



Fixed-Mobile
Convergence Alliance

Convergence Services using SIP over Wi-Fi

Product Requirement Definitions (PRD)
Release 2.0
8th May 2006

Access Point & Gateway Requirements

Release 2.0 – 8th May 2006

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3 How to read this FMCA PRD

This document defines the Access Point & Gateway requirements for the FMCA Convergence Services using SIP over Wi-Fi PRD Release 2.0. This document should be read in conjunction with the following PRD Release 2.0 documents:

- Convergence Products using SIP over Wi-Fi PRD, Release 2.0, Terms and Definitions, April 2006
- Convergence Products using SIP over Wi-Fi PRD, Release 2.0, Service Capabilities, April 2006
- Convergence Products using SIP over Wi-Fi PRD, Release 2.0, Technical Handset, April 2006
- Convergence Products using SIP over Wi-Fi PRD, Release 2.0, Network Architecture, April 2006

Within this PRD the word 'shall' denotes a mandatory requirement and the word 'should' denotes a desirable requirement.

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4 Access Point and Gateway

4.1 Scope

It is recognised that there will be various forms of APs/wireless gateways to address different market segments, such as:

- Wi-Fi enabled APs and/or gateways for consumer services;
- low-end APs for SOHO services;
- medium-end APs for Enterprise and Corporate services;
- high-end APs for Enterprise and Corporate services;
- public Wi-Fi hotspot APs;
- temporary portable APs, e.g. USB dongles for laptops.

The purpose of this section is to define Wi-Fi SIP AP & Gateway product requirements.

The term Mobility Controller with this document, is used to describe a device that interfaces to APs with the primary role of controlling, *inter alia*, the functioning of connected APs, client services and associations, QoS, VLAN prioritisation, security and RF management. It is desirable that multi-vendor controller and AP systems shall be interoperable. APs may be directly connected to the mobility controller or may be located remotely. In the latter case, a layer 3 network may be necessary to interconnect the controller remote APs. It is expected that these controllers will be targeted towards the enterprise and public hotspot environments. Mobility controllers or switches are typically deployed in campus and enterprise environments. They could also be deployed in scenarios where APs require to be managed controlled via a mobility controller located remotely. It is acknowledged that existing APs may have certain functional limitations compared to newer generation APs that have greater functional capabilities, e.g. QoS, support for multiple SSIDs, etc.

Within this PRD the word 'shall' denotes a mandatory requirement and the word 'should' denotes a desirable requirement.

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4.2 Wi-Fi SIP Access Point Implementation

4.2.1 The AP shall support the capability to restrict the number of idle UE associations. The AP shall allow at least five mobile stations in idle mode for each home-based Wi-Fi access point. This value shall be configurable by the service provider and/or the end user.

Matching PRD Release 1.0 Ref. 5.4.1.46

4.2.2 The AP shall support the capability to restrict the number of idle UE associations. The AP shall allow at least five mobile stations in idle mode for each home-based Wi-Fi access point.

Matching PRD Release 1.0 Ref. 5.4.1.44

4.2.3 The Wi-Fi AP shall support the ability to restrict the number of users that can simultaneously connect to the Wi-Fi AP. This value shall be configurable by the service provider and/or the end user.

Matching PRD Release 1.0 Ref. 5.4.1.45

4.2.4 All settings and configurations shall be stored in the AP. In the event of complete loss of power to the AP, all operator defined settings and configurations shall be resumed.

4.2.5 APs should use existing Bluetooth and Wi-Fi techniques to mitigate interference from other sources.

4.2.6 AP should provide support for SIP client and a terminal adapter.

Matching PRD Release 1.0 Ref. 5.4.2.2

4.3 Wire-line WAN Interfaces

4.3.1 Statement: In the case of an integrated AP with a modem as a means of WAN connectivity, the following interface requirements should be adhered to where relevant.

4.3.2 For Ethernet interfaces, the following statements are applicable.

4.3.2.1 The Ethernet port shall conform to IEEE 802.3.

4.3.2.2 The Ethernet port shall be specified as 10/100 Base T (electrical) Fast Ethernet.

Matching PRD Release 1.0 Ref. 5.4.1.54

4.3.3 For ADSL interfaces, the following statement is applicable.

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4.3.3.1 The modem shall be ADSL standards compliant. The ADSL over POTS interface shall comply with ITU-T G.992.1 Annex A.

4.3.4 For ISDN interfaces, the following statements are applicable.

4.3.4.1 ITU-T Q.921

4.3.4.2 ITU-T Q.931

4.3.5 For ADSL 2 Plus interfaces, the following statements are applicable.

4.3.5.1 ITU-T G992.5 Annex A

4.3.5.2 ITU-T G992.3 including support for Annex M

4.3.6 For X21, the following statement is applicable.

4.3.6.1 ITU-T V11/X21

4.3.7 For SHDSL, the following statement is applicable.

4.3.7.1 ITU-T G.991.2

4.3.8 For VDSL, the following statements are applicable.

4.3.8.1 ITU-T G.993.1 for VDSL

4.3.8.2 ITU-T G.993.2 for VDSL 2

4.4 Generic Access Point Requirements

4.4.1 APs shall be deployable in existing wireless corporate networks, public Wi-Fi hotspots and home networks without disruption to their existing services.

Matching PRD Release 1.0 Ref. 5.4.1.1

4.4.2 APs should have mechanisms to support 'Guest' services i.e. allow visiting users to gain access to Wi-Fi SIP voice services and the Internet via their connections. Corporate/Enterprise APs shall have additional guest features to limit access, e.g. restrict access to Internet only.

Matching PRD Release 1.0 Ref. 5.4.1.2

4.4.3 End users should be able to use their existing consumer Wi-Fi access points for SIP and other services.

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4.4.4 APs should work with the core network to support functionality to restrict the maximum number of permitted wireless voice calls to a predetermined limit, so as not to overload fixed backhaul connections. Where an AP delivers voice and data, this should include the capability to partition bandwidth on a static or dynamic basis between real time and non-real time traffic.

Matching PRD Release 1.0 Ref. 5.4.1.3

4.4.5 APs should work with the core network to support functionality to alert the end user when there is insufficient network capacity available to facilitate their call.

Matching PRD Release 1.0 Ref. 5.4.1.4

4.4.6 The Wi-Fi SIP UE and associated Wi-Fi APs shall ensure that the wireless mode voice quality, for both incoming and outgoing calls, shall be comparable or better than the voice quality obtained with good-coverage cellular (including delay and echo).

Matching PRD Release 1.0 Ref. 5.1.3

4.4.7 The Wi-Fi SIP UE and associated Wi-Fi APs shall support voice call handover between APs with balancing voice quality.

Matching PRD Release 1.0 Ref. 5.1.4

4.4.8 Range of AP enclosures should be available to support different operational environments, e.g. ruggedised units for outside APs and optional cable/DSL connections for consumer APs.

Matching PRD Release 1.0 Ref. 5.4.1.6

4.4.9 APs shall have functionality to allow their (default) transmit power levels to be manually configured through a management interface.

Matching PRD Release 1.0 Ref. 5.4.1.7

4.4.10 The AP shall at the minimum support conformance to IEEE 802.11b, IEEE 802.11g through Wi-Fi Alliance certification.

Matching PRD Release 1.0 Ref. 5.4.1.8

4.4.11 The AP should support conformance to IEEE 802.11a and IEEE 802.11h as per operator requirements. Conformance shall be through Wi-Fi Alliance certification.

Matching PRD Release 1.0 Ref. 5.4.1.9

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4.4.12 Provision should be made for mitigating interference with other devices operating in the same wireless spectrum.

Matching PRD Release 1.0 Ref. 5.4.1.12

4.4.13 Interfacing to standard existing customer premises equipment should be supported, e.g. cable modems, DSL modems.

4.4.14 Generic Wi-Fi access points without specific Wi-Fi SIP capabilities shall be supported, but it is recognised that additional functionalities (e.g. QoS and security) may be needed to improve user experience.

4.4.15 Wi-Fi SIP should not require any change in IP network configuration within customer premises equipment or the broadband access network. In particular, it shall work with CPE/ISP NAT with no change. Although undesirable, it is recognised that there may need to be some CPE reconfigurations such as firewall configurations to support new functions required by Wi-Fi SIP.

4.4.16 In-home Wi-Fi SIP should be 'plug and play' with minimal or no configuration. The FMCA recognises that certain aspects of this requirement may be met through emerging Wi-Fi Alliance Simple Configuration certifications.

4.4.17 APs shall support a user friendly mechanism for providing a secure way to configure WEP/WPA/WPA2 between a UE and an AP without the need for the user to enter a passphrase into the UE. It shall not be possible for a third party to crack the WPA security by eavesdropping the user friendly mechanism set-up process.

4.4.18 The Wi-Fi access point should be able to connect at any point within the user's LAN.

4.4.19 APs in the future should provide support for IEEE 802.11k

4.4.20 APs in the future should provide support for IEEE 802.11r

4.4.21 APs in the future should provide support for IEEE 802.11n

4.4.22 APs in the future should provide support for IEEE 802.11u

4.4.23 APs in the future should provide support for IEEE 802.11v

4.4.24 APs should have the option to support detachable antennas.

Matching PRD Release 1.0 Ref. 5.4.1.16

4.4.25 The Wi-Fi AP should support separate transmit and receive antenna diversity on a client by client basis.

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Matching PRD Release 1.0 Ref. 5.4.1.17

4.4.26 The AP should transmit periodic beacons at least every 100 ms.

Matching PRD Release 1.0 Ref. 5.4.1.18

4.4.27 The Wi-Fi AP should support WDS to enable support for wireless repeaters. It should be possible to enable security on the repeater using a 'single touch mechanism'.

Matching PRD Release 1.0 Ref. 5.4.1.19

4.4.28 The Wi-Fi AP shall support the Wi-Fi frequency channels available in the specific country/region.

Matching PRD Release 1.0 Ref. 5.4.1.20

4.4.29 The Wi-Fi AP should support IAPP or similar inter-AP protocol to speed up context transfer for a roaming

Matching PRD Release 1.0 Ref. 5.4.1.22

4.4.30 Based on UMA recommendations¹, the AP shall support UE that want to use power save mode. Specifically, it should recognise the Power Management bit in the frame header and, if an UE indicates it is going to enter PS-mode, the AP should buffer any incoming traffic for that UE and indicate that via a Traffic Indication Map (TIM) or DTIM. The AP should support Power Save Polling by the UE.

Matching PRD Release 1.0 Ref. 5.4.1.23

4.4.31 The AP shall support a minimum of two SSIDs.

Matching PRD Release 1.0 Ref. 5.4.1.25

4.4.32 The AP shall support the capability of broadcasting multiple SSIDs on a SSID basis.

Matching PRD Release 1.0 Ref. 5.4.1.27

4.4.33 The AP shall have the capability, depending on user or operator requirements, to disable the broadcasting of SSIDs.

4.4.34 The AP shall support the mapping of individual SSIDs to specific VLAN tags, PPPoE/PPPoA sessions and DiffServ settings as required by operators.

Matching PRD Release 1.0 Ref. 5.4.1.28

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4.4.35 The AP should support multiple PPPoE for clients and multiple simultaneous WAN PPPoE sessions for the purpose of SSID mapping.

Matching PRD Release 1.0 Ref. 5.4.1.51

4.4.36 The AP should support a single PPPoE client.

Matching PRD Release 1.0 Ref. 5.4.1.52

4.4.37 The AP should support bandwidth management on a per SSID basis.

Matching PRD Release 1.0 Ref. 5.4.1.29

4.4.38 The Wi-Fi AP or WLAN switches (in the scenario where a number of APs are managed by a WLAN switch) shall support storing a number of Wi-Fi SIP profiles in their non-volatile memory.

Matching PRD Release 1.0 Ref. 5.4.1.30

4.5 Specific AP Capabilities

4.5.1 A given AP (e.g. hotspot) should be able to support connection with multiple core networks (and SIP servers) at the same time.

4.5.2 AP should support SIP-ALG and B2BUA as required by individual operators.

Matching PRD Release 1.0 Ref. 5.4.1.61

4.5.3 The AP should support static IP routing to a specific destination based on source SSID and/or source/destination IP address.

Matching PRD Release 1.0 Ref. 5.4.1.62

4.6 AP Network Capabilities

4.6.1 The WLAN switch shall support network (NAT) and port address translation (PAT) functionalities according to RFC2766.

4.6.2 The AP shall support the following DHCP functionalities:

4.6.2.1 Server (RFC 2131, RFC 2132)

4.6.2.2 Relay Agent (RFC 1452)

4.6.2.3 Client (RFC 2132)

4.6.3 The AP shall support the following DNS functionalities:

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4.6.3.1 DNS Server (RFC 1611)

4.6.3.2 DNS Relay

4.7 RF Parameters

4.7.1 AP Total Radiated Power (TRP) shall be measured according to the emerging Wi-Fi Alliance WMC RF Performance Certification (at the rates and on the channels specified by the RF performance certification). Future PRD Releases or white papers will recommend target values which the resulting TRP measurement shall meet or exceed.

4.7.2 AP Total Isotropic Sensitivity (TIS) shall be measured according to the emerging Wi-Fi Alliance WMC RF Performance certification (at the rates and on the channels specified by the RF performance certification). Future PRD Releases or white papers will recommend target values which the resulting TIS measurement shall meet or exceed.

4.8 Enterprise AP Requirements

4.8.1 Enterprise APs should support power over Ethernet– IEEE 802.3af.

Matching PRD Release 1.0 Ref. 5.4.3.1

4.8.2 APs should support the option for authentication by reference to RADIUS servers.

Matching PRD Release 1.0 Ref. 5.4.3.2

4.8.3 APs should have support for IEEE 802.1x in RADIUS as specified in RFC3580.

Matching PRD Release 1.0 Ref. 5.4.3.3

4.8.4 APs should support the EAP extensions to the RADIUS protocol as specified in RFC3579.

Matching PRD Release 1.0 Ref. 5.4.3.4

4.8.5 APs should support downloadable access control lists from a central AAA server based on the user's authentication profile.

Matching PRD Release 1.0 Ref. 5.4.3.5

4.8.6 APs should have functionality that allows them to generate accounting information for billing utilisation of the AP resources by individual users.

Matching PRD Release 1.0 Ref. 5.4.3.6

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4.8.7 APs should support download of 'static' QoS policies via the remote management system.

Matching PRD Release 1.0 Ref. 5.4.3.7

4.8.8 APs shall have functionality to assign IP addresses from a locally configured pool.

Matching PRD Release 1.0 Ref. 5.4.3.8

4.8.9 APs shall have the functionality to assign IP addresses via reference to a (remote) DHCP server.

Matching PRD Release 1.0 Ref. 5.4.3.9

4.8.10 APs should support static, RIP and RIPv2 and OSPF routing protocols.

Matching PRD Release 1.0 Ref. 5.4.3.10

4.8.11 APs shall support a DNS relay.

Matching PRD Release 1.0 Ref. 5.4.3.11

4.8.12 APs should support NAT and NATP.

Matching PRD Release 1.0 Ref. 5.4.3.12

4.8.13 APs should support Foreign Agent functionality as per RFC3344.

Matching PRD Release 1.0 Ref. 5.4.3.13

4.8.14 APs should, if required, support built-in firewall capabilities that are certified by ICASA. Firewall support should cover the following functions: stateful packet inspection; IP source address filtering; IP destination address filtering; IP Protocol filtering; Port filtering; DMZ; ALGs; Port Forwarding; Denial of Service protection; Firewall rule partitioning per VLAN/IP subnets.

Matching PRD Release 1.0 Ref. 5.4.3.14

4.8.15 APs should have the option to support intrusion detection functions.

Matching PRD Release 1.0 Ref. 5.4.3.15

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4.9 Bluetooth Interface

4.9.1 If a Bluetooth Interface is supported on the AP, it shall support AFH (Bluetooth v1.2).

4.9.2 Besides AFH, UE that support both 802.11b/g and Bluetooth should support additional techniques (e.g. activity co-ordination between the two transceivers) to improve co-existence of both technologies and allow simultaneous operation of Bluetooth and Wi-Fi with better quality of experience.

4.10 Wireless QoS, Prioritisation and VLAN Tagging

4.10.1 The AP shall be certified by the Wi-Fi Alliance for compliance to WMM.

Matching PRD Release 1.0 Ref. 5.4.1.40

4.10.2 The AP shall support WMM EDCA to allow prioritised access for voice packets.

Matching PRD Release 1.0 Ref. 5.4.1.38

4.10.3 The AP shall set the WMM EDCA access categories - voice, video, best effort, background - based on the traffic type, e.g. voice, data, signalling.

Matching PRD Release 1.0 Ref. 5.4.1.39

4.10.4 The AP shall discern voice packets, e.g. using IEEE 802.1p tags or IP ToS/DS markings, to internally prioritise voice packets ahead of any other data packets that are to be transmitted on the wireless network. The AP shall support Wi-Fi Alliance WMM to allow prioritised access for voice packets to the medium. Mapping to SSID to be operator defined.

Matching PRD Release 1.0 Ref. 5.4.1.42

4.10.5 The AP shall be certified for Wi-Fi Alliance WMM Power Save

Matching PRD Release 1.0 Ref. 5.4.1.24

4.10.6 In the future IETF CAPWAP (Control and Provisioning of Access Points) standards should be supported.

4.10.7 The AP shall support IEEE 802.1q for multiple VLANs.

4.10.8 The AP shall support IEEE 802.1p.

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4.10.9The AP shall be able to support at least eight SSIDs and associate network profiles and policy groups to these SSIDs.

Matching PRD Release 1.0 Ref. 5.4.1.26

4.10.10 The AP shall support mapping of BSSIDs to specific VLANs.

4.10.11 The AP shall support mapping of BSSIDs to specific traffic priorities via IEEE 802.1p.

4.10.12 The AP shall support DSCP (DiffServ Code Point) tagging.

4.10.13 The AP should be configured to recognise IEEE 802.1p, IEEE 802.1q and DSCP to maintain voice prioritisation and minimise latency and jitter.

4.10.14 The AP should support the mapping of SSID to WAN (backhaul) VLAN tags and WAN PPPoE/PPPoA sessions as required by operators.

Matching PRD Release 1.0 Ref. 5.4.1.53

4.10.15 The AP should support a mechanism to identify UE classes and differentiate between UE classes. Whether this mechanism is used or not shall be determined by the operator. It may be necessary to differentiate between UE classes if, for example, the UE classes support different QoS policies. UE classes will be defined in PRD Release 3.0.

4.11 Access Point Security

4.11.1The AP shall provide user management login and password authentication.

4.11.2The AP shall support MAC address authentication.

4.11.3The AP shall support WEP (RC4), WPA (TKIP), WPA 2. WPA 2 support shall be WPA 2 Personal or Enterprise dependent on operator requirements

Matching PRD Release 1.0 Ref. 5.4.1.31

4.11.4The AP shall support IEEE 802.11i

Matching PRD Release 1.0 Ref. 5.4.1.32

4.11.5The AP shall support Secure Sockets Layer (SSL) traffic.

Matching PRD Release 1.0 Ref. 5.4.1.58

4.11.6 The AP should support SIP-TLS on port 5061.

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4.11.7 The AP should support IPsec traffic pass-through, IPsec termination and initiation.

Matching PRD Release 1.0 Ref. 5.4.1.57

4.11.8The AP should support one or more operator specified upper layer authentication protocols, e.g. HTTP, HTTPS, SSL/RADIUS, EAP TLS, PEAP, EAP-FAST, EAP-AKA, EAP-SIM, EAP-MD5, EAP-TTLS, XML mini-browser in particular for public hotspot scenarios.

Matching PRD Release 1.0 Ref. 5.4.1.34

4.11.9The AP shall support MAC address filtering (blacklisting MAC addresses). APs shall support access control lists to restrict access to known MAC addresses. These lists shall be configurable via the management interface.

Matching PRD Release 1.0 Ref. 5.4.1.55

4.11.10 The AP shall support ACL (access control list – equivalent to a white list).

4.11.11 The AP should support protocol filtering e.g. NetBios, IPX. The filterable protocols shall be indicated.

4.11.12 The AP shall support access lists to enable the device to be locked down using IP address and protocol to the user's requirements.

Matching PRD Release 1.0 Ref. 5.4.1.56

4.11.13 The AP shall support open access, i.e. no WEP, no WPA , no WPA 2 Personal and no WPA 2 Enterprise

Matching PRD Release 1.0 Ref. 5.4.1.35

4.11.14 The AP shall be compliant with Wi-Fi Alliance WPA 2 certifications.

Matching PRD Release 1.0 Ref. 5.4.1.36

4.11.15 The AP should be compliant with Wi-Fi Alliance Extended EAP certifications.

Matching PRD Release 1.0 Ref. 5.4.1.37

4.12 Access Point Management

4.12.1The Wi-Fi AP should support remote management capabilities as covered by the DSL Forum TR69 extensions for LAN connected devices e.g. WT111, WT104, WT98.

Matching PRD Release 1.0 Ref. 5.4.1.48

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4.12.2 The operator shall have the option to disable TR69 functionality.

4.13 Gateway Considerations

4.13.1 AP options should include an integrated gateway (AP / DSL modem), including PPPoE, PPPoA and DHCP support options.

4.13.2 AP option should include support for a Wi-Fi SIP AP with an Ethernet interface.

Matching PRD Release 1.0 Ref. 5.4.1.5

4.13.3 The AP shall provide at least one Ethernet port (IEEE 802.3) for connectivity to WAN equipment.

4.13.4 If more than one Ethernet port is provided, then the AP shall provide for switching or router functionality.

4.14 General Inter-AP Mobility Requirements

4.14.1 The UE shall rove between APs as required, when in wireless mode.

4.14.2 The UE shall support inter AP transfers within an enterprise site or public Wi-Fi hotspot.

4.14.3 The UE shall support voice call continuity and data session continuity in case of AP to AP handover within an enterprise site or public Wi-Fi hotspot.

4.14.4 The user experience of the handover between APs should be seamless with no loss of voice, no perceptible break and, where possible, a maximum voice break of no more than 100ms, e.g. for emerging standards – IEEE 802.11r, IEEE 802.11u and IEEE 802.11f.

4.15 Inter AP Mobility Management from a Mobility Controller

4.15.1 Wi-Fi Alliance WMM and WMM Power Save certifications shall be performed.

4.15.2 APs in the future should support IETF CAPWAP (Control and Provisioning of Access Points) standards.

4.15.3 Bandwidth control, bandwidth limitations and bandwidth prioritisation should be controlled from the switch, but based on core network policy managers e.g. Policy Decision Functions.

4.15.4 All services should be identified and classified via service flows. These service flows shall have the following metrics (i) bandwidth requirement, (ii) latency, (ii) jitter, (iv) encryption method and (v) prioritisation queuing.

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4.15.5 Parameters such as QoS (IEEE 802.11e), prioritisation (IEEE 802.1p), VLAN tagging (IEEE 802.1q) shall be managed by the mobility switch.

4.15.6 BSSIDs should have the capability of being grouped to a VLAN.

4.15.7 The AP and switch should support IEEE 802.1q for multiple VLANs.

Matching PRD Release 1.0 Ref. 5.4.1.49

4.15.8 The AP and switch should support mapping of BSSIDs to specific VLANs.

4.15.9 The AP and switch should support mapping of BSSIDs to specific traffic priorities via IEEE 802.1p.

4.15.10 The mobility switch should have the capability of identifying voice traffic. This traffic identification may comprise of (i) inspecting the traffic such as in SIP signalling and media traffic, (ii) VLAN tagging using IEEE 802.1q, (iii) IEEE 802.1p priority tagging and (iv) DSCP (DiffServ Code Point) tagging.

4.15.11 The network elements should be configured to recognise IEEE 802.1p, IEEE 802.1q and DSCP to maintain voice prioritisation and minimise latency and jitter.

4.15.12 The thin client AP should recognise priority tagged frames (IEEE 802.1p or DSCP) and direct them to the appropriate high priority queue.

4.15.13 The following authentication methods should be supported in the mobility switch (i) WPA2 Enterprise (IEEE 802.11i), (ii) WPA, (iii) static WEP and (iv) MAC addresses.

4.15.14 All security keys should be maintained in the mobility switch.

4.15.15 The switch should support stateful firewalls and have the ability to enforce policies based on Active Directories or RADIUS server/proxy.

4.15.16 Switches should have the capability of AP-AP handover of voice calls of 100ms or less.

4.15.17 Connection redirection on a subnet to subnet basis should be controlled by the mobility switch.

4.15.18 The switch should support Call Admission Control (CAC).

4.15.19 The switch should support load-balancing to neighbouring AP as the need arises.

4.15.20 In the future switches should provide support for IEEE 802.11k.

4.15.21 In the future switches should provide support for IEEE 802.11r.

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4.15.22 In the future switches should provide support for IEEE 802.11n.

4.15.23 In the future switches should provide support for IEEE 802.11u.

4.15.24 In the future switches should provide support for IEEE 802.11v.

4.15.25 The switch should support configurable timers for guest associations.

4.16 Safety Regulations

4.16.1 The AP shall meet in-country/region mandatory cellular and Wi-Fi Health and Safety requirements.

4.16.2 The AP shall meet relevant in-country/region guidelines, e.g. CE marking and the EC WEEE directive.

4.16.3 APs shall meet the International Commission on Non-Ionising Radiation Protection (ICNIRP) guidelines.

4.17 Public Wi-Fi Hotspot Requirements

4.17.1 Public Wi-Fi Hotspots should support one or more of the following options to facilitate Wi-Fi SIP UE association / authentication. Selection of required approach will be operator specific.

4.17.1.1 The usage of well defined XML data within in the initial UAM redirect to facilitate the UE to directly post login credentials. The UE will also need to be appropriately specified to ensure it looks for and parses the XML.

4.17.1.2 Trusted 'walled gardens' for Wi-Fi SIP traffic, bypassing it straight through to the Border Gate Function. The Border Gate Function would then be responsible for authenticating the end user and all billing and audit functions.

4.17.1.3 IEEE 802.1x (shared key authentication and open authentication) and EAP, e.g. EAP-SIM, EAP-AKA, EAP-MD5 and EAP-TTLS.

4.17.1.4 APs shall support IEEE 802.3af.

Matching PRD Release 1.0 Ref. 5.4.4.1

4.17.2 The AP shall not support MAC address authentication only

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5 References

ⁱ UMA Architecture (Stage 2) R1.0.4 – Appendix B.1.2 Recommended 802.11 AP Capabilities

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