infobip

Network API Ideathon

Education materials

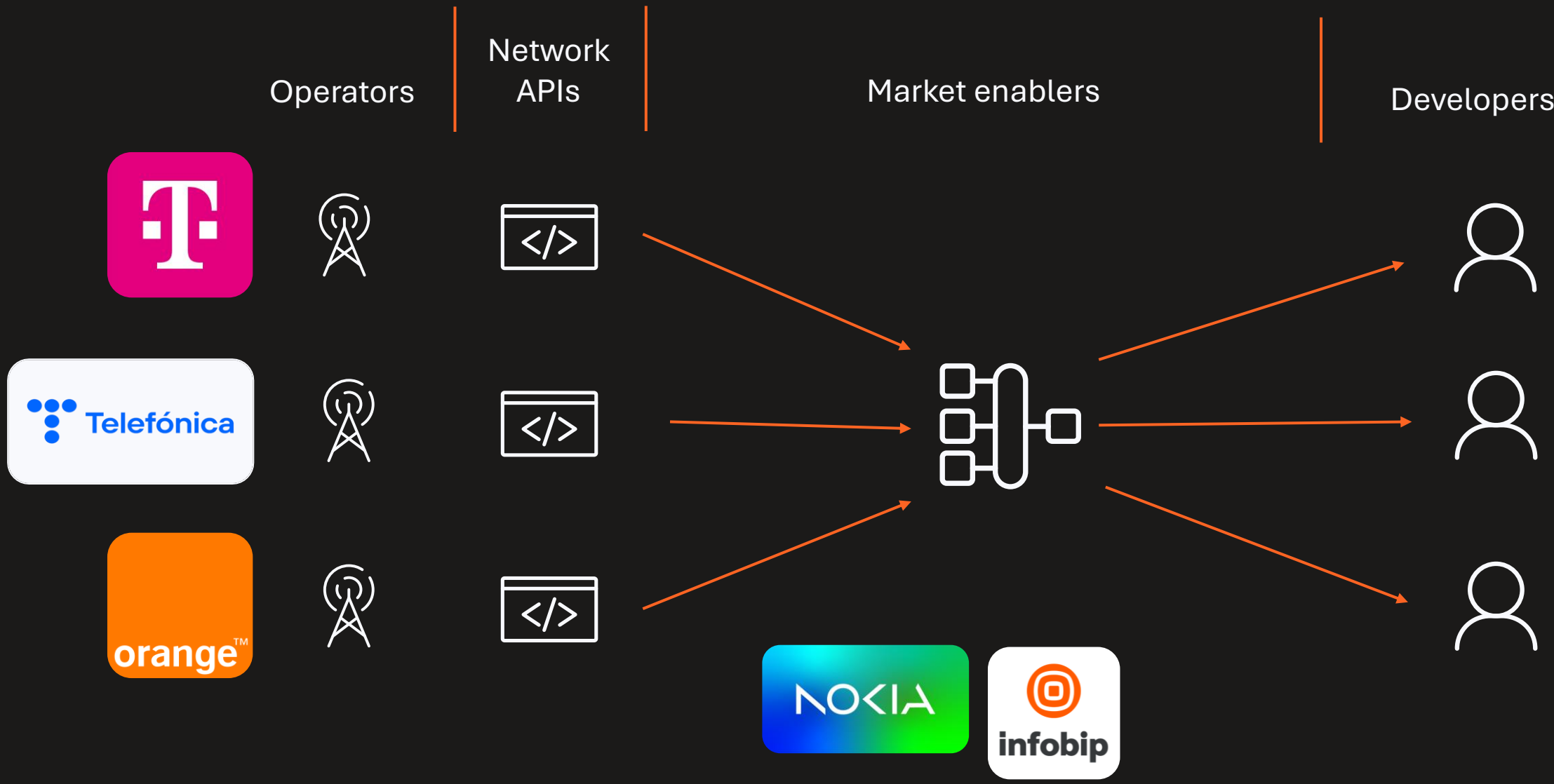
Shift Zadar 2024

What are Network APIs?

- A set of APIs exposing operators' networks to developers
- Network APIs are:
  - Enabling developers to use data stored and collected by the Operators to improve the experience of their applications
  - Improving the way developers can manage the way their applications interact with the network
- API development is done by Camara Project (led by Linux foundation) which is a global group of operators and other stakeholders interested in Network APIs
  - Main purpose of Camara is to ensure API quality and standardization across markets
  - Camara is completely open source, publicly available
- Find out more about Camara

CAMARA
THE TELCO GLOBAL API ALLIANCE

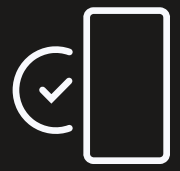
Network APIs



Network APIs

Network APIs

Click on the icon to check out Camara documentation for each API



Number Verification

Quality on Demand

SIM Swap Detection

Device Status

Device Location

Know Your Customer (KYC)

Important note

APIs in this materials are not all Network APIs available

These APIs were picked as the most relevant ones. Feel free to check out others on Camara documentation.

Number Verification

Camara link

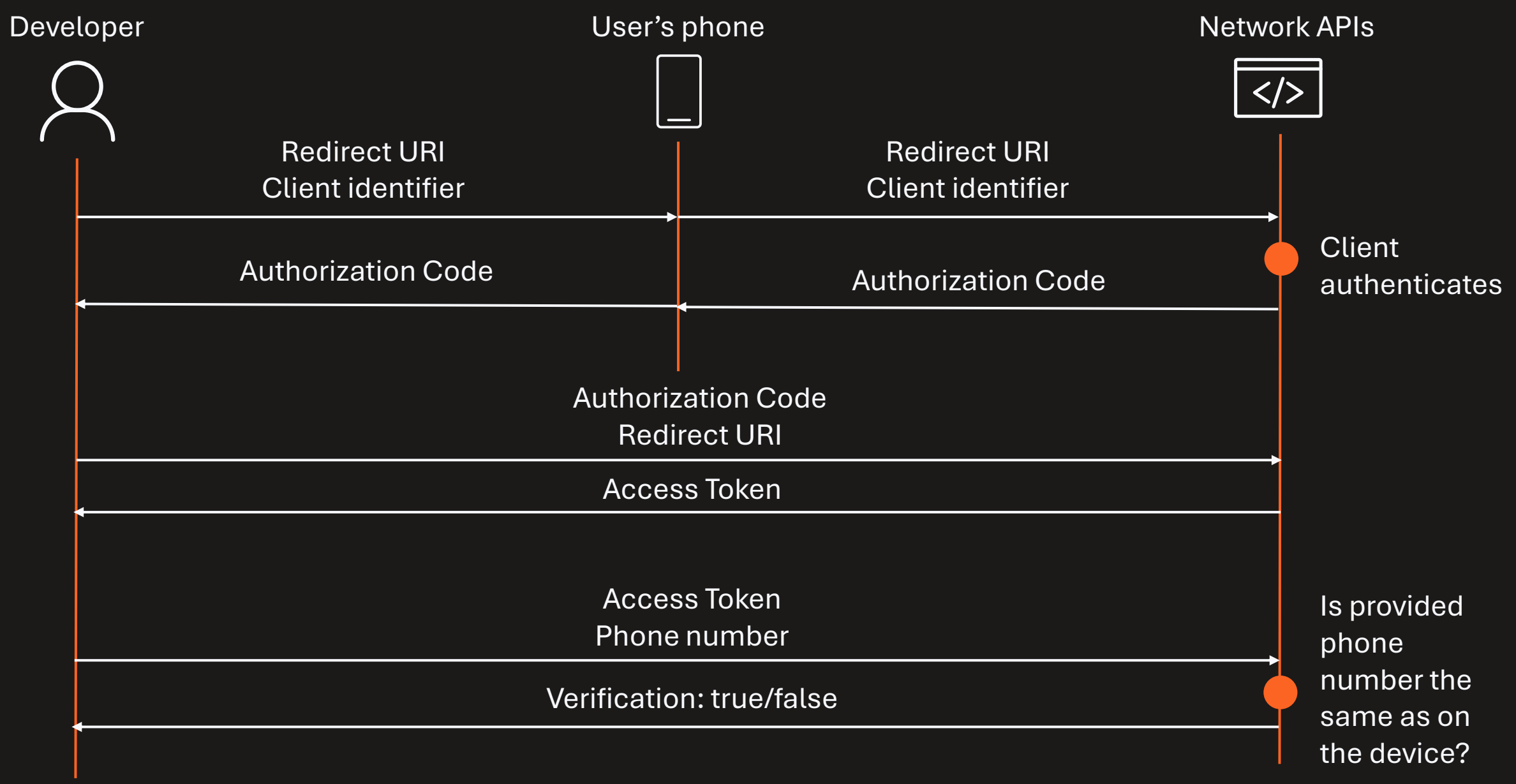
Number Verification

- Phone number verification – done by matching user's phone number with data in operator's network (usually IP address and port on mobile network)
- Phone has to be connected to mobile network data
- Only input needed from the user is phone number (unless it's not already known to the application)

Why and how is it used today?

- Eliminates the need for OTPs
- In case phone number is already known to the application, can be done silently in the background
- Much better option for all cases where OTP is requested over a mobile phone because:
  - OTP creates friction, which Number verification decreased significantly
  - Number verification eliminates human action for phone verification, making it a more secure method

Number Verification



SIM Swap

Camara link

SIM Swap Detection

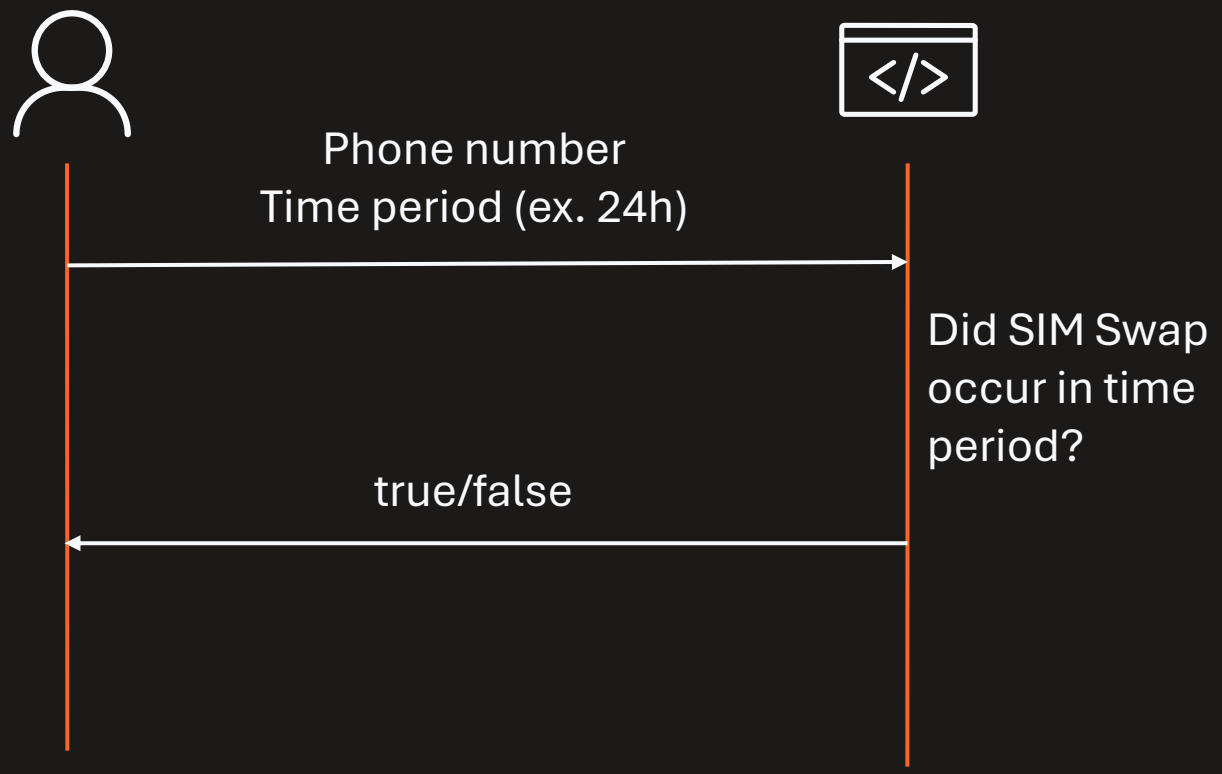
- Information on the last time the SIM was changed for requested phone number
- Works in request & notification model
- In notification mode, subscription needs to be made for each phone number you want to track

Why and how is it used today?

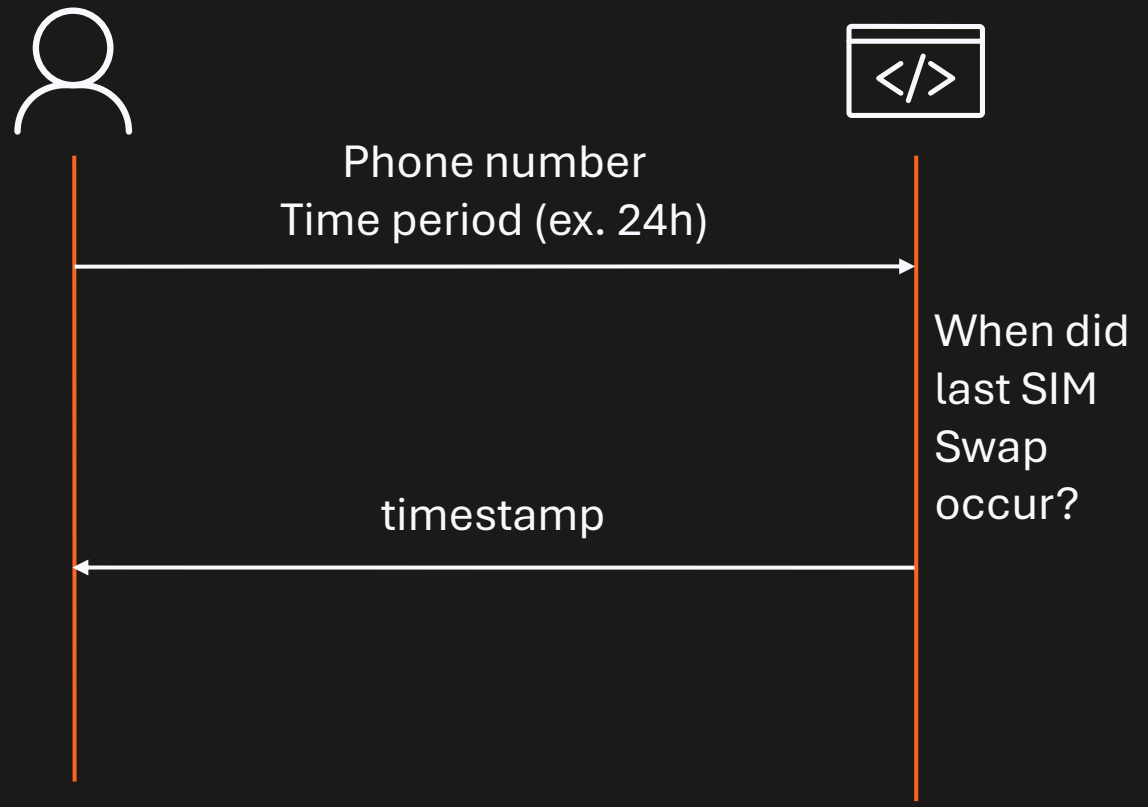
- Mainly for fraud protection
- In UK, banks need to have SIM Swap protection
- In Spain, telcos need to pay for SIM Swap damages

SIM Swap

Option 1

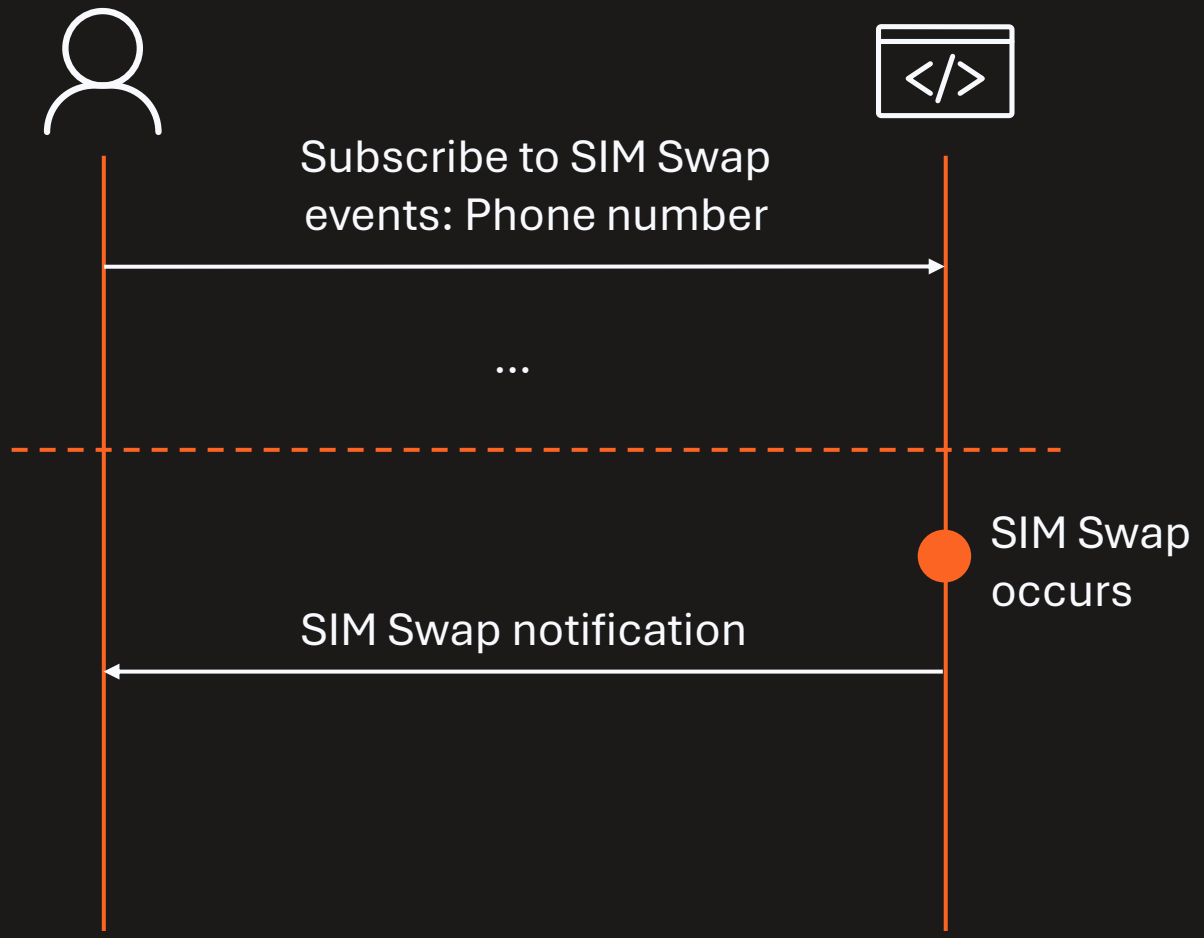


Option 2



SIM Swap

Option 3



Device Location

Camara link

Device Location

Location verification

Is this the location of this device?

Location retrieval

Give me a location of this device.

Location geofencing

Notify me when a device enters this area.

How and why is it used today?

Fraud prevention
Smart mobility
GPS confirmation

Logistics tracking

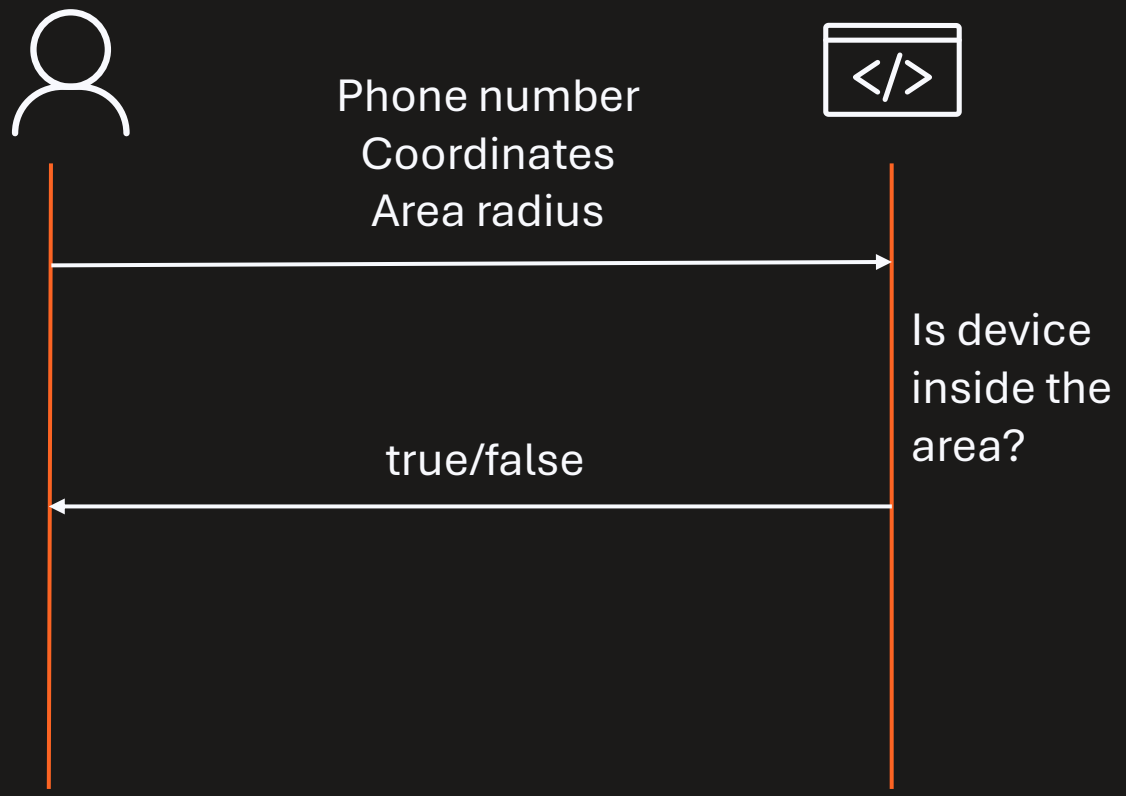
Targeted marketing
Alerts

Device Location

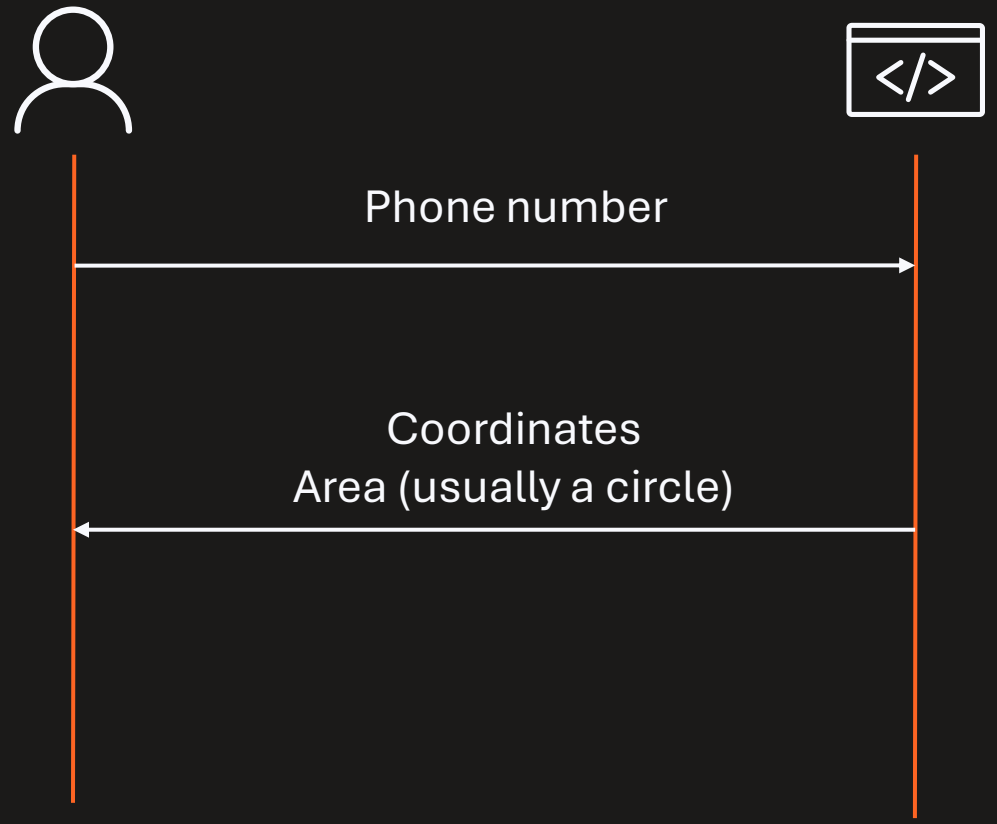
- Location is based on triangulation between Operator’s base stations to which a device is connected to
- For Geofencing, subscription needs to be made for each phone number you want to track

Device Location

Location verification

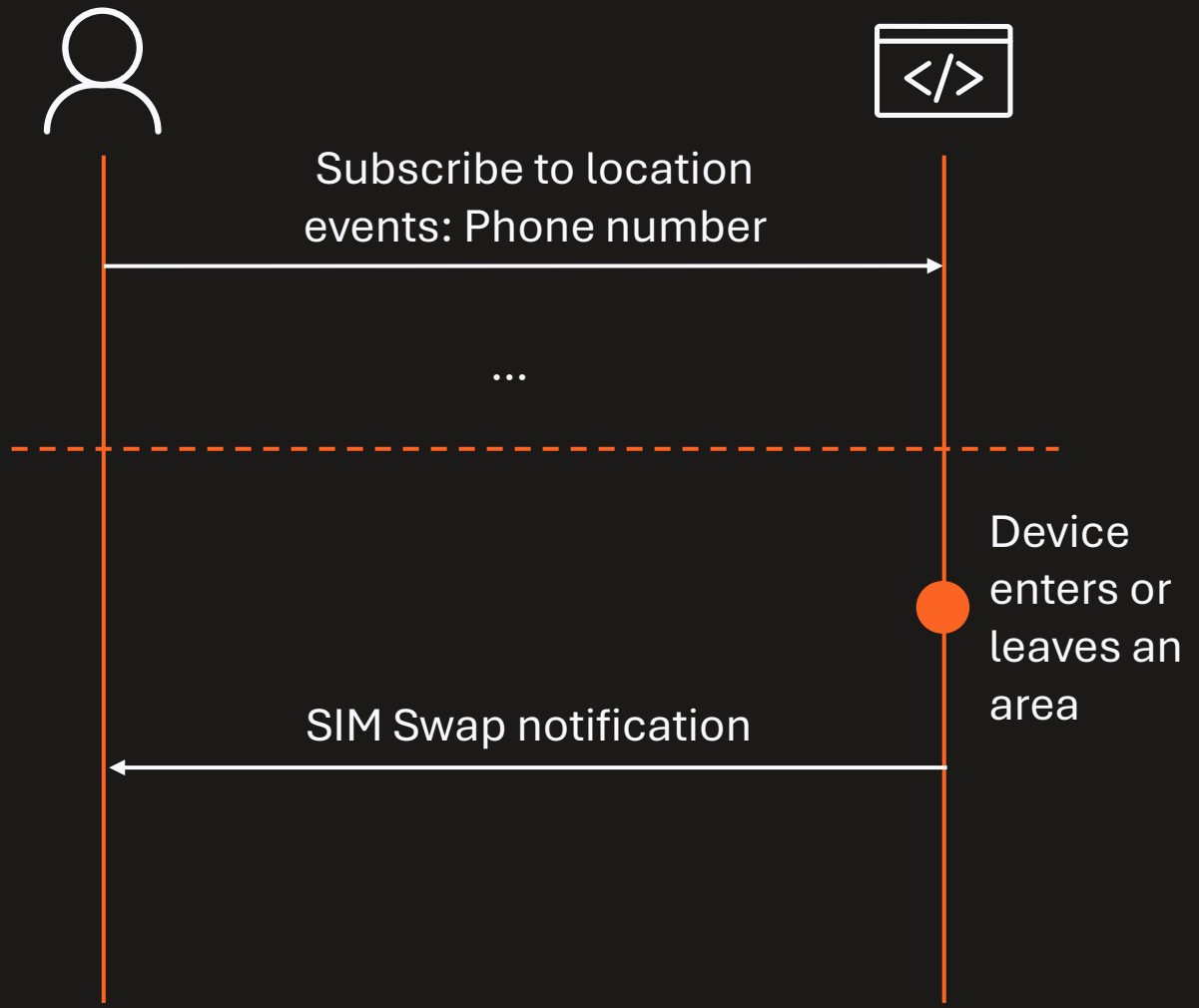


Location retrieval



Device Location

Geofencing



Camara link

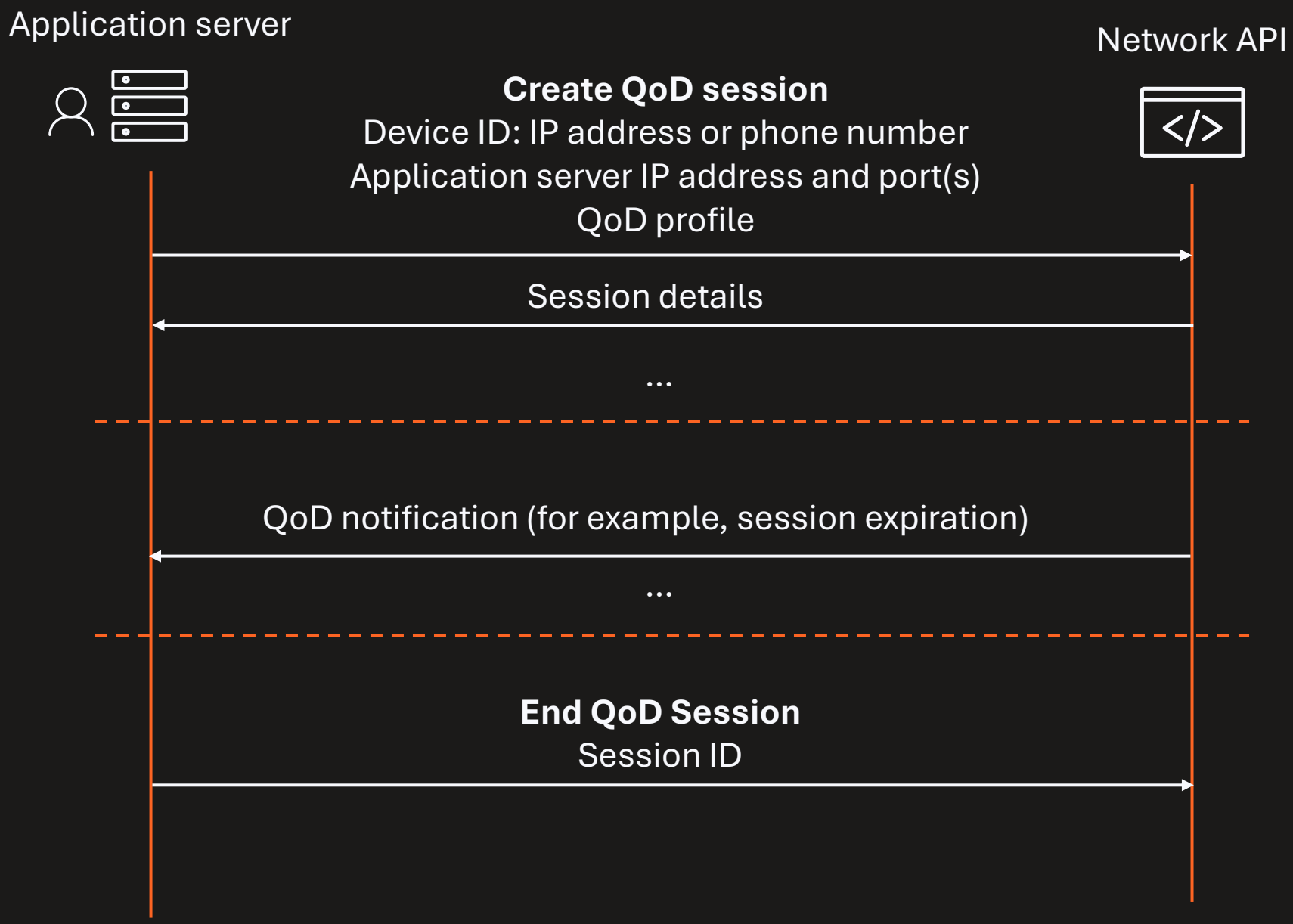
Quality on Demand

- Modify network properties for a limited period of time by getting a priority on network
- You can control latency or bit rate
- Type (level) of service is described in 4 profiles depending on which and application can request a specific type of prioritization on network
- Prioritization session are created by providing
  - User device IP address
  - Application server IP addresses and port(s)

How and why is it used today?

- Increased network quality for online gaming
- Remote ship control in Antwerp port – Nokia powered

Quality on Demand



Device Status

Device Status

Connectivity status

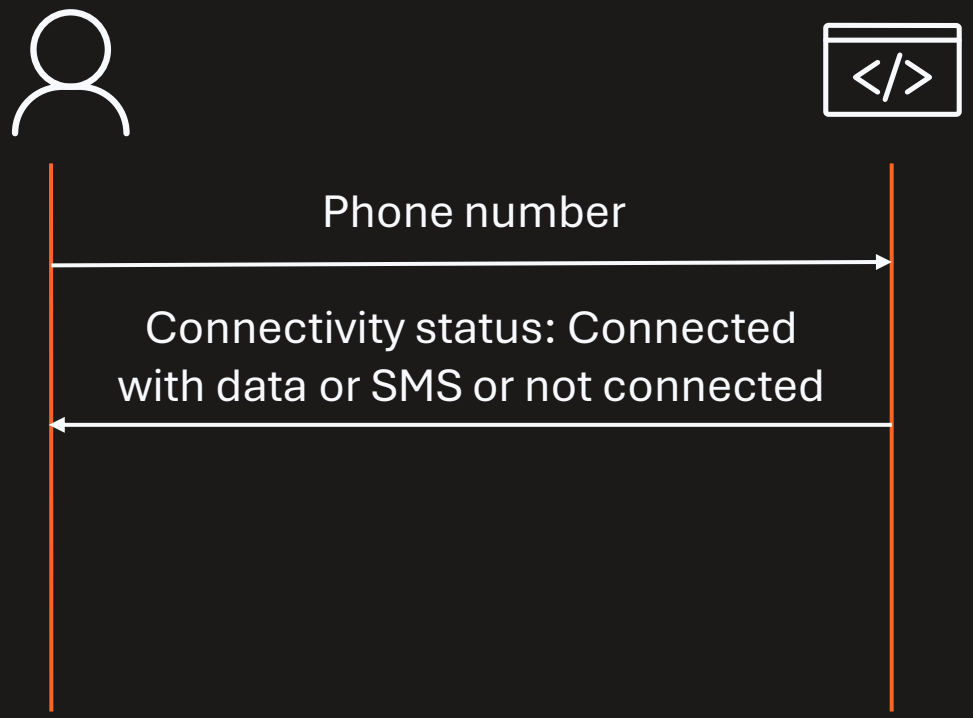
- Provides information about device's connection status
  - Does it have access to network data?
  - Can a device receive SMS?
- Two models: Request status & Notify me about the status
- **Why and how is it used today?**
  - Ensuring device has access to internet or SMS

Roaming status

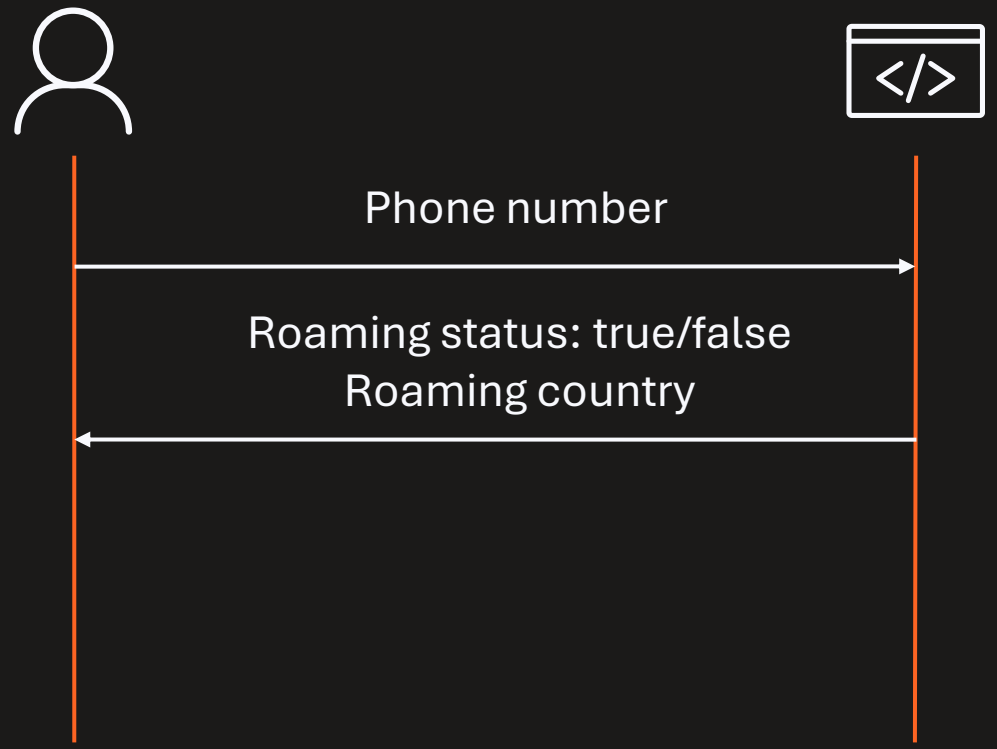
- Provides device's roaming status (and where is it roaming)?
- Two models: Request status & Notify me about the status
- **Why and how is it used today?**
  - Stopping additional roaming charges
  - Fraud protection

Device Status

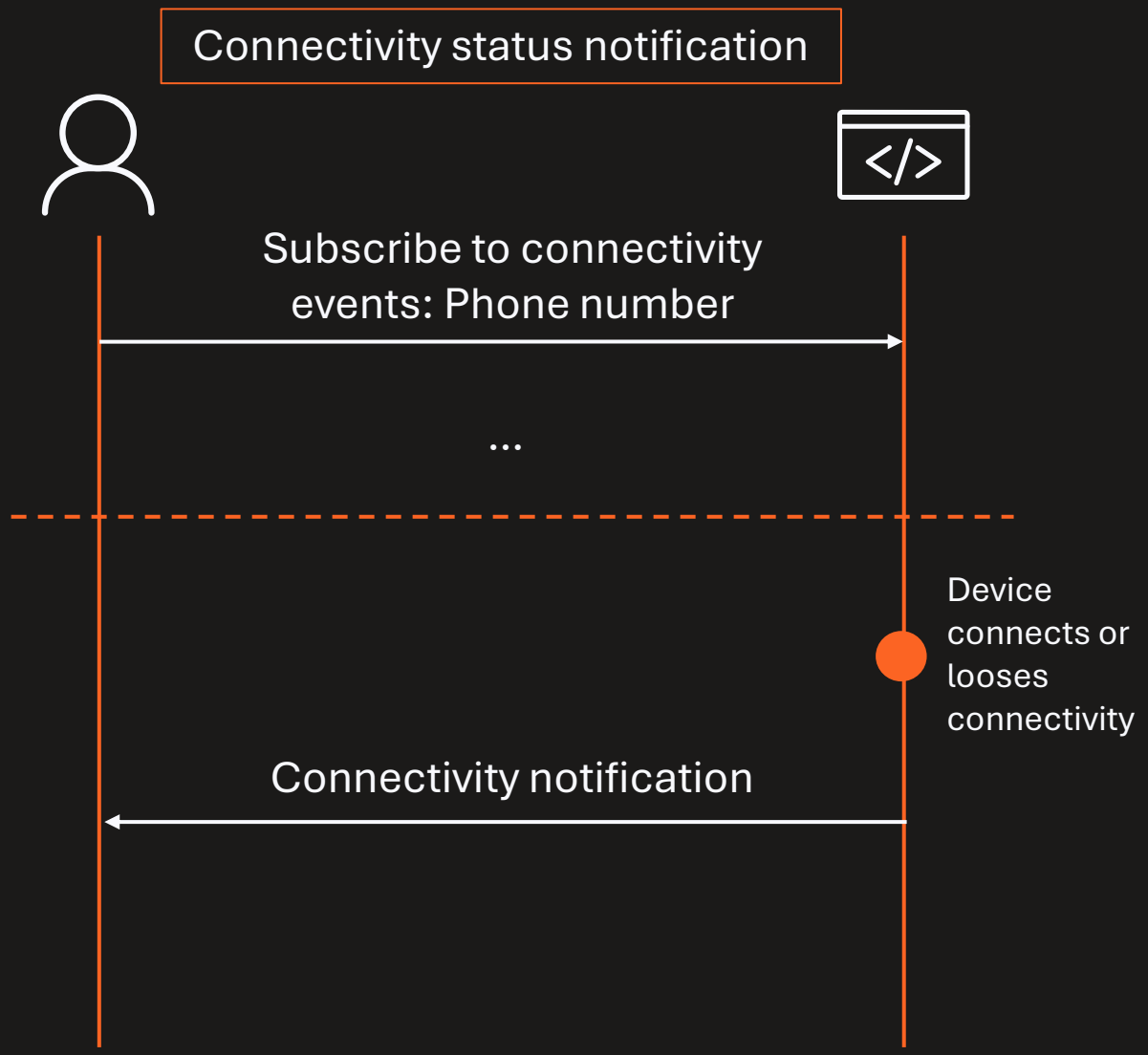
Connectivity status

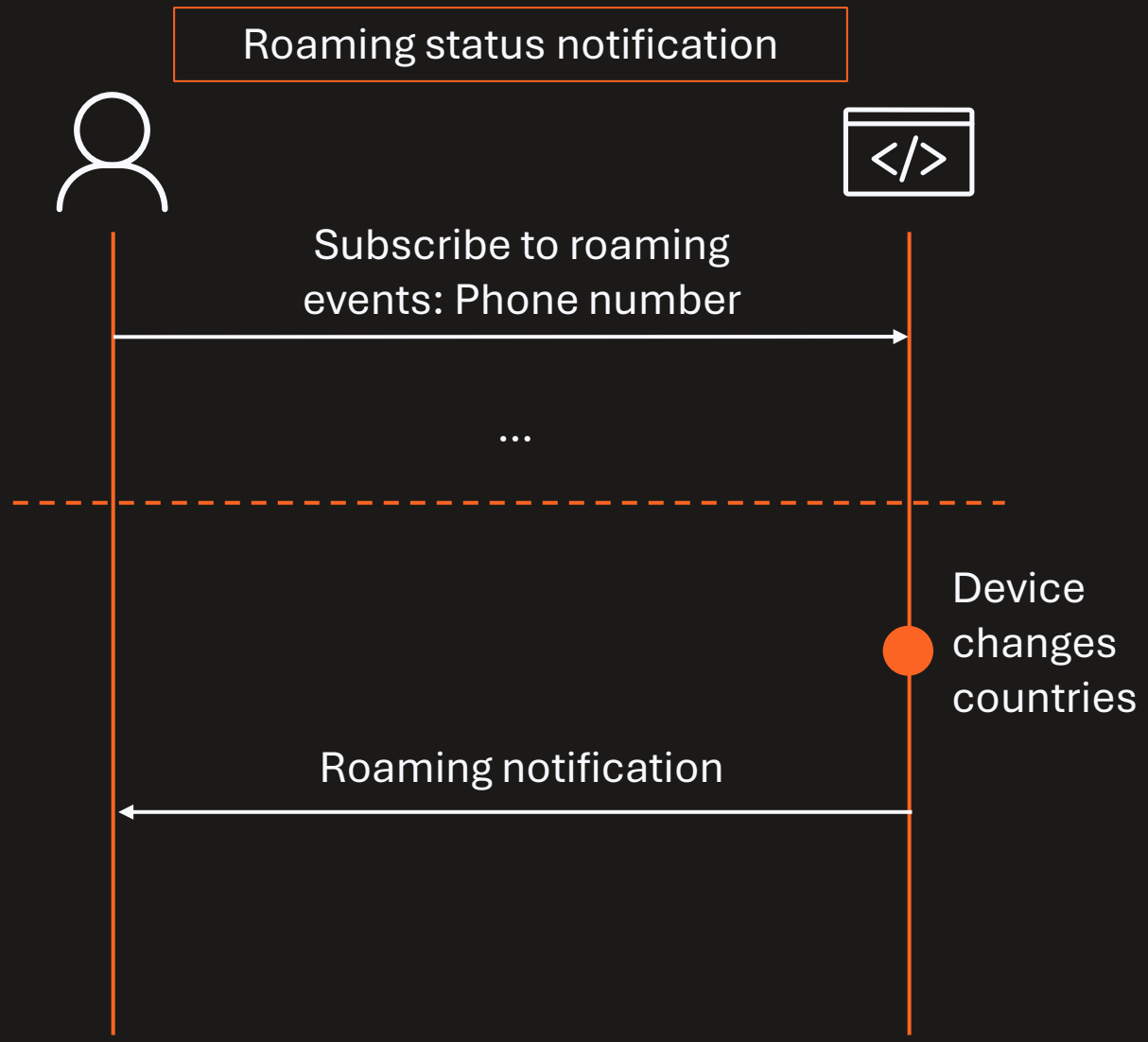


Roaming status



Device Status





KYC

Camara link

Know Your Customer

KYC Match

Is this person's info correct?

KYC Age Verification

Is this person older then requested age?

KYC Fill-in

Give me personal info about this person

How and why is it used today?

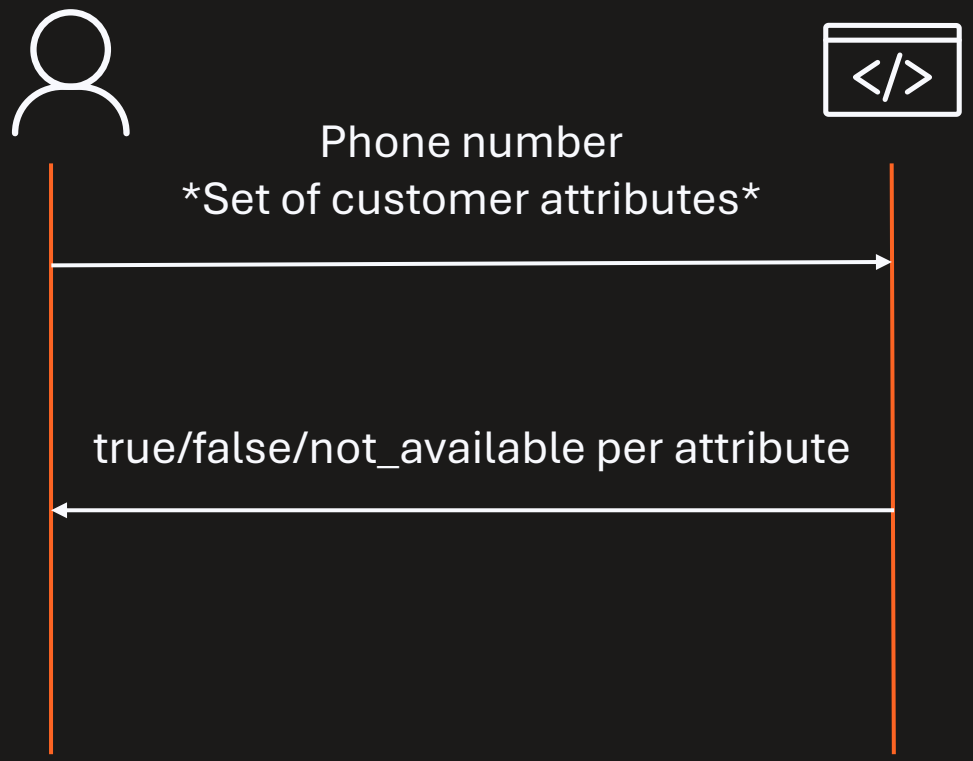
Fraud prevention
User verification

Fraud prevention

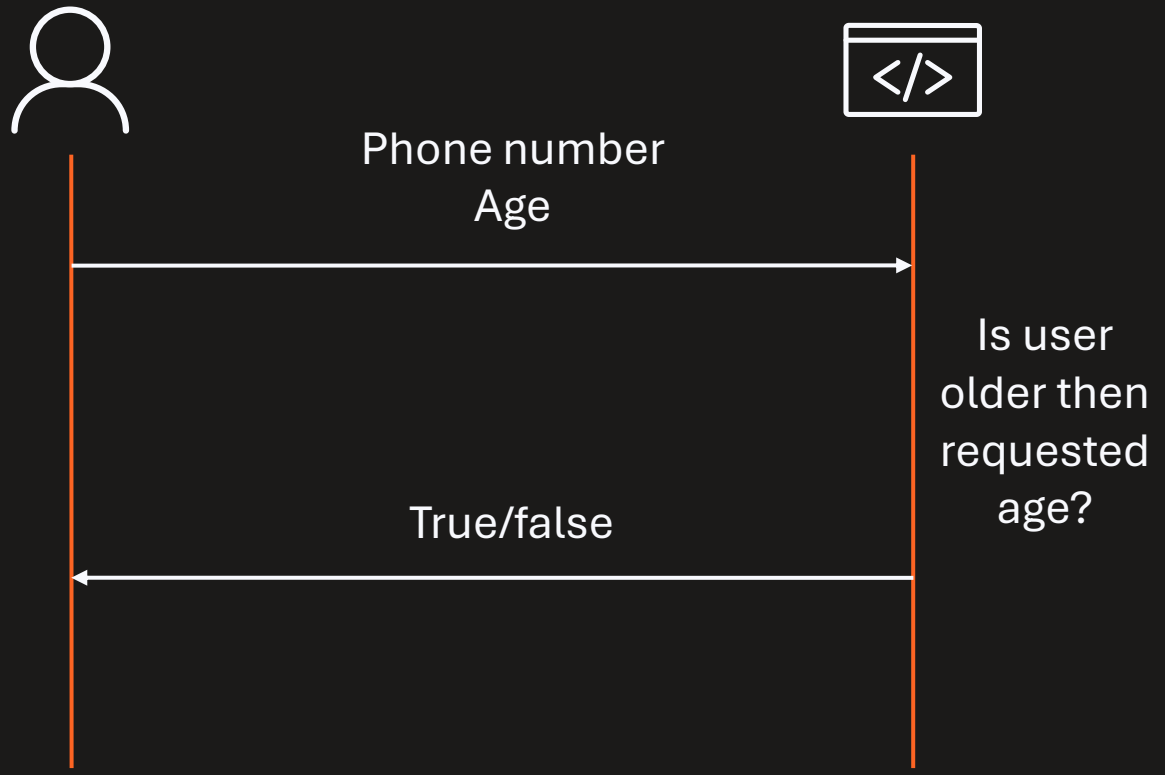
Speeding up onboarding process

KYC

KYC Match

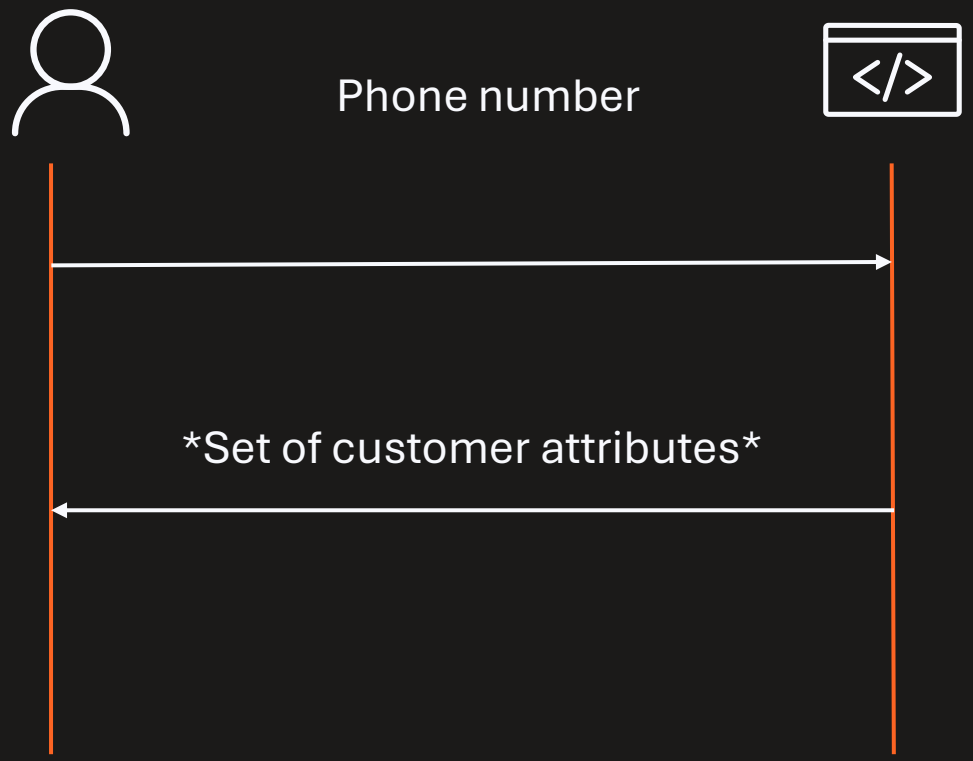


KYC Age Verification



KYC

KYC Fill-in



CHEAT-SHEET

Number Verification

- Verifying user's phone number
- Match phone number and IP address on network data
- OTP replacement

Device Location

- Location verification
- Location retrieval
- Geofencing

SIM Swap Detection

- Attacker convinces Operator to switch a phone number to a SIM card attacker controls
- Request info about the time last SIM swap occured

Device Status

- Connectivity status
  - Network data and SMS
- Roaming status
  - Is device roaming and where is it in roaming

Know Your Customer (KYC)

- KYC Match
- KYC Age verification
- KYC Fill-in

Quality on Demand

- Modify network properties
  - Latency
  - Bit rate
- Device IP address or phone number
- Application server IP address