iPECS is an Ericsson-LG Brand

iPECS UCM Introduction

PLM & Planning Team

2018-08-30

Your Communications Solution

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- Market Trends
- Overview
- Upgrades/Improvements: iPECS CM vs. iPECS UCM

- New Application Integration
- Application Integration
- Terminal Integration

- Basic Features
- New Special Features
- Special Features

Your Communications Solution

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Market Trends

Communication Technology Trend

Key market requirement : low TCO, smart-office support, and rich applications.

→ Cloud, Mobility, and UC are new keywords to meet those market needs.

Cloud Computing

- Cloud computing and virtualization enable effective and efficient usage of resources
- Ecosystem based on the open architecture is needed to fit the Cloud environment

Mobility

- Anytime, Anywhere service is expected
- Changes the way users prefer to communicate
- Ubiquity of mobile technology: text messages, voice, video, and applications for work

Unified Communications

- Think Service, not Device (SaaS)
- Collaboration and enterprise application needs to be connected to each other
- Easy communication from any device, anywhere, anytime

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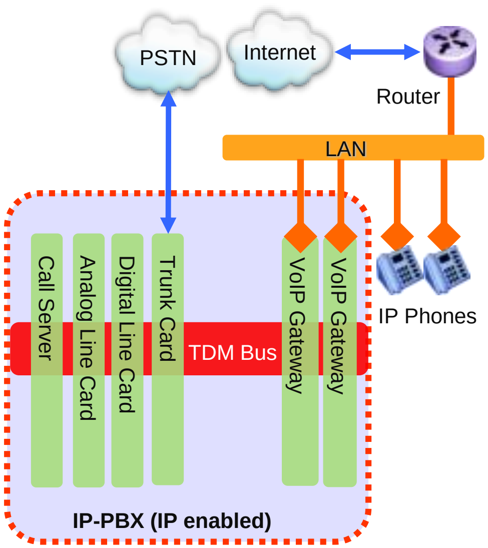
IP Communication Evolution

IP-PBX platform is evolving from IP enabled type to All-IP type in order to adopt various applications and devices.

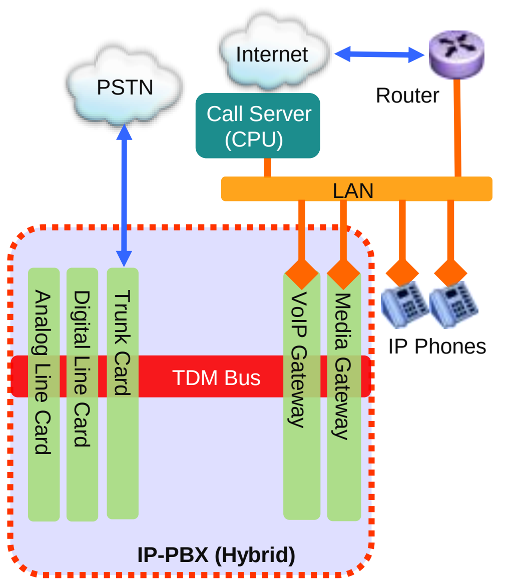
TDM based IP-enabled

TDM Backbone Cabinet with built-in Call Server & VoIP Gateway for IP trunk and phone



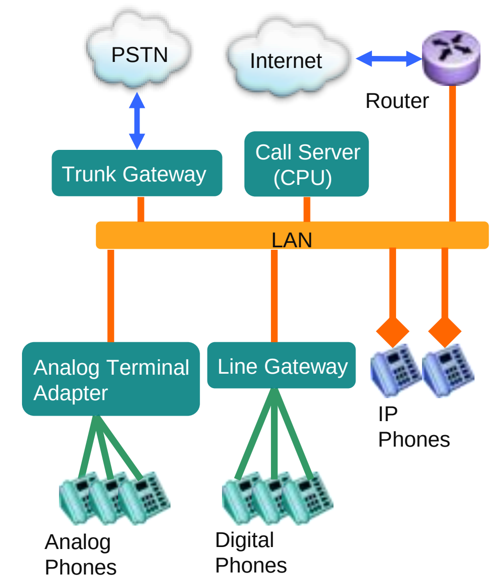
Hybrid

TDM Backbone Cabinet with external Call Server with IP interface, VoIP Gateway for IP trunk & Media Gateway for IP phone



All-IP

IP Backbone & VoIP Call without any interface modules or Gateways for TDM network and phone interface



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Overview

iPECS UCM (replaces iPECS CM)

iPECS UCM

- **Next Generation Communication Platform**
  - Fully distributed architecture based on IP-backbone
  - Software-based solution running on x86 Server
  - Centralized communication and single point Management
  - Flexible Scalability from 2,000 port to 960,000 port (UCM) [30,000 port (CM)]
  - High availability with
    - Server clustering, Power/Ethernet Link/CTI/SMDR redundancy
    - Local Survivability & Failover to PSTN
    - Dual Call Server Profile on Media Gateways as well as IP Phones

- **Rich Features and Flexibility with Large Deployment Base**
  - No.1 market share in Korea and used in dozen countries world wide
  - Large scale reference sites of more than 10,000 users with multi-site configuration, UC, FMC, Contact Center, etc
  - Secured VoIP Communication with sRTP/TLS, VPN, and SBC

- **Moving to Hosted/Centrex Solution on Cloud Environment**
  - Supports virtualization
  - All-IP platform with centralized management
  - Geographical Redundancy
  - Independent Numbering Plan & System Configuration for each Tenant
  - Support variable Open Standard for 3rd party solutions

iPECS UCM Structure

- iPECS UCM consists of a collection of call servers, gateway modules, media gateway cabinets, and software licenses.

Software License

Reside on the call server as a file for call features and applications control

Gateway Module

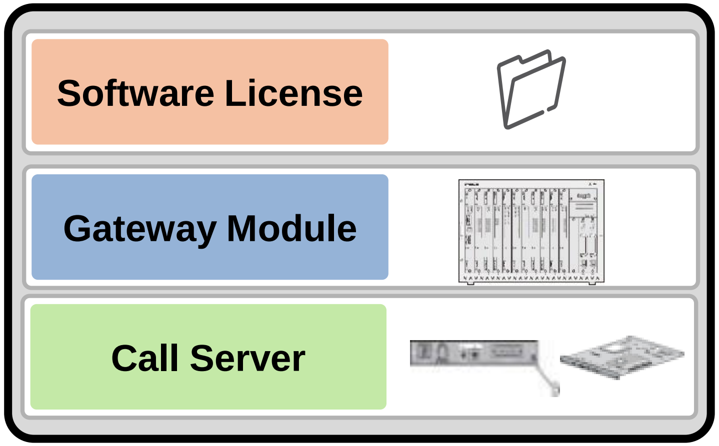
Gateway Modules to interface with PSTN/ISDN network and terminal.

Call Server

Call control platform with CPU

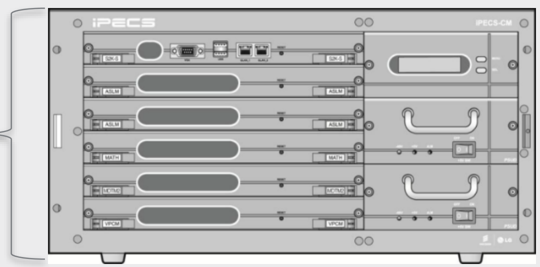
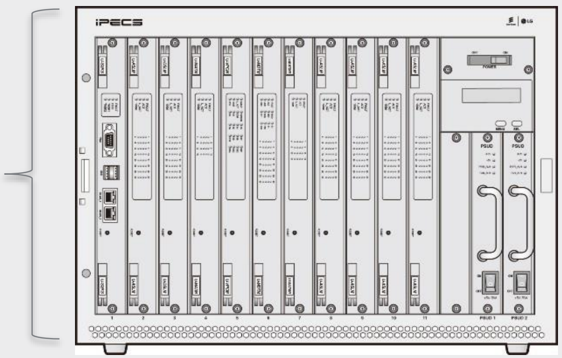
Cabinet

Gateway modules are inserted in Cabinet (1U/7U type)



Cabinet

High Density Gateway System for LME Market

H/W changes	OLD (iPECS CM)	NEW (iPECS UCM)
Media Gateway Cabinet	**CM-MGC2** 6 Slot 5U 	**UCM-MGC3** 11 Slot 7U 
Analog Subscriber Line I/F	**CM-ASLM** (32x Analog extension) **CM-ASLM-MW** (32x Analog extension + Message Waiting)	**UCM-ASLM** **(32x Analog extension + Message Waiting)**
VoIP Processing	**CM-VPCM** (VoIP processing w/ G.711/723.1/729/722)	**UCM-VPCM** (VoIP processing w/ G.711/723.1/729/722**+Opus**)
Digital Trunk I/F	**CM-MDTM** (1x T1/E1 Digital Trunk)	**UCM-MDTMX2** (**2x** T1/E1 Digital Trunk)

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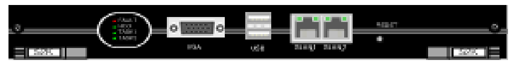
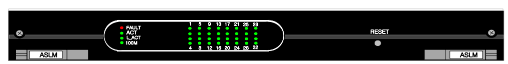
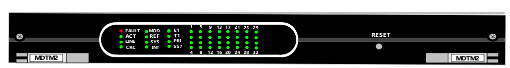
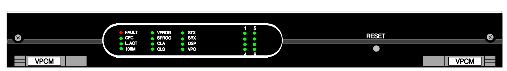
iPECS CM H/W Component (Old)

	Design		Specification
Call Server	CM-S2K-S		• ELG branded Industrial Computer • Can be installed in CM Media Gateways
Media Gateway Cabinet	CM-MGC2		• 6 universal slot, 19" Rack mountable (5U) • AC or DC Power Redundancy • Giga Ethernet Redundancy • LCD Alarm & Fault indication • Built-in Ethernet Switch
	CM-1URMC		• 1 universal slot, 19" Rack mountable (1U) • Single AC Power
Media Gateway Module	CM-ASLM (MW)		• Analog Extension 32ports • CID • Length 8Km, Bridge Max.10ea • Message Waiting Lamp (CM-ASLM-MW)
	CM-MATM		• Analog Trunk 16ports • Support CO/E&M/LD/RD with single FW • 4 types of sub-module (CO/E&M/LD/RD)
	CM-MDTM2		• Digital Trunk 1 Link (30 Ch) • Support E1/T1, PRI, R2, CCS No.7 with single FW
	CM-VPCM		• Voice Conference 256 Ch • Voice Announcement & Prompt 256 Ch • Voice Mail 1G (16G/32G Expandable) • sRTP, Transcoding 256 Ch • IP Packet Redirecting (NAT)

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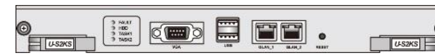
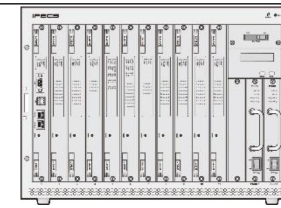
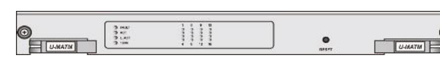
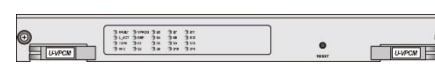
iPECS UCM H/W Component (New)

	Model Name	Specification	
Call Server	UCM-S2K-S*	• ELG branded Industrial Computer • Can be installed in UCM Media Gateways	
Media Gateway Cabinet	UCM-MGC3**	• 11 universal slot, 19” Rack mountable (7U) • DC Power Redundancy • Giga Ethernet Redundancy • LCD Alarm & Fault indication • Built-in Ethernet Switch	
	UCM-1URMC*	• 1 universal slot, 19” Rack mountable (1U) • Single AC Power	
Media Gateway Module	UCM-ASLM**	• Analog Extension 32ports • CID • Length 8Km, Bridge Max.10ea • Message Waiting Lamp	
	UCM-MATM*	• Analog Trunk 16ports • Support CO/E&M/LD/RD with single FW • 4 types of sub-module (CO/E&M/LD/RD)	
	UCM-MDTM2*	• Digital Trunk 1 Link (30 Ch) • Support E1/T1, PRI, R2, CCS No.7 with single FW	
	UCM-MDTMX2**	• Digital Trunk 2 Link (60 Ch) • Support E1/T1, PRI, R2, CCS No.7 with single FW	
	UCM-VPCM**	• Voice Conference 256 Ch • Voice Announcement & Prompt 256 Ch • Voice Mail 32 GB • sRTP, Transcoding 256 Ch • IP Packet Redirecting (NAT)	

* New faceplate & Old H/W ** New faceplate & New H/W

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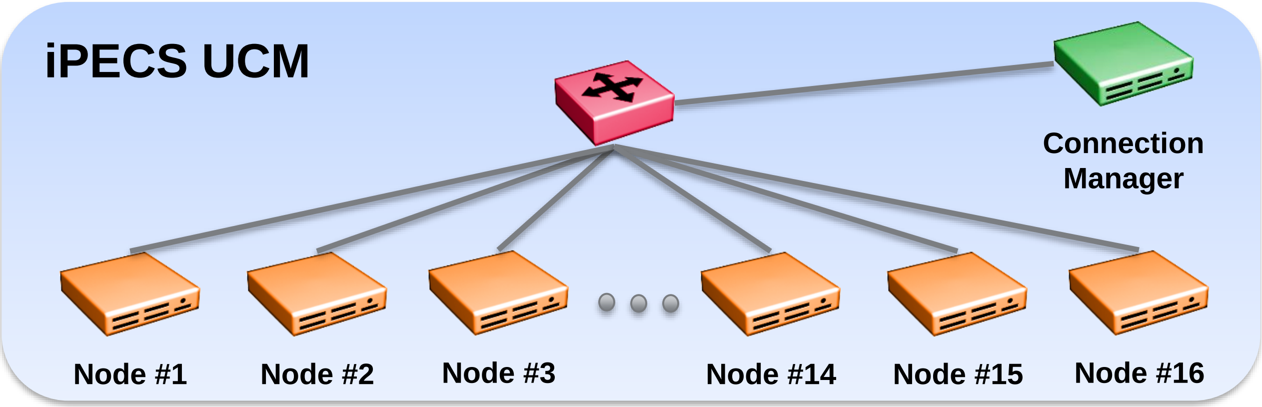
iPECS UCM S/W Highlight

Distributed DB architecture

Capacity up to 960K users (16 nodes)

Active-Active failover

Cloud ready (Virtualization)



Reliable and secure

Scalable and flexible

Versatile multi-call/messaging control

APIs for 3rd party interworking

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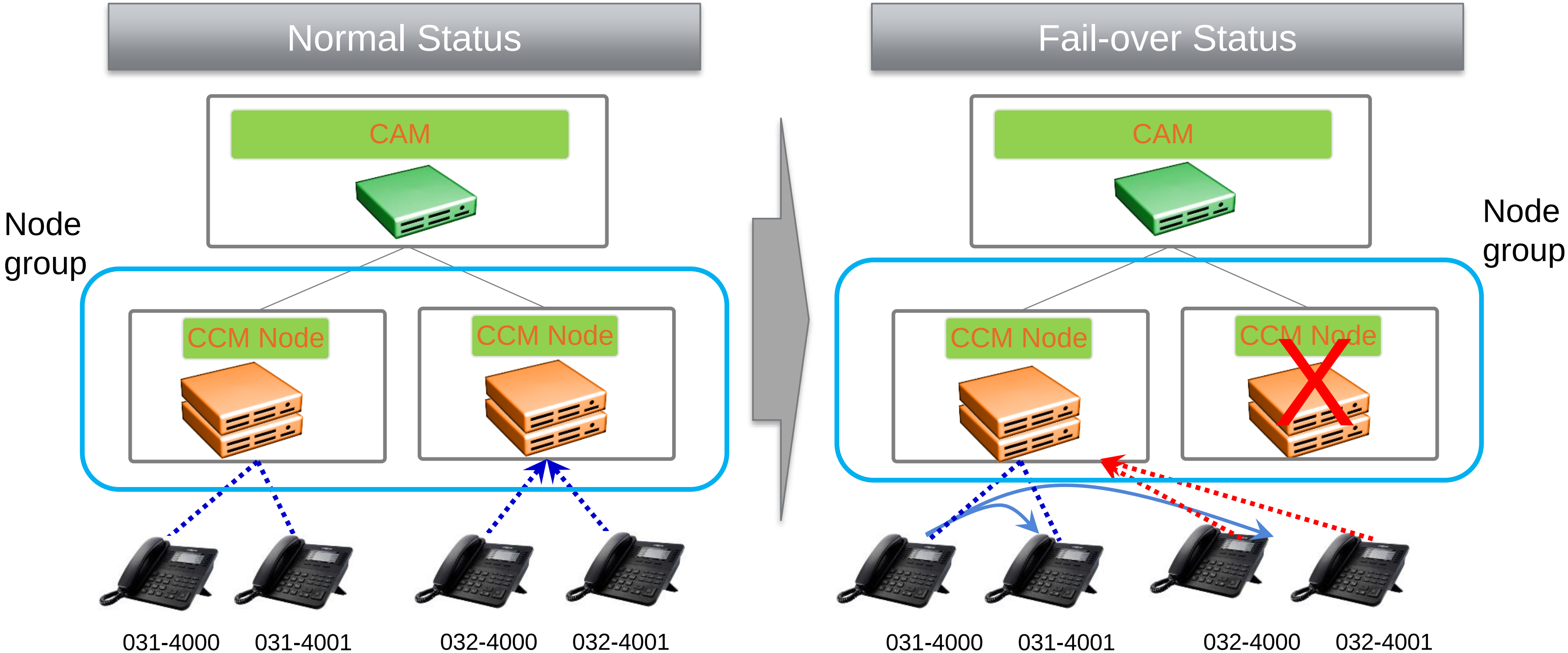
iPECS UCM High Reliability (A-A)

- Active-Active mode support (16 node / 8 node groups)
- Per node redundancy support (4 per node / up to 64 standby servers)
- Per node local survivability support (1024 per node / up to 8192 LCM sites)
- CAM server: local redundancy only



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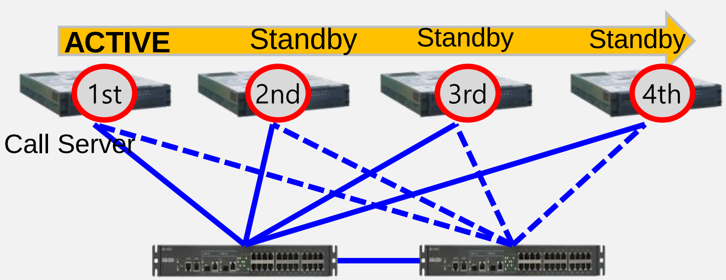
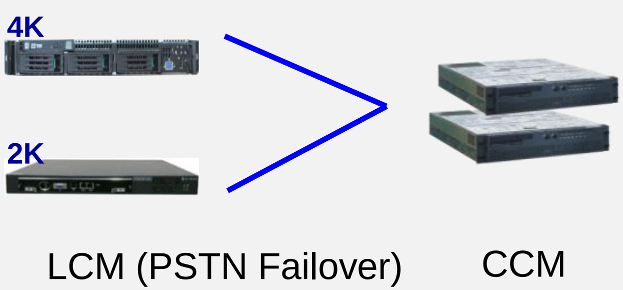
iPECS UCM High Reliability (A-S)

- Local and Geographical Redundancy (16 server/8 region)
- Redundancy for Ethernet Link, Power, CTI Link, SMDA Link
- Local survivability and PSTN Fail over for WAN Fail
- Backup Call Server for GW and IP Phone in case LCM Fail

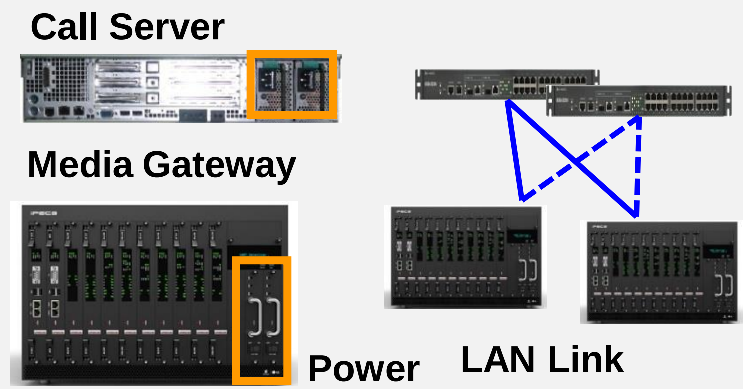
Server Redundancy



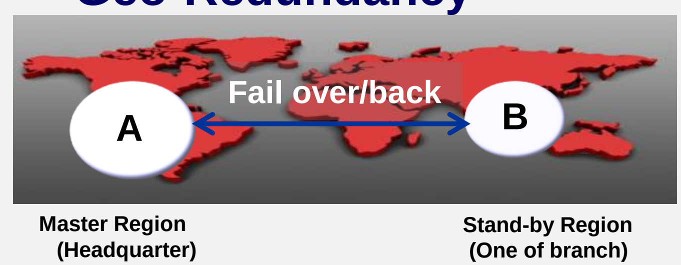
Remote Survivability



Major Parts Redundancy



Geo-Redundancy



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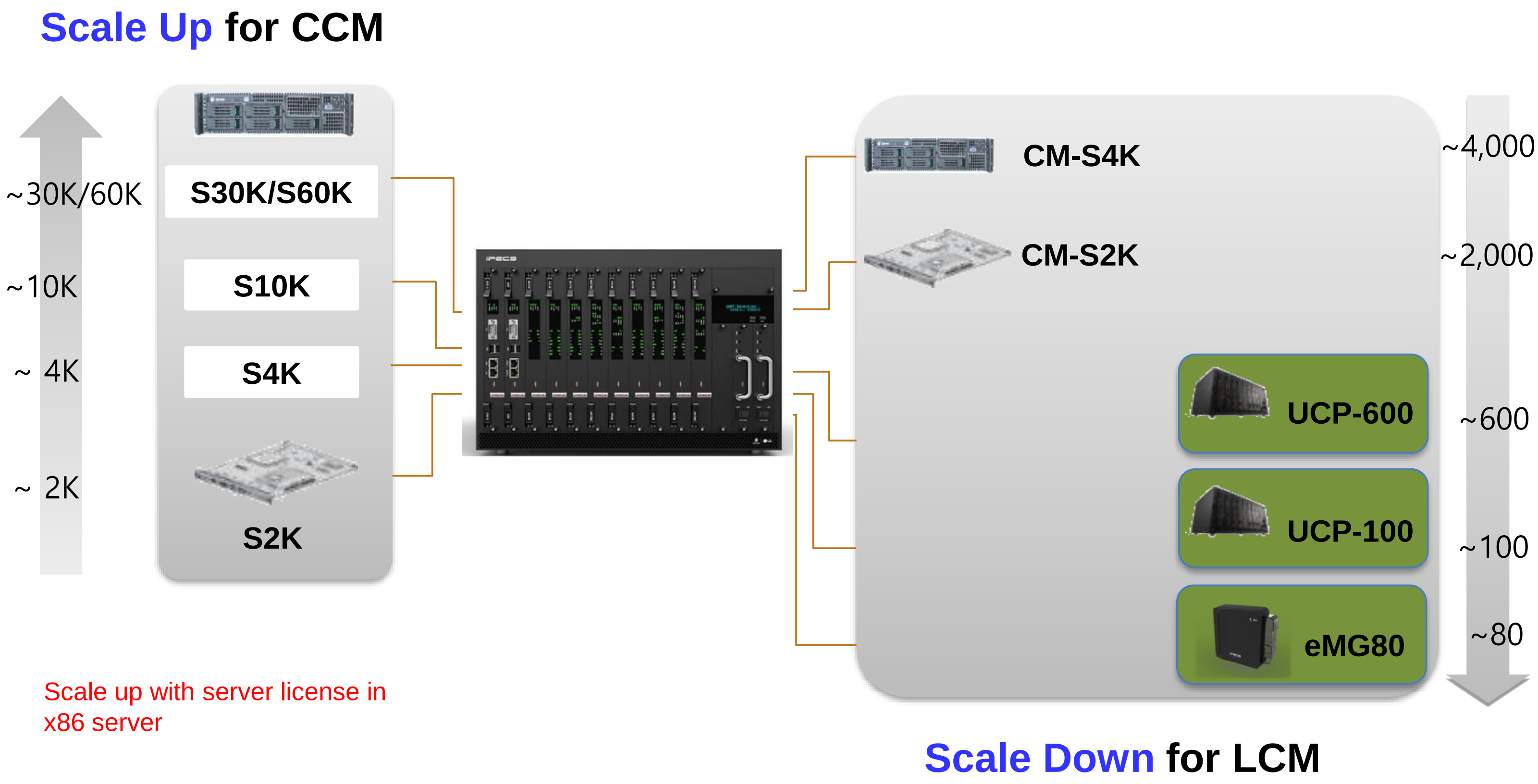
iPECS UCM Flexible Scalability

- CCM node can be scaled up from 2K to 60K ports.
- LCM, which can be installed in up to 1024 sites per CCM, can be scaled down from 4,000 ports to 80 ports so that customer can choose very cost effective branch office solution.



iPECS UCM Security

iPECS UCM is a proven secure communication solution with encryption, enhanced authentication, and access control.

Security management on Call Server

- System access control using ACL(Access Control List)
- Subscriber authentication

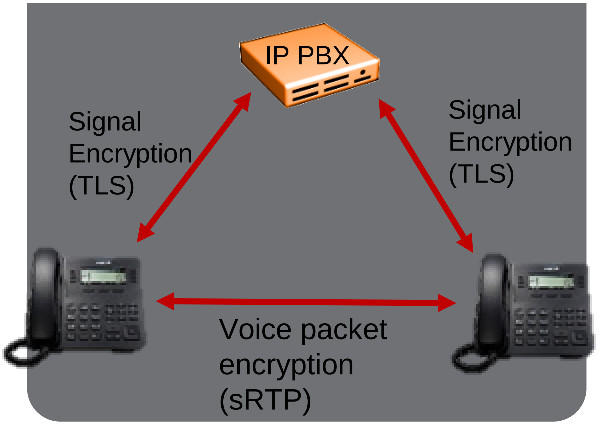
IP address range control

SIP authentication

Strong User/Admin password

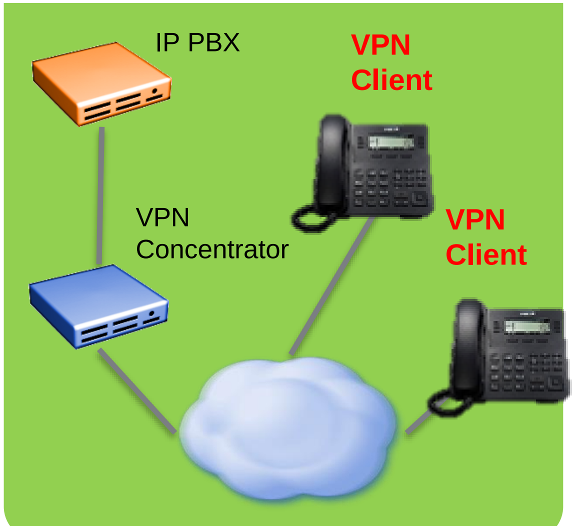
Encryption between IP-PBX and IP Phone

- Protocol : TLS, sRTP
- Algorithm : AES, ARIA (Korea)
- Key Exchange : ECC, RSA
- Certificate : DER, PEM



IP Phone VPN & 802.1x

- IP Phone + embedded VPN client
- 802.1x : enhanced access control



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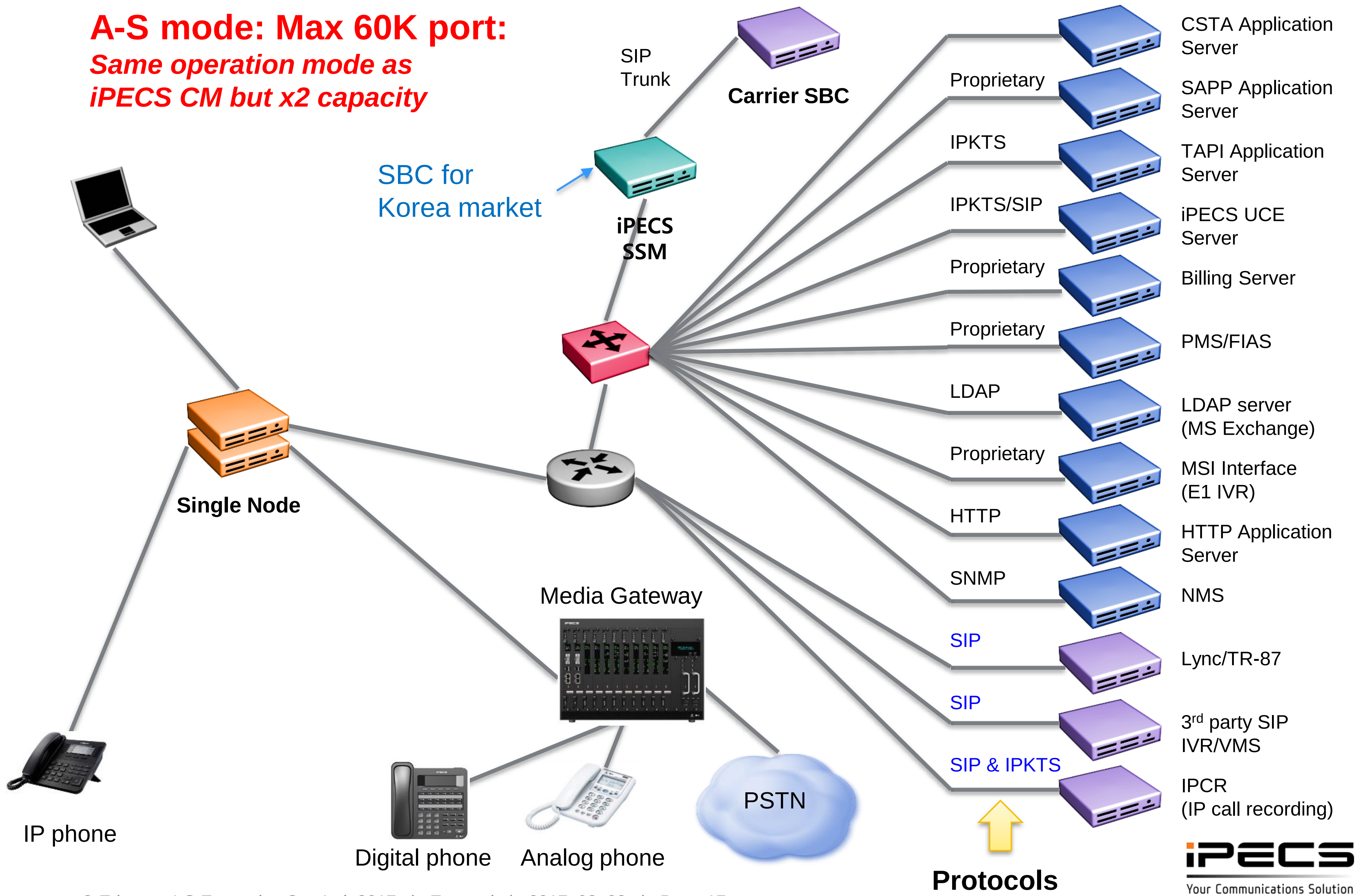
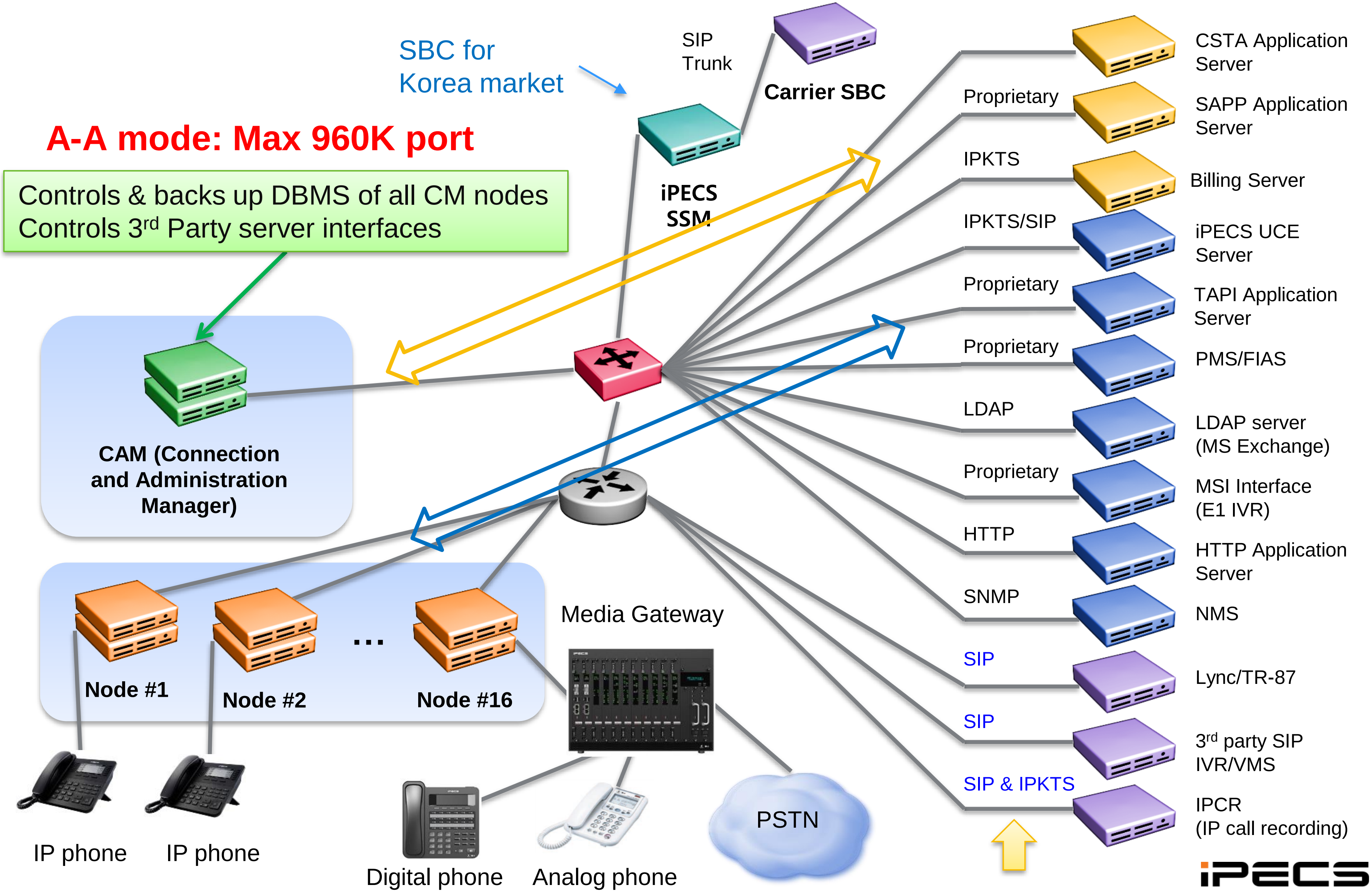
iPECS UCM Network Configuration

A-S mode: Max 60K port:
Same operation mode as iPECS CM but x2 capacity



iPECS UCM Network Configuration



iPECS UCM Feature Highlight

Wide range of IP telephony features	Multi-tenant support up to 65,000 tenant groups
Multiple interfaces for integrating external VMS/IVR	Virtual subscriber service
Spam call protecting features for specific phone number	CID Conversion and ARS digit conversions
Automatic QoS through LLDP and LLDP-MED for IP Phones	Multiple phone numbers for one SIP Phone, up to 30 numbers
Broadcasting and interphone for 100 party/group	Push-to-Talk (PTT) for 128 party/group (99 group/tenant)
Built-in voice conference with 2000 rooms/tenant (128 party/room)	Built-in auto-attendant and voice mail with email notification
Mobile extension	Hot desk for sharing a single desktop phone with multiple users

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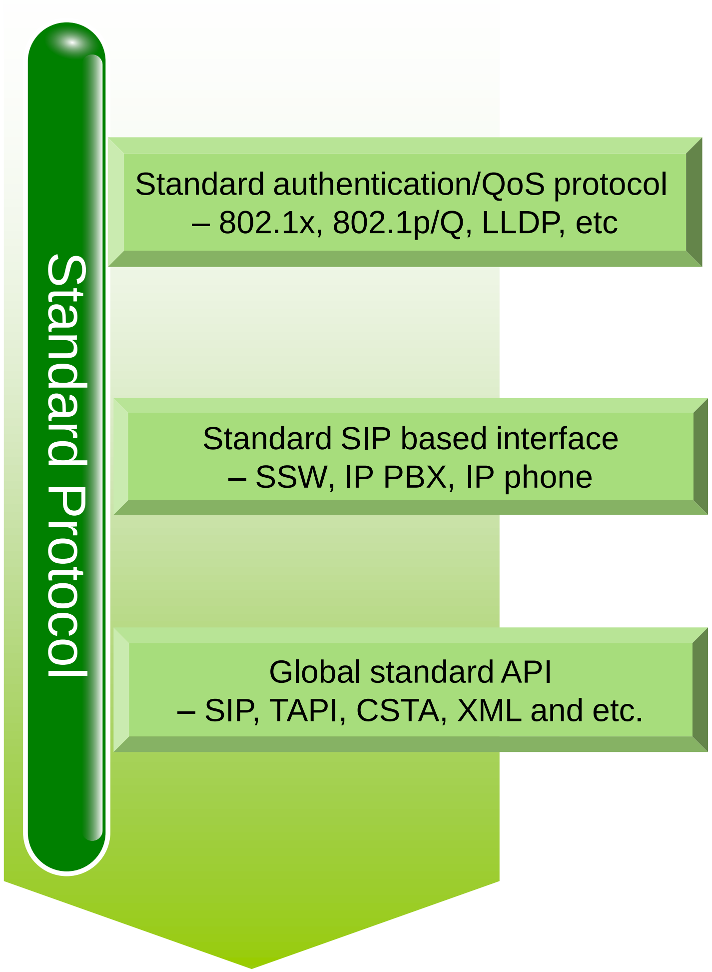
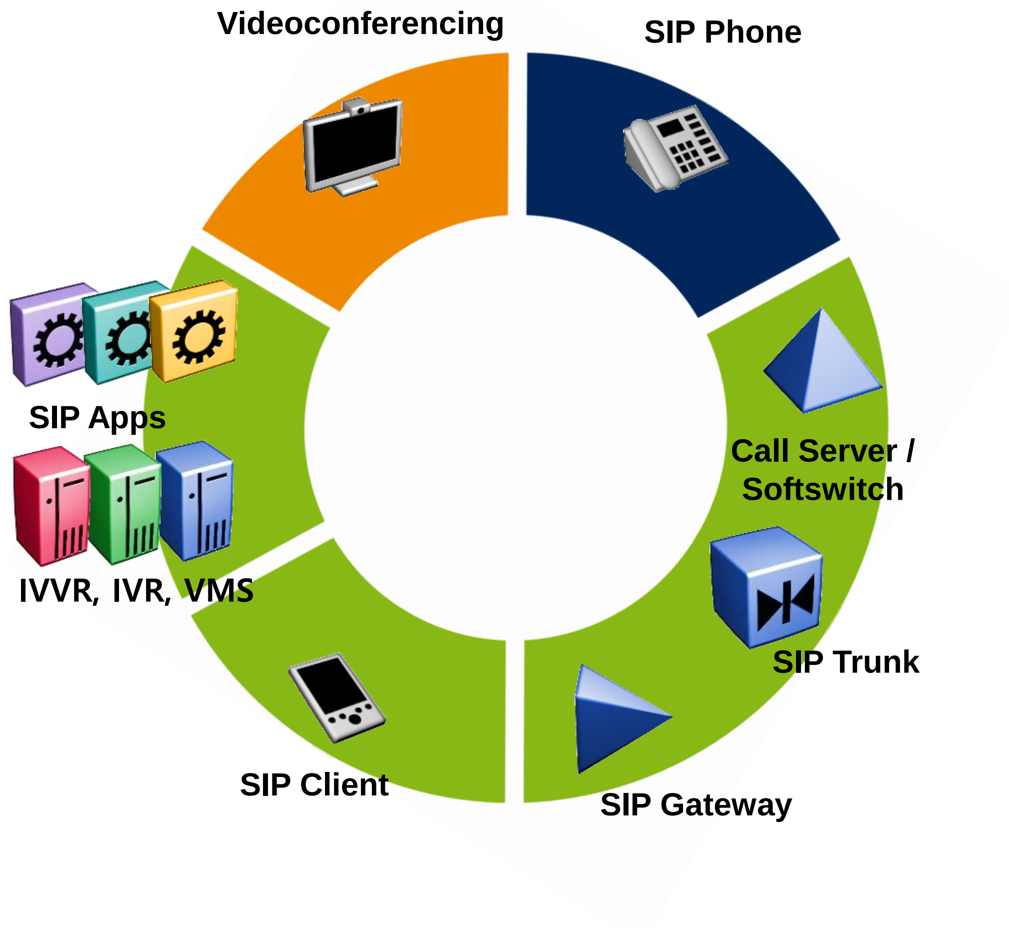
iPECS UCM Openness

- Flexible and converged configuration is available based on standard protocol.





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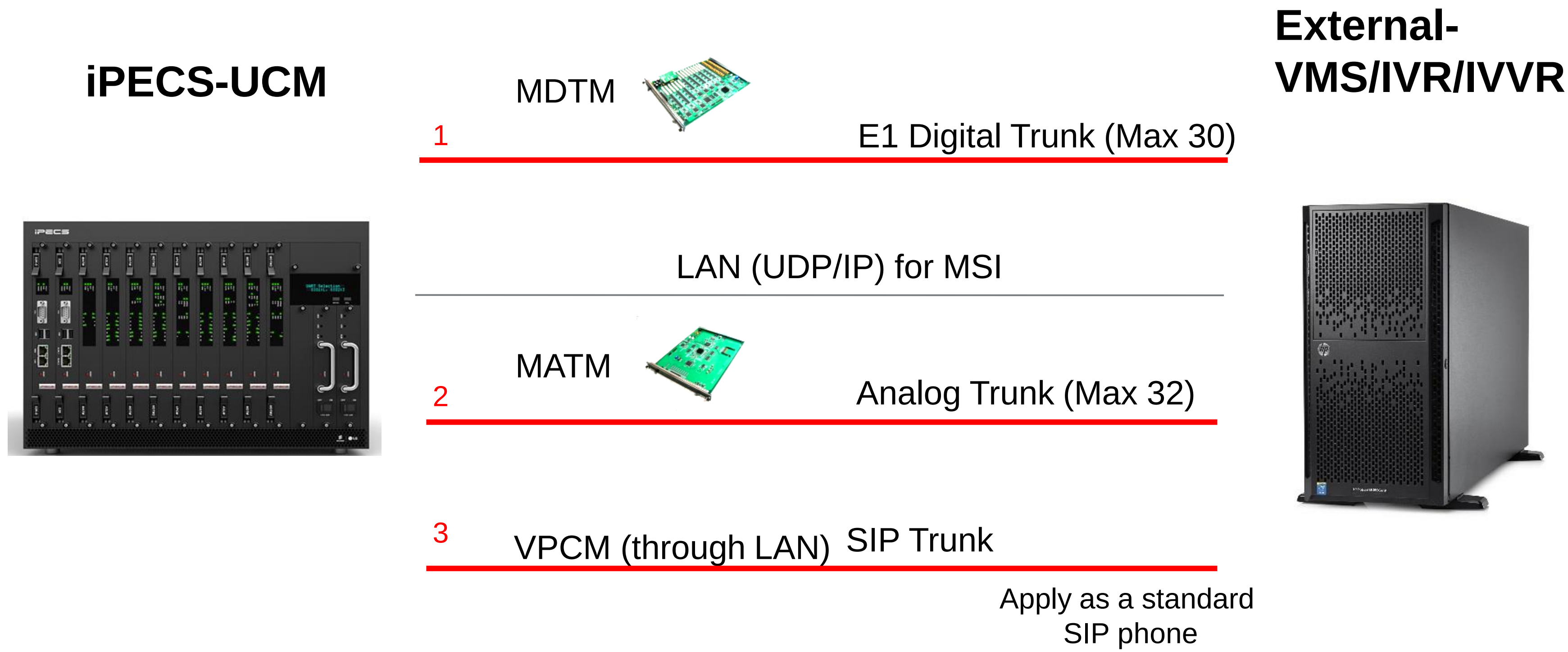
iPECS UCM External VMS/IVR Interface

- Multiple interfaces to integrate the external VMS/IVR are supported to meet various customer environment



Up to 8 VMS Links (16 VMS in case Redundancy) are supported

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iPECS UCM Voice Networking

- Ability to interconnect with other PBX through both QSIG and H.323 in order to expand total system capacity supporting various supplementary services.

	QSIG on PRI (ETSI Standard)	H.323 on IP
Interface Gateway	MDTM-PRI (signal & media)	H323M (signal) VPCM (media)
Codec	TDM	G.711 & G.723 & G.729
Supplementary Service Protocol	Standard QSIG	Standard H.450
Supported Features	Basic Call(Net Station Call), Transit In/Out, Net Line Identification Net Name Identification, Net 3rd Party Conference, Net Call Transfer By Reroute, Net Call Completion(Cal Back) Net Call Offer, Net Call Intrusion, Net Call Forward (register/cancel/service) Net Do Not Disturb, Net Message Wait Indication(MWI) Centralized VMS(Voice Mail system), Centralized ATD(Attendant) Service(CAS)	

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Comprehensive Mobility Solution

- Multiple choices of mobility solutions for office and mobile environments

UCE Mobile Clients

- Unified Comm. enabled Mobile Client
- IM, Presence, Video call, LDAP Integration…
- Call back / Call Through / VCC

IP-DECT

- GDC-800Bi / GDC-800H

3rd party mobile Apps

- Supported with 3rd party SIP license
- Recommended App: CounterPath Bria

Hot Desk

Mobile Extension

- Make Mobile phone as a PBX station
- One-Number Service

Office → **Mobile**

Upgrades/Improvements iPECS CM vs. iPECS UCM

iPECS UCM Capacity Upgrade

Item	CM 5.5	UCM	
		ACT-STB	ACT-ACT (w/ Max 16 nodes)
System Port	30,000	60,000 / system	60,000 / node (960,000 / system)
Extension	30,000	60,000 / system	60,000 / node (960,000 / system)
Trunk Port	10,000	40,000 / system	40,000 / node (640,000 / system)
BHCC*	450,000	720,000 / node	
Media Gateway Module	8,000	65,000	
LCM	255	1,024 / node	
Tenant	254	65,000 / system	
System Speed Code	3,000 / tenant	9,999 / tenant	
Conference Room	100 / system	2,000 / tenant	

* 3.5GHz x86 server needed

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iPECS UCM Improvements (1/4)

Category	iPECS CM P5.5	iPECS UCM
Server Redundancy	ACT-STB Failover	ACT-STB Failover ACT-ACT Failover Local Survival Solution: LCM registration priority option is added (CAM server: local redundancy only)
Server Configuration	CCM : 1 LCM : 250	CAM : 1 CCM : 16 Node LCM : 1024/CCM, max 8192/system
Performance (BHCC)	450,000 BHCC/system	720,000 BHCC/node
Capacity (IPKTS)	30K subscriber/system	60K subscriber/node Max 16 node/system (960K/system)
Capacity (SIP)	UDP 10,000 user/system TLS 10,000 user/system SIP 10,000 session/system	UDP 60,000 user/node TLS 40,000 user/node SIP 20,000 session/node
SIP Auto Provisioning	Not supported	SIP phone setting is automatically provisioned by User ID/PW or MAC
Application Server	NMS	eNMS (upgraded NMS) eVQM (Voice Quality Monitoring) eCSM (Call Statistics Management) E-SBC (standalone SBC) E-VM (standalone Voicemail System)

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iPECS UCM Improvements (2/4)

Category	iPECS CM P5.5	iPECS UCM
DBMS	Proprietary Relational DBMS	**SQL Relational DBMS (Firebird) with capacity increase** • Full ACID compliant transactions • Referential integrity • Multi Generational Architecture • Support for External Functions (UDFs) • SQL activity can send asynchronous notification events to clients • Third-party tools, including GUI administrative tools and replication tools • Careful writes - fast recovery, no need for transaction logs • Many access methods: native/API, dbExpress/FireDAC drivers, ODBC, OLE DB, .NET provider, JDBC native type 4 driver, Python module, PHP, Perl • Incremental backups • Full cursor implementation in PSQL
Data Security	No DB encryption	DB encryption for personal data

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iPECS UCM Improvements (3/4)

Category	iPECS CM P5.5	iPECS UCM
Easy Admin	N/A	• Improved access speed (e.g. x4 speed improvement for mass data generation, summary information) • System Monitoring UI upgrade • System Configuration UI upgrade • Simplified VPCM UI • Expanded virtual gateway UI • Alarm/Fault/Status summary window is added • More user friendly UI
3rd party API	TAPI CSTA SAPP	TAPI CSTA SAPP Restful CM API (2018 Q1)
Easy Upgrade	Manual DBMS upgrade is needed for system S/W upgrade	Manual DBMS upgrade is NOT needed for system S/W upgrade
Web Brower	ActiveX Support Browser Uses JVM	HTML5 Support Browser JVM not used

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iPECS UCM Improvements (4/4)

Category	iPECS CM P5.5	iPECS UCM
Enhanced Audio Conference bridge (P2 : coming soon)	N/A	• S/W based & virtualized (x86 server) • Authentication with Security Code • Participant Name Recording & Play • Mute / Unmute • Web-based conference management
VPCM delay reduction (P2 : coming soon)	N/A	• IP Redirection • MDTM loopback
VQM support for G/W & IPKTS phone (P2 : coming soon)	N/A	• SIP RTCP Summary Report (RFC6035) • RTCP-XR info
Active directory user info field upgrade (P2 : coming soon)	Name & Mobile number	• Name & Mobile number • Title field & Department field • E-mail field
S/W VPCM (P2.x : 2018.1H)	N/A	• S/W based & virtualized (x86 server) • Smaller footprint than H/W VPCM in datacenter • Higher codec density
ACD CTI Feature (P3 : 2018.2H)	IPKTS supported	• IPKTS & SIP supported

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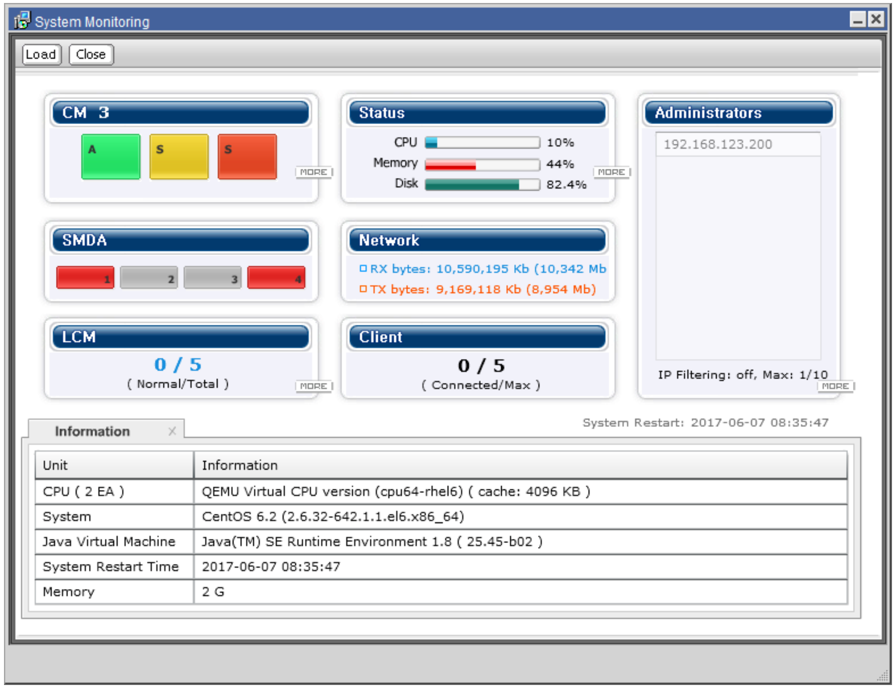
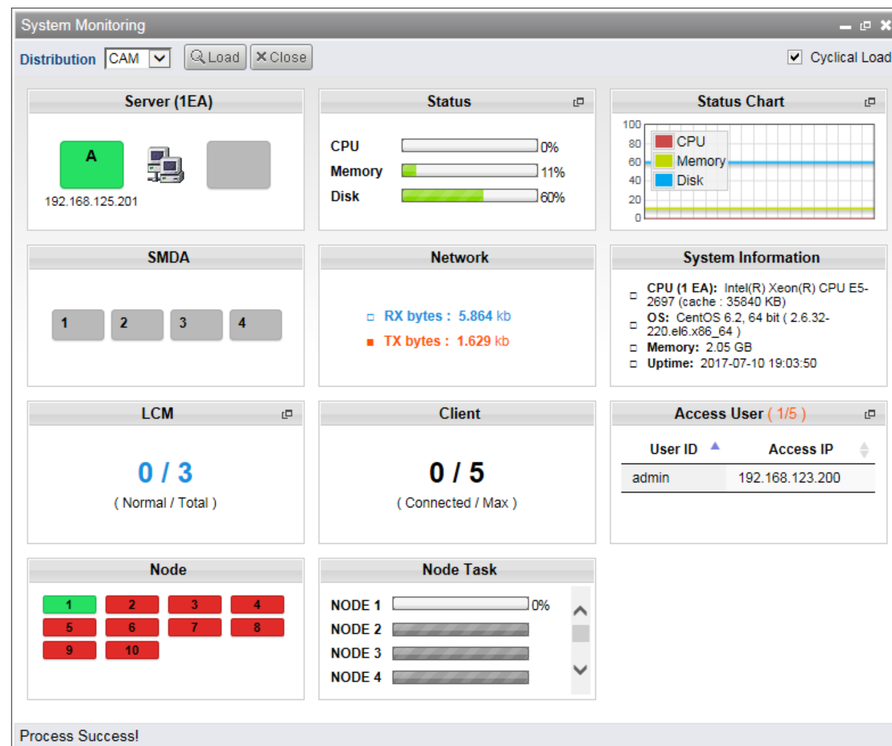
System Monitoring UI upgrade



- UI change & custom layout
- CPU/Memory/Disk usage graph



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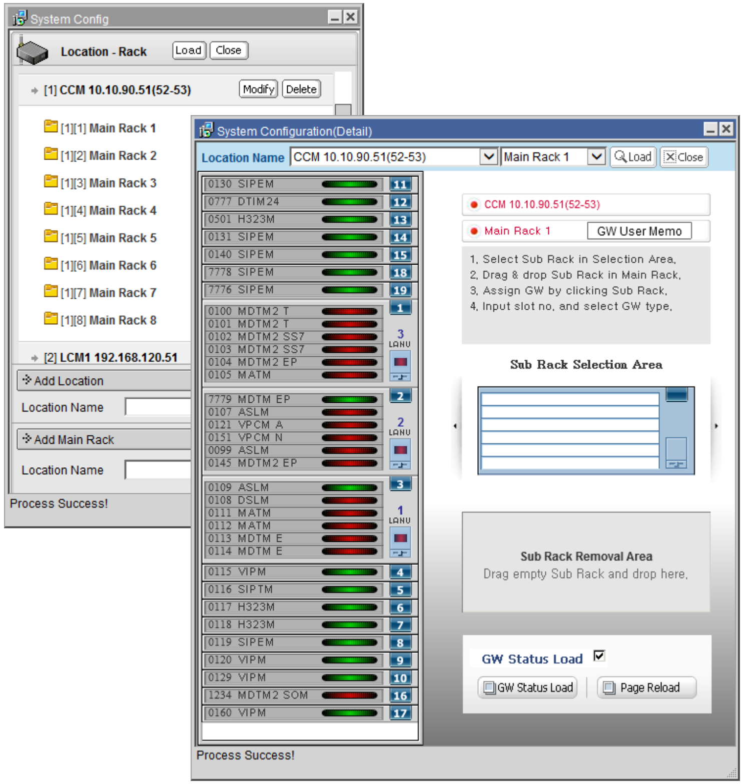
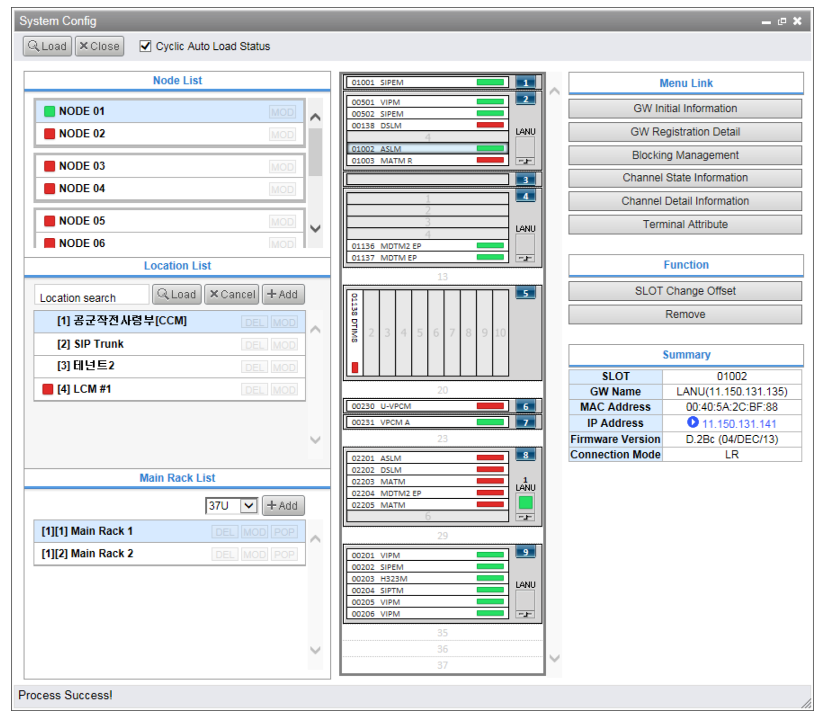
System Configuration UI upgrade



- All info access in one screen
- LCM status icon
- Gateway summary and related menu display
- And many others …



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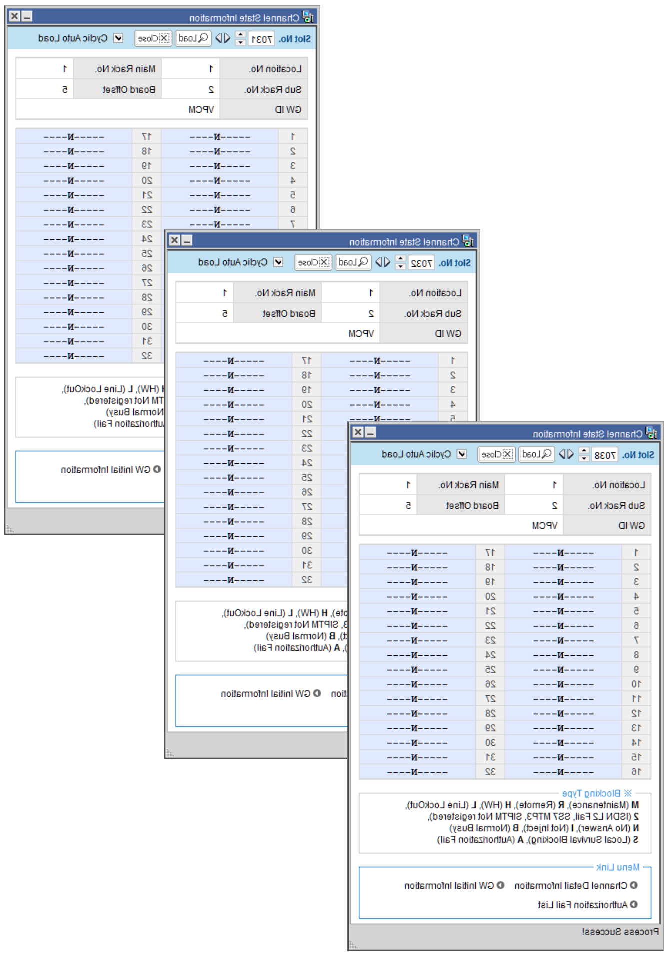
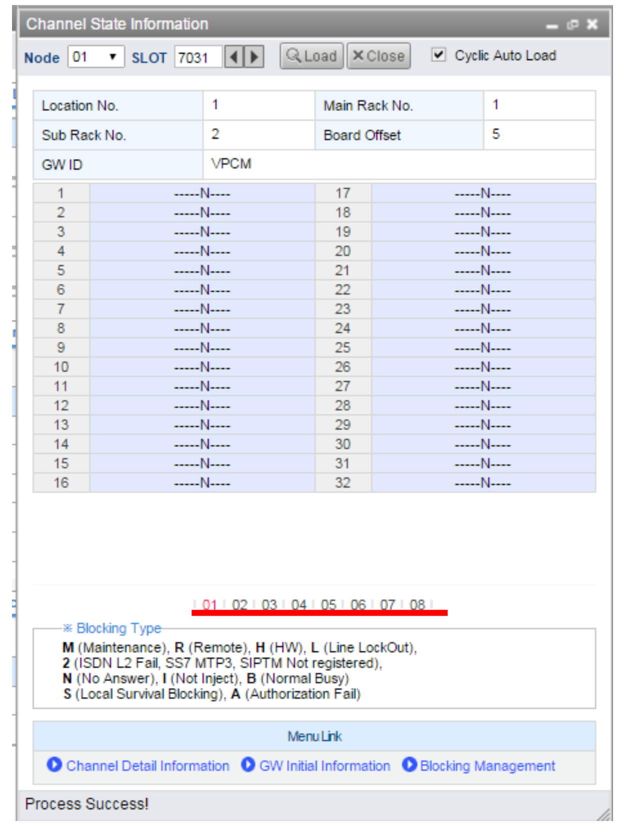
Simplified VPCM UI

32 channel 8 slot ➔ 265 channel 1 slot





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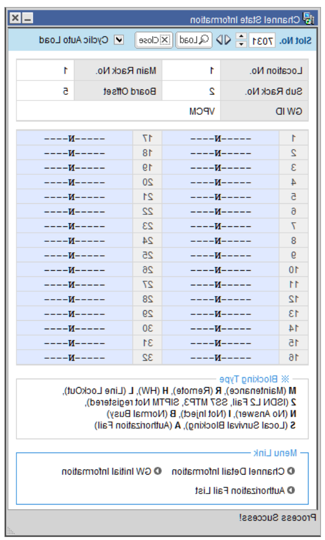
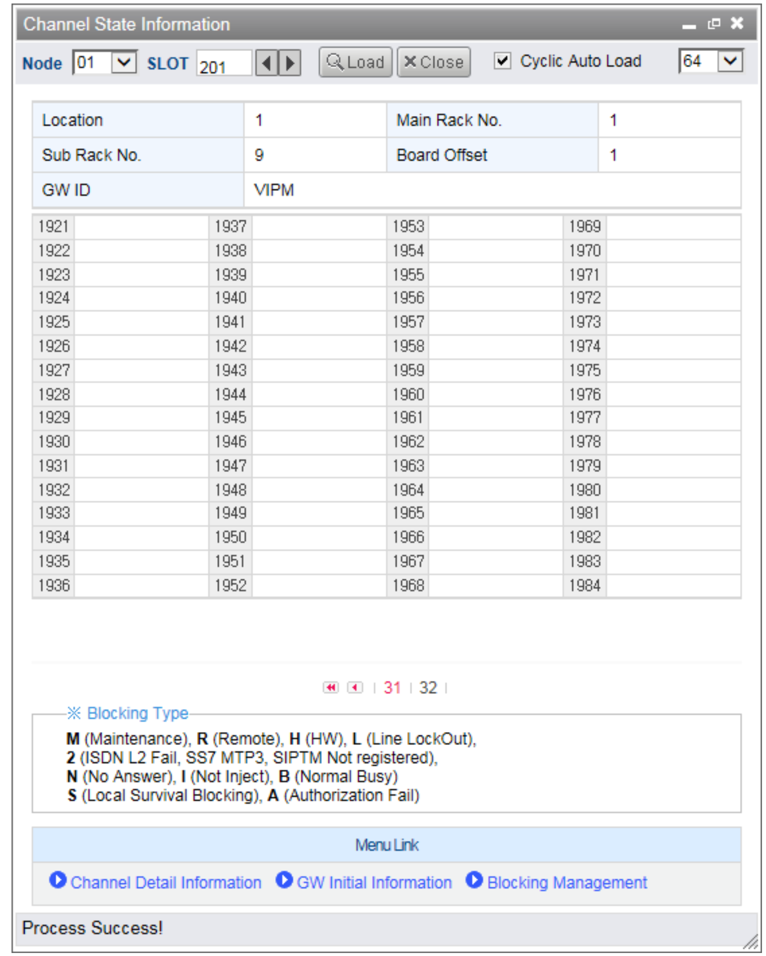
Expanded virtual gateway UI

CM Virtual G/W (VIPM, SIPEM, SIPTM, H323M) slot used 32 channel
→ UCM Virtual G/W slot can use 8192 channel
(VIPM: IPKTS Phone, SIPEM: SIP Phone, SIPTM: SIP Trunk, H323M: H323 Trunk)





iPECS Your Communications Solution

Alarm/Fault/Status summary

Alarm/Fault/Status summary with filters

- Easier error message tracking
- Easier temporal tracking

Alarm/Fault/Status Message Summary

Type: Alarm | Level: ALL | Date: 2016-01-30 00 : 00 ~ 2016-01-30 23 : 59 | Keyword: | Load | Close

Total Count 44 , 1/5 Page

Date	Type	Code	Grade	Information
2016-01-30 11:43:50	ALARM	A0018	Major	LANU NO ANSWER FAIL ALARM ON LOC:NODE01/LANU/LANU0040/LANU INF:S_LOC0001/M_RACK0001(32U)/S_RACK04(CM-MG)
2016-01-30 11:43:50	ALARM	A0018	Major	LANU NO ANSWER FAIL ALARM ON LOC:NODE01/LANU/LANU0021/LANU INF:S_LOC0002/M_RACK0001(32U)/S_RACK02(CM-MG)
2016-01-30 11:43:50	ALARM	A0018	Major	LANU NO ANSWER FAIL ALARM ON LOC:NODE01/LANU/LANU0020/LANU INF:S_LOC0001/M_RACK0001(32U)/S_RACK02(CM-MG)
2016-01-30 11:43:50	ALARM	A0018	Major	LANU NO ANSWER FAIL ALARM ON LOC:NODE01/LANU/LANU0013/LANU INF:S_LOC0004/M_RACK0001(32U)/S_RACK01(CM-MG)
2016-01-30 11:43:50	ALARM	A0018	Major	LANU NO ANSWER FAIL ALARM ON LOC:NODE01/LANU/LANU0012/LANU INF:S_LOC0003/M_RACK0001(32U)/S_RACK01(CM-MG)
2016-01-30 11:43:50	ALARM	A0018	Major	LANU NO ANSWER FAIL ALARM ON LOC:NODE01/LANU/LANU0011/LANU INF:S_LOC0002/M_RACK0001(32U)/S_RACK01(CM-MG)
2016-01-30 11:43:50	ALARM	A0018	Major	LANU NO ANSWER FAIL ALARM ON LOC:NODE01/LANU/LANU0010/LANU INF:S_LOC0001/M_RACK0001(32U)/S_RACK01(CM-MG)
2016-01-30 11:43:26	ALARM	A0004	Critical	GATEWAY NO ANSWER FAIL ALARM ON LOC:NODE01/GW/SLOT07041/VPCM INF:S_LOC0001/M_RACK0001(32U)/S_RACK02(CM-MG)/OFFSET06
2016-01-30 11:43:26	ALARM	A0004	Critical	GATEWAY NO ANSWER FAIL ALARM ON LOC:NODE01/GW/SLOT07031/VPCM INF:S_LOC0001/M_RACK0001(32U)/S_RACK02(CM-MG)/OFFSET05
2016-01-30 11:43:26	ALARM	A0004	Critical	GATEWAY NO ANSWER FAIL ALARM ON LOC:NODE01/GW/SLOT07021/VPCM INF:S_LOC0001/M_RACK0001(32U)/S_RACK01(CM-MG)/OFFSET06

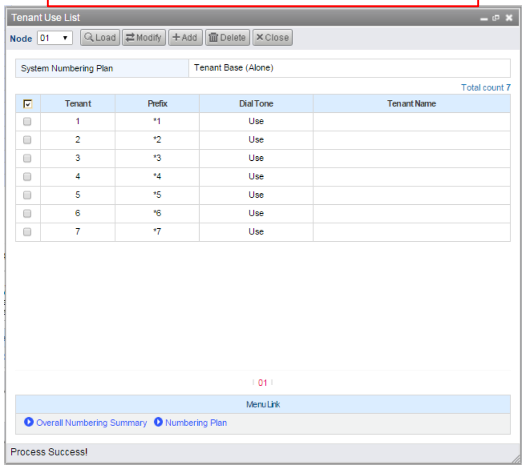
01 | 02 | 03 | 04 | 05

Process Success!

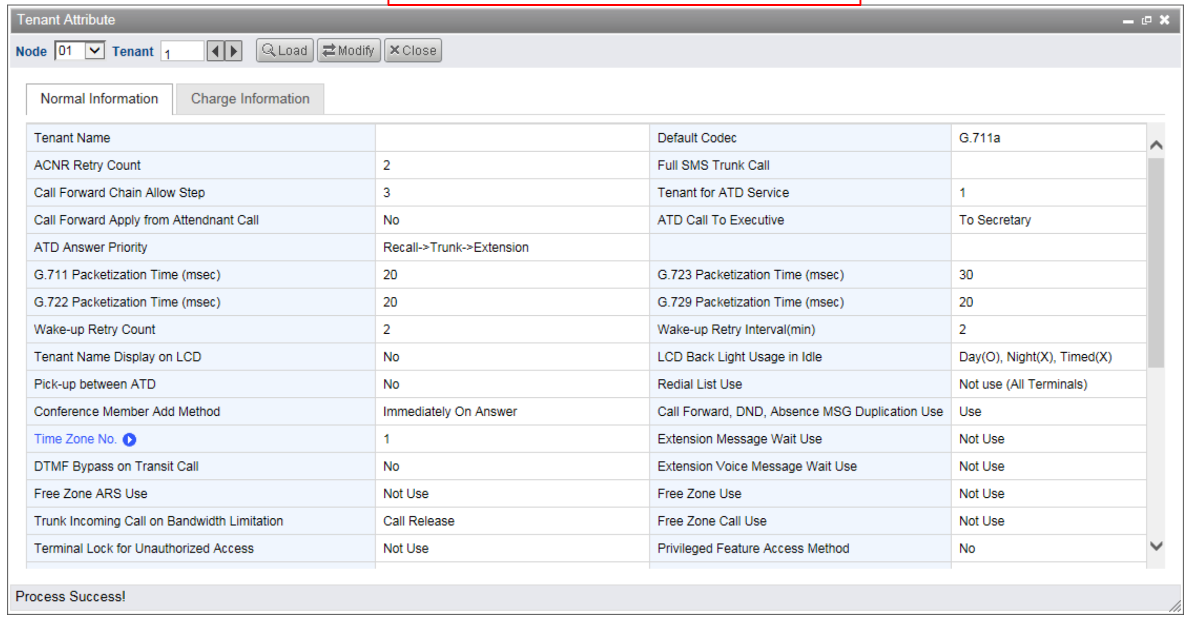
Your Communications Solution

More User Friendly UI

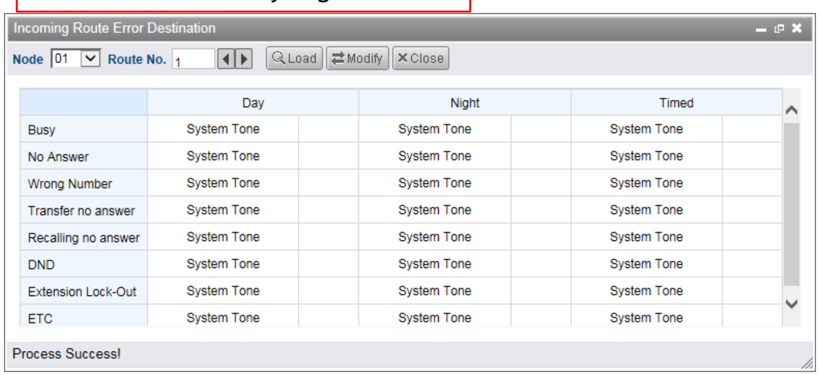
Actual used items are displayed



Menu is divided in to multiple tabs



One window for day/night menus



Your Communications Solution

New Application Integration

iPECS eVQM

(P2.x : 2018.2H)

- eVQM (enhanced Voice Quality Monitoring) provides tools to monitor, troubleshoot, resolve, and prevent quality issues that negatively impact service levels and user experience.

- Essential VQM data
  - MOS Info
  - Talk Delay
  - Packet Loss
  - Jitter
  - Signal Noise, Level
  - Configuration Data

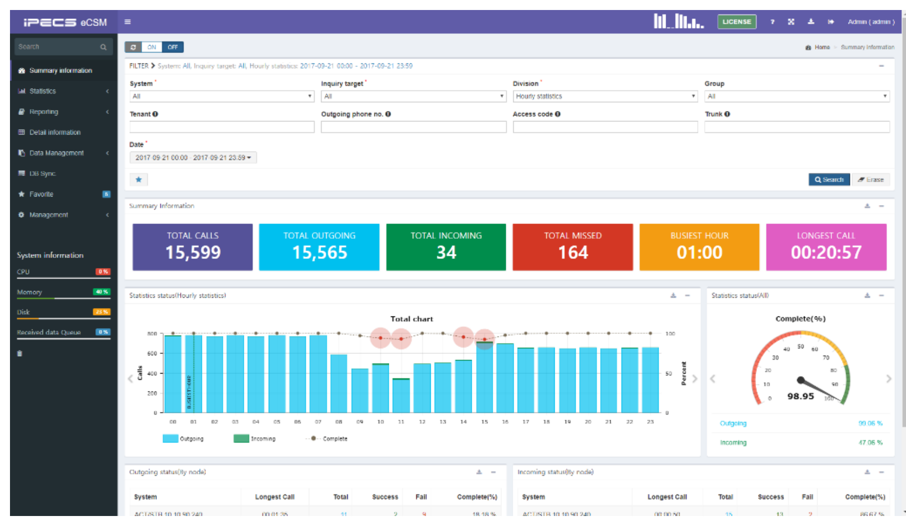
Your Communications Solution

iPECS eCSM

(P2.x : 2018.2H)

- eCSM (enhanced call statistics manager) provides tools to monitor, troubleshoot, resolve, and prevent call connection issues that negatively impact service levels and user experience.

- Comprehensive statistics data
  - Total/per-node/per-tenant/per-route-group/per-prefix/per-trunk)
  - Statistics for (monthly, daily, hourly, every 5-minutes)
    : outgoing/incoming/total/subscriber/subscriber-group
  - Report chart / Top 5 report/daily report/monthly report
  - Tenant, route-group, prefix, trunk name configuration
  - Statistics group configuration
  - Call tracking function
  - Excel, PDF, PNG file output
  - Daily summary report
  - User, group, privilege management



Your Communications Solution

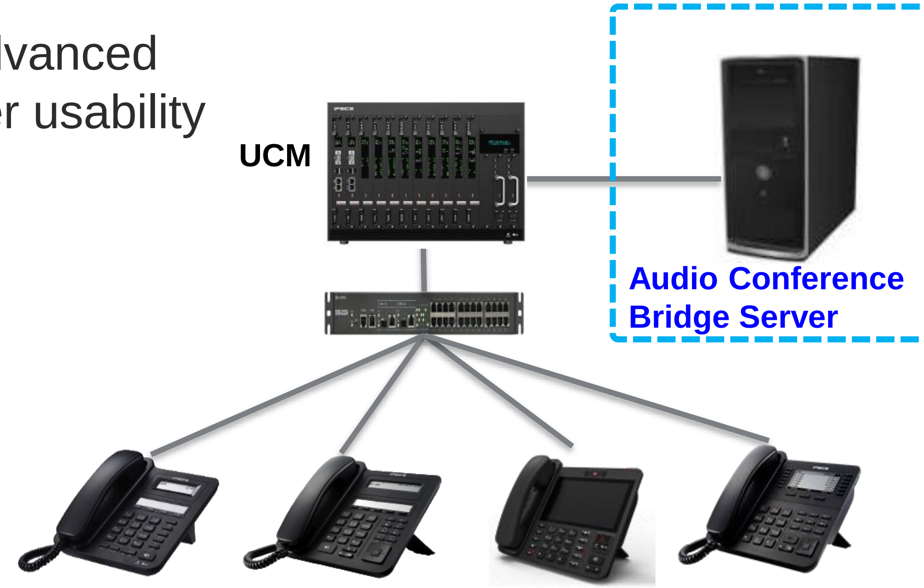
iPECS E-VM (voicemail)

(P2.x : 2018.2H)

Category	Feature	Description
Mailbox Features	Maximum Message Length	Max 3600 seconds
	Days Messages Kept	1~365 days (default: 30days)
	Urgent Voice Message	priority : urgent or normal.
	Language Options	prompt language is selectable based on tenant.
Logins	Log-in	Mailbox number and Passcode will be requested to log-in.
	Fast Log-in	When an user access voice message from his office phone, only Passcode will be needed
	Password administration	option to set/change password
Greetings	Personal Greeting	Multiple personal greeting can be defined based on user-defined time schedule.
Voice Title	Personal Voice Title	personal voice title can be defined
Message Playback Options	Play Urgent Voice Message first	If there is any Urgent Voice messages, those message plays first.
	Play Message	automatically enters the subscriber into the Play menu if new messages are present.
	Play message header	Listen to header of message (date/time/length/calling party of message)
	Play Voice Title	Voice Title will be played before message play
	Call Back	call back to the number of the person who left you the message
	Reply a Message	after listening to a user message, user can reply with a voice message
	Forward a Message	Lets you forward a message to a phone number
	Skip a Message	Lets you skip the message is playing.
	Save Message	a message will remain in the mailbox for 31 days
Sending Messages	Create and Send Message	Lets you create a new voice message from scratch and send it to another number
Notifications	Message Waiting Indicator (MWI)	When a new message is present, the indicator light on the phone is illuminated.
	Email Notification	You can set the phone to send you an email whenever a new voice message arrives
User Account	VM User Accout Creation	Create VM User account automatically by DB-Sync with CM
VM Web	Web Management	System / Tenant / User Admin Web

iPECS ACB (Audio Conference Bridge) (P2.x : 2018.1H)

- Audio conference bridge provides advanced conference control interface for better usability and security :
  - Dynamic Conference Creation
  - Authentication with Security Code
  - Participant Name Recording & Play
  - Mute All
  - Unmute All
  - End Conference
  - Conference Statistics
  - Web-based management*



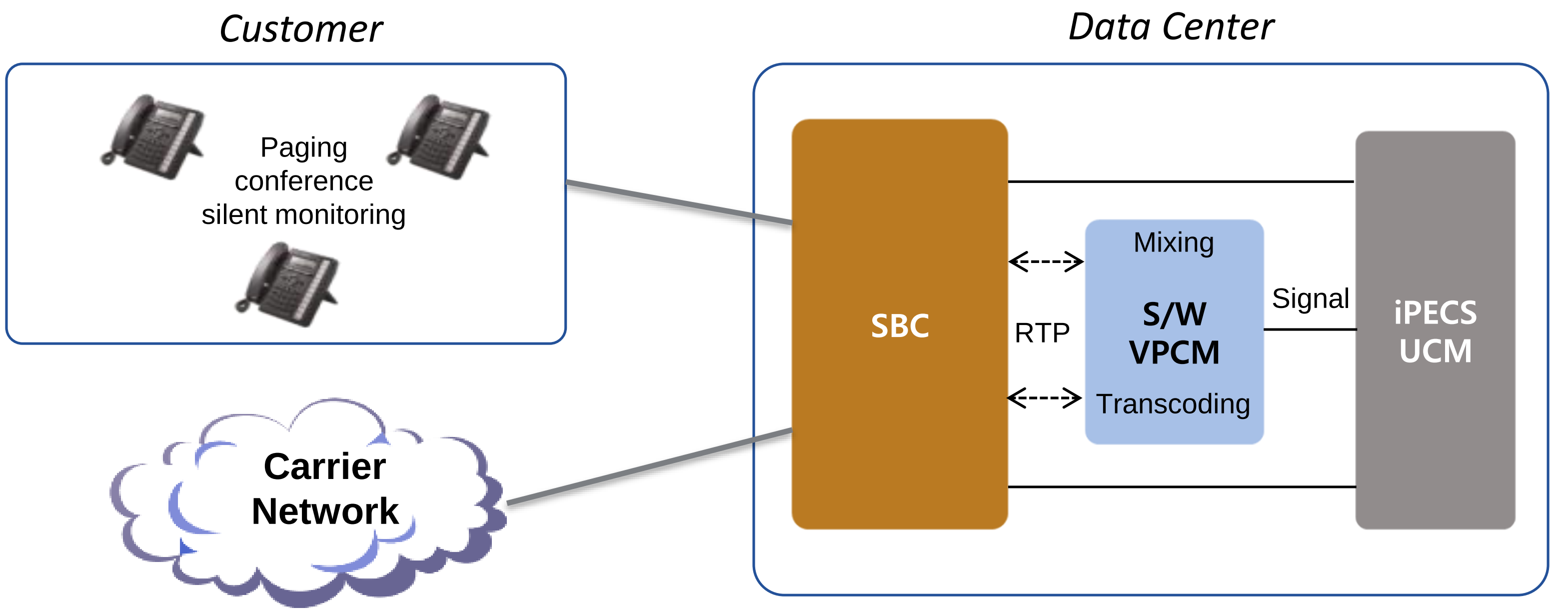
DIGIT	ADMIN USER	NON-ADMIN USER
1	Mute/Un-Mute Self	Mute/Un-Mute Self
2	Lock/Unlock Conference	Disabled
3	Eject last user who joined conference	Disabled
4	Decrease Listen Volume of Conference	Same for user
5	Resets the caller's listening volume to the default level.	Same for user
6	Increase Listen Volume of Conference	Same for user
7	Decrease Talk volume	Same for user
8	Leave Menu	Same for user
9	Increase Talk volume	Same for user
0	Allows an Admin to mute/unmute all non-admin participants in the conference	Disabled
*	Play menu options	Same for user
#	Leave Conference	Leave Conference

* Web-based management feature will be added in 2018.1H

iPECS Your Communications Solution

S/W VPCM

(P2.x : 2018.2H)



- S/W VPCM replaces existing VPCM for removing dedicated H/W on Data Center
  - Used for voice mixing (for add-hoc conference), paging, and silent monitoring
  - Transcoding for different codec between trunk and terminal
  - Tone generation for voice prompt and announcement

Your Communications Solution

Application Integration

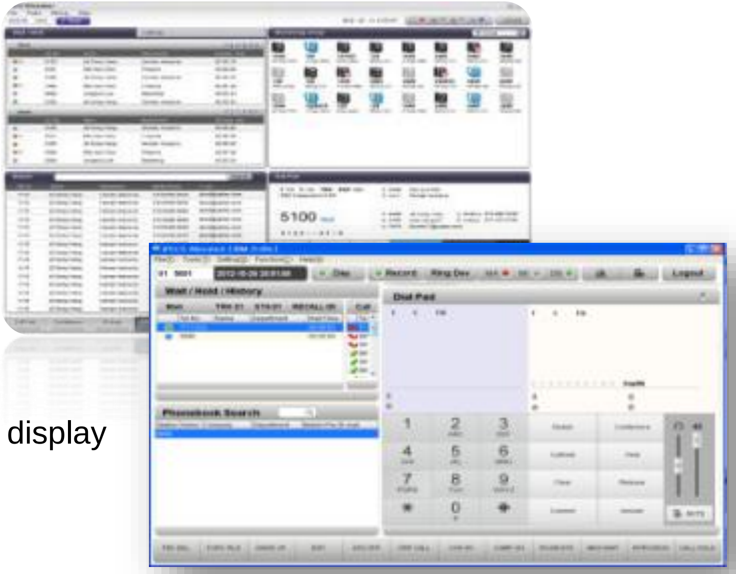
iPECS Attendant

Enhanced IP Attendant

iPECS Attendant is a software application designed to enhance the attendant feature by visualizing the attendant call handling and control functions.

Embedded soft phone functions

- Utilizing various call features of iPECS UCM via IP soft phone
- High quality voice communication using a PC
- Flexible call handling and operating
- Value added service such as video call, call recording



Easy to use interface

- New graphic user interface for easier and more intuitive design and display
- Flexible display layout

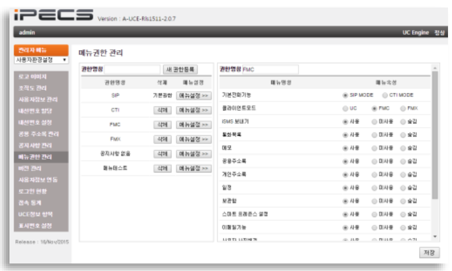
Hospitality features

- New Check-in/out, wake up call, Group registration, room status, room cut off etc.

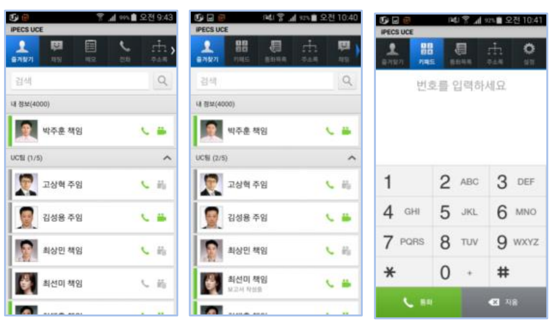
iPECS Your Communications Solution

iPECS UCE

- iPECS UCE is specialized Unified Communication Solution for LME office environments.



UCE Admin for mode selection

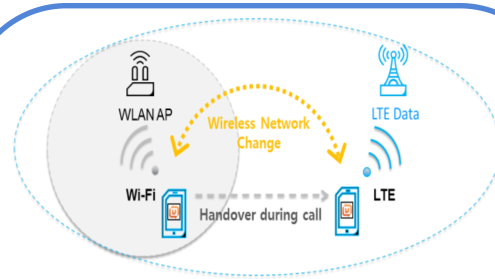


UC Client

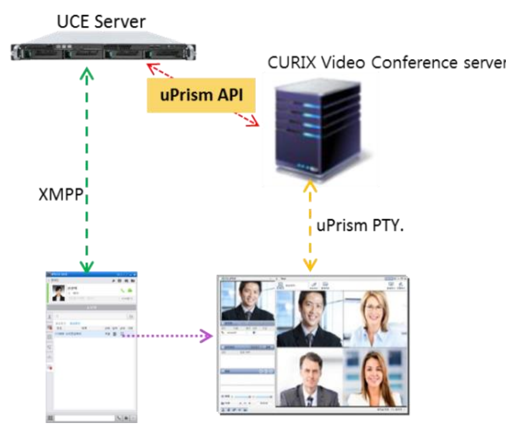
FMC Client

FMX Client

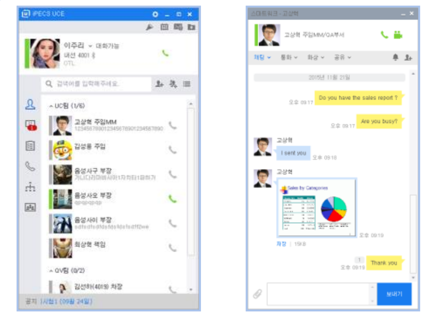
UC/FMC/FMX Mode



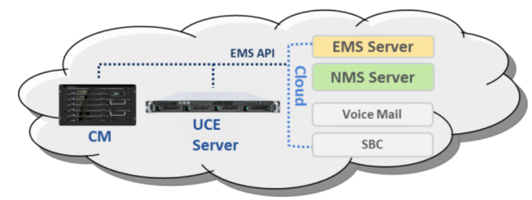
Handover / LTE Only



Video Solution Integration



GUI/UI Enhancement



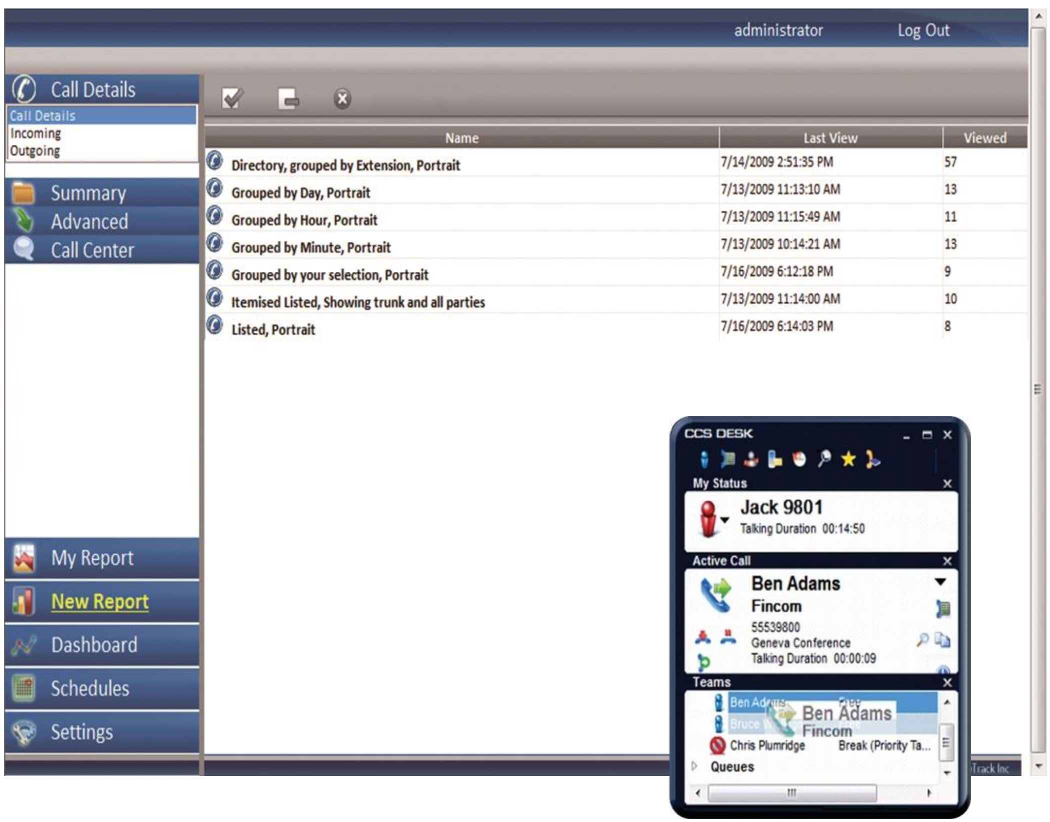
Cloud Service Integration

XML Service for New IP-Phones

iPECS
Your Communications Solution

iPECS CCS

- iPECS CCS is the comprehensive Contact Center Suite optimized for small and medium contact center. It is designed as the solution with all IP (i.e., VoIP), multimedia (Call, Fax, E-Mail, Web), social networking (Facebook, Twitter) and modular base to fit to the variable customer needs.

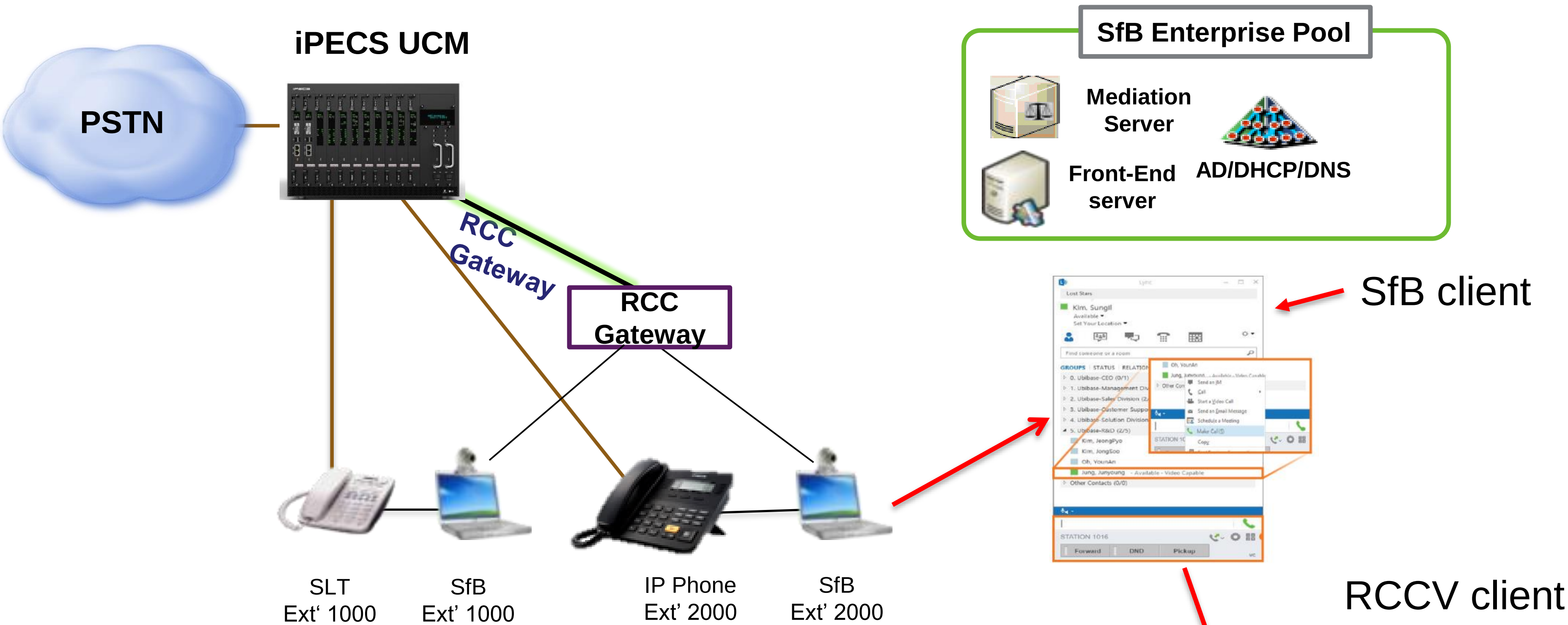


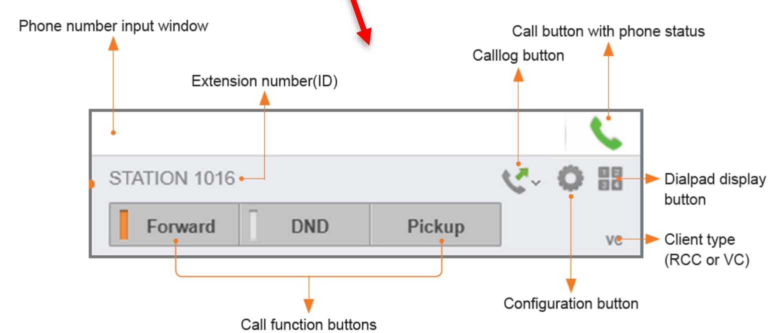
- Business Intelligence Reporting
- Skills Based Routing
- Real-Time Configurable Dashboards
- Unlimited queues
- Remote & Multi-Site Support
- CRM Integration
- Powerful Add-Ons
  - Call-back in Q (Virtual Hold)
  - Web Call-back
  - Email, Voicemail & Fax queuing
  - Voice Recording
  - IVR
  - Tele-Marketing (Outbound CC)
  - Web Chat

Your Communications Solution

iPECS RCC/RCCV

- iPECS RCC/RCCV Client can complement Microsoft Skype for Business client by providing IP phone control or soft-phone add-on

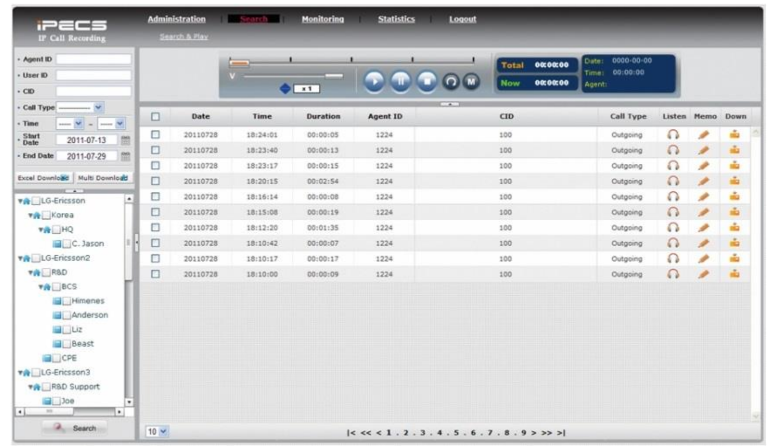




iPECS IPCR

- iPECS IPCR is IP Call Recording solution optimized for iPECS Call Platform

- **Cost effective all call recording**
  - No additional circuit I/F board required
  - No extra cabling required
  - Centralized or distributed call recording
  - Encryption enabled call recording
  - All Terminal recording
  - Trunk-port-based call recording
  - Multi party Conference call recording up to 128 party access

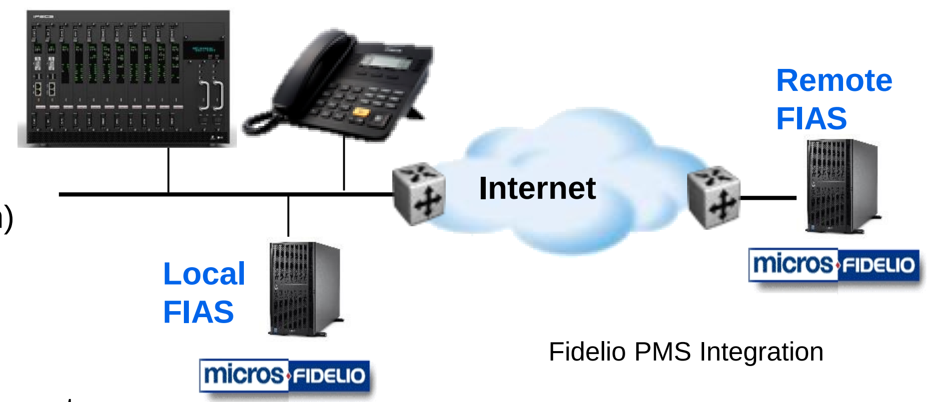


- **Supervisor Call recording control**
  - Easily remove recording file when customer doesn’t want to record
  - Supervisor/Manager can stop agent All Call Recording
  - Supervisor/Manager can start one click call recording during On-Demand Recording

iPECS
Your Communications Solution

Fidelio PMS I/F for Hotel

- FIAS (Fidelio Interface and Application Protocol) is implemented to support direct interface with Fidelio PMS which is one of the most popular PMS for large hotels.



Fidelio PMS Integration

- **Supported Features**
  - Check in / check out notification
  - Room move
  - Guest information support for name and language
  - Class of service handling (bar / unbar an extension)
  - Room status
  - Voice mail notification from iPECS
  - Message lamp handling
  - Do not disturb handling
  - Simple posting of phone charges based on total amount
  - Minibar charge by total and by article number
  - Wake up calls handling

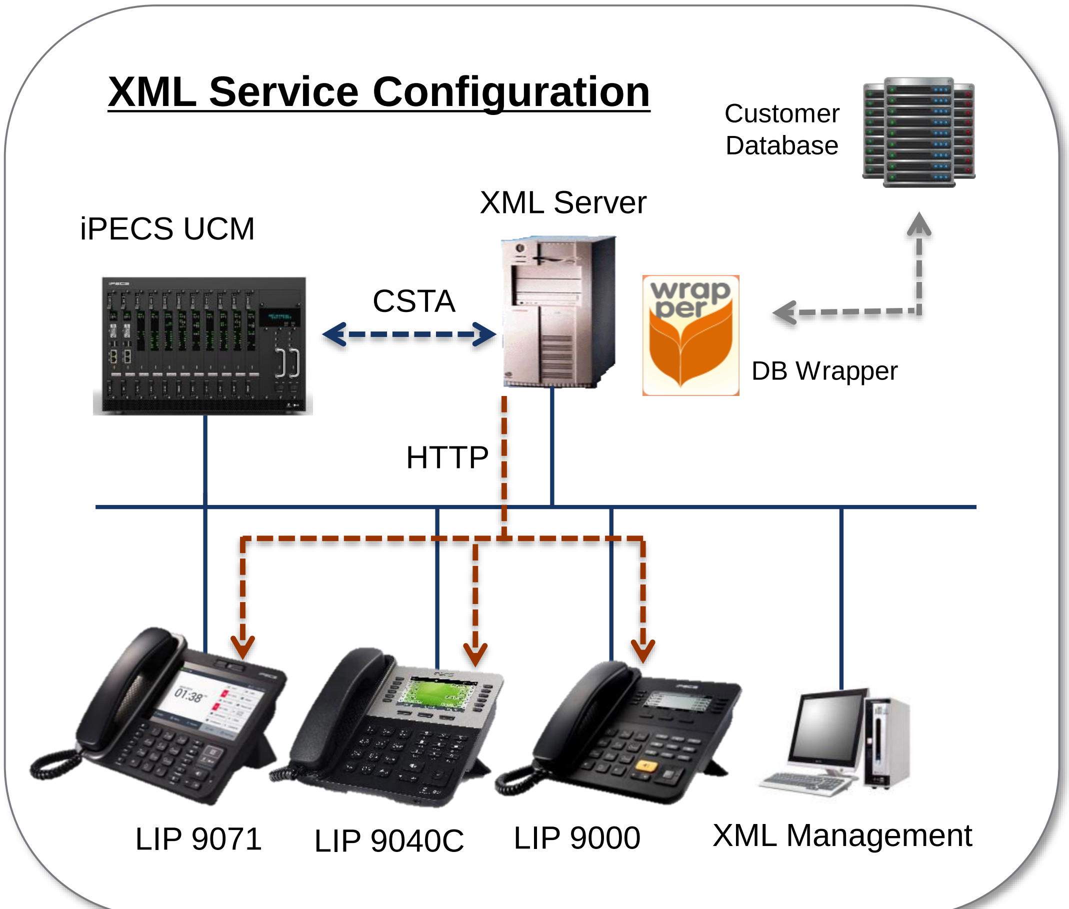
- **Compatible MICROS-Fidelio PMS versions**
  - Suite8 PMS version 8.6.x onwards
  - OPERA Suite PMS version 4.0.04.x onwards
  - OPERA Suite PMS version 5.0.x

Front Desk Station

00 : GUEST NAME
01 : GUEST GRADE
02 : CHECK-OUT DATE
03 : LCD LANGUAGE
04 : HOTEL ROOM CUT-OFF
05 : DND
06 : WAKE UP TIME
07 : TOLL CLASS
08 : TRANS CLASS
09 : PMS GROUP
10 : MSG WAIT NO
11 : MSG SENDER

XML Service

- LIP-9000 series provide XML API to allow customer to combine communication & Information in order to improve productivity.



Major Features

- Multimedia CID
- Directory Search
- Corporate Notification
- Call History
- Catch-Call

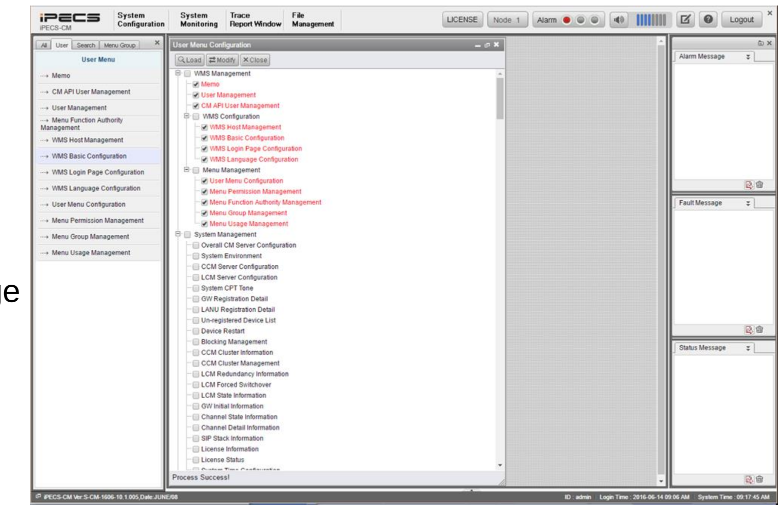
Multimedia CID

Directory Search

iPECS
Your Communications Solution

WMS (Web Management System)

- WMS is designed with very intuitive user interface, which helps administrator to install and maintain iPECS UCM easily.



▸ **Web Based Local & Remote Maintenance Solution**

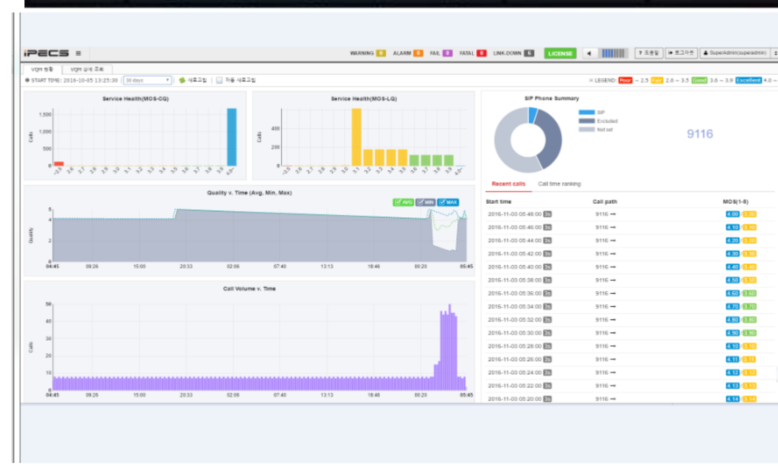
- **Editing simultaneously**
  - Multi-login, Multi-working, Log-in History
  - Multi Windows I/O
  - Tree Structure
- **Monitoring for real time defect**
  - Real-time Display
  - SMDA, 3rd Party App., CPU, Memory, Hard Disk Usage etc
- **Print Real-time Message**
  - Alarm, Fault, Notification System Fault using Led, Speaker
- **Remote Maintenance**
  - Providing remote system control, Fault Monitoring, Statistics
  - Securing certification process about unknown users

Call Trace regarding specialized extension or trunk

Message Trace regarding Status, RTP Connection etc

iPECS eNMS

- eNMS (Network Management System) is a powerful tool for managing a fault information, monitoring real time status, maintaining call statistics and databases of multiple appliances.



SNMP based unified monitoring

- Call server and gateway module monitoring
- Terminal data management
  - DB sync. with iPECS UCM
  - Managing terminal status, IP address and etc
- Data switch status monitoring
- Customized Dash Board

Error monitoring and real time notification

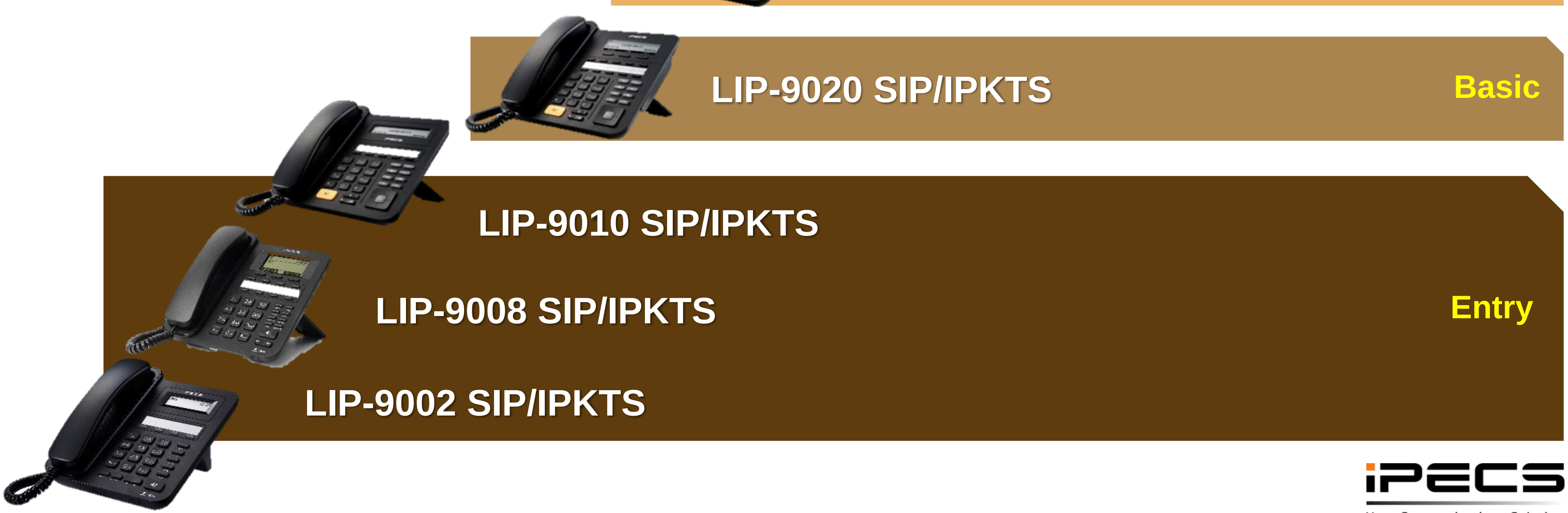
- SMS/E-mail notification
- Management of trouble history

Your Communications Solution

Terminal Integration

LIP-9000 Series

- Full line-up in the new design
- Intuitive user interface in high resolution LCD
- Enriched presence information display
- Optional color variation available
- HD voice quality for all models



Your Communications Solution

IP DECT

- **Standard SIP based IP DECT for cost effective mobility and easy maintenance as well as enhanced features**

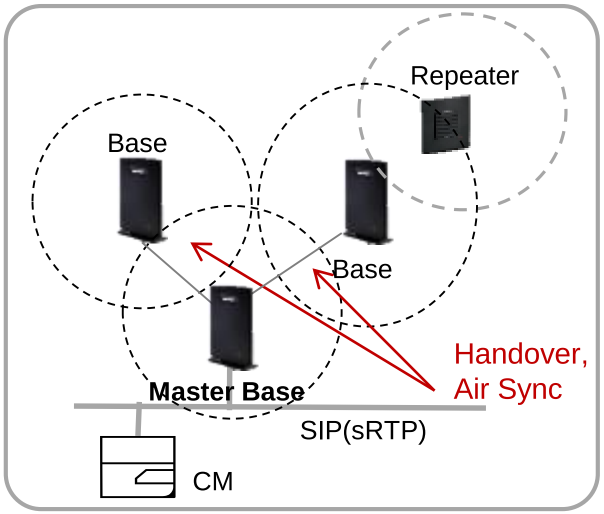
GDC-800H GDC-800Bi GDC-800R

- High-tech IP DECT solution
  - 128 BS & 1000 HS
  - Up to 8 calls / BS
  - SUOTA (SW Upgrade Over-the-Air)

- Cost effective multi-site mobility solution
  - Multiple locations become integral parts of centralized voice communication infrastructure.
  - IP DECT at remote locations does not need additional remote gateway module

- Easy Installation & Management
  - Centralized Web management tool
  - Simplified installation and operation

- Simple to expand coverage using repeaters
  - Up to 1 repeater per base



iPECS
Your Communications Solution

Basic Features

Basic Feature Groups

Call Control

1:1/ 1:N / Hold / DND / Redial
Speed Dial
Forward / Transfer
Call Park / Pick-up
Class of Service
Emergency Call
Multi-Numbering
CID Conversion
Virtual Subscriber
ARS Digit Conversion
Executive/ Secretary

Numbering

Directory Number
Numbering Plan

Station Group

Key number
Hunt
Pick up
PTT
Interphone
Paging

DISA

Auto Attendant
Voice Prompt

Hot Desk

Virtual office

Networking

SIP
QSIG

Mobile Extension

Extension Paring with Mobile
Call Through / Call Back
VCC

Conference

Ad Hoc
Meet me
Command Call

Voice Mail

Email Notification
Greeting
Voicemail Backup
VM Paging

System Security

VPN, Black list, Call SPAM, ACL, Auto QoS

Hotel Feature

Wake up, Emergency Call Notification, Hunt Group Display

Cloud Service

Licensing Structure based on tenant

System Operation & Management Tool

WMS
NMS
Statistic

Basic Feature List

Call Processing	Call Processing	Call Processing	Trunk
Call Hold	Trunk Queuing	Auto Attendant / Digital Receptionist	Trunk Release Guard Time
System Hold	Step Call	Web-based Management Console	Trunk Ring Detect
Automatic Hold	Voicemail	Real Time Web-based System Status	Dial Pulse Signaling
Music on Hold	Record New Voice Prompts From Phone	Integrated Web Server	DID (direct in dial)
Music on Hold Playlist or Line In	Call Recording	Backup and Restore	DISA (direct inward system access
Do Not Disturb	IP call recording	Vmware compatible	DTMF tone control
Call Logging	MWI – Message Waiting Indicator	Temporary Station Lock	IP trans-coding & rtp relay
Call Reporting	Message wait/call back	Security	IP trunk
Call Transfer	BLA (Bridge Line Appearance)	TLS/sRTP	H.323 Trunk
Transfer Directly to VM	Class of Service	Terminal lock for unauthorized user	ISDN
Blind Call Transfer	Dial Plan	Localization	CLI Display
Attended Call Transfer	Emergency Calls from Unnamed IP phone	Multiple language support	ISDN supplementary services
Call Forward	Fax over IP	Speed dial	ISDN Call Deflection
Pilot hunt call forward	Hot Line Service	Speed Dial Pause Insertion	ISDN Malicious Call Id
Preset call forward	Automatic Answer	Station Speed Dial	ICLID ROUTING
Call Forward on Busy	Last Number Dialed	System Speed Dial	Automatic Network Dialing
Call Forward on No Answer	Line Lockout	Tenant	Alternative Route Selection
Call Routing (DID)	call override	Tenant prefix	Individual Trunk Access
Call Routing (Caller ID)	Short Message Service : SMS	Tenant group	Route Selection For Each Trunk
Alternative Route Selection (ARS)	Message Wait Reminder Tone	Command call	Trunk Route Service
Auto Called Number Redial (ANCR)	BLF Status Updates	Command call	Incoming Route Option
Caller ID	Intercom call	cost control	Outgoing Route Option
CID dependant ring	Intercom call hold	Account code	Alternative Incoming Route Service
Trunk IC/OG CID change	Intercom call answer mode change	Authorization code	Alternative Outgoing Route Service
Conference Calling	Intercom step call	CDR/SMDR	Route Transit Service
Conference Rooms	Paging	LCR: least cost routing	Trunk Access Code Service
Multi-Party Voice Conference	Internal Page	data control	Trunk Own Code Service
Call Intrusion	Meet Me Page Answer	Data line security	Route Cli Service
Call Intercept	Push-to-talk paging	Fax bridge	Trunk Direct Transit Service
Call Parking	Ring Extension and Mobile Simultaneously	Trunk	H.323 Multi Route Service
Call Pickup	Executive/secretary	CO line flash	Trunk Inter Digit Timer Service
Call Back	Executive/secretary forward	Trunk Route Groups	Trunk Dtmf Duration Service
Call Waiting	Mobile extension	Trunk Preset Forward	R2 Comfort
CampOn	Attendant	Trunk Ring Assignment : Dil	CAC : Call Admission Control

iPECS Your Communications Solution

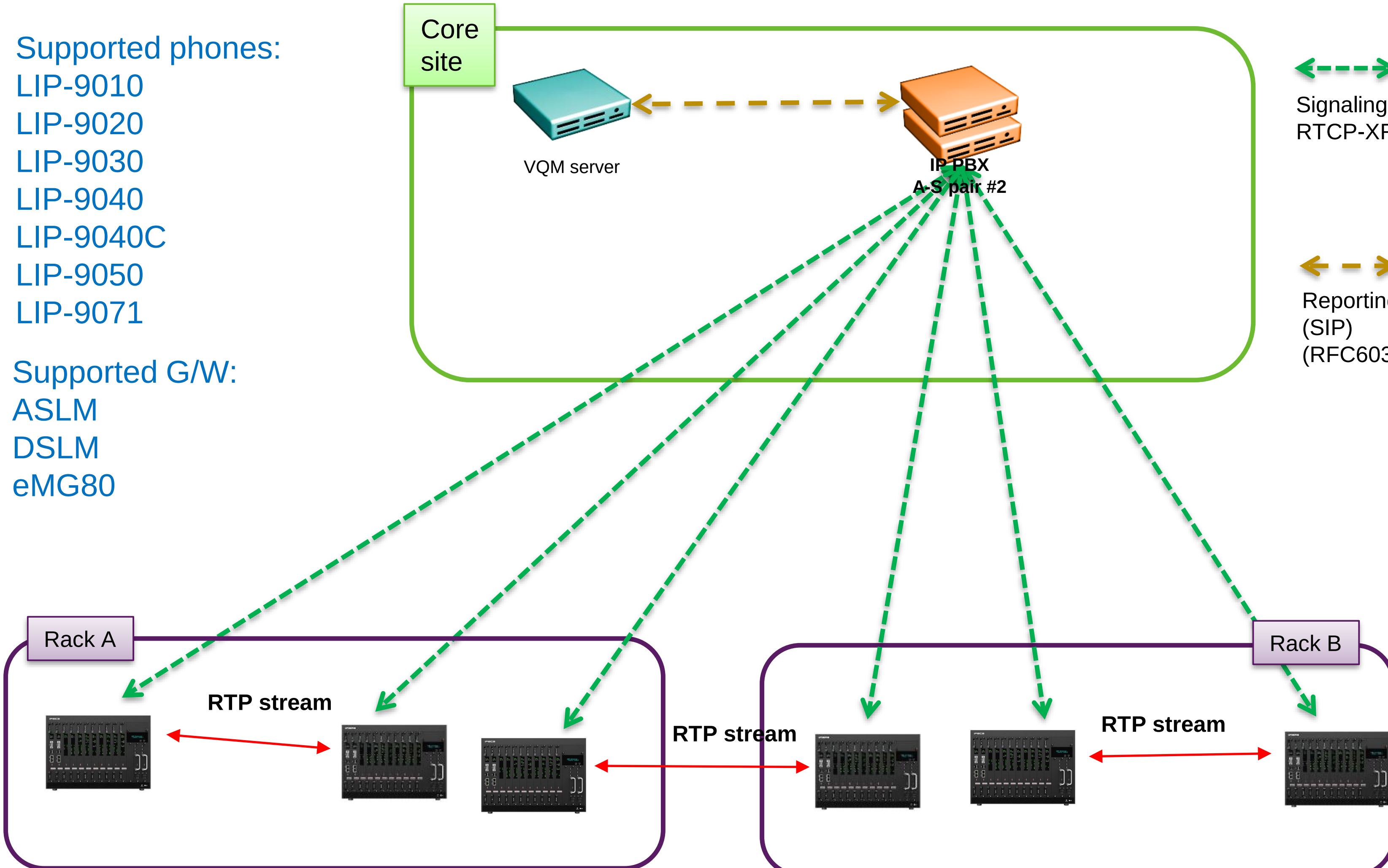
New Special Features

VQM support for G/W & IPKTS phone

- Voice quality of gateways and IPKTS phone can be measured

Supported phones:
LIP-9010
LIP-9020
LIP-9030
LIP-9040
LIP-9040C
LIP-9050
LIP-9071

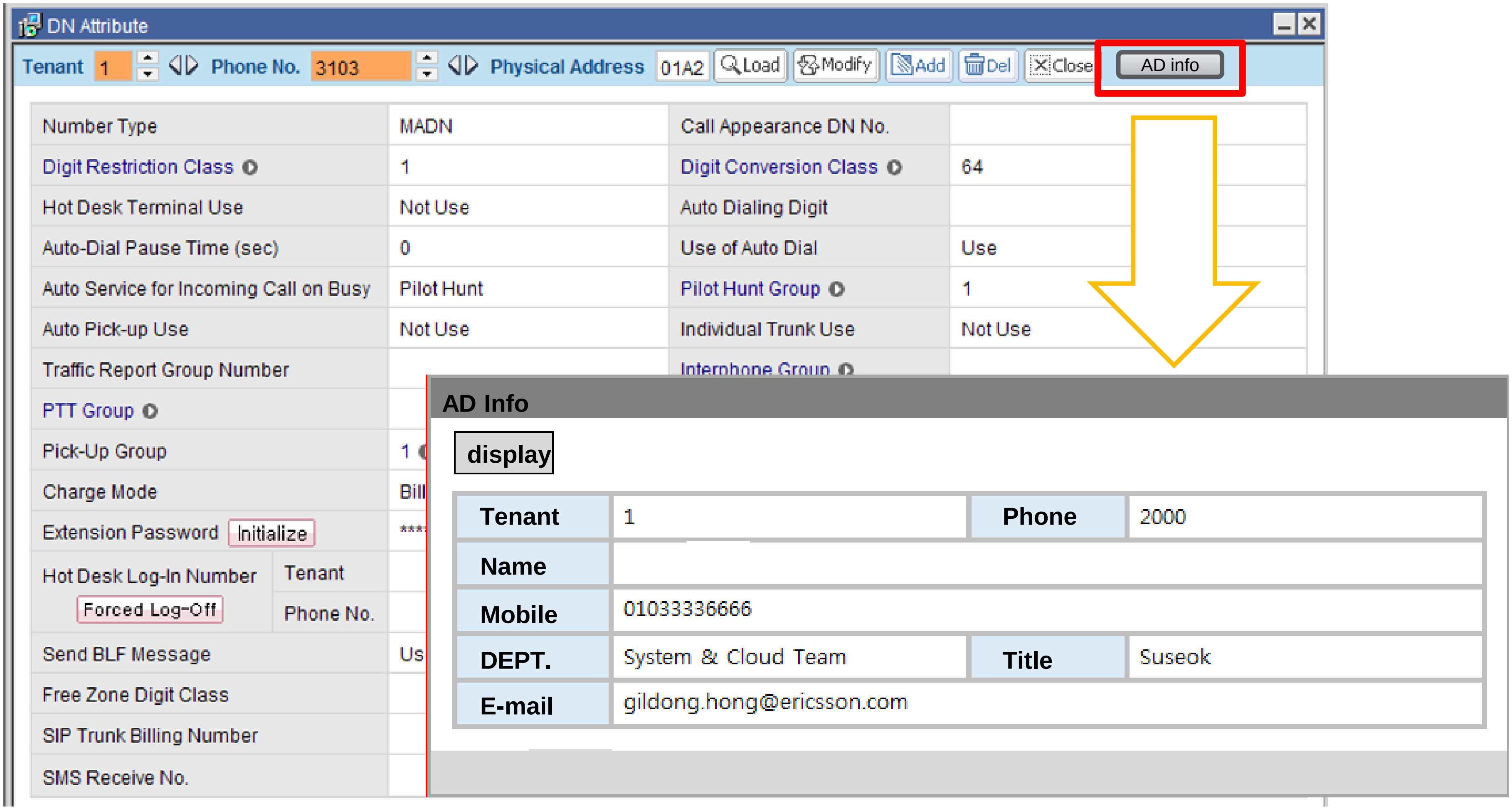
Supported G/W:
ASLM
DSLM
eMG80



Your Communications Solution

User Info Field Upgrade

- More info about extension user is provided (lookup API also supported)



iPECS
Your Communications Solution

Special Features

Hot Desk

- Hot Desk feature provides seamless communication at anywhere, anytime

  - Hot Desk

Anytime

Anyone

1	Log Off		
2	ID 101 Login		Employee #1
3	Log Off		
4	ID 103 Login		Employee #2
5	Log Off		
6	ID 104 Login		Employee #3

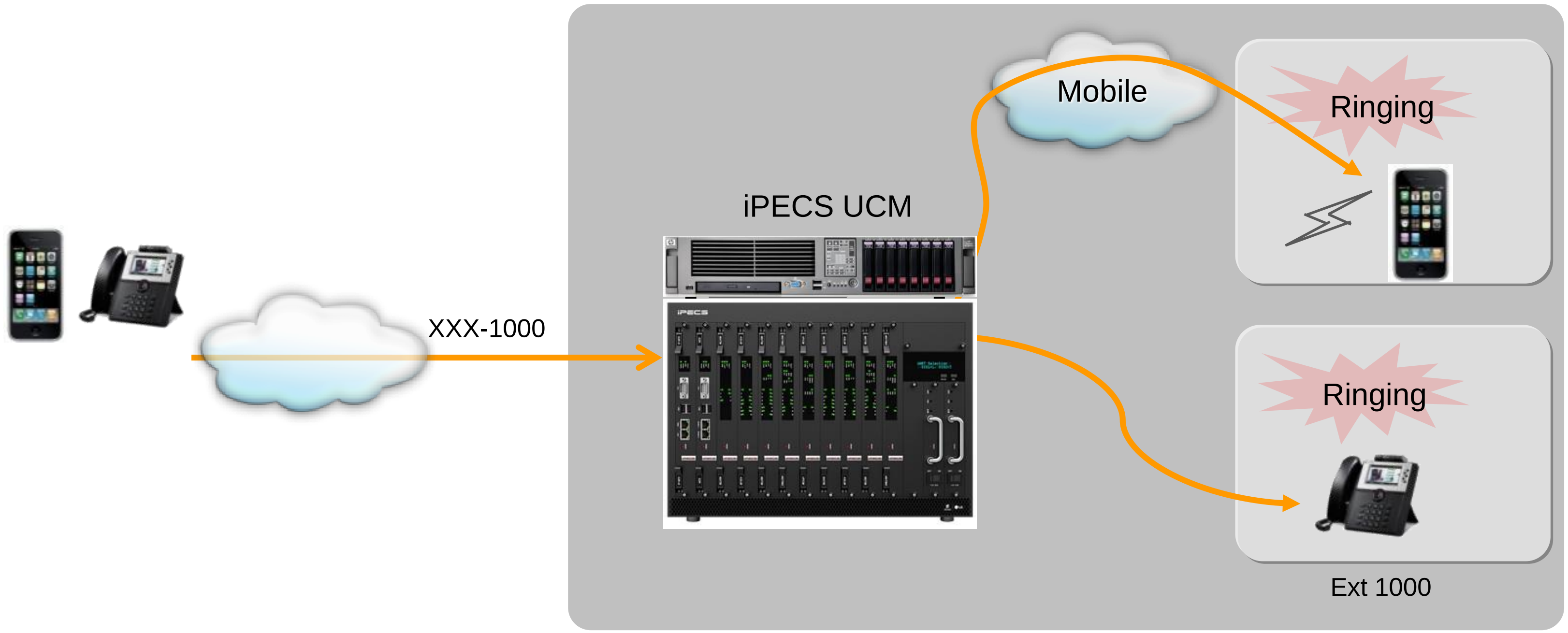
Anyplace

Seat #1 Seat #2 Seat #3

*Flexible button map and station speed dial information of deskphone is changed to match Hot Desk ID

Mobile pairing

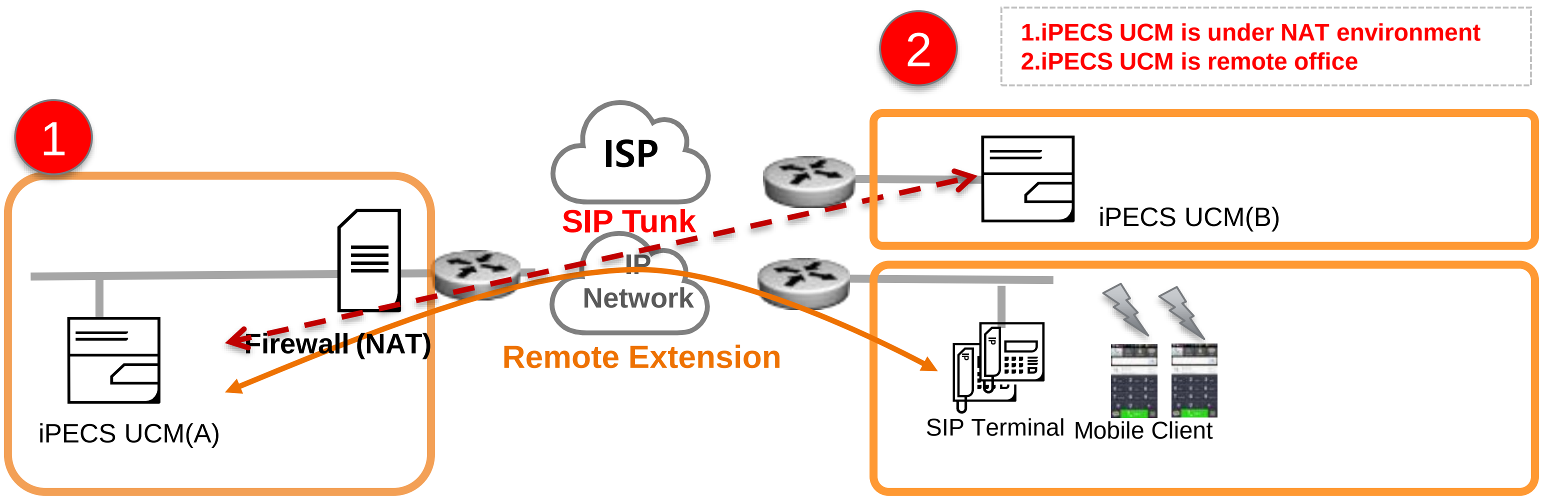
- Paired mobile phone provides one-number service for office worker



Your Communications Solution

Remote Extension Enhancement

- SIP Trunk & Extension is supported in enterprise network environment to increase system availability
  - SIP extension to IP phone, Mobile Client out of NAT/Firewall is now available
  - NAT feature on SBC is not needed

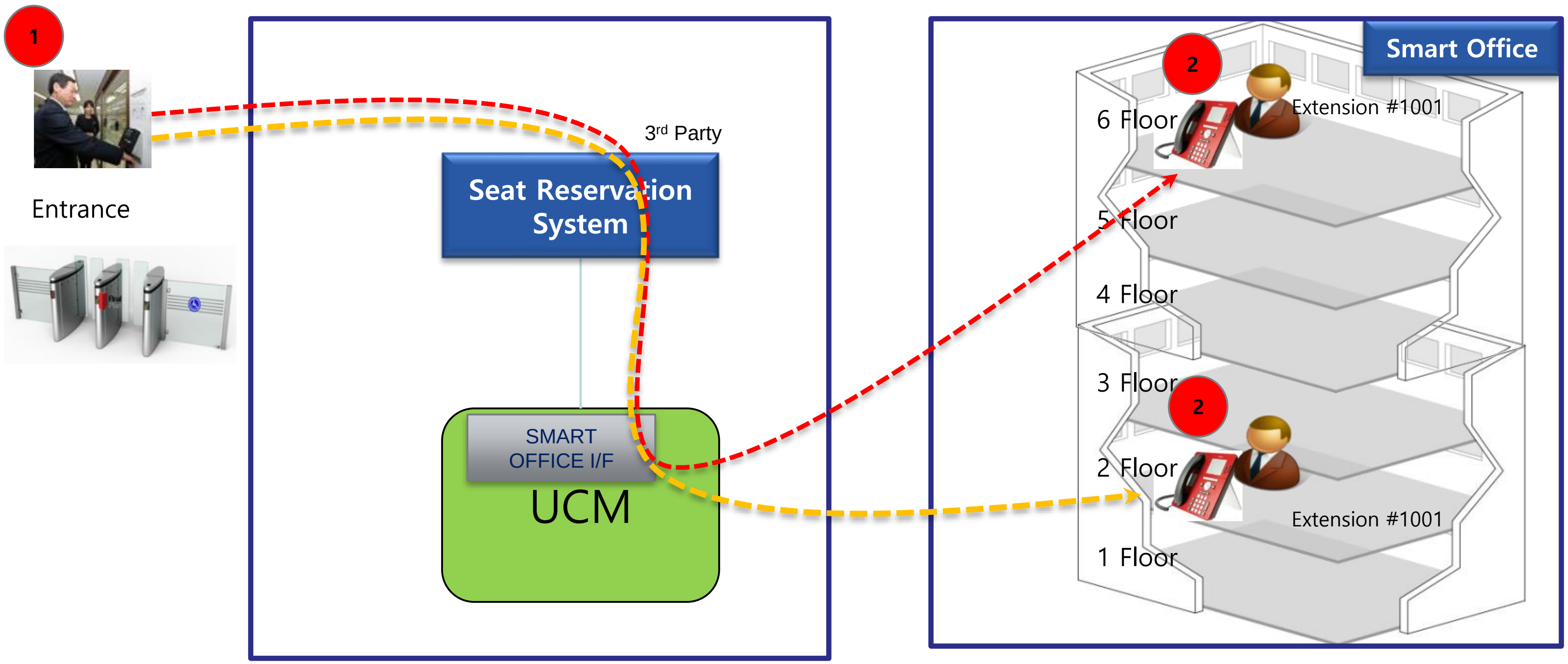


- iPECS UCM can set firewall IP for SIP registration and call control of remote phone.
- Proxy Server IP should be set to firewall IP of SIP Phone.

iPECS Your Communications Solution

Smart Office

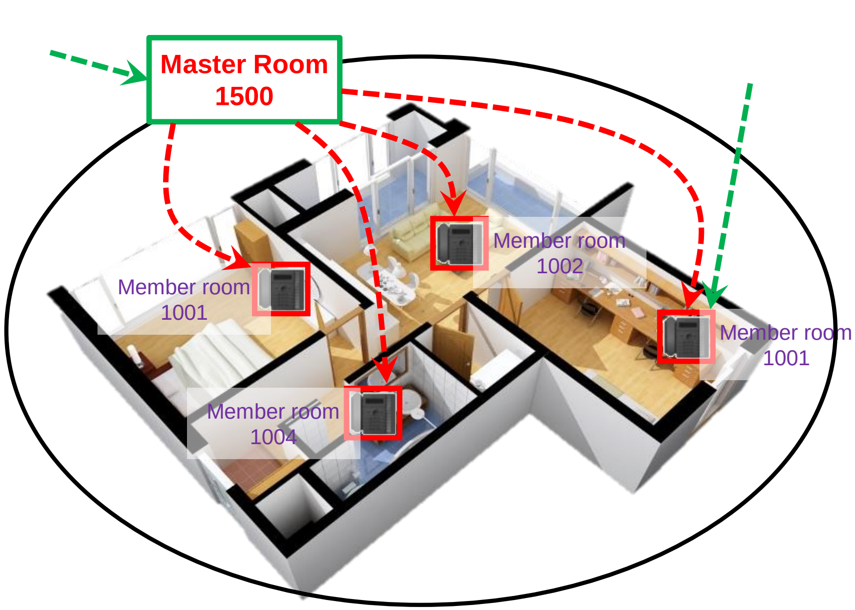
- Utilize Smart office I/F in Smart Mobility Office environment

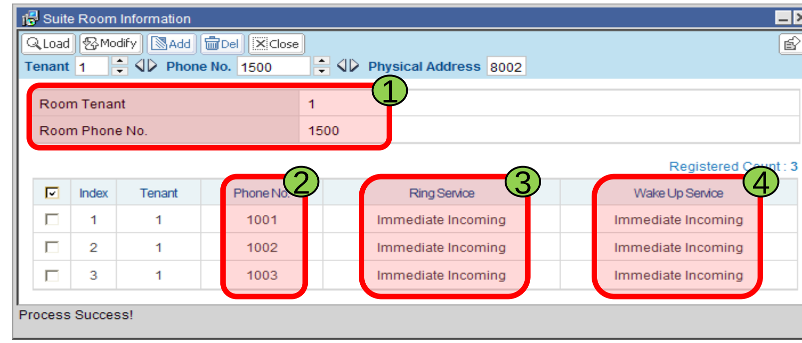


1. Register your seat
2. Automatically deskphone on the seat you reserved will be changed to your extension.
3. UCML-SMO will be needed soon but not needed now

iPECS Your Communications Solution

Suite Room





	Index	Tenant	Phone No	Ring Service	Wake Up Service
	1	1	1001	Immediate Incoming	Immediate Incoming
	2	1	1002	Immediate Incoming	Immediate Incoming
	3	1	1003	Immediate Incoming	Immediate Incoming

WMS > Data Management > Hotel Information > Suite Room Information

1. Master Room Number of Suite Room
2. Up to 60 Member Room Number per Suite Room
3. Ring option for Normal Call and Wakeup Call can be defined: Immediate Incoming, 3~30 sec Delayed, No Incoming

- Suite Room is consist of several Member Room numbers and one virtual Master Room number which is used for controlling room status and interworking with PMS, Hotel Front-Desk or Hotel Attendant.
- Incoming call only with either Master Room Number and Member Room Number.
- Outgoing call with any phone but with Master Room Number including its COS, CID, Name, Check In/Out information.
- Up to 4 concurrent calls can be made per Suite Room.
- SIP phone is not allowed to be member of Suite Room

iPECS
Your Communications Solution

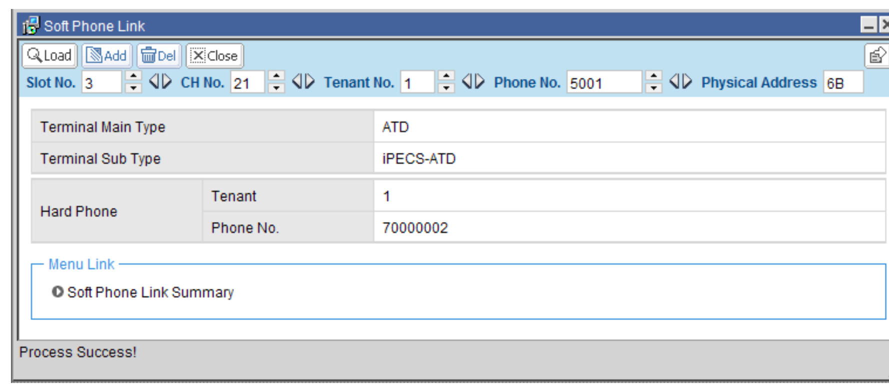
IP Attendant Headset Link

Call Control

Voice

Voice

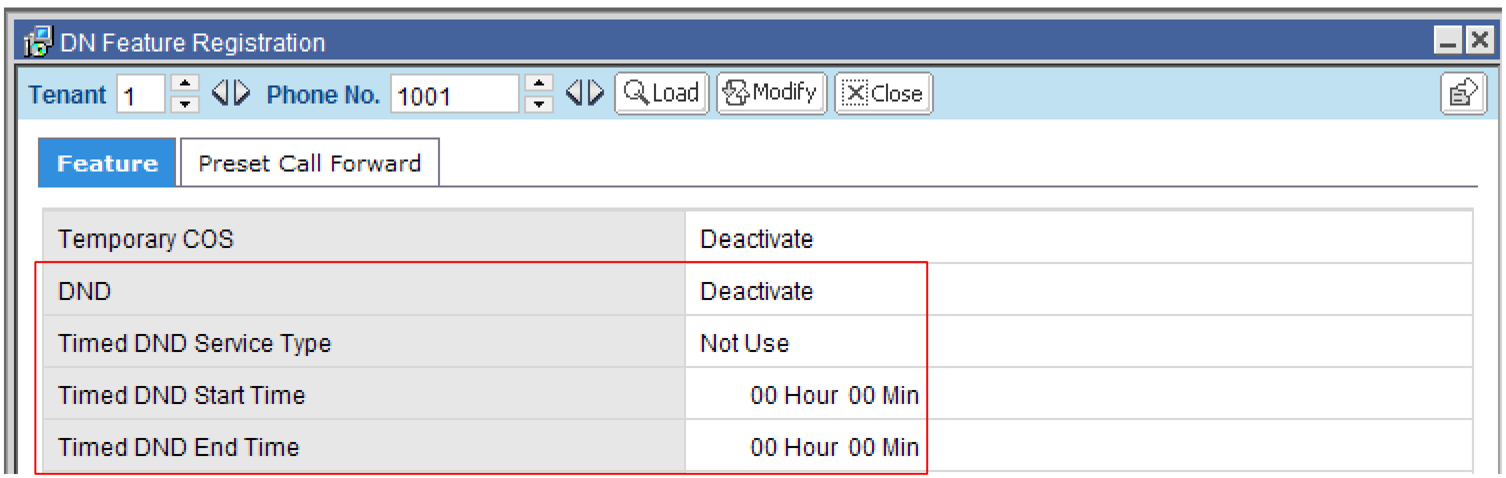
- Call Initiation by IP ATD, not the phone
- Some of feature will not be supported such as Call Recording by IP ATD, Voice Conference and so on
- With SLT or LIP Phone



Your Communications Solution

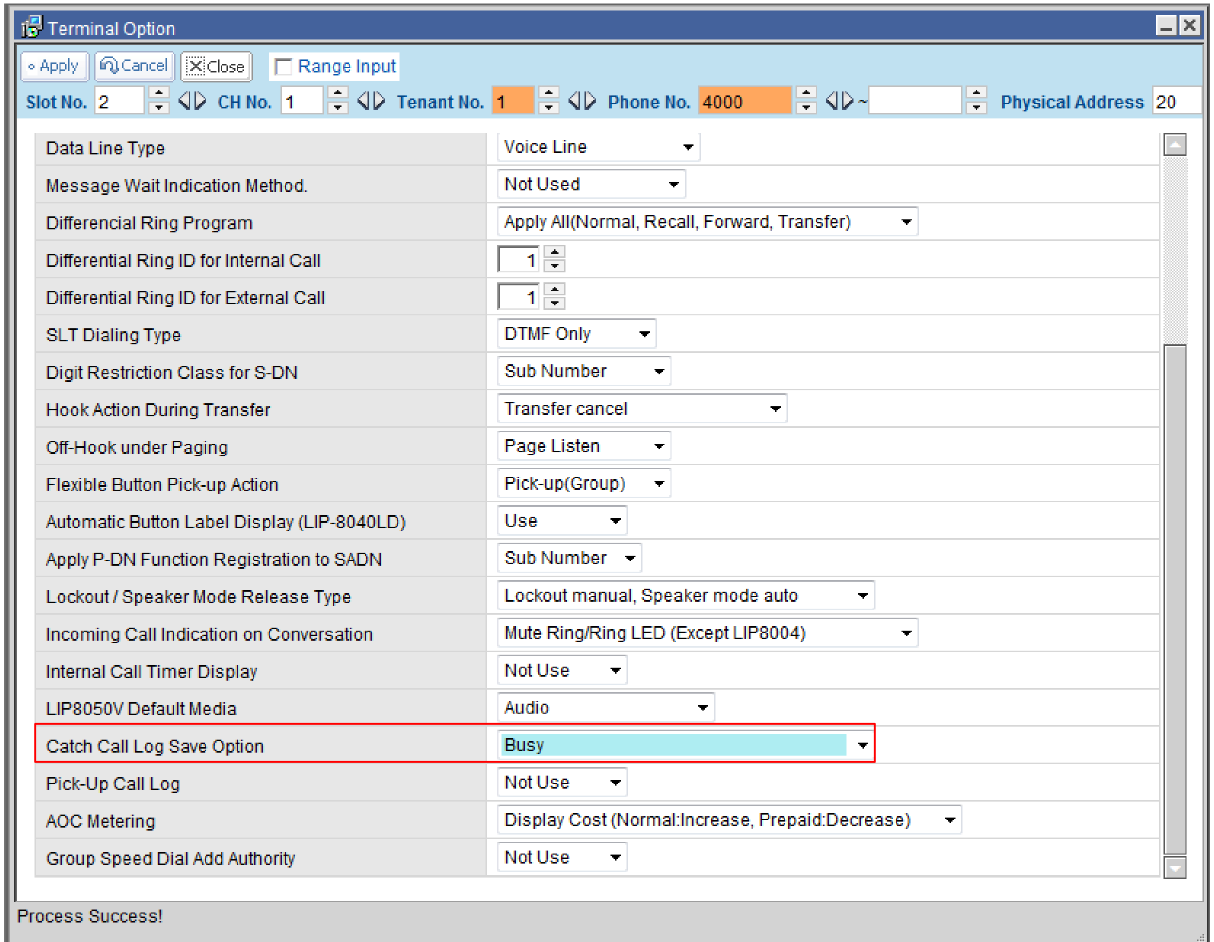
Timed Do Not Disturb (DND)

- This feature allows users to set DND for range of designated time.
  - Five (5) DND options are supported: Once, Daily, Monday~Friday, Monday~Saturday, or a Date.
  - DND registration for Daily, Monday~Friday or Monday~Saturday is maintained until it canceled by the user.
  - DND registration for Once or Date mode is canceled automatically after end time.



Catch Call Service

- UCM can inform you of the incoming call information when the status of user is ‘Busy’ or ‘DND’ or ‘Forward’ or the incoming call number is registered to ‘Spam’.

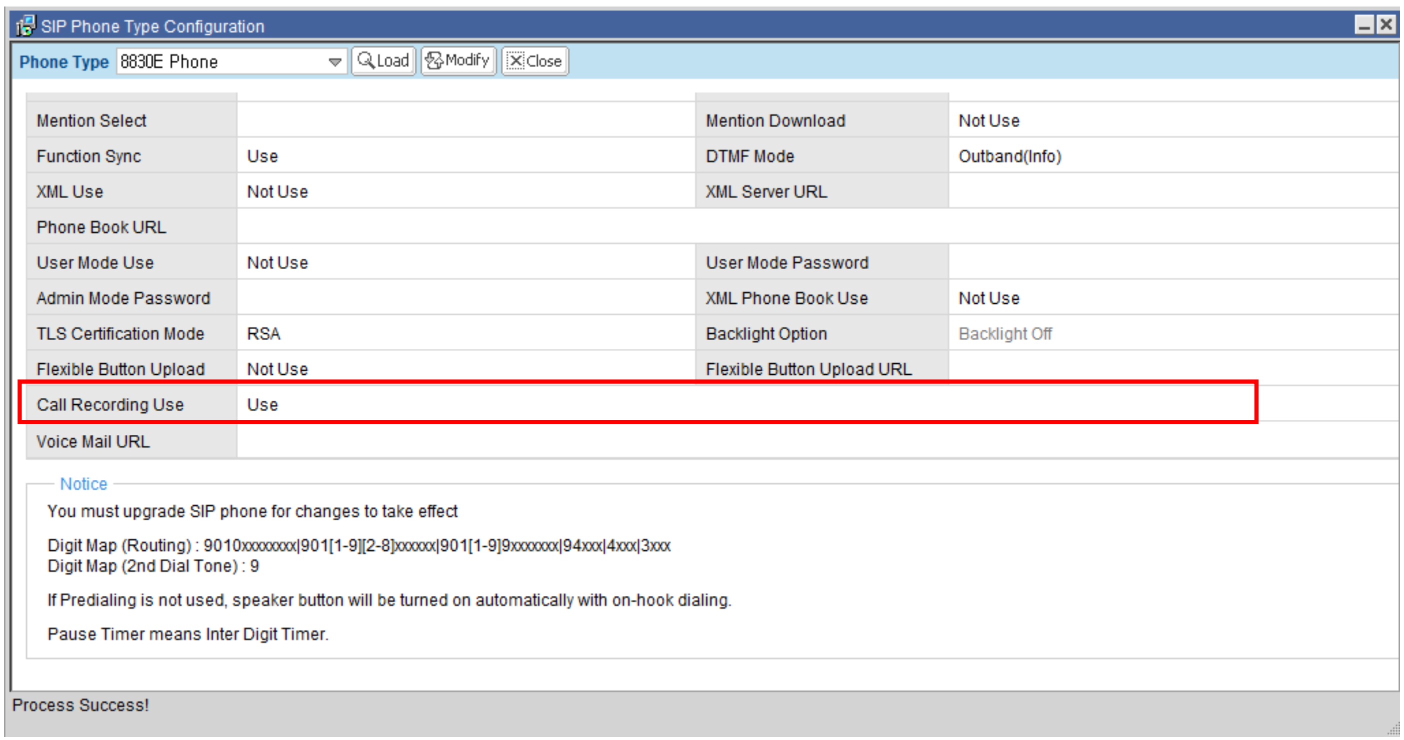


Your Communications Solution

Call Recording using IP Phone Conference

- To decrease required number of VPCM, SIP phone which activates call recording performs voice mixing internally and send mixed voice packet directly to the call recording device.

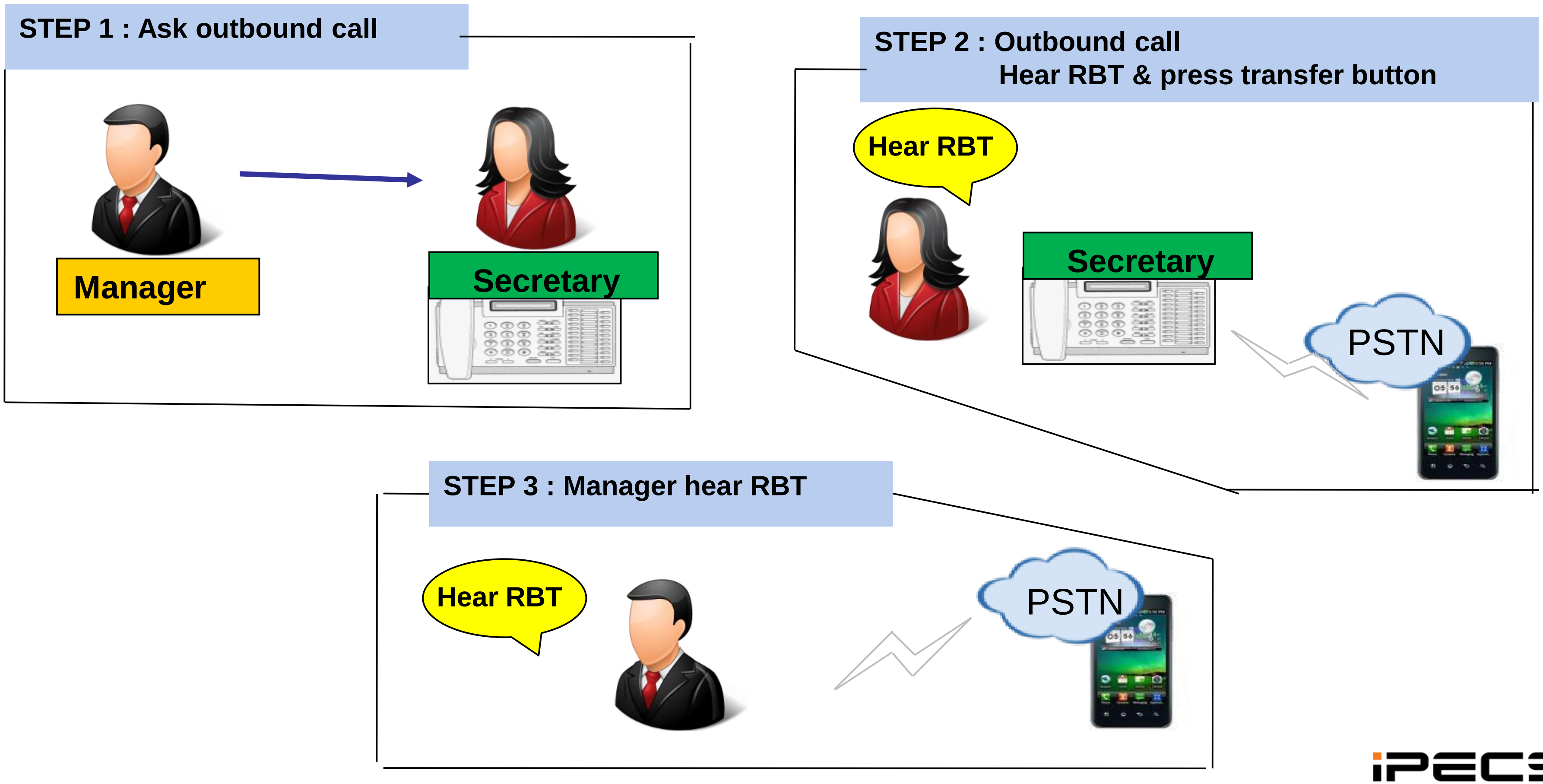
<u>Related WMS Menu</u>
[To set use of Call Recording in System]
Data Management > Number (DN) Information > Voice Mail Information > Two-way Record Device
Data Management > Number (DN) Information > Voice Mail Information > Two-way Record Start Mode
Version Management > SIP Phone Provisioning > SIP Phone Type Configuration > Call Recording Use : Use



Your Communications Solution

Transferring a trunk call in alerting status

- Secretary can transfer a outgoing trunk call to Manager before called party answer the call.



iPECS Your Communications Solution

Call Priority Control

- **Minimize Call (Min. Communication Level)**

  Level of Extension for Minimal Communication. When this level of Extension is higher than the 'Min Communication Level' assigned in the 'System Environment' menu, the Extension cannot place an outgoing call.

- **Intercept Call**

  When a called Extension is busy, the calling Extension can connect to the called Extension forcing the release of the connected party. The caller must have an Intercept level that is higher than the called party to activate Call Intercept.

- **Transfer COS (Call Transfer Restriction)**

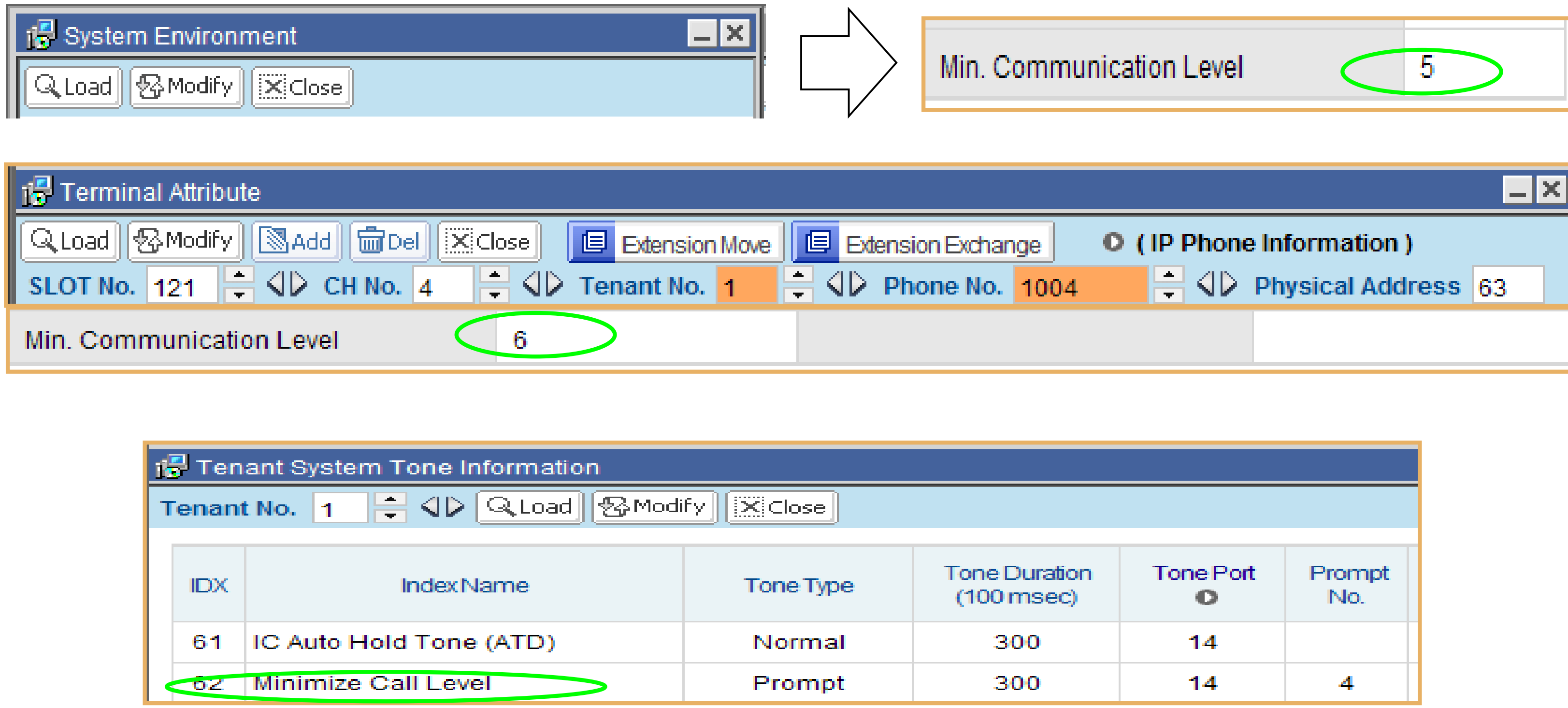
  Extensions may be configured so that they may not transfer a call to other Extensions. When pressing the [TRANS] button, the system may restrict the transfer based on the dialed digits compared to the Digit Restriction Map in the Transfer COS of the Extension.

- **Hot/Warm Line**

  An Extension can be assigned to access a pre-assigned number (Hot Line/Warm Line) automatically upon an off-hook state. Warm Line may be configured, in which case, the Extension user receives normal intercom dial tone for the Hot Line delay time and may dial based on the assigned dialing restrictions. When the delay timer expires, if the user has taken no action, the Hot Line call is placed.

Minimize Call

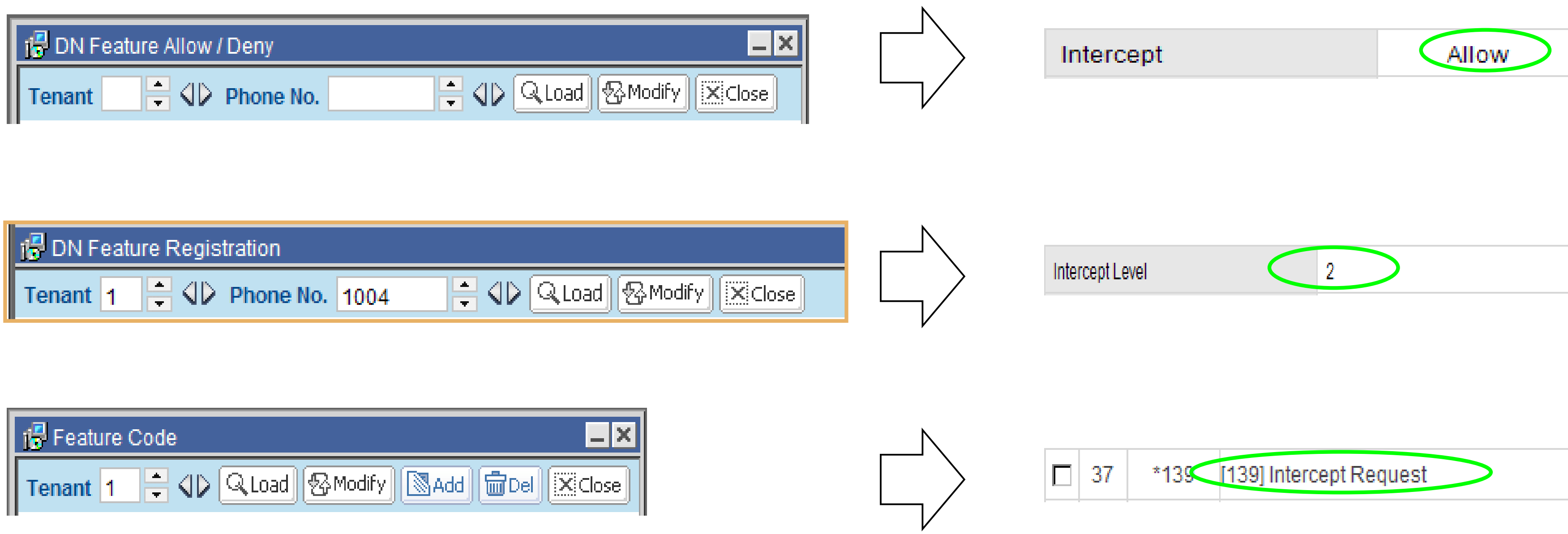
- System can stop making a call from a lower priority station so that it can give high priority stations to guarantee to make a call.



IDX	Index Name	Tone Type	Tone Duration (100 msec)	Tone Port	Prompt No.
61	IC Auto Hold Tone (ATD)	Normal	300	14	
62	Minimize Call Level	Prompt	300	14	4

Intercept Call

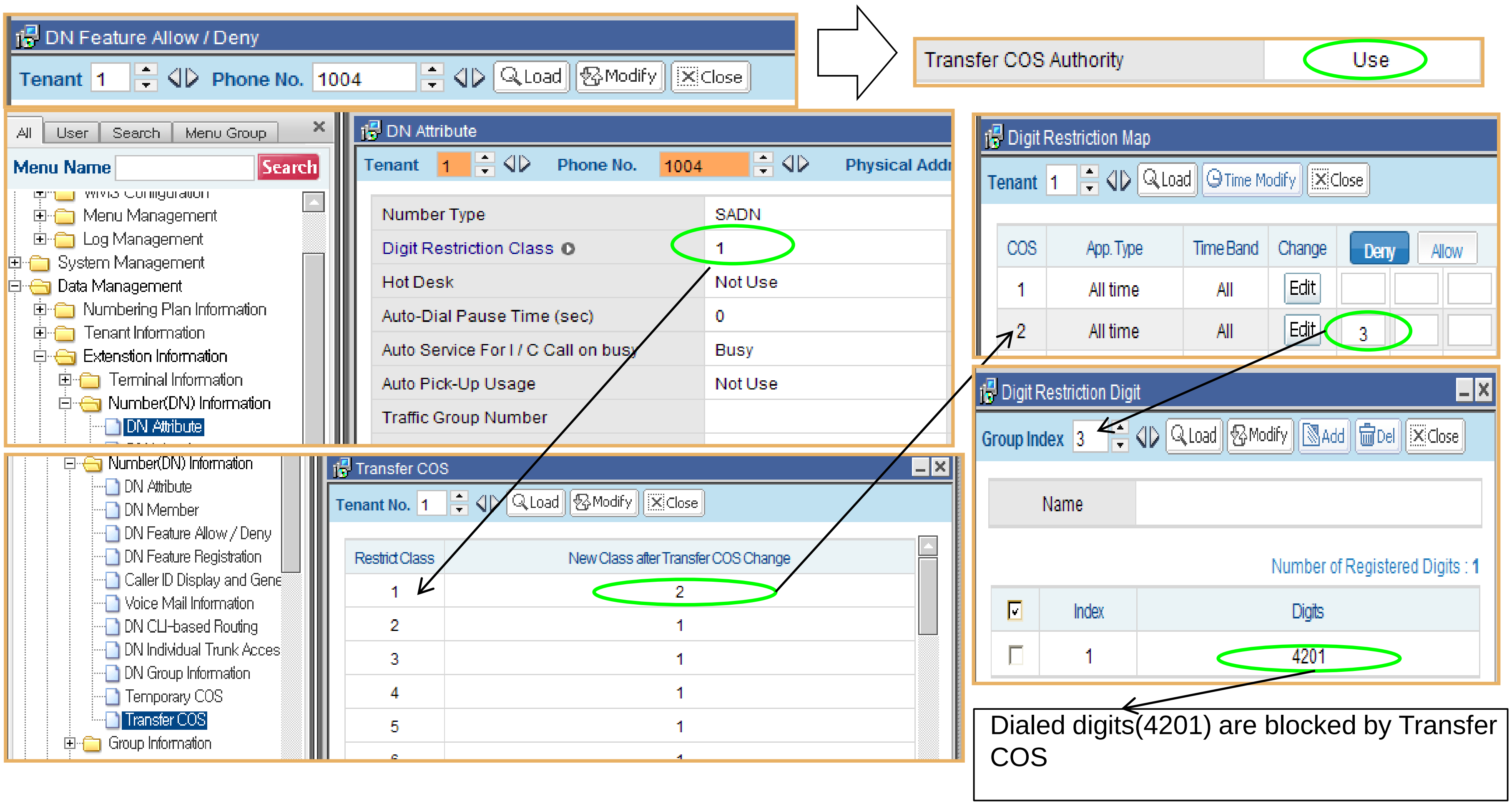
- Pressing “Intercept Request” feature code and extension number will remove the extension user and let the supervisor intercept the call.



Your Communications Solution

Transfer COS

- A transfer call can be blocked by “TRANSFER COS” settings (prevents call delegating)



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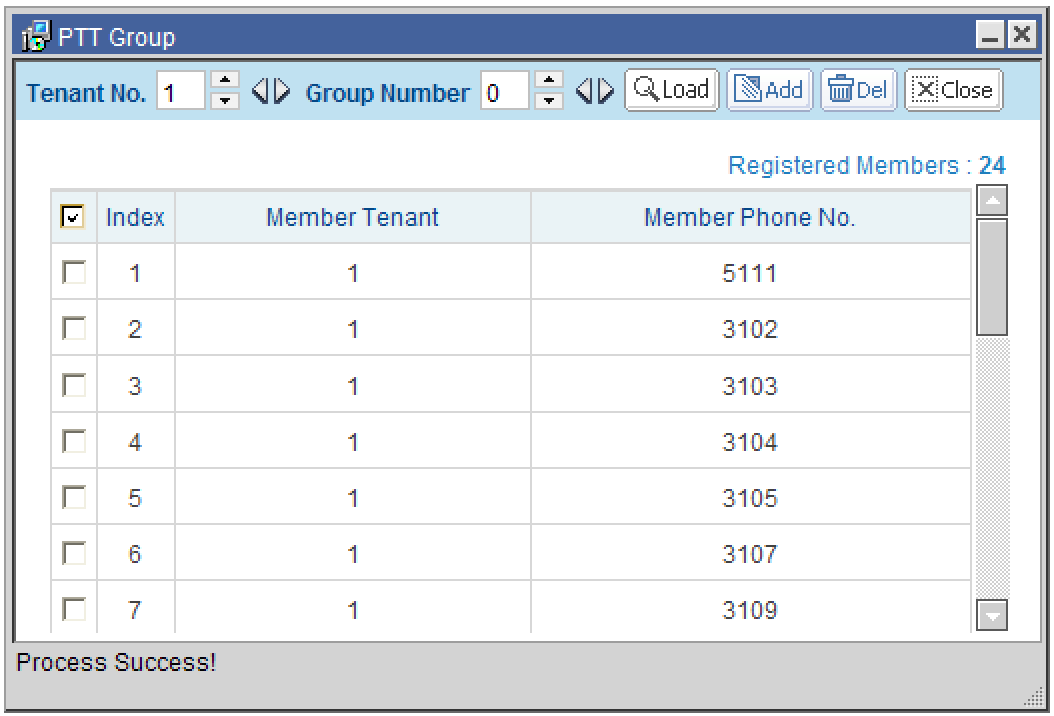
Push-To-Talk Paging

- iPECS Multi-button phones can be assigned to one or more of ten (10) PTT (Push-To-Talk) groups.
- When logged in, users may send or receive One-way pages.



Index	Member Tenant	Member Phone No.
1	1	5111
2	1	3102
3	1	3103
4	1	3104
5	1	3105
6	1	3107
7	1	3109

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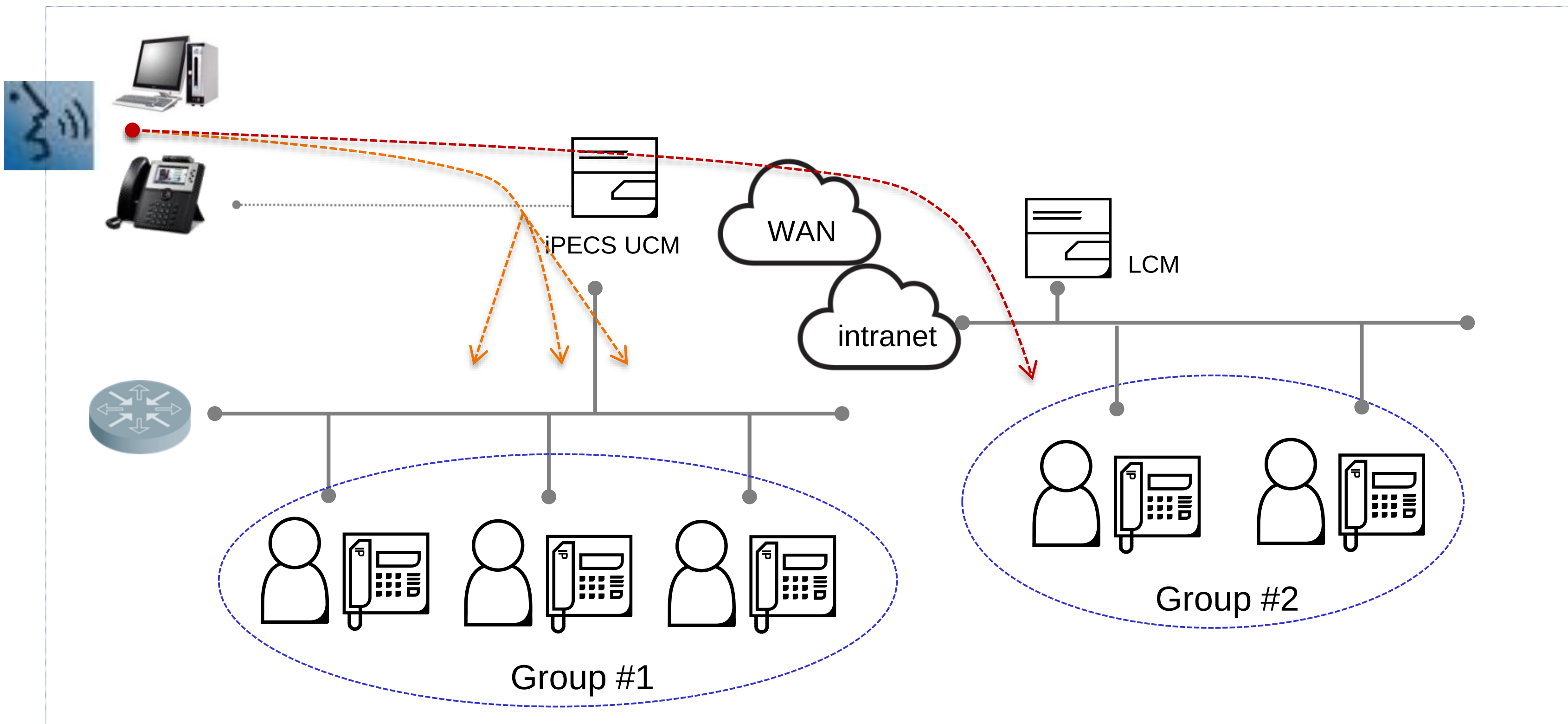
Command Call

- A user can place a call to all members in a Command Call Group simultaneously.



iPECS is an Ericsson-LG Brand

Your Communications Solution

Appendix

iPECS Solution Portfolio

Clients

IP phones

LIP-9000 series

color phone

LIP-9040C

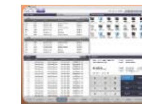
Video phone

LIP-9071

IP DECT

GDC-800

PC Attendant



iPECS Attendant

Applications

Contact center

iPECS CCS

Call recording

iPECS IPCR

NMS

iPECS eNMS

UC

iPECS UCE

Skype for Business add-on

iPECS RCCV

Telephony Platforms

eMG80

eMG800

UCP 100/600/2400

CM 2K~30K

UCM 2K~960K

Switches

L2 Smart
ES-2000 Series

L2 Managed
ES-3000 Series

L3 Managed
ES-4600 Series

Contact Center Solution I/F

- Multiple Options for Contact Center Solution to meet each level of Customer needs.

	Routing by	CTI Interface	Applications		License
			Ericsson-LG Enterprise	3rd Party	
Option 1	PBX ACD	N/A	N/A	N/A	N/A
Option 2	PBX ACD & CTI Server	CSTA II	N/A	CSTA CTI Server Package	CTI Interface per CTI agent
Option 3	CTI Server	TAPI	Ericsson-LG TSP	TAPI CTI Server Package	TSP Interface
Option 4	CTI Server	TAPI	Ericsson-LG TSP & iPECS CCS		CTI Interface per CTI agent CCS license

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