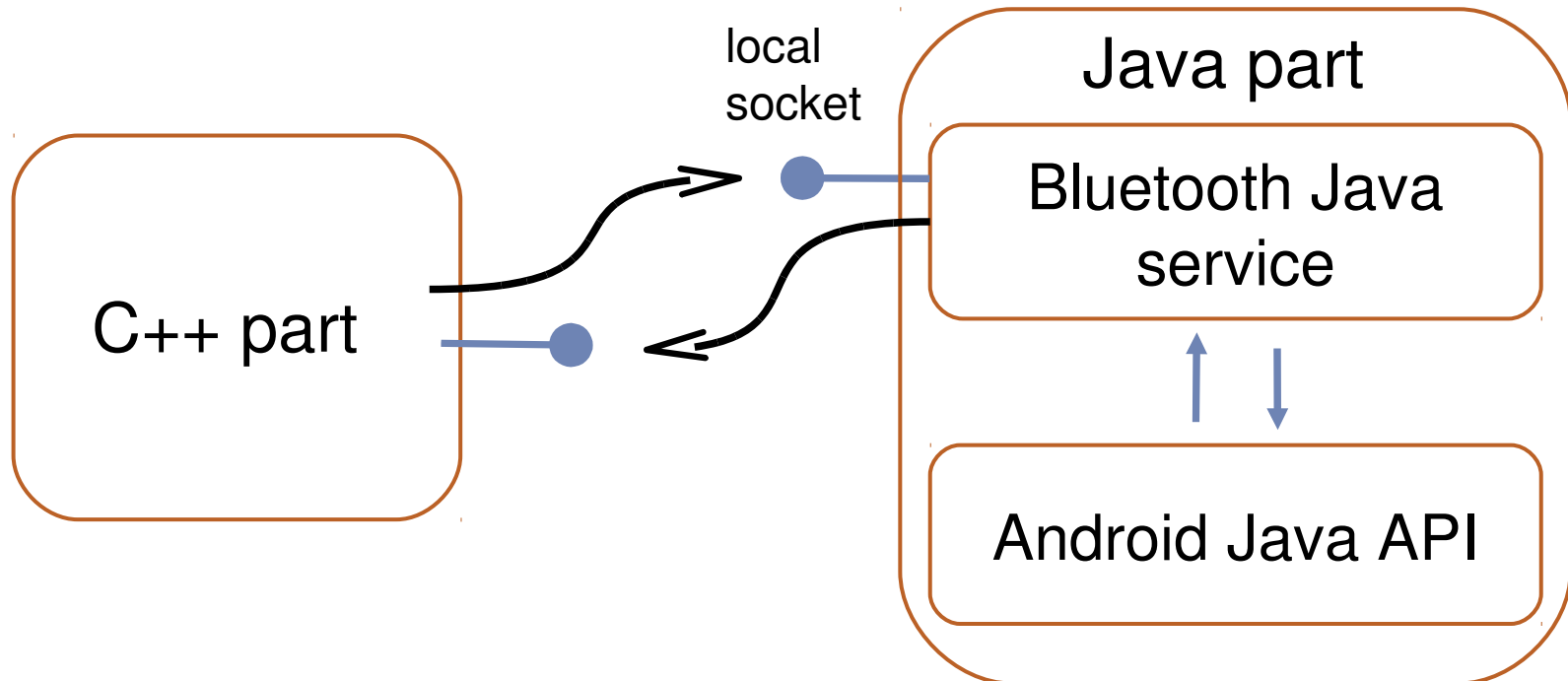


Bluez B-Bus daemon hcid

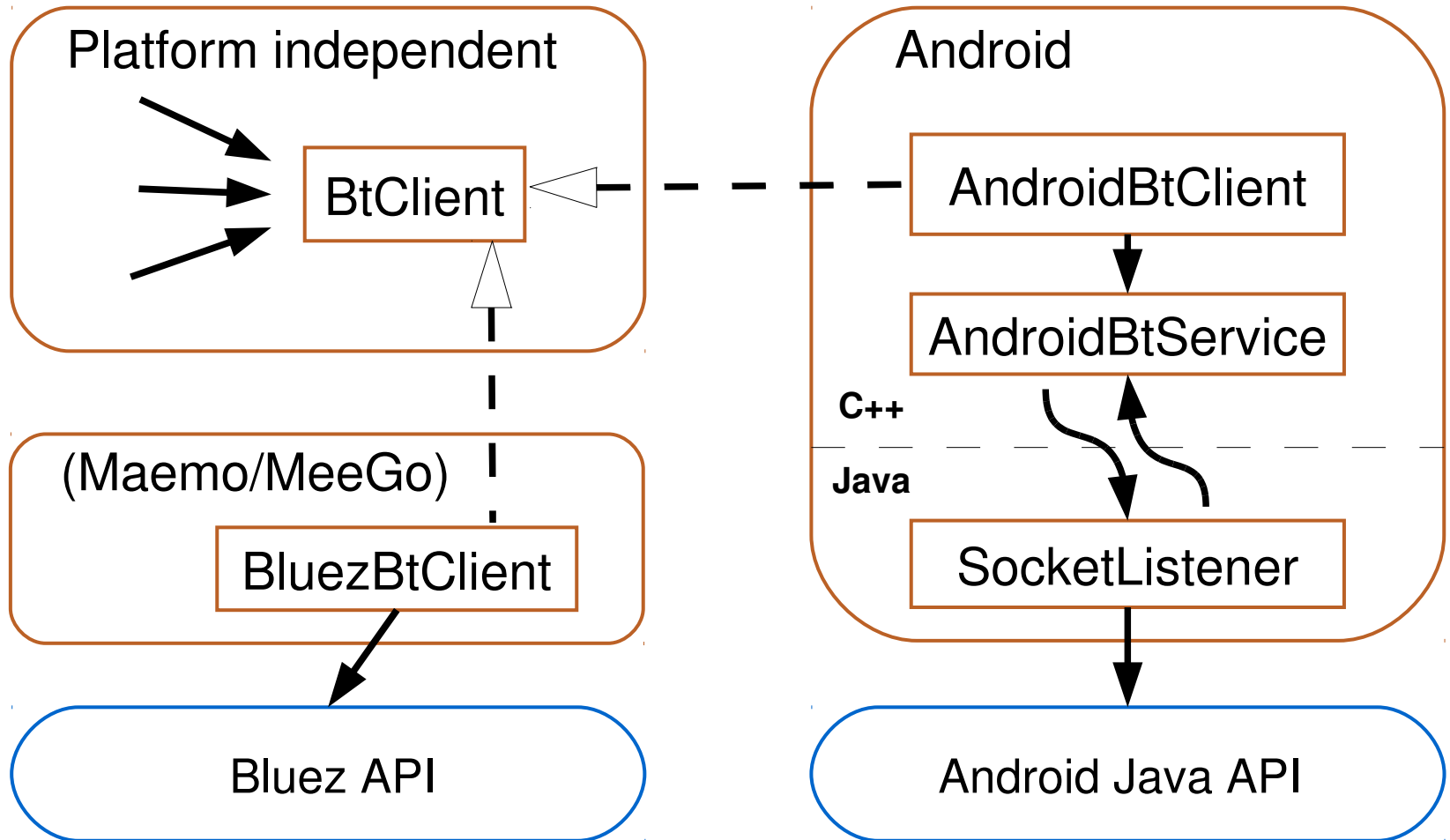
- Android use Bluez through D-BUS IPC
 - Bluez provides D-BUS daemon hcid
- But!**
- No permissions to use D-BUS from custom application

Our solution

- Implement component in Java provided Bluetooth API
- Have access to remote device via local socket



Architecture of our solution



Results

- Universal solution for Bluetooth communication from native code on Android has been proposed.
- The application for remote ECG monitoring has been ported to Android

