

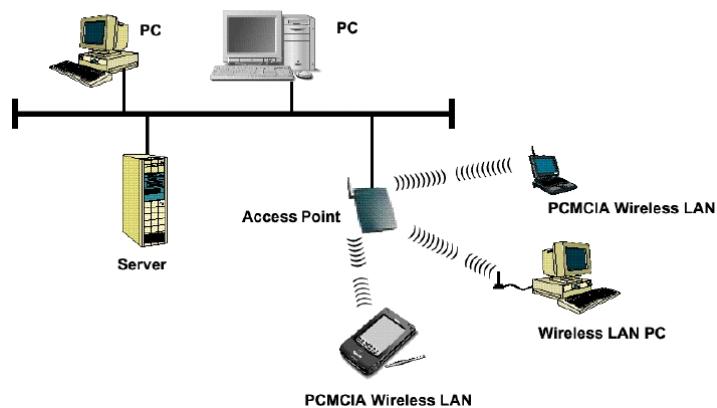
TH03 Data Clearing for WLAN Services

Computer Technology Support & Consulting

Remi Vervecken – remi.vervecken@ctsc.com

WLAN Roaming Processing – Wireless LAN Introduction 1

WLAN = Wireless Local Area Network)



WLAN Roaming Processing – Wireless LAN Introduction 2

Standard	Year	Description
IEEE 802.11	1997	First standard 1-2 Mbps
HiperLAN	1997	EU-Standard, Highspeed 5 GHz Band
IEEE 802.11a	1999	Highspeed WLAN, 54Mbps, 5 GHz Band
IEEE 802.11b	1999	11 Mbps, 2.4 GHz Band
WiFi	1999	Wireless Fidelity, "quality standard"
IEEE 802.11e	200?	QOS, Voice calls over WLAN-Infrastructure
IEEE 802.11g	2001	Enhanced 802.11b for 54 Mbps
IEEE 802.11h	200?	Consolidation HiperLAN and 802.11a
IEEE 802.11i	2002	WLAN Encrypton WEP-2 with 802.1x
WISPR	2002	Wireless ISP-Roaming (WLAN & GPRS)

WLAN Roaming Processing – Wireless LAN Introduction 3

	WLAN	Bluetooth	UMTS	GPRS
Defined/Intro.	1997/1997	1998/2000?	1992/2003?	1997/2000
Power	Ⓜ 100 mW	Ⓜ 100 mW	Ⓜ 250 mW	Ⓜ 2000 mW (GSM Mobile)
Freq.-Band	ISM (2.4 + 5 GHz-Bands)	ISM (2.4 GHz-Bands)	UMTS (1.9 + 2.1 GHz-Bands)	GSM (900,1800,1900 MHz-Bands)
Data Rate	Ⓜ 54 MBit/s	Ⓜ 769 kBit/s	Ⓜ 2 MBit/s	Ⓜ 114 kBit/s
Mobile Hand-Over	No (not yet)	No	Yes	Yes
Roaming	Yes	No	Yes	Yes
Use Cases	Mobile Internet Services (e.g. world wide web or email)	Very short range connections, pico-Networks, i.e. wireless printing	Mobile video-telephony and video-conferencing	High speed Data connections, WAP-Applications

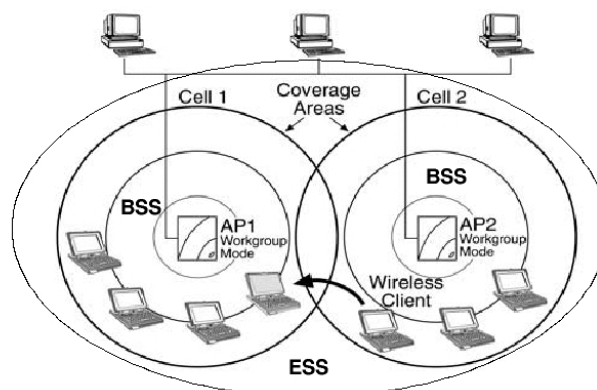
WLAN Roaming Processing – Wireless LAN Introduction 4

Technical Data IEEE 802.11b

- DSSS (Direct Sequence Spread Spectrum)
- Transmission Power: 100 mW (min. 1 mW)
- Frequency band: 2.4 – 2.484 GHz
- Channels: from 2412 MHz all 5 MHz, EU: 13 channels, US: 11 channels
- Power Management (Laptops)

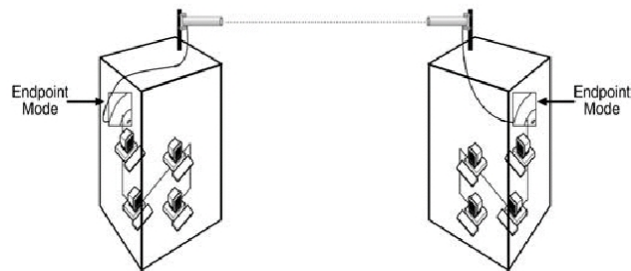
WLAN Roaming Processing – Architecture 1

Infrastructure Mode



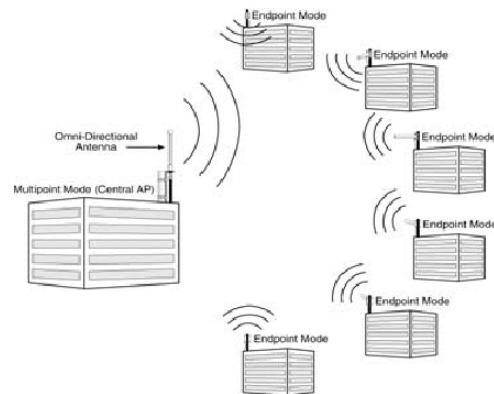
WLAN Roaming Processing – Architecture 2

Point-To-Point Mode



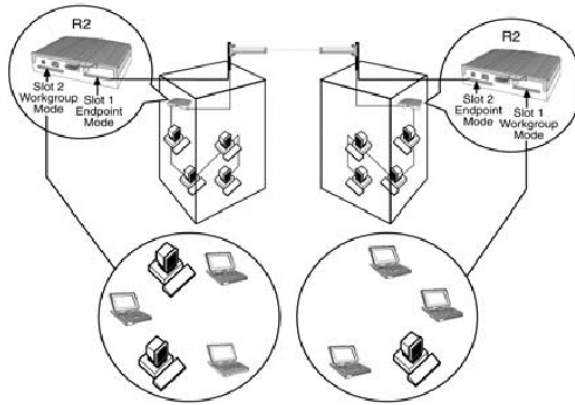
WLAN Roaming Processing – Architecture 3

Point-To-Multipoint Mode



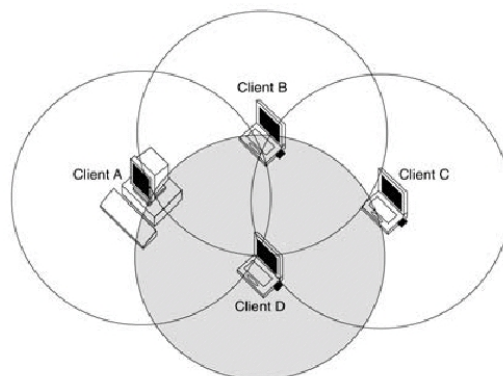
WLAN Roaming Processing – Architecture 4

Point-To-Point + Infrastructure Mode



WLAN Roaming Processing – Architecture 5

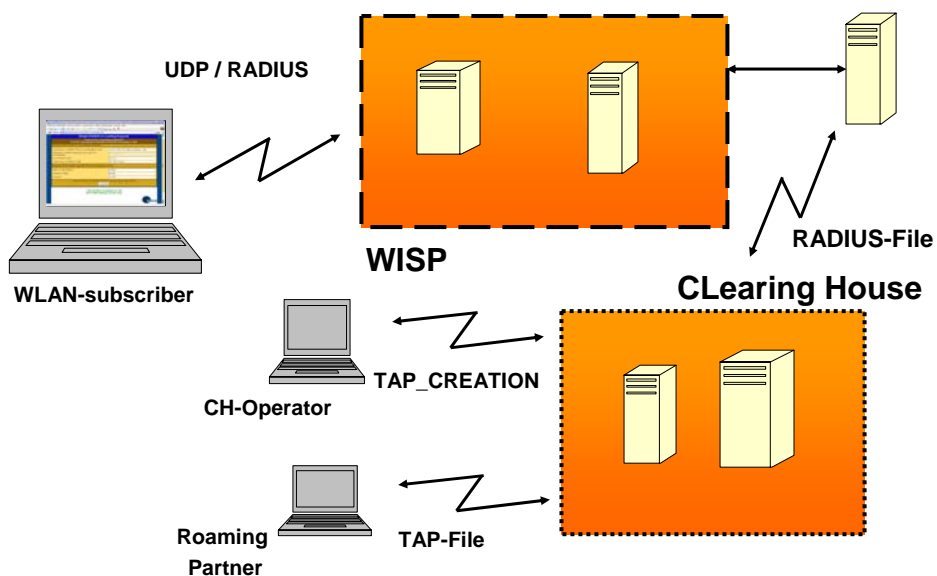
Ad Hoc Mode



Hotspot infrastructure

- a. AAA (hotspot, WISP)
- b. Data clearing
- c. Financial clearing
- d. HS/Contract Management

WLAN Flow

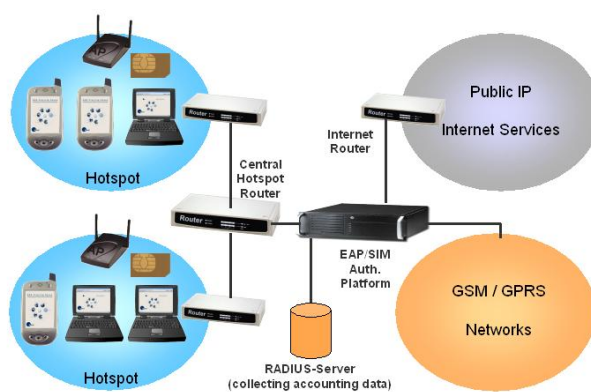


WLAN Processing

Different ways for mobile Processing

1. SMS - Method
2. SIM - Method
3. EAP-SIM - Method

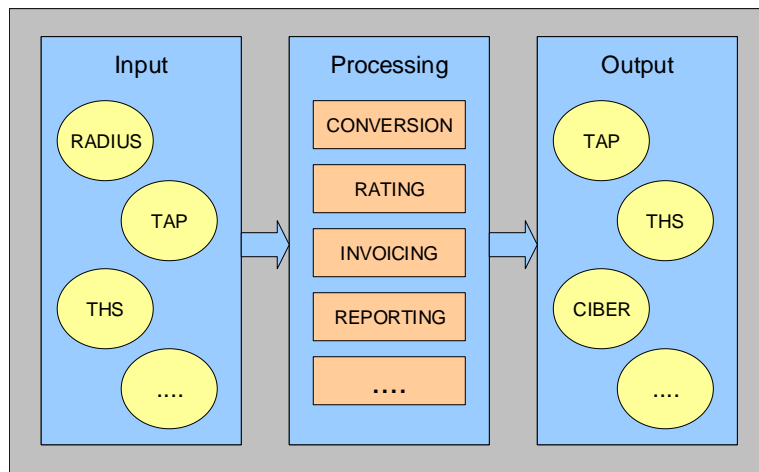
WLAN Processing – EAP SIM



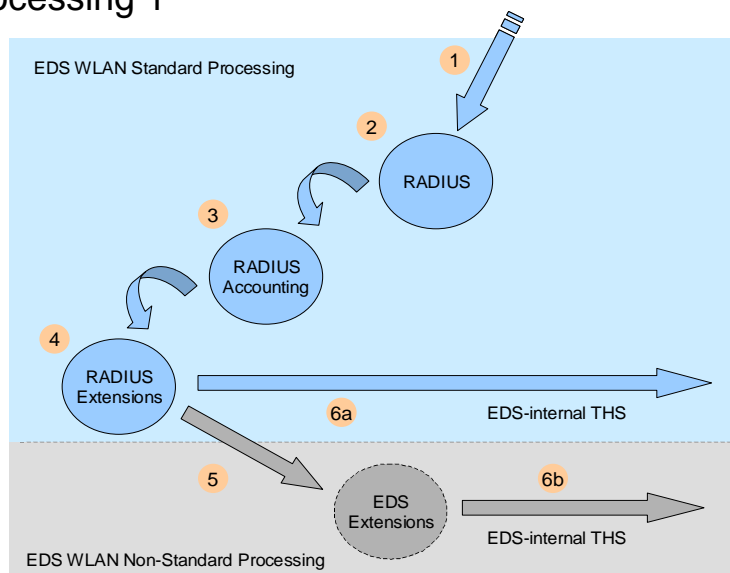
EDS Wireless LAN EAP/SIM Trial – Architectural Scenario

WLAN Roaming Processing – Process Overview

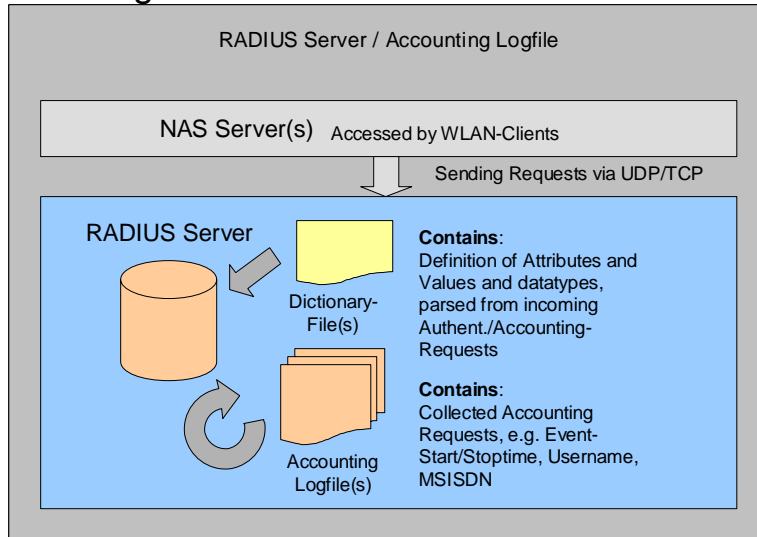
EDS Clearing House Data Processing



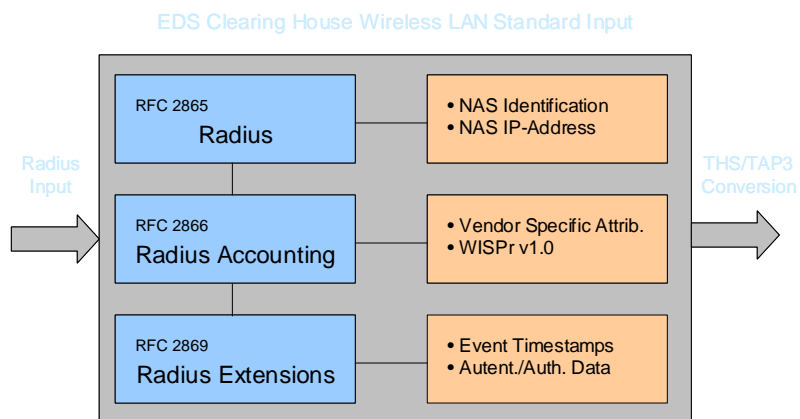
WLAN Roaming Processing – Standard WLAN-Processing 1



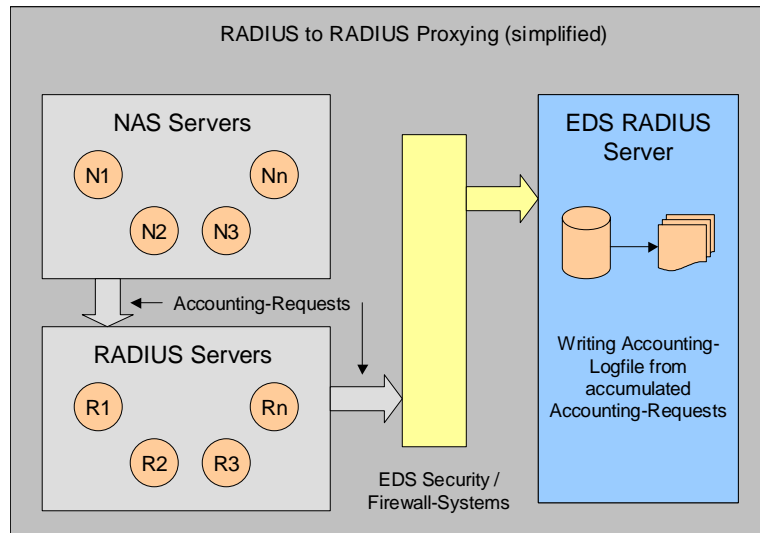
WLAN Roaming Processing – Standard WLAN-Processing 2



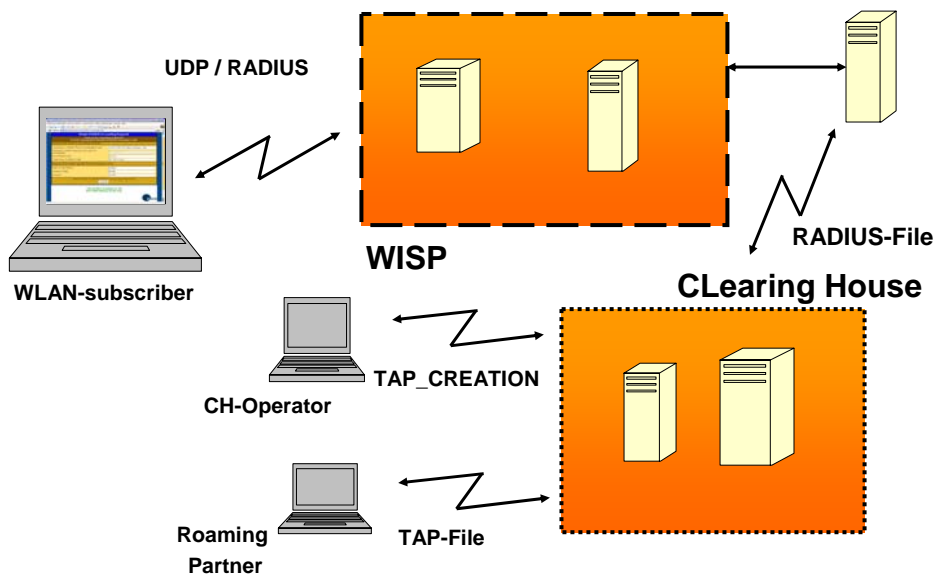
WLAN Roaming Processing – Standard WLAN-Processing 3



WLAN Roaming Processing – Non-Standard WLAN-Processing



WLAN Flow



Questions and Answers Q & A

