Rapid OpenID Authentication System based on Cellular Authenticated Token

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Contributions

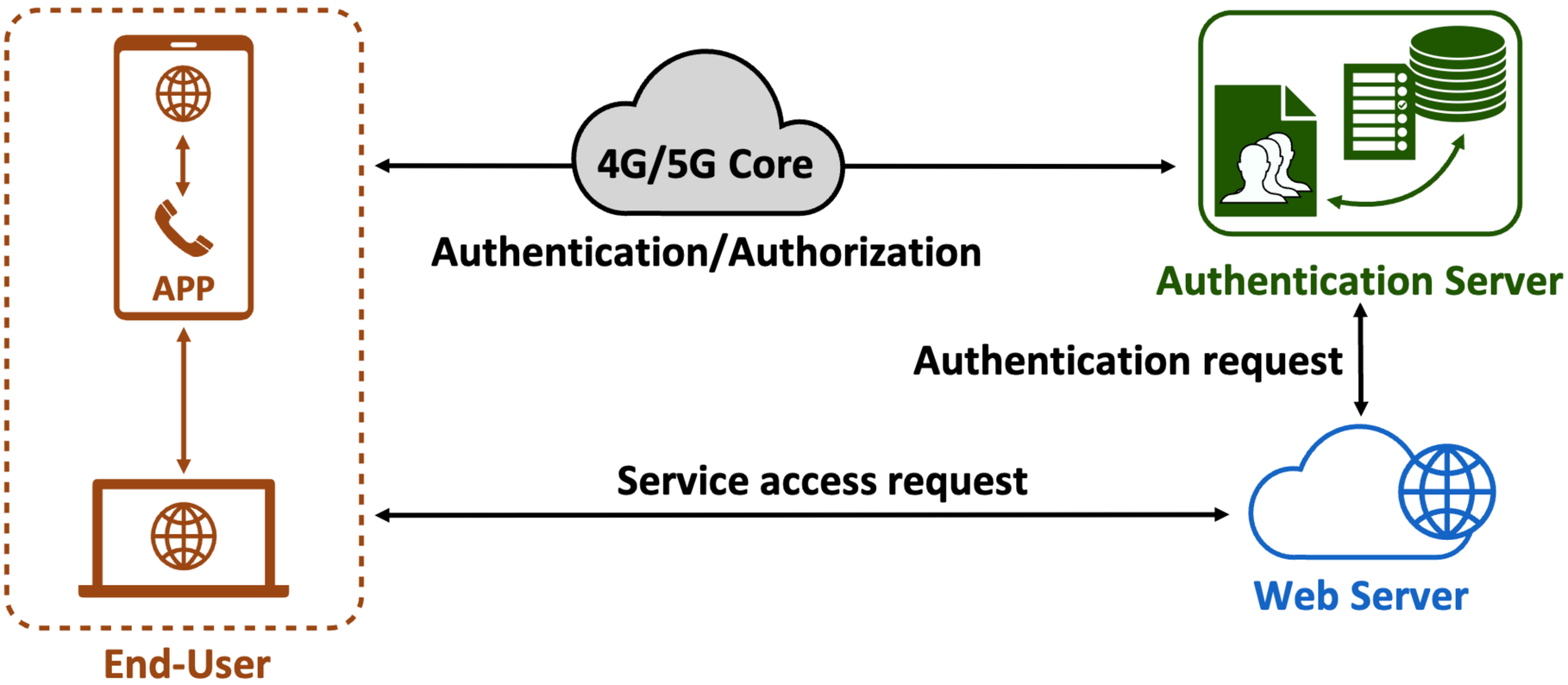
- Developing a third-party authentication system for user authentication
- Being applied to browsers and general Internet applications which are on the smartphones or other devices such as laptop
- More secure and faster than other methods

Problem

- Multiple user authentication methods have been introduced
- Currently common methods are not convenient and secure

Design

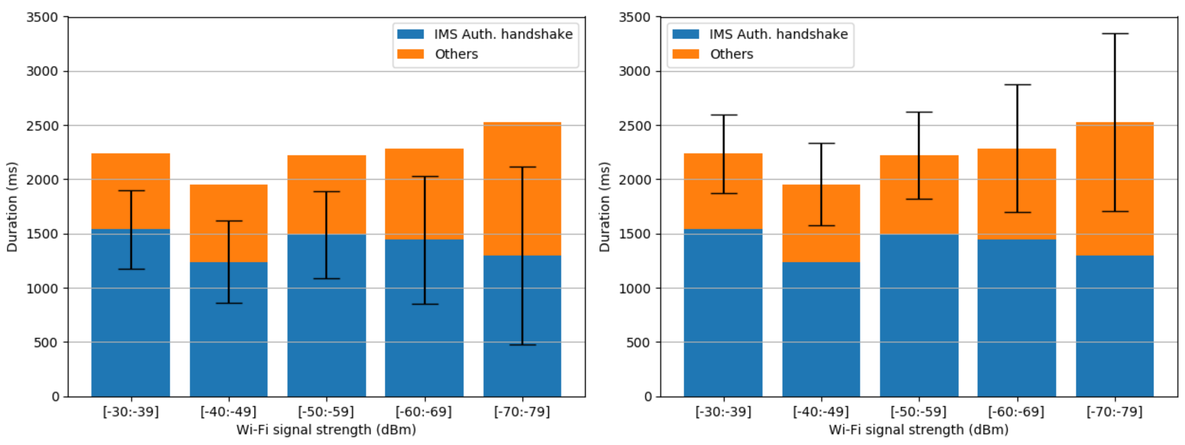
- Leveraging user's existing cellular smartphone
- Based on authenticated session between the smartphone and 4G/5G core network
  - Utilizing signaling protocol used in 4G/5G call system - Session Initiation Protocol (SIP)
  - Through VoWi-Fi (Voice over Wi-Fi) session
- Developing an APP on the smartphone



- Applying for two use cases
  - Only Smartphone Case: create WebSocket connection between APP and browser on the smartphone
  - Smartphone and Laptop Case: create Bluetooth Low Energy (BLE) connection between smartphone and laptop

Evaluation

Login duration in different cases of Wi-Fi signal strength in Only Smartphone Case



Login duration in different cases of Wi-Fi and Bluetooth signal strength in Smartphone and Laptop Case