

# ALCATEL-LUCENT OPENTOUCH MULTIMEDIA SERVICES

RELEASE 1.3 AND

# ALCATEL-LUCENT OMNIPCX ENTERPRISE COMMUNICATION SERVER

RELEASE 11.0

Converged multimedia communication for large enterprises.



Accustomed to the freedom they have to access their consumer applications anywhere, at any time and on any device, today's employees want the same seamless, ubiquitous access to enterprise applications on their business and personal devices whether they are in the office or well beyond the enterprise boundary. Two components of the Alcatel-Lucent OpenTouch™ Suite, the Alcatel-Lucent OmniPCX™ Enterprise Communication Server (CS) and Alcatel-Lucent OpenTouch™ Multimedia Services, provide the flexibility that employees want.

engage with customers, partners and peers, and improving their productivity at work. OpenTouch offers a seamless user experience, based on natural conferencing capabilities, across devices and locations.

## **Alcatel-Lucent OmniPCX Enterprise Communication Server and Alcatel-Lucent OpenTouch Multimedia Services**

As a key component of the OpenTouch Suite, the Alcatel-Lucent OmniPCX Enterprise CS, Release 11.0, is a communication software that delivers world-class business telephony features for medium, large and very large-sized companies, offering a choice of centralized or decentralized IP telephony solutions.

Alcatel-Lucent OpenTouch Multimedia Services, Release 1.3, complements the OmniPCX Enterprise CS and offers the OpenTouch conversation services.



## **Alcatel-Lucent OpenTouch Suite**

The Alcatel-Lucent OpenTouch Suite turns traditional enterprise communications into rich conversations by making multi-device, multi-party, multimedia collaboration part of everyday business. When employees are more agile and productive, the business is more agile and productive.

The OpenTouch Suite delivers native multimedia (video, voice, instant messaging [IM], content sharing) and multi-device conversation services, helping users better

FEATURES	BENEFITS
Conversation services on application-enabled desk phones, tablets, PCs and smartphones <sup>1</sup>	Offers a next-generation enterprise communications experience
User-centric communications experience across devices and locations <sup>1</sup>	Provides full-featured access to enterprise communications services across devices while on site or off site
Conversation services with integrated multimedia conferencing and presence <sup>1</sup>	Enables virtual teams across sites with rich multiparty communications, including IM, Web sharing and HD video conferencing
Business communications services, including attendant, routing and messaging services	Increases communication efficiency for employees with new opportunities to reach their contacts
Embedded voice-centric customer services and multimedia customer service integration	Increases customer satisfaction by improving call resolution while optimizing support resources
Centralized or decentralized IP telephony infrastructure flexibility and software scalability	Reduces the on-net and off-net communication costs; enables a choice of network configurations and a choice of IP, IP/TDM or TDM endpoints, minimizing additional investment and enabling a smooth migration
VMware® virtualization and 100% software deployment option	Increases operational agility and streamlines hardware sourcing policies in data centers
Open SIP and video at the core <sup>1</sup>	Provides multimedia and standards-based openness for visual collaboration
Open API <sup>1</sup> using Web Services and REST technology	Improves agility when integrating communications with business processes
Simplified and unified management <sup>2</sup>	Reduces total cost of ownership of business communication and conversation services

## TECHNICAL SPECIFICATIONS

### Communication services

#### Conversation services<sup>1</sup>

- Wideband VoIP, HD video and IM communications
- Ad-hoc and scheduled audio, video, IM and Web conferencing using voice-activated video switching: Set up and join instantly
- Whiteboard and webinar presentation mode with annotation
- Enterprise presence, including conversation status
- Desktop phone and mobile phone control from PC
- Universal directory access
- Call by name or by skill
- Favorites list unified across devices
- Unified call and messaging history across devices
- Single-identity: routing profiles
  - User-defined routing rules
  - Route to one or several devices
- Rapid session shift between devices
- Visual mailbox access
- Desktop integration

#### Business communication services

- Centralized directory, call by name
- Multiline telephony
- Call options, speed dial
- Audio conferencing
- Personal and enterprise call routing and forwarding

- Call-back features
- Recording
- Call history
- Contextual voice prompts
- Informal group features
- Desk-sharing features for shared offices
  - Alcatel-Lucent 8 Series Extended Edition IP Touch™ Phones
  - Alcatel-Lucent OpenTouch Connection for Alcatel-Lucent OmniTouch™ 8082 My IC Phone
  - Logon, logoff, re-logon
  - Automatic logoff

#### Manager-assistant

- Teams
- Filtered lines, private lines
- Text messaging, IM, voice messaging
- Discreet listening

#### Teams and groups

- Hunting groups, queues
- Supervision

#### Multi-tenancy

- Services per entity:
  - Speed dial
  - CLIP/CLIR
  - Auto attendant
  - Greeting message
  - Music on hold
  - Night service

### Desktop communications

#### OmniTouch 8082 My IC Phone

- 7-in. capacitive and haptic touch screen
- Media player, screensaver and pictures<sup>3</sup>
- Microsoft® Outlook® contacts sync<sup>3</sup>
- OpenTouch™ Conversation experience<sup>3</sup>
  - Wideband audio
  - Video escalation
  - Unified directory
  - Session history
  - Visual messaging
  - Favorites
  - Supervision, pick-up
  - Session shift
  - Routing profiles
  - Presence-based manager – assistant conversations
- OpenTouch Connection experience
  - Business communication services
  - Digital dial-pad or keyboard
  - Display of participant name and contextual feature keys
  - Hands-free loudspeaker announcement
  - Alcatel-Lucent NOE protocol
  - XML kit/library for developers
- Hospitality mode
- SIP and Web services<sup>3</sup>
- Third-party Web-based applications support<sup>3</sup>
- SDK, developer portal<sup>3</sup>
- 10/100/1000 Ethernet
- Bluetooth® or corded handset

- G722, G722.2 wideband audio
- 802.3 AF PoE (class 3)

#### **OmniTouch™ 8600 My Instant Communicator<sup>1,4</sup>**

- Audio, video, IM and Web-sharing conversation services on a PC desktop
- IBM® and Microsoft® PC desktop integration
- Microsoft® Windows® XP, Vista®, 7
- Microsoft Windows 8 (64bit)<sup>4</sup>
- Citrix™ XenApp™ 6.5

#### **LifeSize® personal video**

- LifeSize® Unity 50™: Desktop audio/video appliance for office and remote workers
- OpenTouch endpoints<sup>1</sup>
  - One-to-one or multiparty conversations with other OpenTouch endpoints
  - Routing profiles
  - Session shift

#### **IP Touch 8 Series Extended Edition IP phones, IP Touch 9 Series digital phones**

- Business communication services
- Embedded alpha keyboard
- Display of participant name and contextual feature keys
- Hands-free loudspeaker announcement
- Headset capability, such as Bluetooth
- Alcatel-Lucent NOE protocol, SIP or NOE over SIP
- Add-on supervision modules
- XML kit/library for developers
- IP desktop softphone: IP Touch 8 Series software client
  - Microsoft Windows XP, Windows 7, Windows 8
  - Apple® Mac®, Apple® iPad®, Apple® iPhone®
  - Google™ Android® tablets<sup>5</sup>

#### **8002, 8012 DeskPhone**

- Cost-effective Gigabit Ethernet desk phones
  - Essential SIP telephony services
  - Multi-line support
  - Display of participant name and contextual feature keys
  - Unified directory<sup>1</sup>
  - Routing profiles<sup>1</sup>
  - Hands-free loudspeaker

#### **PC desktop integration<sup>1</sup>**

- Desk phone and mobile phone control
- One-number control
- Unified Messaging control

- Microsoft applications
  - Microsoft Outlook 2010
  - Microsoft Outlook 2013<sup>4</sup>
  - Microsoft® Exchange Server 2007, 2010, 2013<sup>4</sup>
  - Microsoft Exchange Server 2013<sup>4</sup>
  - Microsoft® Office® Communicator 2007 R2, Lync® 2010
  - Microsoft® Lync® 2013<sup>4</sup>
- IBM applications
  - IBM® Lotus Notes® 8.5.x
  - IBM® Lotus Domino® 8.5.x
  - IBM® Lotus Sametime® 8.5.x

#### **Video rooms and whiteboards**

- LifeSize® Room 220™/220i, Team 220™, Express 220™, Icon™ 600<sup>5</sup>
- SMART interactive whiteboards (AAPP)
- OpenTouch endpoints<sup>1</sup>
  - One-to-one or multiparty conversations with other OpenTouch endpoints
  - Routing profiles
  - Rapid session shift
  - SIP, H.264

#### **On-site mobility**

##### **OmniTouch™ 8118/8128 WLAN and 500/500EX/8232 DECT**

- Business communication services
  - Call by name
  - Message waiting indication
  - Texting
- Hands-free
- Headset capability
- Integration with notification and location-based services through Alcatel-Lucent Application Partner Program (AAPP)

#### **On-site and off-site mobility**

##### **OpenTouch™ Conversation for iPad<sup>1</sup>**

- Place, answer and manage voice and video calls
  - Background-mode notifications
  - Full-screen application
- View contact presence and availability
- Start with a simple one-to-one chat and
  - Add people
  - Add voice
  - Add video
  - Add content
- Manage call routing profiles
- Present a single business identity across devices
- Listen to and manage voice mail messages
- Schedule meetings on-the-go
- View, conduct, annotate presentations
- Download from the Apple 220® Store

#### **OmniTouch™ 8600 My Instant Communicator Mobile<sup>1,4</sup>**

- Software client with intuitive graphical interface
- Single identity, directory lookup, business caller name presentation, comm. history, on-call access to business services on:
  - RIM® BlackBerry®
  - Apple iPhone®
  - Google Android™ platform
- Presence, favorites, routing profiles, view/start/stop manager-assistant routing, list of participants, ad-hoc conferences, session shift<sup>1</sup> on:
  - RIM BlackBerry
  - Google Android
- IM on RIM BlackBerry
- Easy deployment:
  - RIM BlackBerry Enterprise Server (BES)
  - Apple® AppStore
  - Google™ Play

#### **Hospitality communication services**

- My IC Phone, IP Touch 8 EE and 9 Series or analog phones
- Guest features
- Room service features
- Room directory features
- Billing and barring features

#### **Attendant services**

- Call queuing services
- Alarm indication
- Attendant group features
- Busy lamp field
- Multitenant services
- Record online
- Trunk and charging features
- VIP line features
- User management features
- Add-on module
- Headset capability

#### **Attendant positions**

- PC-based IP attendant
- PC-based Alcatel-Lucent 4059 Extended Edition Attendant Console
  - Directory and presence look-up
  - Busy Lamp Field
- IP Touch™ 4068 Extended Edition

#### **Messaging services**

- Integrated or unified messaging<sup>1,4</sup>
  - Local storage
  - IMAP servers

- Alcatel-Lucent 4645 Voice Messaging Services
- Extended recording and playback control
- Message Waiting Indication and visual control
- Automated Attendant
- Personal Automated Attendant
- Distribution lists
- Record online
- Shared mailbox

#### **Fax services**

- Embedded software<sup>1,4</sup>
- SIP, SIP/TLS, T.38 Fax over IP, SMTP
- Microsoft Outlook/Exchange 2007, 2010
- Microsoft Outlook/Exchange 2013<sup>4</sup>
- Microsoft desktop integration
- IBM Lotus/Domino 8.5
- Web access

## **CUSTOMER SERVICES**

### **OmniTouch™ Contact Center Standard Edition**

#### **Embedded distribution**

- Patented visual tool to manage configuration and design routing, to check call flow in real time and update
- Skill- and cost-based distribution
- Routing time schedule
- Expected and remaining waiting time announcement
- Group selection options

#### **Outbound**

- Preview, progressive, predictive
- Visual Agent Scripting for outbound quality dialog defined by non-programmers

#### **Architecture**

- Distributed Contact Center with ABC network
- HA and branch survivability with OmniPCX
- Business, home and mobile agents

#### **Voice announcement**

- External/external voices guides
- From audio station or IP Touch™ phones

#### **Agent features**

- Free seating agent position
- Logon/logoff, withdraw, wrap-up (manual or CTI-based)
- Private call barring
- Transaction code (with reporting)

- Supervisor help/monitoring
- Agent direct call with statistics
- CCA toolbar providing personal statistics

#### **Supervision and statistics**

- Real-time statistics
- Customizable alarms and reports
- Discrete call listening and monitoring
- Predefined and customizable Microsoft® Excel®-based statistics and reporting
- Statistics download (FTP)
- Free seating supervisor position
- Wallboard display control for LED and TV
- Genesys™ Workforce Management™
- Openness to other workforce management software

### **OpenTouch Customer Service<sup>6</sup>**

#### **Unified interactions**

- Voice, e-mail, web chat
- Facebook®, Twitter®
- Social media integration
- Fax
- SMS, MMS
- Open media

#### **Unified Routing**

- Platform (PBX) independent
- Multi-site
- Multi-time zone
- Unified multimedia queuing
- Workload overflow
- Virtual routing
- Pre-routing
- Pre-defined default routing strategies
- Rules-based and intelligent routing
- Blending with outbound dialing

#### **Unified Dialer**

- Multiple dialing modes
- Filter support
- Regulation compliance: UK, US
- Calling number per campaign
- Fax and voicemail detection

#### **Voice Portal**

- Commodity hardware
- Inbound and outbound
- SIP
- Voice prompts
- DTMF collection
- Integrated with ASR/TTS
- Integrated with natural language
- Integrated with business applications

#### **Management Portal**

- Profile-based interface
- Configuration: Campaign creation, workforce management
  - Business data support
  - Alarms
  - Routing rules
  - Gateways
  - Recording rules
  - Pacing rules
  - Compliance rules
  - SLA
- Management
  - Live configuration update
  - Start/stop campaign
  - Load contacts lists
  - Broadcast messages
  - Scoring
- Real-time monitoring & historical reporting
  - Multi-time zone support
  - Custom views
  - Agents, teams, campaign states and performance monitoring
  - Queues monitoring
  - Outbound call classification
  - Outcomes reporting
  - Strategy center
  - Performance indicators
  - Operational and business alarms

#### **Unified Desktop**

- Single workspace
  - Live interactions
  - Logged interactions
  - Tasks
- Optimized control of all multimedia interactions
- Deep integration with CRM
- Banner mode
- PC client
- Citrix® compliant
- Knowledge management
- Answer templates (e-mail, IM, Facebook, Twitter)
- Multi-languages
- Customizable user interface
- Agent scripting

#### **Workflow**

- Centralized definition and distribution of processes
- Priority management
- Single view of all pending work
- Integration with business processes

### **Design Studio**

- Text and graphical environment
- Auto-completion
- Support for all solution components
- Enhanced debugging
- Templates
- Rapid Application Development (RAD)
- Automatic campaign definition

### **Integration server and connectors**

- Native connectors: CRM, QM, WFM
- Homogeneous API layer
- Open standards

### **OmniPCX Enterprise integration**

- Distributed topology over ABC network
- Branch survivability
- Business, home and mobile agents
- Agent features:
  - Free seating agent position
  - Logon/logoff, withdraw,
  - Private call barring
  - Supervisor help/monitoring

### **OmniTouch™ 4625 Interactive Voice Response**

- Short deployment time and easy access to autonomy with packaged IVR, including Application Generator
- Outbound applications
- ASR, TTS, voice mailboxes, fax

### **Genesys™ suite integration**

- OmniPCX Routing Service Intelligence (RSI)
  - Optimization by leveraging OmniPCX features and resources
  - Database synchronization
  - CCD backup on OmniPCX
- IP Touch 8 and 9 Series agent display

### **Genesys Compact Edition**

- Segmented media distribution:
  - Visual Contact Center reuse of popular/patented CCS matrix concepts applied to blended e-mail /voice routing
- Visual IVR
- E-mail
- Outbound
- Voice announcement
- Agent features
- Supervisor features
- Supervision and statistics
- Openness options
- Professional services options

## **OPERATIONS<sup>2</sup>**

### **OmniVista™ 8770 Network Management System**

- Centralized, hosted or distributed management using Alcatel-Lucent OmniVista 8770 Network Management System (NMS)
- Comprehensive application suite to manage OmniPCX Enterprise CS from 8.0 and OpenTouch
  - Meta-profiles: 3 to 6 parameters for user creation
  - Microsoft Active Directory® integration
- Real-time performance monitoring, including MOS and R-factor: Web 2.0 dynamic charts and search
- Advanced proactive real-time thresholding and alerting with versatile reporting capabilities
- Tailored and animated topology maps
- Multicarrier metering
- Unified Web and LDAP corporate directory
- Company directory
- Device management for OpenTouch endpoints
- Evolution path from OmniVista 4760 NMS

### **Serviceability toolkit**

- Virtual Machine silent installation tool
- Data collection tool

## **INFRASTRUCTURE**

### **Capacity**

#### **OpenTouch Multimedia Services**

- Single server: 1,500 users with conversation services, 3,000 devices

#### **OmniPCX Enterprise CS**

- Single server: 15,000 IP users or 5,000 TDM users
- 100 servers in a single network
- Fully networked servers, 100,000 IP/TDM users with single image
- 250 servers in a supra network
- >1 million users in a supra network
- BHCC per server: 300,000

### **Architecture**

- Centralized or distributed CS
- CS and database duplication
- Seamless communications failover
- Full-featured branch office survivability
- Backup signaling link for branch office survivability
- TDM or IP switching
- Rack-based Media Gateways

- Software Media Services
  - IP and SIP deployment
  - Up to 120 ports per virtual machine
  - G.711, G.729.AB
  - Transcoding
  - Audio conferencing
  - Voice guides

### **Business processes**

- TAPI
- MAPI
- DDE
- OLE.com
- LDAP

### **Application partner interfaces (AAPP)**

- SIP
- XML Web Services
- CSTA, TSAPI Premium Server, TAPI Premium Server, RTI, WMI
- DR-Link
- Alcatel-Lucent Hospitality Link, InfoCenter
- OmniVista Tickets Collector, CDR
- QSIG, Paging Interface

### **SIP**

- SIP proxy/registrar/redirect server and SIP gateway
- Server redundancy (active/passive)
- Branch office survivability

### **IETF standards**

- SIP RFC: 2782, 3261, 2543, 3262, 3263, 3264, 3265, 3311, 3323, 3324, 3325, 3327, 3515, 3891, 3892, 3398, 3608, 3966 (partial), 4497, 2327, 2617, 1321, 2833, 4733, 3842, 4028, 3725 (partial), 3960 (partial), 5009
- RTP RFC: 1889, 1890, 2198, 3550, 3551, 3711, 3362
- SIP best practices: RFC 4504

### **VoIP**

- G722, G722.2<sup>1</sup> audio wideband
- G.711 A-law and  $\mu$ -law, G.723.1A, G.729.AB audio
- Call admission control
- Automatic compression algorithm allocation
- Dynamic jitter buffer, echo cancellation, packet loss concealment (PLC), VAD: silence suppression and comfort noise generation
- Wideband conferencing<sup>1</sup>
- DTMF Q23, robust DTMF relay, RFC 2833
- Generic signal qualification and modem transport

- Anti-saturation mechanism; backward and forward automatic gain control
- Embedded signal quality diagnostic tool
- QoS: TOS or DiffServ tagging, 802.1 p/Q

## Video

- SD/HD video
- H.264
- Voice-activated video switching for ad-hoc and scheduled conferences<sup>1</sup>
- Continuous presence<sup>1</sup> (requires additional MCU)
- ISDN gateways (AAPP)
- LifeSize Video Center (AAPP)

## Fax

- G3, super G3 fall-back
- Automatic fax detection
- G.711 transparent (Alcatel-Lucent protocol) and T.38 (Alcatel-Lucent protocol, H.323 and SIP)

## Messaging networks

- 4645 VMS: IMAP4, VPIM, Octel® OctelNet™ and Amis

## Trunks

### Private networking protocols

- Alcatel-Lucent ABC
  - User feature transparency
  - Network-wide management
  - Network-wide routing
  - Centralized applications
- IP
  - ABC based on enhanced QSIG (tunneling) and H.323 for VoIP
  - SIP, H.323v2
  - ABC VPN for networking over ISDN/PSTN network
- TDM
  - ABC
  - QSIG BC, QSIG GF, DPNSS

## Security

### Global security certification

- Common criteria EAL2+

### Authentication

- Local, RADIUS, LDAP authentication
- NTLM Single Sign-On (My IC Desktop)<sup>1,4</sup>
- IEEE 802.1X MD5/TLS (IP Touch)

## Traffic filtering

- OmniPCX Enterprise CS
  - Trusted hosts file
  - TCP wrapper function
- Client/device (IP Touch)
  - ARP spoofing protection
  - PC port switch VLAN filtering

## SIP perimeter defense

- OpenTouch Session Border Controller
  - SIP deep packet inspection against SIP DoS attacks
  - Software delivery
  - Dedicated appliance: 1,000 audio or video sessions
  - Active – standby redundancy

## Guest access

- OpenTouch Edge Server<sup>1</sup>
  - Front-end server in DMZ
  - Enables guests to access OpenTouch conferences
  - Software delivery

## Encryption

- SSHv2 for secure sessions (such as Telnet, FTP)
- SSLv2/v3 for secure HTTP session
- SNMP v1/v2c/v3 for complete NMS integration
- Client/device confidentiality (signaling protocol and media)
- IPSec and Secure RTP (AES 128 bits)
- Secure SIP/SRTP
  - SIP trunks

## Integrity

- Media gateway and IP Touch binaries signatures

## User authorization to communication services

- Call monitoring and barring
- Internal toll fraud protection by class of services

## Appliance Servers

- OpenTouch Multimedia Services
  - Software distribution
  - HP® ProLiant DL servers
- OmniPCX Enterprise CS
  - IBM System x® servers
  - HP ProLiant DL servers

## Virtualization

- VMware vSphere® 5.0, 5.1

## Racks

### OmniPCX Enterprise RM1 (19-in. rack)

- 3 modular slots (stackable up to 3 with RM3)
- Height: 66 mm (2.60 in.)
- Width: 442 mm (17.40 in.)
- Depth: 400 mm (15.75 in.)
- Weight: 10 kg (22 lb)

### OmniPCX Enterprise RM3 (19-in. rack)

- 9 modular slots (stackable up to 3 with RM<sup>1</sup>)
- Takes optimized hardware modules (and/or e-CS communications server)
- Height: 154 mm (6.06 in.)
- Width: 442 mm (17.40 in.)
- Depth: 400 mm (15.75 in.)
- Weight: 17 kg (38 lb)

### OmniPCX Enterprise M2 (cabinet)

- 1 ACT 28 or 2 ACT 14
- Height: 740 mm (29.13 in.)
- Width: 570 mm (22.44 in.)
- Depth: 516 mm (20.31 in.)
- Weight: 70 kg (154.32 lb)

### OmniPCX Enterprise M3 (cabinet)

- 2 ACT 28 or 4 ACT 14
- Height: 1500 mm (59.05 in.)
- Width: 570 mm (22.4 in.)
- Depth: 516 mm (20.31 in.)
- Weight: 110 kg (242.5 lb)

### OmniPCX Enterprise ACT 14-in data rack format (19-in. rack)

- 48 V power supply and battery backup
- 1 ACT 14
- Height: 264.4 mm (10.41 in.)
- Width: 486.3 mm (19.15 in.)
- Depth: 383.4 mm (15.09 in.)
- Weight: 30 kg (66.14 lb)

### OmniPCX Enterprise ACT 28 in data rack format (19-in. rack)

- 48 V power supply and battery backup
- 1 ACT 28
- Height: 530 mm (20.87 in.)
- Width: 486.3 mm (19.15 in.)
- Depth: 383.4 mm (15.09 in.)
- Weight: 70 kg (154.3 lb)

## DECT radio

- Radio DECT/GAP
- Radio frequency range
  - 1.88 GHz to 1.90 GHz (Europe)
  - 1.91 GHz to 1.93 GHz (South America)
  - 1.92 GHz to 1.93 GHz (U.S.) with power adaptation
- Optimized Radio Base Station (IBS)
  - Six simultaneous communications
  - 2 x UA interfaces
  - Inline powered
- Advanced Radio Base Station (RBS)
  - 12 simultaneous communications
  - Dedicated DECT8 board
  - External power supply
  - Outdoor versions
- 8340 IP DECT Access Point
  - 11 simultaneous communications per AP
  - 256 AP (750 project-mode)
  - POE or POE injector
  - Outdoor versions
  - DAP manager for automated configuration and handset roaming
  - Hybrid IBS/RBS and IP DECT networks
  - OmniPCX Enterprise CS duplication and full-featured branch survivability

## WLAN

### OmniAccess WLAN access points and WLAN controllers

- IEEE 802.11a/b/g/n
- IEEE 802.11i
- Radio frequency range
  - 2.4 GHz to 2.4835 GHz (“b” and “g”)
  - 5.150 ~ 5.250 GHz (low band)
  - 5.250 ~ 5.350 GHz (mid band)
  - 5.470 ~ 5.725 GHz (Europe)
  - 5.725 ~ 5.850 GHz (high band)

### Automated radio coverage

- Dynamic RF management for AP channel power and channel optimal setting
- Self-healing around failed access points

### Wireless security

- WEP, WPA, WPA-PSK, WPA2 and WPA2-PSK
- Integrated stateful firewall
- Rogue access point detection and containment
- Wireless IDS/IPS

## Quality of service

- Standardized
  - Over-the-air QoS: 802.11e
  - WMM (EDCA)
  - 802.11e Power Save (U-APSD)
  - 802.11e Traffic Specification (TSPEC)
- SRP mode
- Connection Admission Control with graceful load balancing
- 802.1p DiffServ marking

## Call persistency

- Proxy mobile IP for Layer 3 handover
- Fast handover – WPA2 opportunistic key caching
- Voice-aware scanning
- Voice-aware 802.1x re-authentication

## Telephony protocols

- Alcatel-Lucent OmniPCX (NOE)
- SIP

## International directives

- EC Directives
- 94/9/EC: ATEX
- 1999/5/EC: R&TTE
- 1999/519/EC: SAR
- 2011/65/EU: ROHS
- 2012/19/EU: WEEE
- 2004/108/EC: EMC
- 2009/125/EC: Ecodesign
- 2006/95/EC: LVD

## Safety

- IEC 60950-1
- UL 60950-1

## SAR

- Cenelec EN50360
- Cenelec EN50385
- FCC OET 65 and IEEE 1528

## EMC

- IEC-CISPR22 Class B
- Cenelec EN55022 Class B
- FCC Part 15B
- IEC-CISPR24
- Cenelec EN55024
- IEC-EN61000-3-2
- ETSI-EN 301 489-1
- ETSI-EN 301 489-06: DECT
- ETSI-EN 301 489-17: Bluetooth and WLAN

## Radio

- ETSI EN 300 328: 2.4 GHz
- ETSI EN 301 893: 5 GHz
- ETSI EN 301 406: DECT
- FCC Part 15 Subpart C and D

## EX environment (DECT)

- Cenelec EN 60079-0
- Cenelec EN 60079-11

## Miscellaneous environments

- ACT:
  - Cenelec EN 50121-4: Railway applications
- RM1, RM3:
  - DNV certificate: Maritime
  - IEC 60945: Maritime

## Environmental conditions

- ETSI – ETS 300 019 Part 1-1: Storage
- ETSI – ETS 300 019 Part 1-2: Transportation
- ETSI – ETS 300 019 Part 1-3: In Use

## Telecom

- ETSI EG 201 121
- ETSI ES 203 021
- ETSI ES 203 038
- ETSI TBR 010, 022, 003, 033, 004, 034, 008
- ITU-T H.323
- FCC Part 68
- Canada CS03

## Over voltage and over currents

- ITU-T K.21

<sup>1</sup> This feature requires both OmniPCX Enterprise CS and OpenTouch Multimedia Services.

<sup>2</sup> This feature requires OmniVista 8770 NMS.

<sup>3</sup> My IC Phone requires both OmniPCX Enterprise CS and OpenTouch Multimedia Services except when deployed in specific industries and verticals, such as hospitality, where only OmniPCX Enterprise CS is required.

<sup>4</sup> This feature requires both OmniPCX Enterprise CS and OmniTouch 8400 Instant Communications Suite.

<sup>5</sup> Contact an Alcatel-Lucent representative for details.

<sup>6</sup> This feature requires the OpenTouch Customer Service application