



## WBA OPENROAMING IETF PRESENTATION

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IETF 116, March 2023

- OpenRoaming Secure / Seamless / Private
- OpenRoaming: Realized through Innovation and Industry Collaboration
- Mac Randomization
- OpenRoaming – Privacy Built-in
- How To Provision Users
- Provisioning via NFC
- OpenRoaming Provisioning - PC
- IOS Provisioning
- Android Provisioning



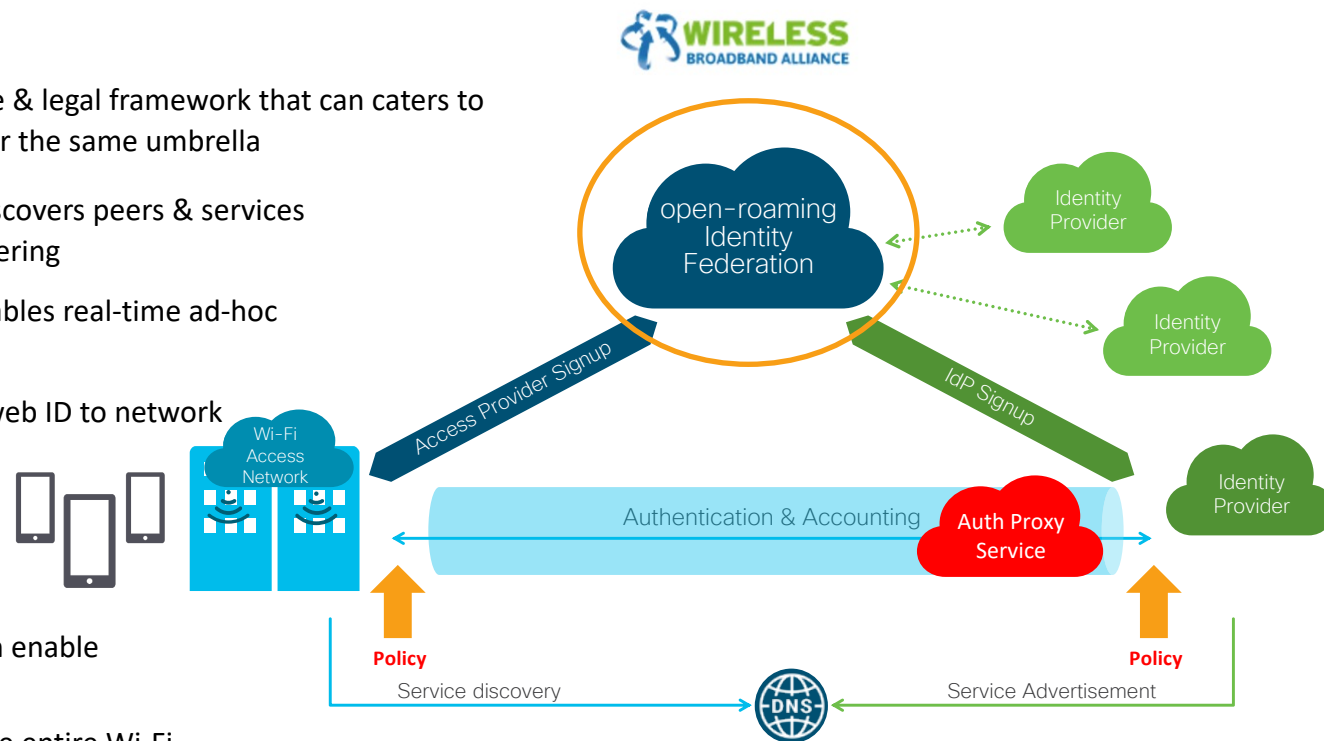
Zero-touch Wi-Fi onboarding, ensuring a user is always best connected

Secure 802.1x-based authentication, WPA2/3 wireless data encryption

Private by design. Anonymized roaming, personal information is only shared with user consent

- 1 Identity Federation architecture & legal framework that can caters to different business models under the same umbrella
- 2 Federation that dynamically discovers peers & services and allows for secure direct peering
- 3 Dynamic policy at the edge enables real-time ad-hoc roaming agreements
- 4 Proxy services connect cloud/web ID to network services

- 1 Device eco-sytem collaboration enable seamless end-user experience
- 2 Wireless standard to benefit the entire Wi-Fi ecosystem



# What about Privacy?

## Mac Randomization

### NETWORK:

Visibility into **visitor onboarding, visitor identity and analytics**, across applications that rely on MAC address as a unique identifier will be jeopardized as device manufacturers roll out MAC Randomization.

00:A0:C9:

00:  
A0:  
A0: C9: 00:  
C9: 14: A0:  
14: C8: C9:  
C8: 29 14:  
29 C8:  
29

### USER:

The need for **privacy**. Having a persistent identifier that allows for tracking even if you have not authenticated to the network (no trust relation) violates privacy.

# OpenRoaming – Privacy Built-in

1

## Authentication is private

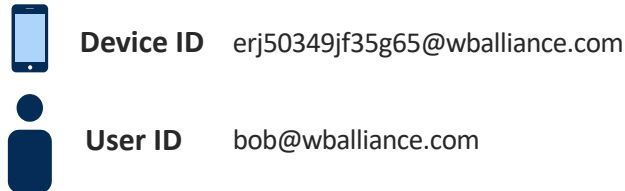
Secure and private authentication between user's device and IDP



2

## User and device are identified in context

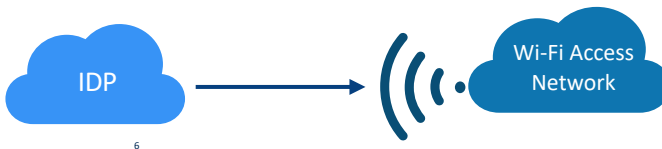
Identified with persistent Device ID and User ID with IDP context  
IDP shares (anonymized) data in the secured path



3

## IDP shares identities on the user's behalf

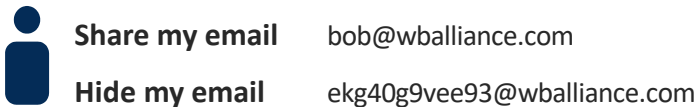
IDP manages identity and privacy for the user



4

## Privacy with user consent

User controls privacy, identifiers are always persistent



# OpenRoaming Demo at the IETF116 reception on Sunday.

## Steps:

1. Provision device by installing the users' IDP credentials (e.g., app, profile, etc.).
2. Remove all current SSIDs used so that the device does not have any Wi-Fi access.
3. The device automatically connects to an SSID with OR enabled.
4. When the first SSID is turned off and another OR-enabled SSID is turned on, the device connects to the new one automatically.

The procedure is done securely and seamlessly with Hotspot 2.0 mechanism.



OpenRoaming  
Demo App



Available on the  
App Store



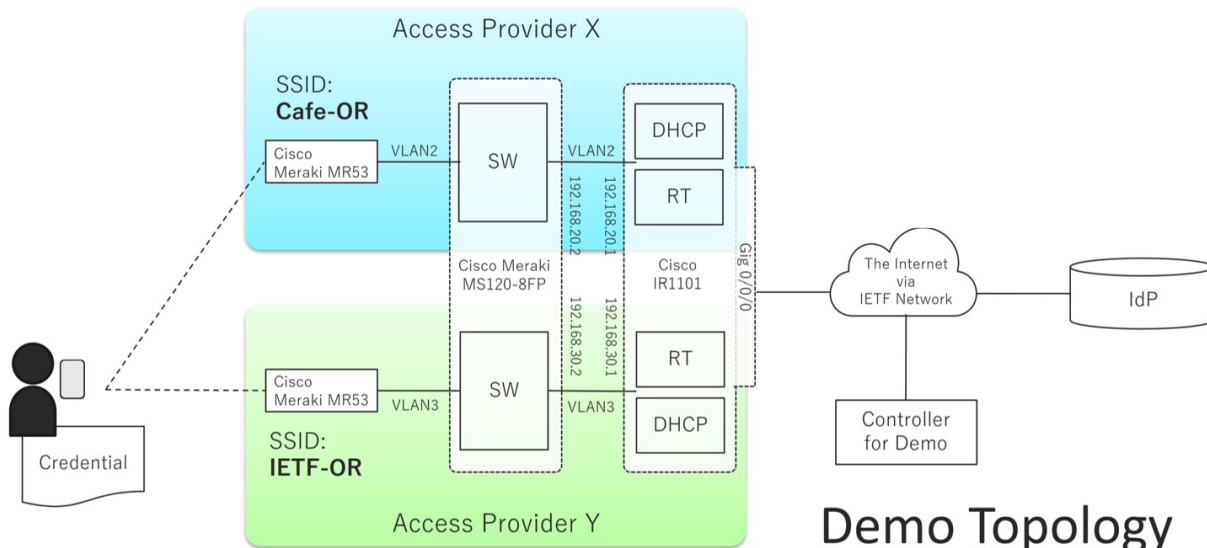
Get it on  
Google Play

### With the app,

**iOS:** Download the OpenRoaming Demo App into your phone from Apple App Store. Run it and login with your ID such Apple or Google.

**Android OS:** Find the SSID: "OpenRoaming" and click it. Login with your ID such as Google or Samsung. Or, download the App and do same as iOS.

You can visit the OpenRoaming signup page to check the ways more.  
<https://wballiance.com/openroaming-signup/>



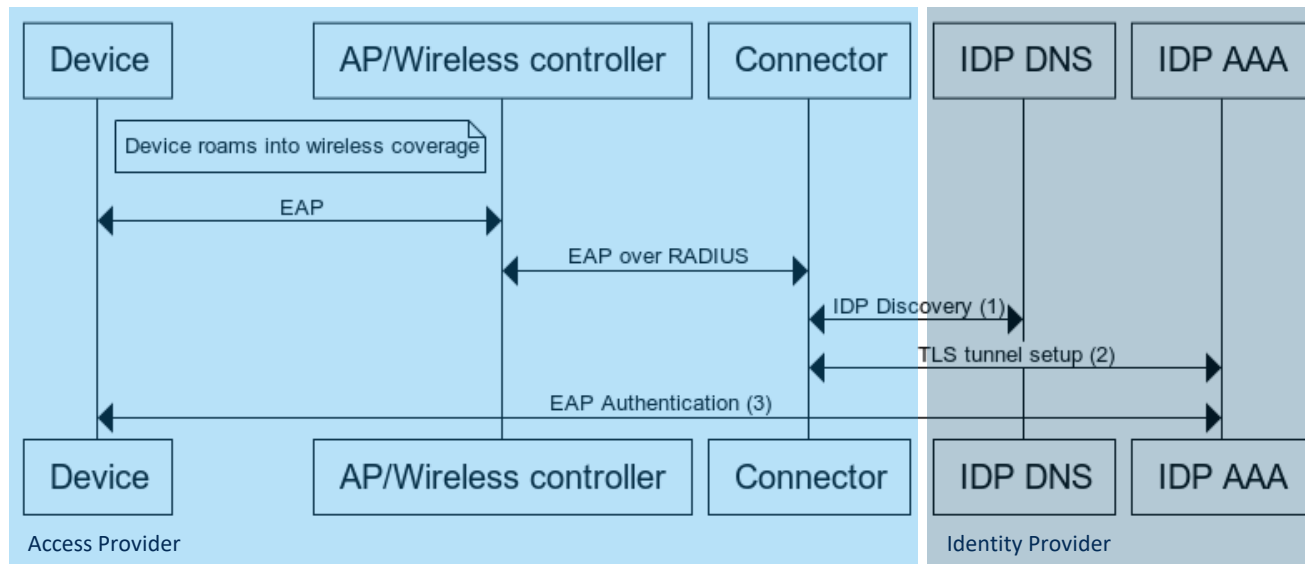
## Demo Topology

**Thank You**

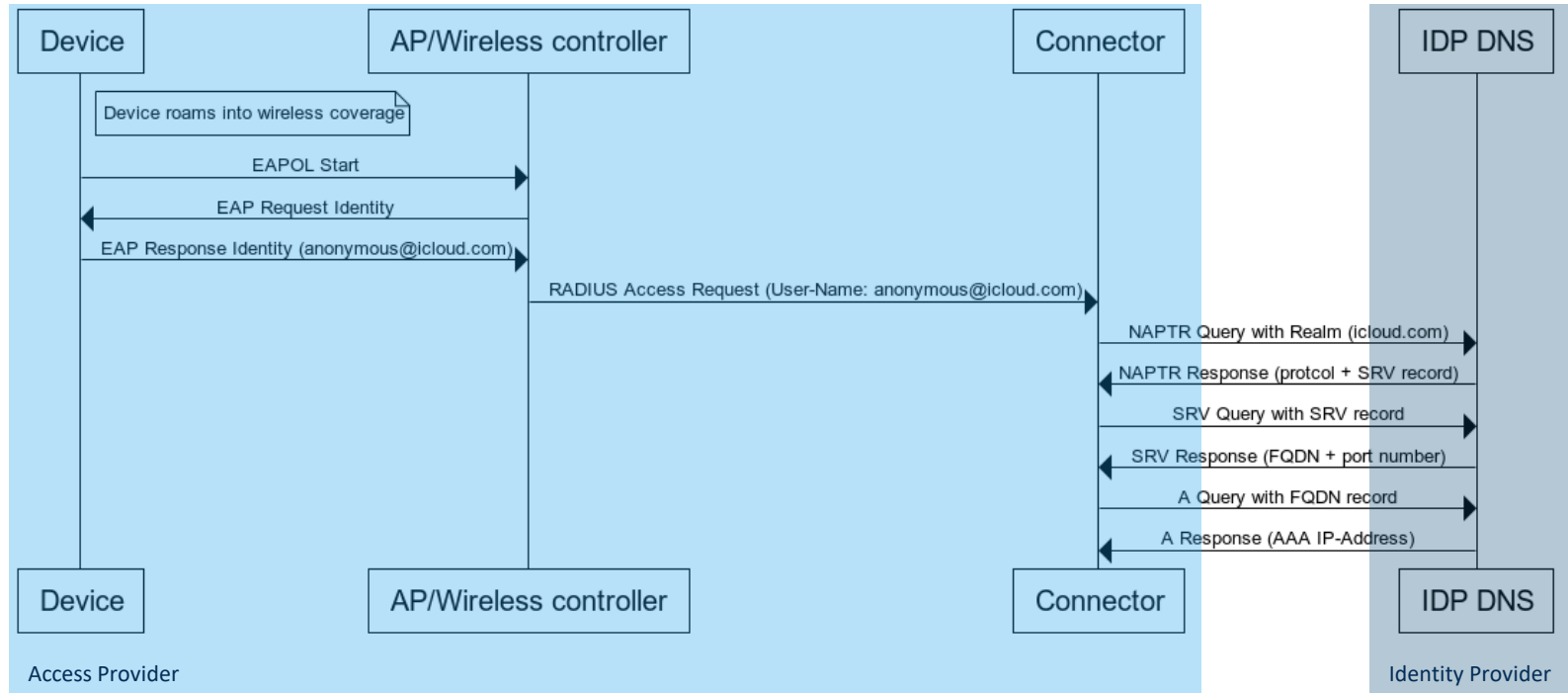


## Annex

## OpenRoaming Authentication and Accounting

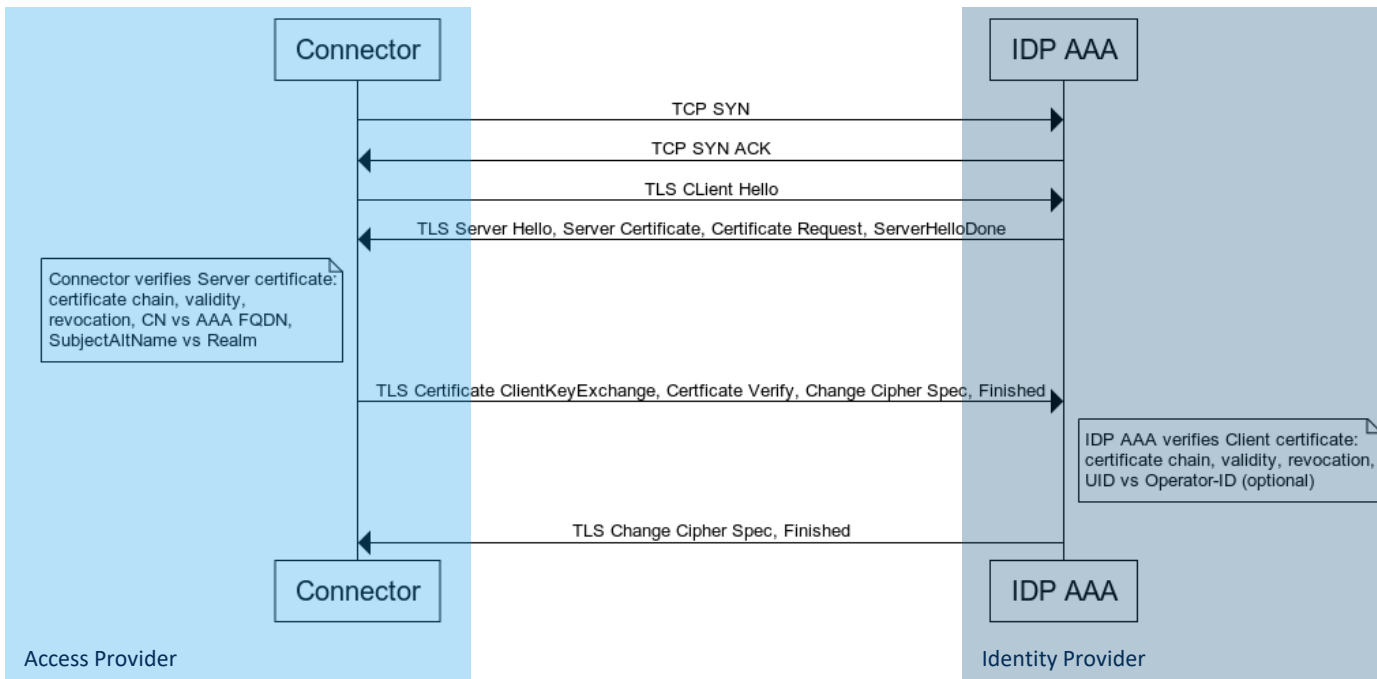


## IDP Discovery

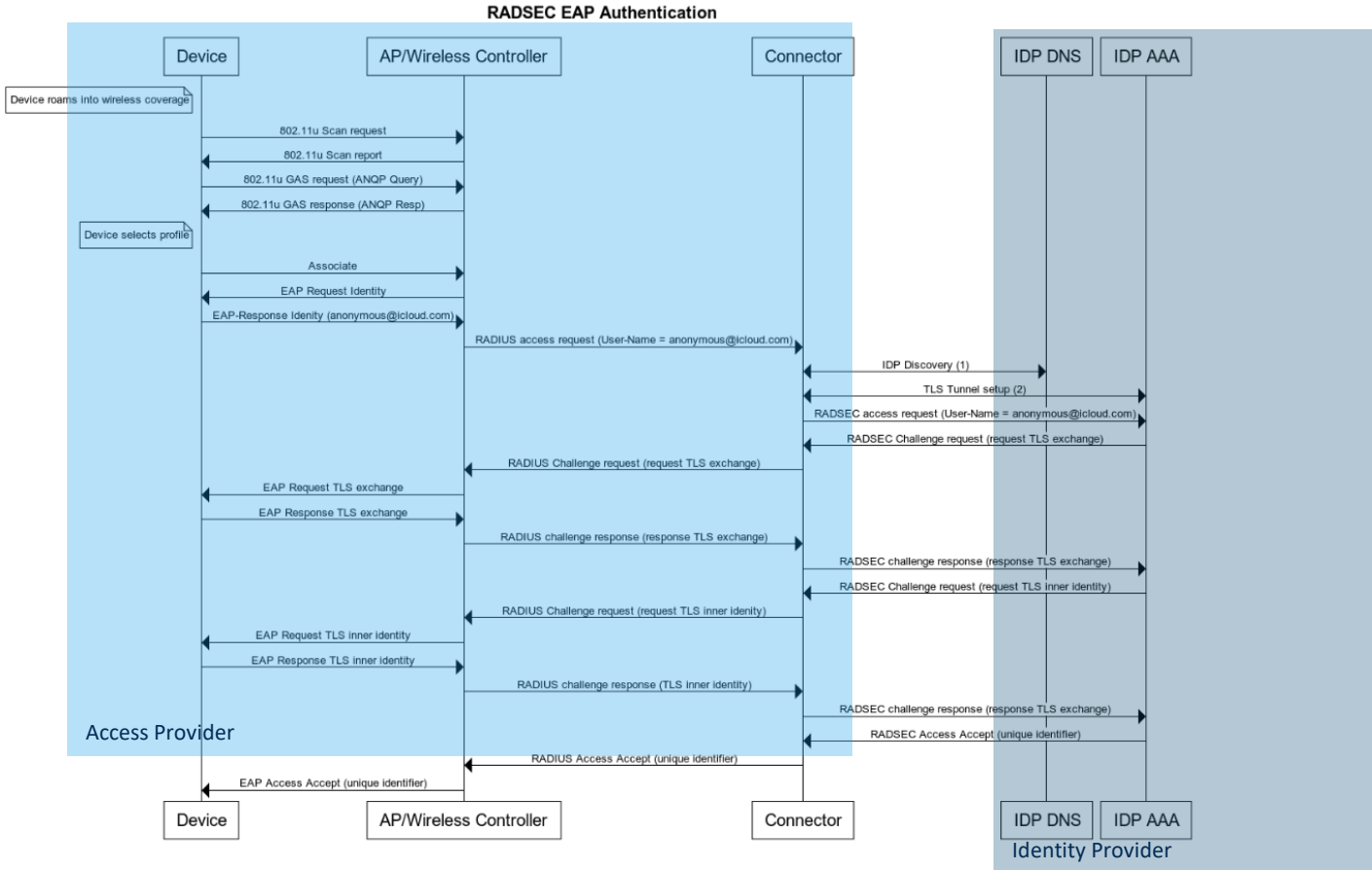


# TLS handshake between Access provider and ID Provider (2)

## TLS Tunnel setup between AP and IDP



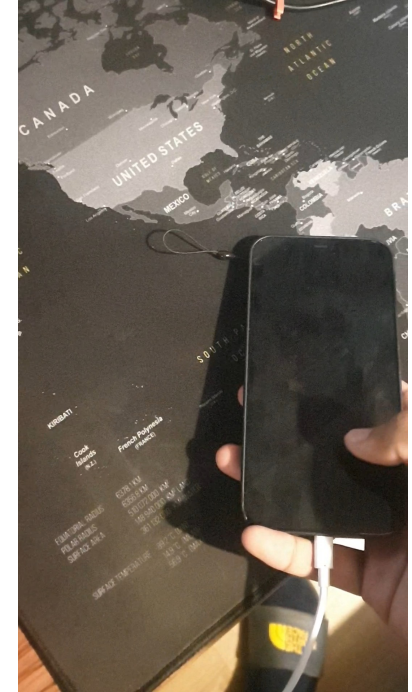
# RADSEC EAP Authentication (3): EAP-TTLS

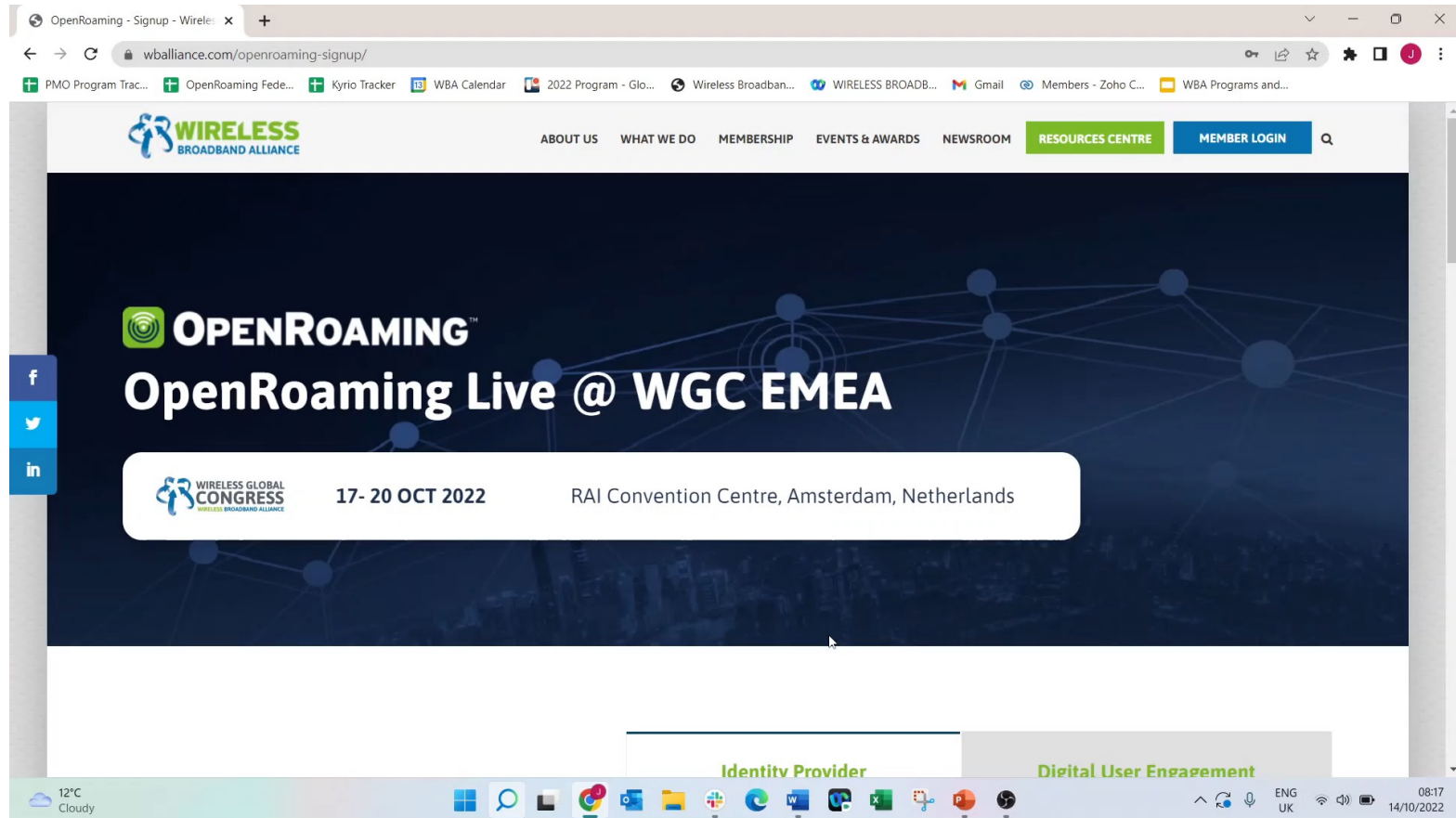




Please see here two video demos I have put together.

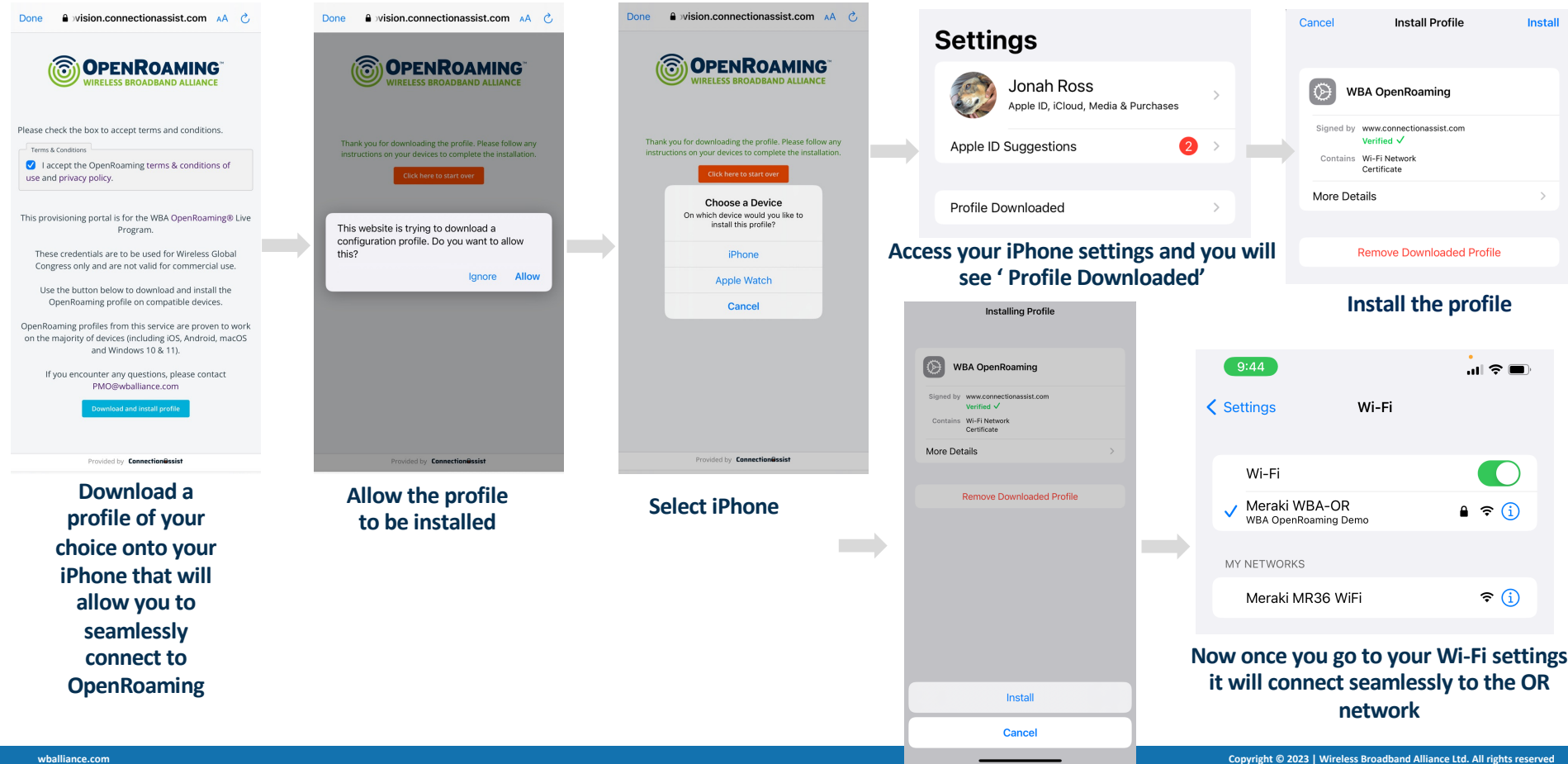
I started by configuring the NFC tag, once you have done that you can be redirected to whichever site you like. I have used the WBA provisioning portal and the online sign page as examples.

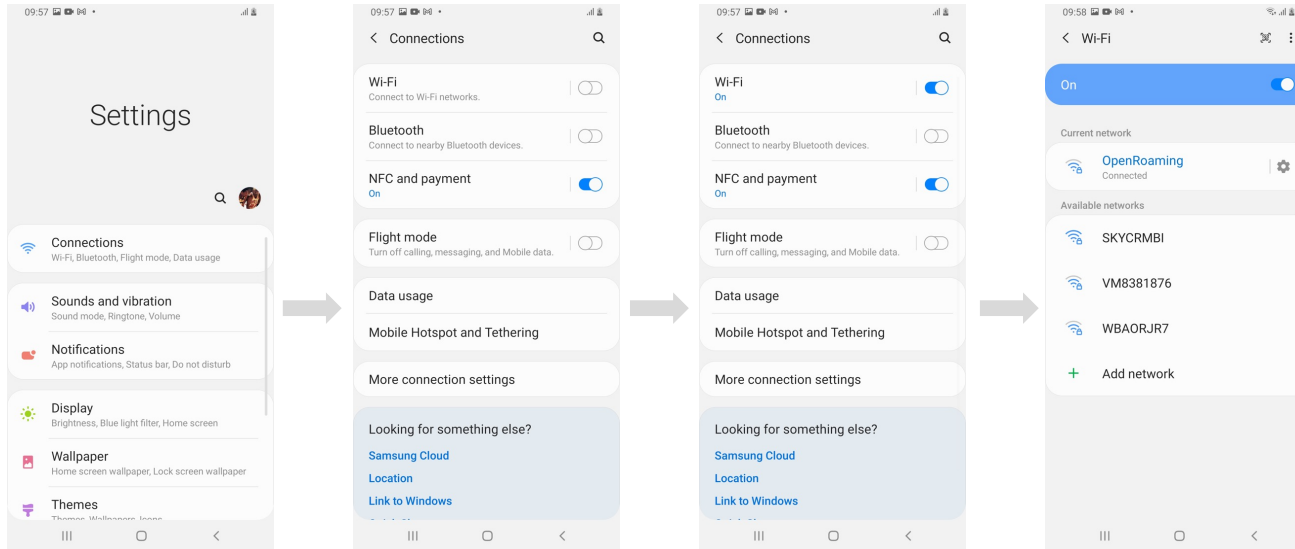




The screenshot shows a web browser window displaying the OpenRoaming Live @ WGC EMEA event page. The browser's address bar shows the URL `wballiance.com/openroaming-signup/`. The page features the WIRELESS BROADBAND ALLIANCE logo in the top left corner. The main navigation bar includes links for ABOUT US, WHAT WE DO, MEMBERSHIP, EVENTS & AWARDS, NEWSROOM, RESOURCES CENTRE, and MEMBER LOGIN. The central banner area has a dark blue background with a network diagram. It prominently displays the OPENROAMING logo and the text "OpenRoaming Live @ WGC EMEA". Below this, a white box contains the WIRELESS GLOBAL CONGRESS logo, the dates "17- 20 OCT 2022", and the location "RAI Convention Centre, Amsterdam, Netherlands". On the left side of the page, there are social media icons for Facebook, Twitter, and LinkedIn. At the bottom of the page, there are two green buttons labeled "Identity Provider" and "Digital User Engagement". The Windows taskbar at the bottom shows the system clock as 08:17 on 14/10/2022, along with various application icons and a weather widget indicating 12°C and Cloudy.







**Android device connecting with a SamsungID**

**A profile from: [wballiance.com/openroaming-signup/](https://wballiance.com/openroaming-signup/)  
Can also be downloaded to provision your device**

