Developer and Solution Partner Program
Inter-Working Report

Partner: **CROSSCALL**
Solution name: **CORE-M5**
Alcatel-Lucent Enterprise Platform:
OmniAccess Stellar WLAN

May 2022

Legal notice

Disclaimer

The product and release listed have been tested with the Alcatel-Lucent Enterprise Platform and the release specified hereinafter. The tests concern only the inter-working between the DSPP member's product and the Alcatel-Lucent Enterprise Platform referenced above. The inter-working report is valid until the DSPP member's product issues a new major release of such product (incorporating new features or functionality), or until ALE issues a new major release of such Alcatel-Lucent Enterprise product (incorporating new features or functionalities), whichever first occurs.

While efforts were made to verify the completeness and accuracy of the information contained in this documentation, this document is provided "as is".

In the interest of continued product development, ALE International reserves the right to make improvements to this documentation and the products it describes at any time, without notice or obligation.

Document history

Revision	Date	Author	Details
1	May 2022	Arnaud Vermet	Creation

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Tests Overview

Date	**May 2022**
ALE representative	**Arnaud Vermet**
Partner representative	
ALE platform	**OmniAccess Stellar WLAN**
ALE release	**4.0.3.2054**
Partner solution	**Core-M5**
Partner release	**L1812.6.02.05.FR01**
Solution categories	**Rugged phone**

Test results

☑ Passed ☐ Refused ☐ Postponed

☐ Passed with restrictions

IWR validity extension

None

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Table of contents

Table of contents

Chapter

1 INTRODUCTION

1.1 Definition

This document is the result of the certification tests performed between the DSPP member's solution and Alcatel-Lucent Enterprise's platform.

It certifies proper inter-working with the DSPP member's solution.

Information contained in this document is believed to be accurate and reliable at the time of printing. However, due to ongoing product improvements and revisions, ALE cannot guarantee accuracy of printed material after the date of certification nor can it accept responsibility for errors or omissions. Updates to this document can be viewed on:

- the Technical Support page of the Enterprise Business Portal (https://myportal.al-enterprise.com/) in the Interworking Reports corner (access is restricted to Business Partners and DSPP members)

1.2 Validity of the Interworking Report

This Interworking report specifies the products and releases which have been certified.

This inter-working report is valid unless specified until the DSPP member issues a new major release of such product (incorporating new features or functionalities), or until ALE issues a new major release of such Alcatel-Lucent Enterprise product (incorporating new features or functionalities), whichever first occurs.

A new release is identified as following:

- a "Major Release" is any x. enumerated release. Example Product 1.0 is a major product release.
- a "Minor Release" is any x.y enumerated release. Example Product 1.1 is a minor product release

The validity of the Interworking report can be extended to upper major releases, if for example the interface didn't evolve, or to other products of the same family range. Please refer to the "IWR validity extension" chapter at the beginning of the report.

Note 1: *The Interworking report becomes automatically obsolete when the mentioned product releases are end of life.*

Note 2: The renewal of the interoperability test (certification) is under the responsibility of the partner

Note 3: ALE usually generate a major release every 18 or 24 months. Therefore the IWR is implicitly valid for two year after the publication.

1.3 Limit of the technical support

For certified DSPP solutions, Technical support will be provided within the scope of the features which have been certified in the Interworking report. The scope is defined by the Interworking report via the tests cases which have been performed, the conditions and the perimeter of the testing and identified limitations. All those details are documented in the IWR. The Business Partner must verify an Interworking Report (see above “Validity of the Interworking Report) is valid and that the deployment follows all recommendations and prerequisites described in the Interworking Report.

The certification does not verify the functional achievement of the DSPP member’s solution as well as it does not cover load capacity checks, race conditions and generally speaking any real customer's site conditions.

Access to technical support by the ALE Business Partner requires a valid ALE maintenance contract

For details on all cases (3rd party application certified or not, request outside the scope of this IWR, etc.), please refer to Appendix “DSPP Escalation Process”.

1.3.1 Case of additional Third-party applications

In case at a customer site an additional third-party application NOT provided by ALE is included in the solution between the certified Alcatel-Lucent Enterprise and DSPP member products such as a Session Border Controller or a firewall for example, ALE will consider that situation as to that where no IWR exists. ALE will handle this situation accordingly (for more details, please refer to Appendix “DSPP Escalation Process”).

Chapter

2

SOLUTION INFORMATION

Solution name	**CORE-M5**
Solution version	**L1812.6.02.05.FR01**
Interface/API	
Interface/API version if relevant	

Brief Solution description:

Powerful, reliable and Android Enterprise Recommended certified. X-LINK compatible and ergonomic design. Versatile and durable. The CORE-M5 incorporates Crosscall's key values and features, providing the perfect solution for all professionals:

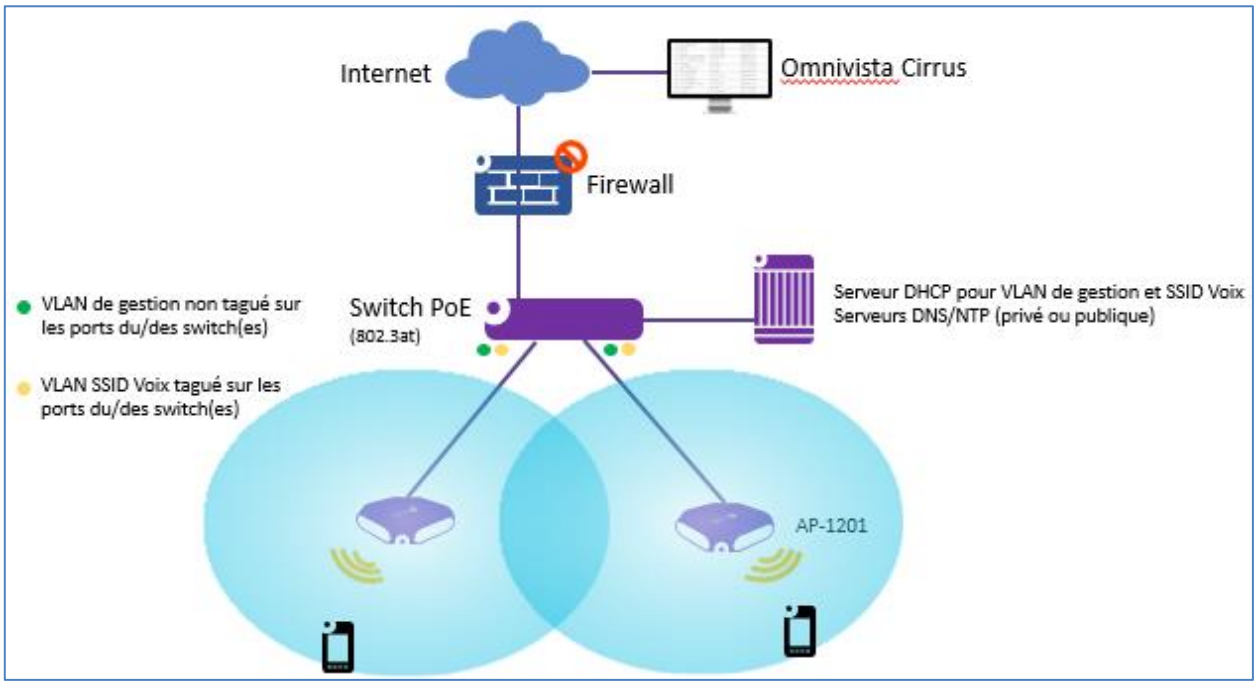
• Powerful: Qualcomm SM6115 Octo-core
• Connectivity: VoLTE, VoWIFI, FREQUENCY BAND 4G (LTE), WIFI 802.11ac 2.4GHZ AND 5GHZ, WPA3 Certification, BLUETOOTH
• Durable: Five-year warranty, repairable smartphone, military standard MIL-STD-810H

Chapter

3

TEST ENVIRONMENT

Tology :



- Two OmniAccess Stellar AP1201 access points are positioned on the ceiling (around 15 meters between both APs)
- Adequate coverage cell between the two APs must have an overlap of about 20%.
- Both APs are powered using PoE
- Two VLAN are configuration on the switch ports:
  - One management VLAN
  - One dedicated VLAN for Voice over Wireless SSID
- Both APs are managed using Omnivista Cirrus

Chapter 3 TEST ENVIRONMENT

3.1 Hardware configuration

List main hardware equipments used for testing

Composants	Caractéristiques	Détails
Omnivista Cirrus	Version 4.6.1 GA	/
OAW-AP Stellar	AP1201	Wifi 5 (Wave2)
Smartphone	Core-M5	IEEE 802.11a/b/g/n/ac

3.2 Software configuration

List main softwares used for testing

- Alcatel-Lucent Enterprise OmniAccess Stellar: **OmniAccess Stellar AP1201**
- OmniAccess Stellar Version: **v4.0.3.2054**
- Crosscall Mobile Phone Model **: Core-M5**
- Andriod version on Mobile Phone used for test : **L1812.6.02.05.FR01**

Chapter

4 SUMMARY OF TESTS

4.1 Summary of test results

Test ID	OK	NOK	Comments
VoWIFI_1	☒	☐	
VoWIFI_2	☒	☐	
VoWIFI_3	☒	☐	
VoWIFI_4	☒	☐	
VoWIFI_5	☒	☐	
VoWIFI_6	☒	☐	
VoWIFI_7	☒	☐	
VoWIFI_8	☒	☐	Minor, disconnection during handover but expected behavior (maximum 1 second)
VoWIFI_9	☒	☐	

Comments:

- Core-M5 roaming is performed around -70 & 75 dbm.
- no call drops during handovers between the two APs, audio quality (voice) is correct.
- Low latency is noticed (observed only once, very minimal latency).
- Only interruption observed is when during the handover of WIFI signal to a 4G signal, the interruption is of the order of one second max.
- Tests were done using both 2,4GHz and 5GHz, however in the context of Voice Wireless, design must be done on 5Ghz wireless band.

4.2 Summary of problems

- N/A

4.3 Summary of limitations

- N/A

4.4 Glossary

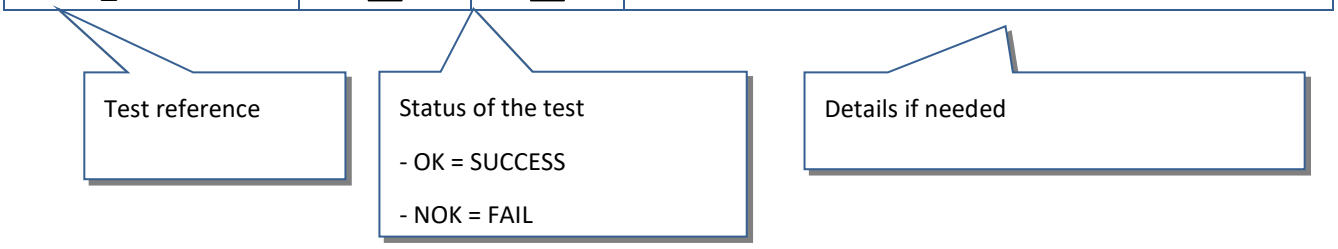
Acronyme	Signification
ALE	Alcatel-Lucent Enterprise
AP	Access Point
DHCP	Dynamic Host Configuration Protocol
ICMP	Internet Control Message Protocol
LAN	Local area network
POE	Power Over Ethernet
PSK	Pre-shared key
QoE	Quality of Experience
RSSI	Received Signal Strength Indication
SSID	Service set identifier
VLAN	Virtual LAN
VoWIFI	Voice over WIFI

Chapter

5 TESTS RESULT

5.1 Test Template

Référence du test	OK	Non OK	Comments
VoWifi_1	☐	☐	



5.2 Connectivity and Setup

5.2.1 Assumptions

The network performance must have the following characteristics:

Parameters	Details
Latence (Average end-to-end delay)	Network round trip delay must be less than 250 ms
Jitter (variation of delay over the end-to-end path)	Jitter must be less than 100 ms
Packet loss	Packet loss must be less than 2%
Burst factor (BF)	802.11 retransmissions should be kept under 15%

The RF design goal :

Parameters	Details
Coverage	-70 dBm (or better) to maintain a voice/Audio/Video communication -60 dBm to -64 dBm (or better) to ensure a correct handover -25dBi SNR or better
Channel utilization	Low channel utilization (no more than 40%), high channel utilization may be the indication of new sources of interferences or AP outages
Best practices with 5GHZ channels	Enable Band Steering on 5GHz band, MU-MIMO and 802.11ax - When majority of 802.11ac & 802.11ax multimedia clients Prefer 40MHz wide channel - Prefer non-DFS channels in indoors - Channels list on DFS UNII-II Extended subband to manage interferences (Radars/Weather stations)

5.2.2 Test Results

These tests shall verify that the Crosscall CORE-M5 smartphone can be used as VoWifi device on a Stellar architecture with good QoE.

5.2.2.1 VoWIFI_1

TEST'S REFERENCE: VoWIFI_1			
Objective	Validation of the connection and Wi-Fi operation of smartphones on the Stellar WLAN infrastructure		
Process	- Creation of a dedicated SSID using PSK (Pre-Shared Key) from Omnivista Cirrus on the AP1201 APs - Use of several types of encryption depending on smartphone support (WPA2_PSK_TKIP, WPA2_PSK_AES, WPA3_PSK_SAE_AES..) - Connect the smartphone to the configured SSID - Browse the Internet - Launch the Rainbow application		
EXPECTED TEST RESULT		**STATUS**	
- The smartphone can connect to the Stellar infrastructure on several types of encryption. - The Wi-Fi connection is established quickly (no significant delays) - The smartphone gets an IP address and can browse the Internet - Rainbow can connect to the cloud		OK	☒
		NOK (major)	☐
		NOK (minor)	☐
		Not tested	☐
GLOBAL RESULT			
Site :	**Crosscall**	***Validation :***	Yes ☒ No ☐
Version :	**L1812.6.02.05.FR01**		
Tester:	**Aurélie / Farid**		
Date :	**16/11/2021**	*Anomaly reference:*	
Comments :	WPA_PSK_TKIP/WPA_PSK_AES/WPA_PSK_AES_TKIP/WPA2_PSK_TKIP/WPA2_PSK_AES/WPA3_PSk_SAE_AES		

5.2.2.2 VoWIFI_2

TEST'S REFERENCE: VoWIFI_2	
Objective	Validation of the WiFi stability of the smartphones on the Stellar WLAN infrastructure on the 2.4GHz frequency as well as the good radio coverage reported by the devices. The RSSI, i.e. the WiFi signal received by the smartphones according to their sensitivity must be higher than -65 dBm in order to make good quality voice calls.
Process	- Modify the SSID configuration to leave only the 2.4GHz frequency - Connect to the SSID - Validate the stability of the signal and of the 2.4Ghz Wifi connection - Move away and get closer to an access point

EXPECTED TEST RESULT	STATUS	
- The smartphone can connect to the Stellar infrastructure using 2.4GHz. - The Wi-Fi connection is established quickly (no significant delays) - There should be no instability (disconnection - reconnection) - the Wi-Fi signal received by the smartphones must be consistent with the distance of the access points.	OK	☒
	NOK (major)	☐
	NOK (minor)	☐
	Not tested	☐

GLOBAL RESULT			
Site :	**Crosscall**	***Validation :***	Yes ☒ No ☐
Version :	**L1812.6.02.05.FR01**		
Tester :	**Aurélie / Farid**		
Date :	**16/11/2021**	*Anomaly reference:*	
Comments :	/		

5.2.2.3 VoWIFI_3

TEST'S REFERENCE: VoWIFI_3	
Objective	Validation of the WiFi stability of the smartphones on the Stellar WLAN infrastructure on the 5GHz frequency as well as the good radio coverage reported by the devices. The RSSI, i.e. the WiFi signal received by the smartphones according to their sensitivity must be higher than -65 dBm in order to make good quality voice calls.
Process	- Modify the SSID configuration to leave only the 5GHz frequency - Connect to the SSID - Validate the stability of the signal and the 5Ghz Wifi connection - Move away and get closer to an access point

EXPECTED TEST RESULT	STATUS	
- The smartphone can connect to the Stellar infrastructure in 5GHz. - The Wi-Fi connection is established quickly (no significant delays) - There should be no instability (disconnection - reconnection) - The Wi-Fi signal received by smartphones must be consistent with the distance of the access points.	OK	☒
	NOK (major)	☐
	NOK (minor)	☐
	Not tested	☐

GLOBAL RESULT			
Site :	**Crosscall**	***Validation :***	Yes ☒ No ☐
Version :	**L1812.6.02.05.FR01**		
Tester :	**Aurélie / Farid**		
Date :	**16/11/2021**	*Anomaly reference:*	
Comments :	/		

5.2.2.4 VoWIFI_4

TEST'S REFERENCE: VoWIFI_4			
Objective	Validation of the proper roaming of the smartphone between two access points on a Stellar WLAN infrastructure		
Process	- Connect to the SSID (dual band 2.4/5GHz) - Validate the stability of the Wi-Fi signal - Move between access points while pinging (possible to use the Network Tools application) to a fixed machine (LAN), and internet (google DNS) to check the packet losses according to the access points dropouts/hookups		
EXPECTED TEST RESULT		**STATUS**	
- The Wi-Fi connection is established - The smartphone decides to roam between the access points at the right time according to its sensitivity (between -70 and -65dmb). Possible to measure the RSSI with the "Network Monitor" application. - Low or no ICMP packet loss - No Wi-Fi instability after several roaming		OK	☒
		NOK (major)	☐
		NOK (minor)	☐
		Not tested	☐
GLOBAL RESULT			
Site :	**Crosscall**	***Validation :***	Yes ☒ No ☐
Version :	**L1812.6.02.05.FR01**		
Tester :	**Aurélie / Farid**		
Date :	**16/11/2021**	*Anomaly reference:*	
Comments :	Roaming done around -70dbm. Iteration: 15 times		

5.2.2.5 VoWIFI_5

TEST'S REFERENCE: VoWIFI_5	
Objective	Validation of a Rainbow communication between a wired PC (LAN) and a smartphone connected to a Stellar WLAN access point in the same VLAN.
Process	- Establish a rainbow communication between a PC and a smartphone (Audio tests, roaming + quality, can be done via podcast transmission from the fixed station). - Validation of the quality and stability of the communication. - Validation of the audio quality and stability of the fixed communication from the smartphone - Validation of the audio quality and stability of the communication while moving between the terminals from the smartphone - End the communication

EXPECTED TEST RESULT	STATUS	
- Rainbow call is established - Voice call quality is good on landline. Call made and received - off-hook and on-hook - Voice call quality is good while on the move. Transmitted and received call - off-hook and on-hook - Check that the voice is not subject to network disturbance (degraded voice, etc.) - Verify that the roaming is not or not very perceptible during the communication (about less than 200ms for it not to be perceptible) - Continuity of telephone communication when moving in areas covered by Stellar	OK	☒
	NOK (major)	☐
	NOK (minor)	☐
	Not tested	☐

GLOBAL RESULT			
Site :	**Crosscall**	***Validation :***	Yes ☒ No ☐
Version :	**L1812.6.02.05.FR01**		
Tester :	**Aurélie / Farid**		
Date :	**16/11/2021**	*Anomaly reference:*	
Comments :	No roaming issue (voice quality) Iteration : 15 times		

5.2.2.6 VoWIFI_6

TEST'S REFERENCE: VoWIFI_6	
Objective	Validation of a Rainbow communication between two smartphones on a Stellar WLAN infrastructure in the same VLAN.
Process	- Establish a Rainbow communication between two smartphones. Audio tests (roaming+quality) can be performed via podcast transmission from the fixed station. - Validation of the quality and stability of the communication. - Validation of the audio quality and stability of the communication between smartphones - Validation of audio quality and stability of Rainbow communication while moving between terminals - End the communication

EXPECTED TEST RESULT	STATUS	
- Rainbow call is established - Voice call quality is good on landline. Call made and received - off-hook and on-hook - Voice call quality is good while on mobility. Transmitted and received call - off-hook and on-hook - Verification that the voice is not subject to network disturbances (degraded voice, etc.) - Measure that the roaming is not or weakly perceptible during the communication (possible to use the Network Monitor application) - Continuity of telephone communication when moving in areas covered by Stellar	OK	☒
	NOK (major)	☐
	NOK (minor)	☐
	Not tested	☐

GLOBAL RESULT			
Site :	**Crosscall**	***Validation :***	Yes ☒ No ☐
Version :	**L1812.6.02.05.FR01**		
Tester :	**Aurélie / Farid**		
Date :	**16/11/2021**	*Anomaly reference:*	
Comments :	No roaming issue (voice quality) Iteration : 15 times		

5.2.2.7 VoWIFI_7

TEST'S REFERENCE: VoWIFI_7			
Objective	Validation of Wi-Fi to 4G switchover and vice versa (internet browsing)		
Process	- The smartphone is connected in Wi-Fi on a Stellar infrastructure - Ping to the internet - Leave the Wi-Fi coverage area to force the switch to 4G (measure the RSSI level during the switch) - Repeat the test by re-entering the coverage area to switch from 4G to Wi-Fi (RSSI level measurement during the switchover)		
EXPECTED TEST RESULT		**STATUS**	
- The smartphone can automatically switch from Wi-Fi to 4G depending on the signal level - Packet losses are to be considered in this context, but the pings should come back automatically (possible to use the Network Tools application) - Measure at which RSSI level the switchover is done (possible to use the Smartphone application "Network Monitor")		OK	☒
		NOK (major)	☐
		NOK (minor)	☐
		Not tested	☐
GLOBAL RESULT			
Site :	**Crosscall**	***Validation :***	Yes ☒ No ☐
Version :	**L1812.6.02.05.FR01**		
Testeur :	**Aurélie / Farid**		
Date :	**16/11/2021**	*Anomaly reference:*	
Comments :	No roaming issue (voice quality) Iteration : 15 times		

5.2.2.8 VoWIFI_8

TEST'S REFERENCE: VoWIFI_8			
Objective	Validation of Wi-Fi to 4G switchover and vice versa (Rainbow communication)		
Process	- The smartphone is connected on the Wi-Fi Stellar infrastructure - Perform a Rainbow communication between a PC and the smartphone - Leave the Wi-Fi coverage area to switch to 4G (measure the RSSI level during the switch) - Repeat the test by re-entering the coverage area to switch from 4G to Wi-Fi (measure the RSSI level during the switchover)		
EXPECTED TEST RESULT		**STATUS**	
- The smartphone can automatically switch from Wi-Fi to 4G depending on the signal level received. - Audio losses are to be expected in this context, measure the time before recovering the rainbow call - Measure at which RSSI level the switchover is done (possible to use the Smartphone application " Network Monitor ") - Check if the Rainbow call is persistent		OK	☒
		Non OK (défaut majeur)	☐
		Non OK (défaut mineur)	☐
		Not tested	☐
GLOBAL RESULT			
Site :	**Crosscall**	***Validation :***	Oui ☒ Non ☐
Version :	**L1812.6.02.05.FR01**		
Testeur :	**Aurélie / Farid**		
Date :	**16/11/2021**	*Anomaly reference:*	
Comments :	No roaming issue (voice quality) Data loss: 1 second max . (4G to WIFI & WIFI to 4G) No roaming issue (voice quality) Iteration : 15 times		

5.2.2.9 VoWIFI_9

TEST'S REFERENCE: VoWIFI_9	
Objectif	Validation of the redundancy at the architecture level. Verify the behavior of the smartphone during a AP failure (loss of power)
Process	- Position in the middle of two Wifi APs. - The smartphone is connected to one of the two APs - Ping to a machine / internet - Turn off the AP (or the PoE power supply) on which the smartphone is connected - Repeat the test with a Rainbow communication

EXPECTED TEST RESULT	STATUS	
- Wi-Fi connection established - The smartphone can automatically hook up to the second AP without losing the Wi-Fi signal - Packet loss is to be expected in this context, but pings should come back automatically - Check if the Rainbow communication is persistent or not when the first AP is switch off	OK	☒
	NOK (major)	☐
	NOK (minor)	☐
	Not tested	☐

GLOBAL RESULT			
Site :	**Crosscall**	***Validation :***	Oui ☒ Non ☐
Version :	**L1812.6.02.05.FR01**		
Tester :	**Aurélie / Farid**		
Date :	**23/03/2022**	*Anomaly reference:*	
Comments :	No issue		

Chapter

6

Appendix A: SOLUTION DESCRIPTION

Crosscall Mobile Core-M5

Powerful, reliable and Android Enterprise Recommended. X-LINK™ compatible, with an ergonomic design. Versatile and durable. The CORE-M5 incorporates CROSSCALL's key values and offers the perfect solution for professionals in a range of fields.

The CORE-M5 is equipped with a Qualcomm® SM6115 Octo-core processor that guarantees you a flawless experience every time you use your device. Its powerful processing capability means you can use several applications at the same time and vary their use without any loss of responsiveness. With the CORE-M5, you also get large storage capacity, which can be expanded to up to 512 GB with a micro SD card.

The CORE-M5 features dedicated frequency bands for 4G connection (up to 300 Mbps downstream and 75 Mbps upstream). These frequency bands cover all French operators and most European operators. When you are at home or in the office, your CORE-M5 connects to your WiFi network (802.11 a/b/g/n/ac 2.4Ghz and 5Ghz), which saves you from using your data plan. The CORE-M5 is WPA3 certified, meaning your data is secure. It has a dual SIM slot so you can quickly switch from one SIM to another, whether for work or personal use, to alternate between operators or temporarily sign up to a local package abroad.

Chapter

7

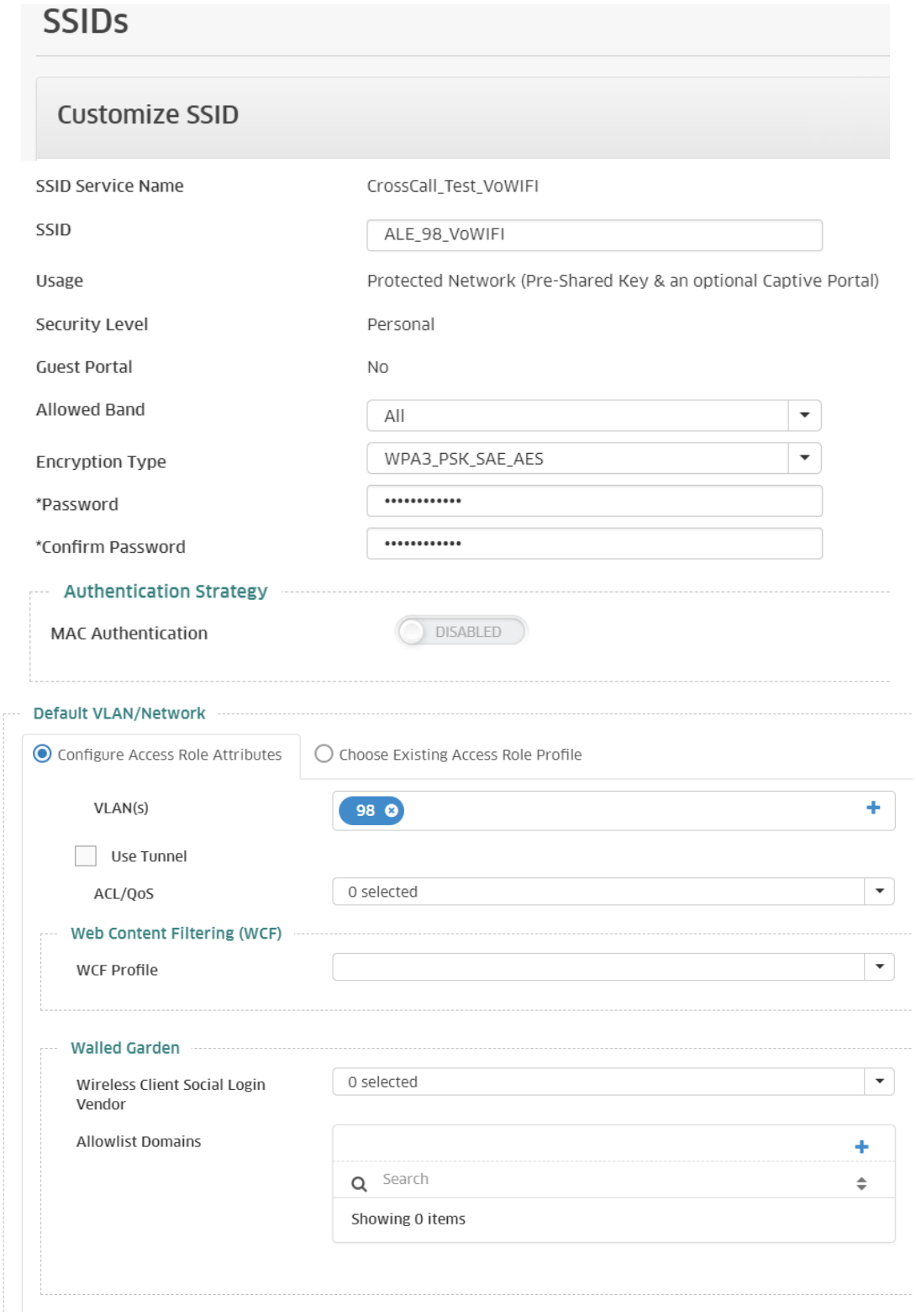
Appendix B: PARTNER side CONFIGURATION

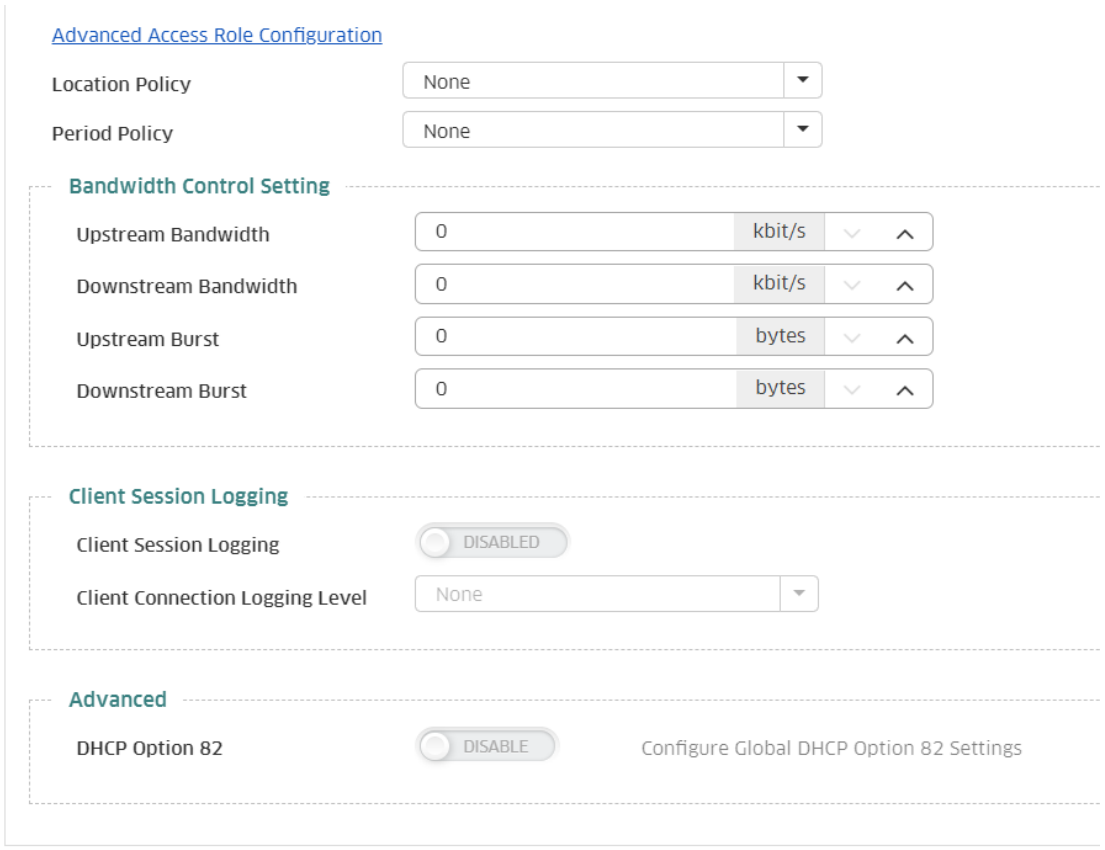
No specific configuration.

Chapter

8

Appendix C: ALE side CONFIGURATION




Advanced Access Role Configuration
Location Policy
None
Period Policy
None
Bandwidth Control Setting
Upstream Bandwidth
0
kbit/s
Downstream Bandwidth
0
kbit/s
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bytes
Downstream Burst
0
bytes
Client Session Logging
Client Session Logging
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Client Connection Logging Level
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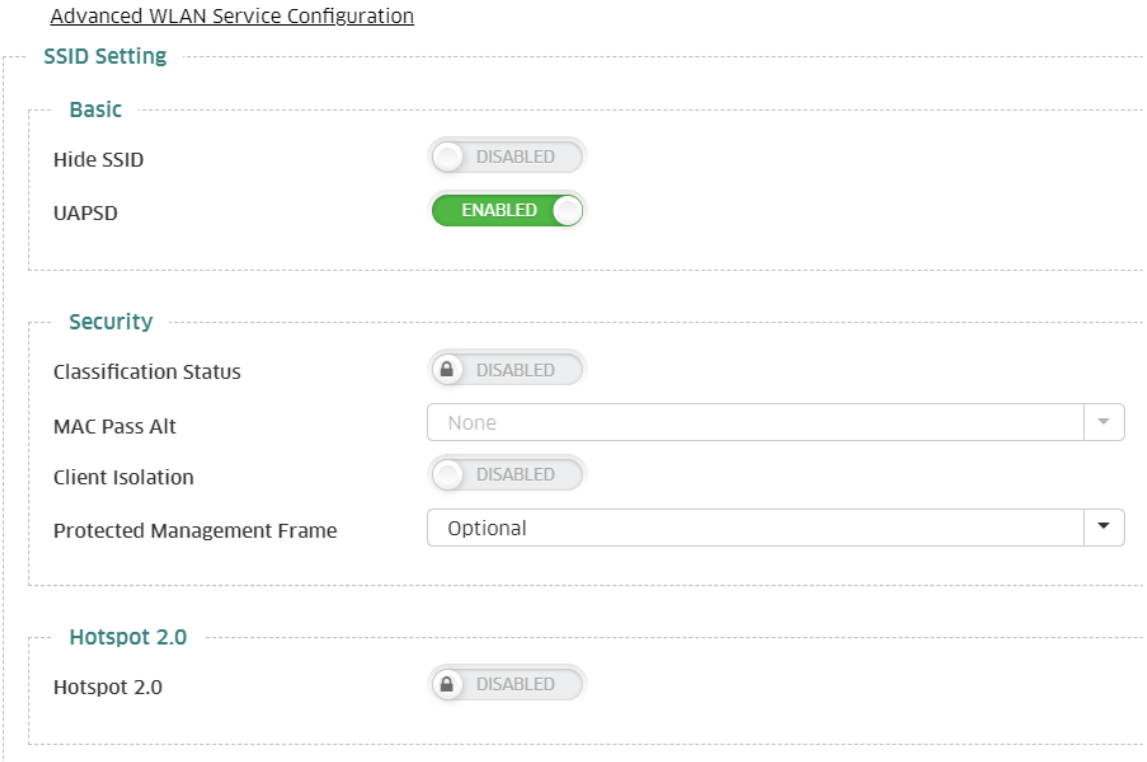
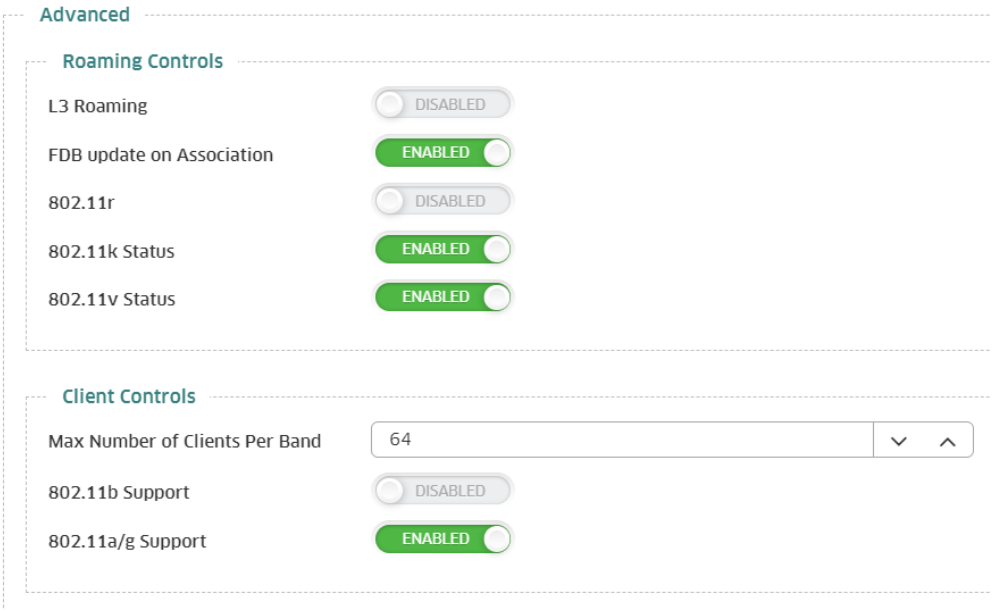
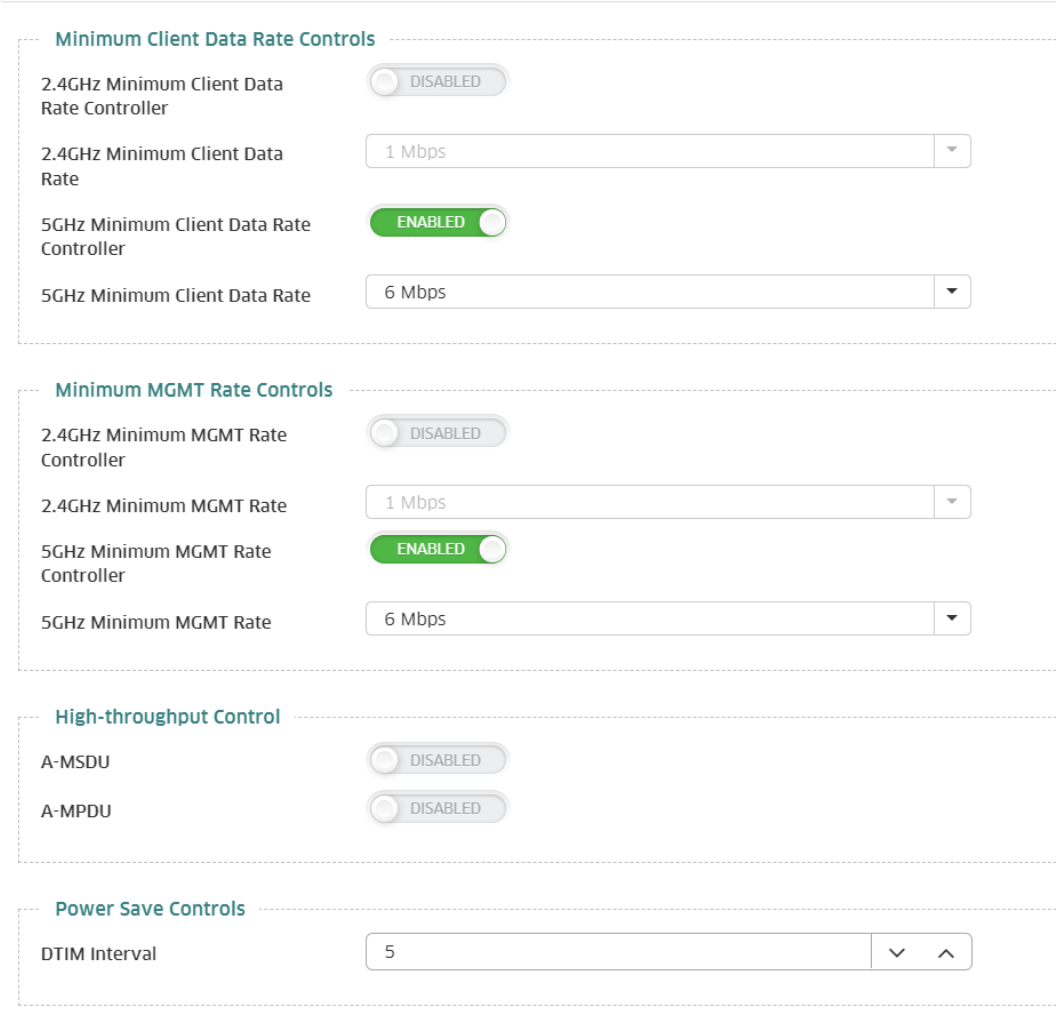
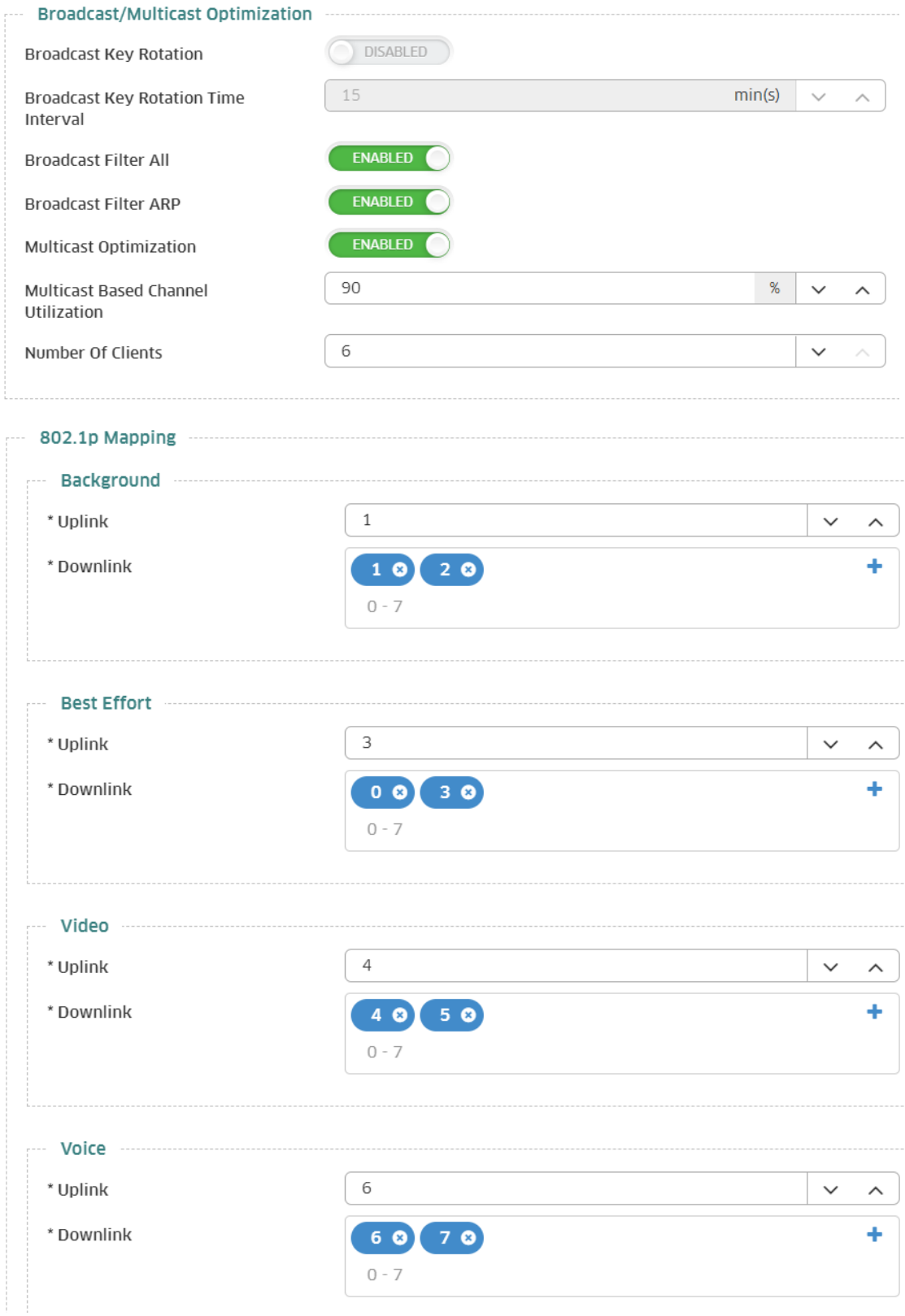
DISABLE
Configure Global DHCP Option 82 Settings

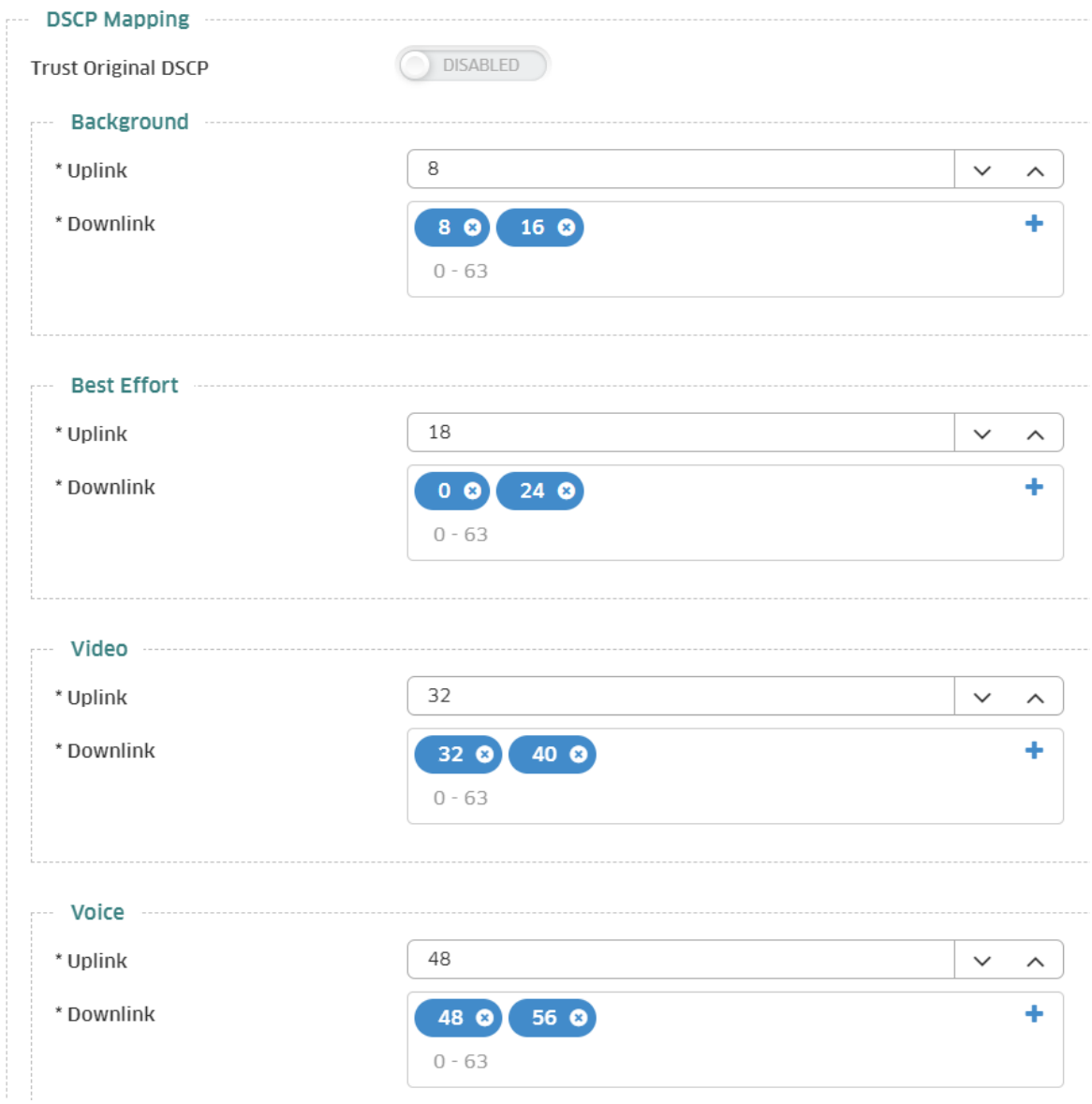

Advanced WLAN Service Configuration
SSID Setting
Basic
Hide SSID
DISABLED
UAPSD
ENABLED
Security
Classification Status
DISABLED
MAC Pass Alt
None
Client Isolation
DISABLED
Protected Management Frame
Optional
Hotspot 2.0
Hotspot 2.0
DISABLED

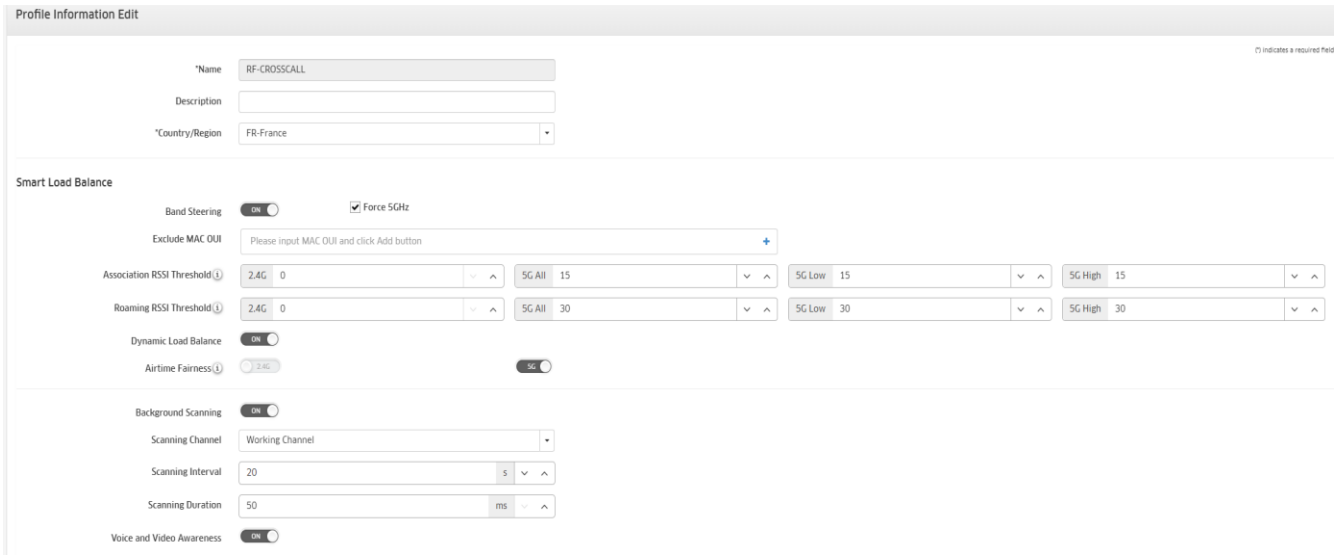


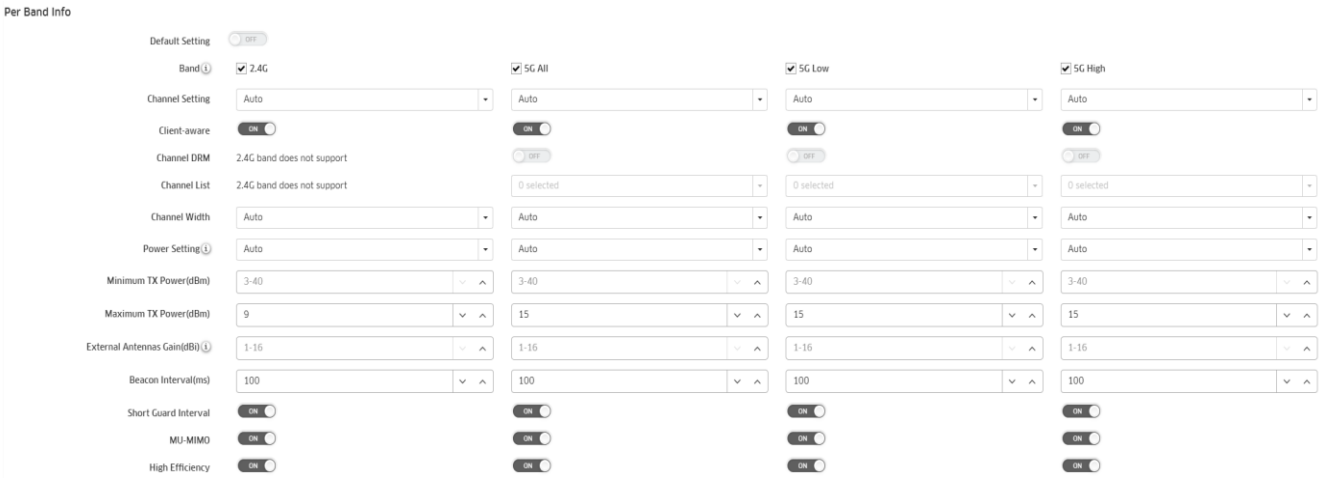
Option 802.11r Fast Roaming might be use depending of the type of SSID (Enterprise with authentication 802.1x)




Broadcast/Multicast Optimization
Broadcast Key Rotation
DISABLED
Broadcast Key Rotation Time Interval
15
min(s)
Broadcast Filter All
ENABLED
Broadcast Filter ARP
ENABLED
Multicast Optimization
ENABLED
Multicast Based Channel Utilization
90
%
Number Of Clients
6
802.1p Mapping
Background
* Uplink
1
* Downlink
1
2
0 - 7
Best Effort
* Uplink
3
* Downlink
0
3
0 - 7
Video
* Uplink
4
* Downlink
4
5
0 - 7
Voice
* Uplink
6
* Downlink
6
7
0 - 7


DSCP Mapping
Trust Original DSCP
DISABLED
Background
* Uplink
8
* Downlink
8
16
0 - 63
Best Effort
* Uplink
18
* Downlink
0
24
0 - 63
Video
* Uplink
32
* Downlink
32
40
0 - 63
Voice
* Uplink
48
* Downlink
48
56
0 - 63


Profile Information Edit
(*) indicates a required field
*Name
RF-CROSSCALL
Description
*Country/Region
FR-France
Smart Load Balance
Band Steering
ON
Force 5GHz
Exclude MAC OUI
Please input MAC OUI and click Add button
Association RSSI Threshold
2.4G 0
5G All 15
5G Low 15
5G High 15
Roaming RSSI Threshold
2.4G 0
5G All 30
5G Low 30
5G High 30
Dynamic Load Balance
ON
Airtime Fairness
2.4G
5G
Background Scanning
ON
Scanning Channel
Working Channel
Scanning Interval
20
s
Scanning Duration
50
ms
Voice and Video Awareness
ON


Per Band Info
Default Setting
OFF
Band
2.4G
5G All
5G Low
5G High
Channel Setting
Auto
Client-aware
ON
Channel DRM
2.4G band does not support
OFF
Channel List
2.4G band does not support
0 selected
Channel Width
Auto
Power Setting
Auto
Minimum TX Power(dBm)
3-40
Maximum TX Power(dBm)
9
15
External Antennas Gain(dBi)
1-16
Beacon Interval(ms)
100
Short Guard Interval
ON
MU-MIMO
ON
High Efficiency
ON

Chapter

9

Appendix D: PARTNER SUPPORT PROCESS

Mail : commercial@crosscall.com
After-sale request : https://www.crosscall.com/fr_FR/help

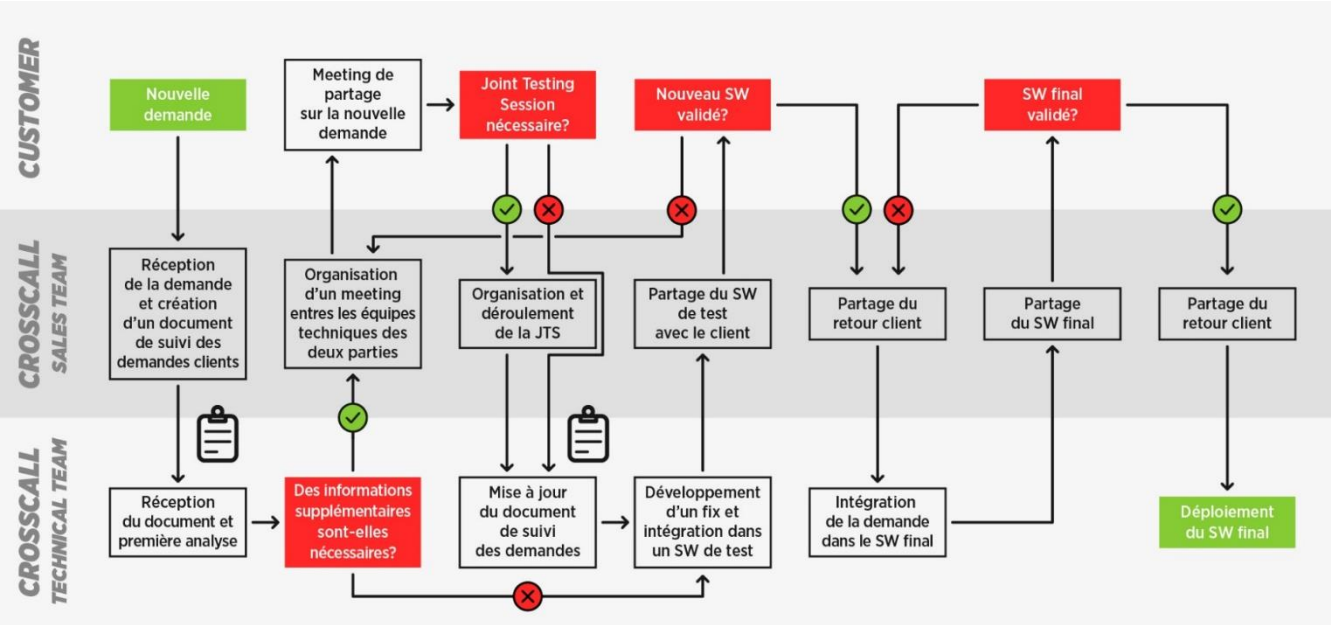
When receiving a new request, our pre-sales engineer takes care of all customer requests via internal tools.

Based in Aix-en-Provence, our technical teams, made up of French-speaking network engineers and developer engineers, study the request and provide feedback on the feasibility within the requested deadlines. If additional information seems necessary, a meeting with the customer will be requested by our technical teams.

Following this meeting, a joint test session can be scheduled with our teams depending on the problem. At the end of this session, our technical teams will be able to develop test software that will be delivered to the customer.

Once the fix has been confirmed by the customer, it will be incorporated into a future update according to the schedule previously validated with the customer.

Throughout the life of the project, our teams are in direct contact with the various interlocutors and regularly review issues and future developments in order to provide customer satisfaction.



Chapter

10

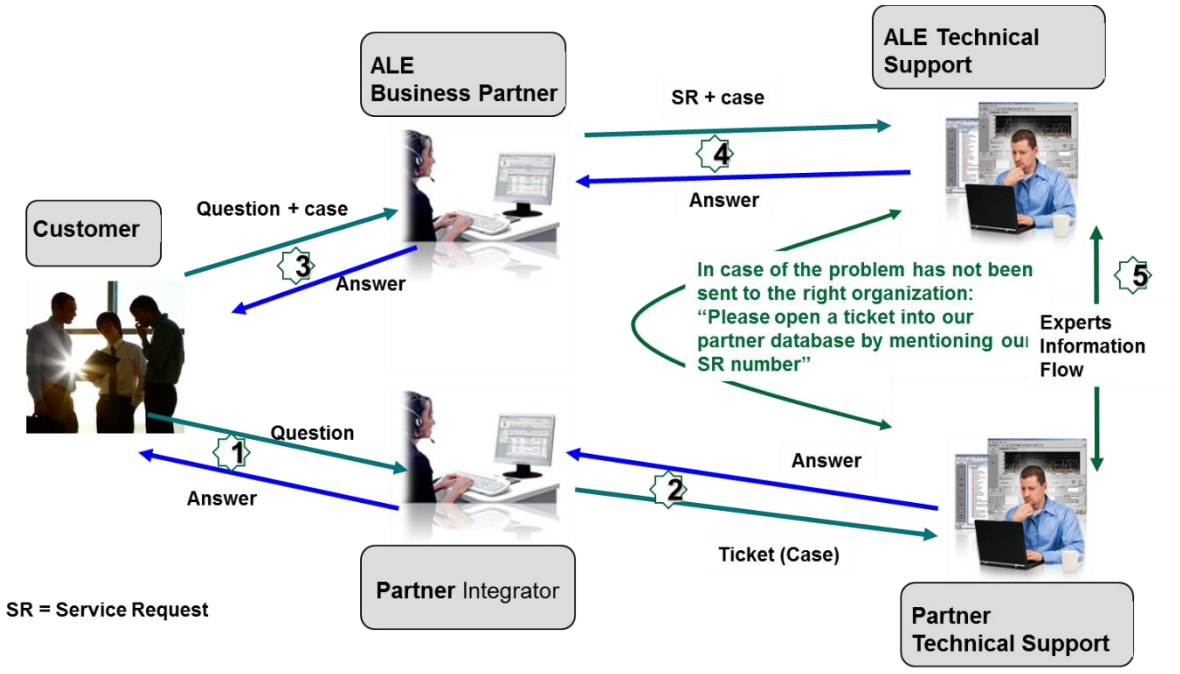
Appendix E: ALE SUPPORT PROCESS

10.1 Introduction

The purpose of this appendix is to define the escalation process to be applied by the ALE Business Partners when facing a problem with the solution certified in this document.

The principle is that ALE Technical Support will be subject to the existence of a valid InterWorking Report within the limits defined in the chapter “Limits of the Technical support”.

In case technical support is granted, ALE and the Application Partner, are engaged as following:



(*) The Partner Integrator can be a Third-Party company or the ALE Business Partner itself

10.2 Escalation in case of a valid Inter-Working Report

The InterWorking Report describes the test cases which have been performed, the conditions of the testing and the observed limitations.

This defines the scope of what has been certified.

If the issue is in the scope of the IWR, both parties, ALE and the Solution or Developer Partner, are engaged:

Case 1: the responsibility can be established 100% on ALE side.
In that case, the problem must be escalated by the ALE Business Partner to the ALE Support Center using the standard process: open a ticket (eService Request –eSR)

Case 2: the responsibility can be established 100% on Solution or Developer Partner side.
In that case, the problem must be escalated directly to the Solution or Developer Partner by opening a ticket through the Partner Hotline. In general, the process to be applied for the Solution Partner is described in the IWR.

Case 3: the responsibility cannot be established.
In that case the following process applies:

- The Solution or Developer Partner shall be contacted first by the ALE Business Partner (responsible for the application, see figure in previous page) for an analysis of the problem.

- The ALE Business Partner will escalate the problem to the ALE Support Center only if the Solution or Developer Partner has demonstrated with traces a problem on the ALE side or if the Solution or Developer Partner (not the Business Partner) needs the involvement of ALE

In that case**,** the ALE Business Partner must provide the reference of the Case Number on the Solution or Developer Partner side. The Solution or Developer Partner must provide to ALE the results of its investigations, traces, etc, related to this Case Number.

ALE reserves the right to close the case opened on his side if the investigations made on the Solution or Developer Partner side are insufficient or do not exist.

Note: Known problems or remarks mentioned in the IWR will not be taken into account.

For any issue reported by a Business Partner outside the scope of the IWR, ALE offers the “On Demand Diagnostic” service where ALE will provide 8 hours assistance against payment.

IMPORTANT NOTE 1: The possibility to configure the Alcatel-Lucent Enterprise PBX with ACTIS quotation tool in order to interwork with an external application is not the guarantee of the availability and the support of the solution. The reference remains the existence of a valid InterWorking Report.

Please check the availability of the Inter-Working Report on DSPP (URL: https://www.al-enterprise.com/en/partners/dspp) or Enterprise Business Portal (Url: Enterprise Business Portal) web sites.

IMPORTANT NOTE 2: Involvement of the ALE Business Partner is mandatory, the access to the Alcatel-Lucent Enterprise platform (remote access, login/password) being the Business Partner responsibility.

10.3 Escalation in all other cases

For non-certified solutions, no valid InterWorking Report is available and the integrator is expected to troubleshoot the issue. If the ALE Business Partner finds out the reported issue is maybe due to one of the Alcatel-Lucent Enterprise solutions, the ALE Business Partner opens a ticket with ALE Support and shares all trouble shooting information and conclusions that shows a need for ALE to analyse.

Access to technical support requires a valid ALE maintenance contract and the most recent maintenance software revision deployed on site. The resolution of those non-DSPP solutions cases is based on best effort and there is no commitment to fix or enhance the licensed Alcatel-Lucent Enterprise software.

For information, for non-certified solution and if the ALE Business Partner is not able to find out the issues, ALE offers an “On Demand Diagnostic” service where assistance will be provided for a fee.

10.4 Technical support access

The ALE **Support Center** is open 24 hours a day; 7 days a week:

- e-Support from the DSPP Web site (if registered as Solution or Developer Partner): https://www.al-enterprise.com/en/partners/dspp
- e-Support from the ALE Business Partners Web site (if registered Alcatel-Lucent Enterprise Business Partners): https://myportal.al-enterprise.com/ click under "Contact us" the *eService Request* link
- e-mail: Ebg_Global_Supportcenter@al-enterprise.com
- Fax number: +33(0)3 69 20 85 85
- Telephone numbers:

ALE Business Partners Support Center for countries:

Country	Supported language	Toll free number
France	French	+800-00200100
Belgium		
Luxembourg		
Germany	German	
Austria		
Switzerland		
United Kingdom	English	
Italy		
Australia		
Denmark		
Ireland		
Netherlands		
South Africa		
Norway		
Poland		
Sweden		
Czech Republic		
Estonia		
Finland		
Greece		
Slovakia		
Portugal		
Spain	Spanish	

For other countries:

English answer: + 1 650 385 2193
French answer: + 1 650 385 2196
German answer: + 1 650 385 2197
Spanish answer: + 1 650 385 2198

END OF DOCUMENT