

# Zwave Sensor Hub IP Video Door Phone Solution

A promotional banner for the ZWave Sensor Hub IP Video Door Phone Solution. The banner features a blue background with white text and images of various hardware components. On the left, there is a list of product models and their descriptions, followed by a 'Learn More >' link. In the center and right, there are images of the hardware: a touch-screen IP video door phone, a standard IP video door phone, a smart hub, a door access control system, and a smart IoT web manager. A computer monitor displaying a web interface is also shown on the right.

**ZWave Sensor Hub IP Video Door Phone Solution**

AP-VAC150 IP Video Door Phone(Touch Screen)  
AP-VAC50 IP Video Door Phone  
AP-SH50 Smart Hub  
AP-ACS1500 Door Access Control System  
Smart IoT Web Manager

[Learn More >](#)

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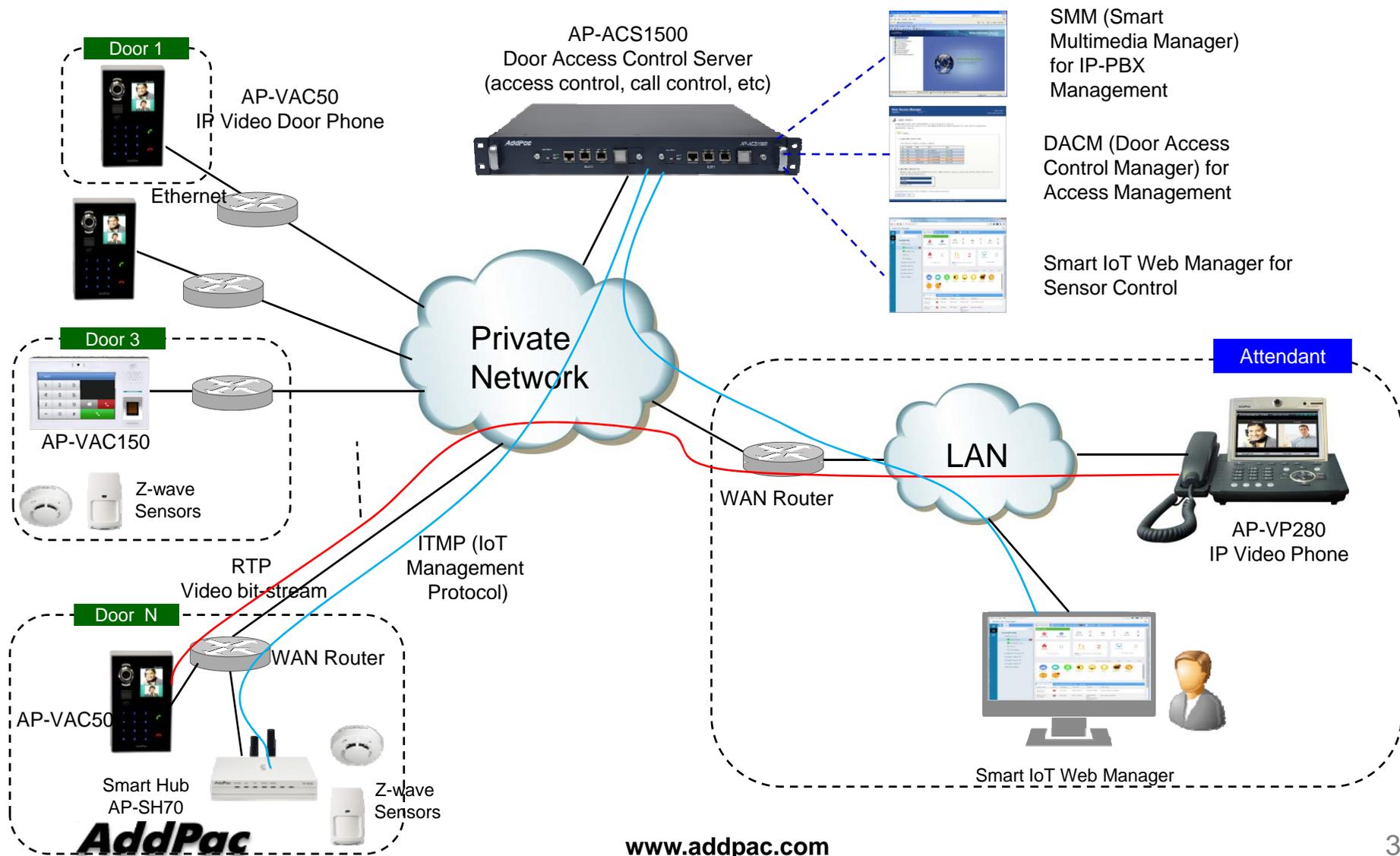
2015, Sales and Marketing

[www.addpac.com](http://www.addpac.com)

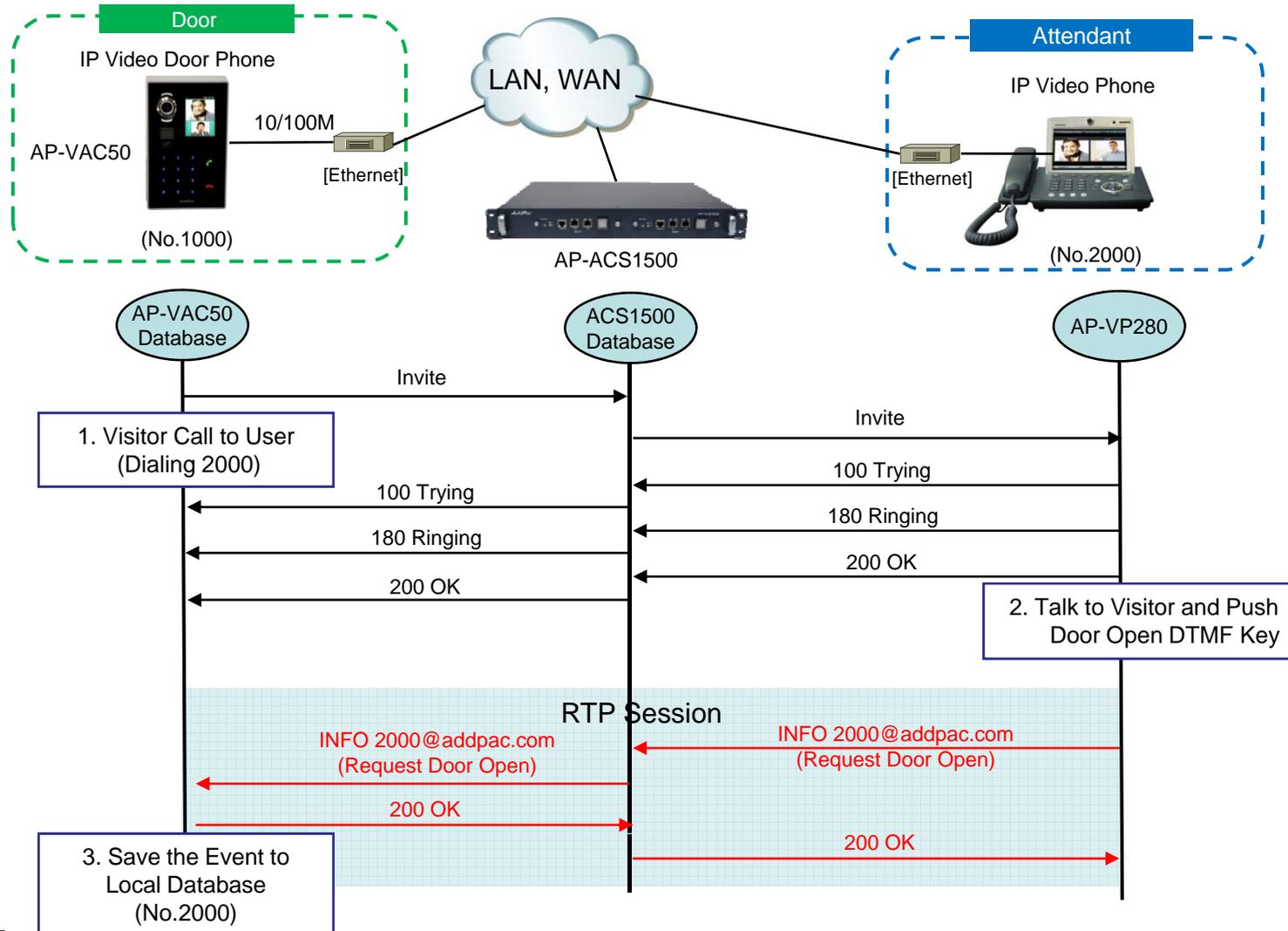
# Contents

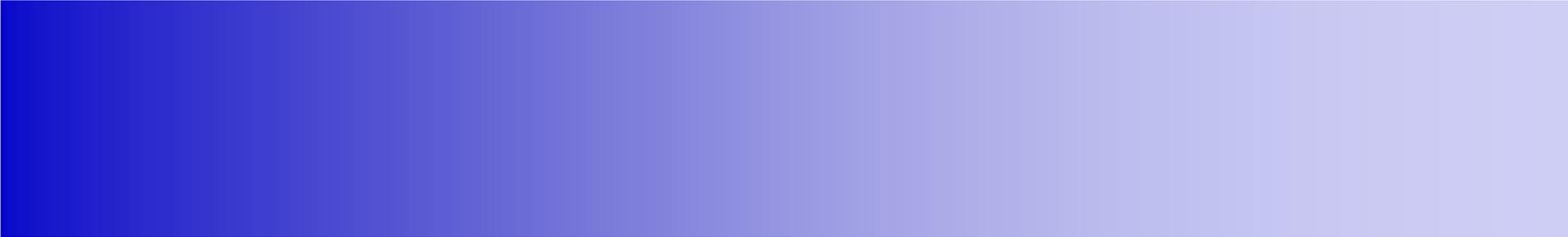
- Zwave Sensor Hub + IP Video Door Phone Service Network Diagram
- SIP Call Flow Diagram
- IP Video Door Phone Series + Zwave Smart Hub
  - AP-VAC50 + AP-SH70 Zwave Smart Hub (Example)
- Zwave Smart Hub Built-In IP Video Door Phone Series
  - AP-VAC150, AP-VAC80 IP Video Door Phone
  - AP-VAC350, AP-VAC300, AP-VAC280 IP Video Door Phone
- AP-ACS1500 Door Access Control System
  - Call Manager
  - Door Access Manager (RF, Fingerprint, Time Attendant)
  - **IoT Manager for Zwave Door Sensor Control**

# Network Diagram



# SIP Video Call Flow





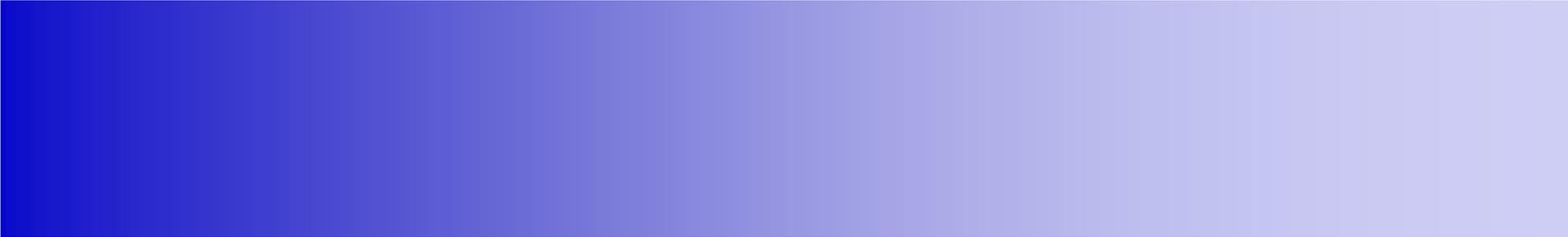
# IP Video Door Phone Series + Zwave Smart Hub

# IP Video Door Phone Solution

Model	AP-VAC200	AP-VAC100	AP-VAC50	AP-VAC20
Service Features				
Duplex (Voice)	Full Duplex	Full Duplex	Full Duplex	Full Duplex
Key Pad	3x4 Key Support	3x4 Key Support	3x4 Key Support	3x4 Key Support
LCD	3.5 Inch	3.5 Inch	2inch LCD	Graphic LCD
RF Card	Support	Support	Support	Support
Fingerprint	Support	N/A	N/A	N/A
Camera Sensor	SD(VGA)	SD(VGA)	SD(VGA)	SD(VGA)
Video Codec	SD, H.264/MPEG4	SD, H.264/MPEG4	SD, H.264/MPEG4	SD, H.264/MPEG4
Voice Codec	G.711	G.711	G.711	G.711
Signaling	H.323/SIP	H.323/SIP	H.323/SIP	H.323/SIP
MIC & Speaker Phone	Support	Support	Support	Support
LAN Port	1	1	1	1
PoE(Optional)	Support	Support	Support	Support

# Zwave Smart Hub Solution

Model	AP-SH50	AP-SH50ZW	AP-SH70
Service Features			
Sensor Type	Wireless Zigbee, Zwave	Wireless Zwave Only	Wireless Zwave
Wired Sensor Port	N/A	N/A	N/A
Smart Appl. for Phone, PAD	Support	Support	Support
Smart Web Manager	Support	Support	Support
LAN Port (Fast Ethernet)	1	1	1
WiFi (USB)	N/A	N/A	Support (Option)
PoE(Option)	Option	Option	Option



# Zwave Smart Hub Built-In IP Video Door Phone Series

# 5 Inch LCD IP Video Door Phone Solution

Model	AP-VAC150	AP-VAC80
Service Features		
Duplex (Voice)	Full Duplex	Full Duplex
Key Pad	Touch Screen based Key Support	Touch Screen based Key Support
LCD	5 Inch LCD	5 inch LCD
RF Card	Support	Support
Fingerprint	Support	N/A
ZWave Sensor Hub	Option	Option
Video Camera	SD (CMOS Sensor)	SD (CMOS Sensor)
Video Codec	H.264/MPEG4	H.264/MPEG4
Voice Codec	G.711	G.711
Signaling	H.323/SIP	H.323/SIP
MIC & Speaker Phone	Support	Support
LAN Port	1	1
PoE(Optional)	Support	Support

# 7 Inch LCD IP Video Door Phone Solution

Model	AP-VAC350	AP-VAC300	AP-VAC280
Service Features			
Duplex (Voice)	Full Duplex	Full Duplex	Full Duplex
Key Pad	Touch Screen based Key Support	Touch Screen based Key Support	Touch Screen based Key Support
LCD	7 Inch LCD	7 inch LCD	7 inch LCD
RF Card	Support	Support	Support
Fingerprint	Support	N/A	N/A
ZWave Sensor Hub	Option	Option	Option
Video Camera	SD (CMOS Sensor)	SD (CMOS Sensor)	SD (CMOS Sensor)
Video Codec	H.264/MPEG4/H.263	H.264/MPEG4/H.263	H.264/MPEG4/H.263
Voice Codec	G.711	G.711	G.711
Signaling	H.323/SIP	H.323/SIP	H.323/SIP
MIC & Speaker Phone	Support	Support	Support
LAN Port	1	1	1
PoE(Optional)	Support	Support	Support

# AP-ACS1500 Door Access Control System



# Main Features

## AP-ACS1500 DACS (Door Access Control System)

- Door Access Control Application System + Call Manager
- SIP Application Server, Proxy, Registrar and Location Server
- Multiple ITSP Trunk with SIP & H.323 Accounts Support
- High Performance RISC Architecture
- Smart Multimedia Manager for Call Manager
- DACM(Door Access Control Manager) for IP Door Phone Control (RF Card, Fingerprint Module, etc)
- IoT Web Manager for Door Zwave Sensor Control
- IPv4/IPv6 based Dual Network Protocol Support
- Fault Tolerant and Scalability Architecture
- Firmware Upgradeable Architecture
- Dual System Redundancy Architecture
  - Two(2) Fast Ethernet Interface / System
- Dual Redundancy Power

# Hardware Features

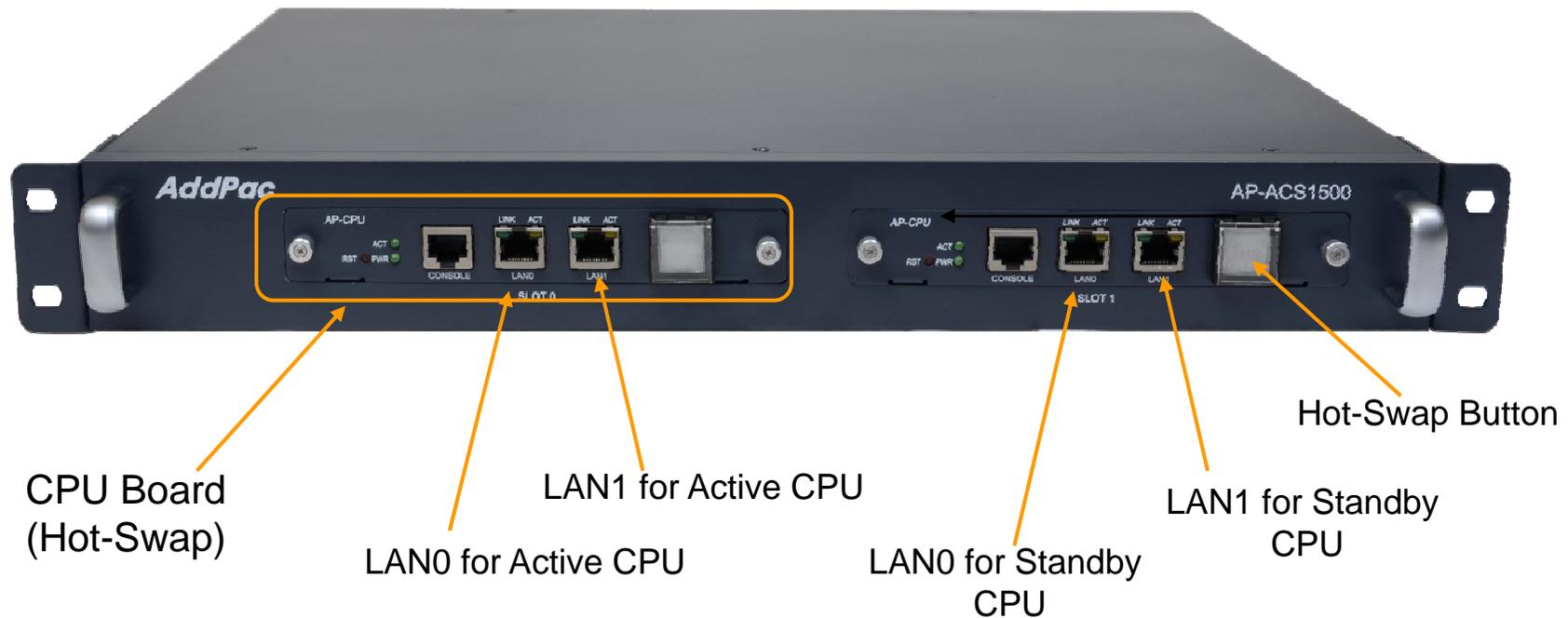
## AP-ACS1500 DACS (Door Access Control System)

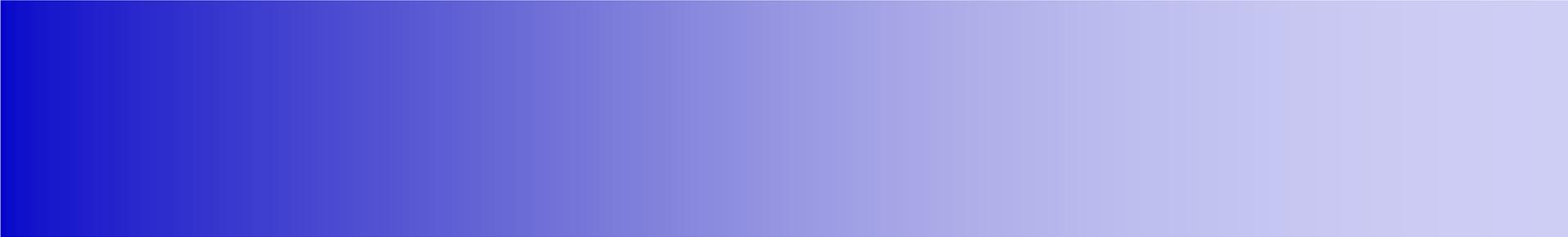
- High-End Microprocessor Computing Power
- Main Chassis
  - Dual Redundancy CPU Boards for System Fault Tolerant
    - Two(2) 10/100Mbps Fast Ethernet
    - One(1) RS-232C Console (RJ45)
  - Dual Redundancy Power Supply
  - Hot-Swap Features

# Hardware Specification

## AP-ACS1500 DACS (Door Access Control System)

### AP-ACS1500 Front Side

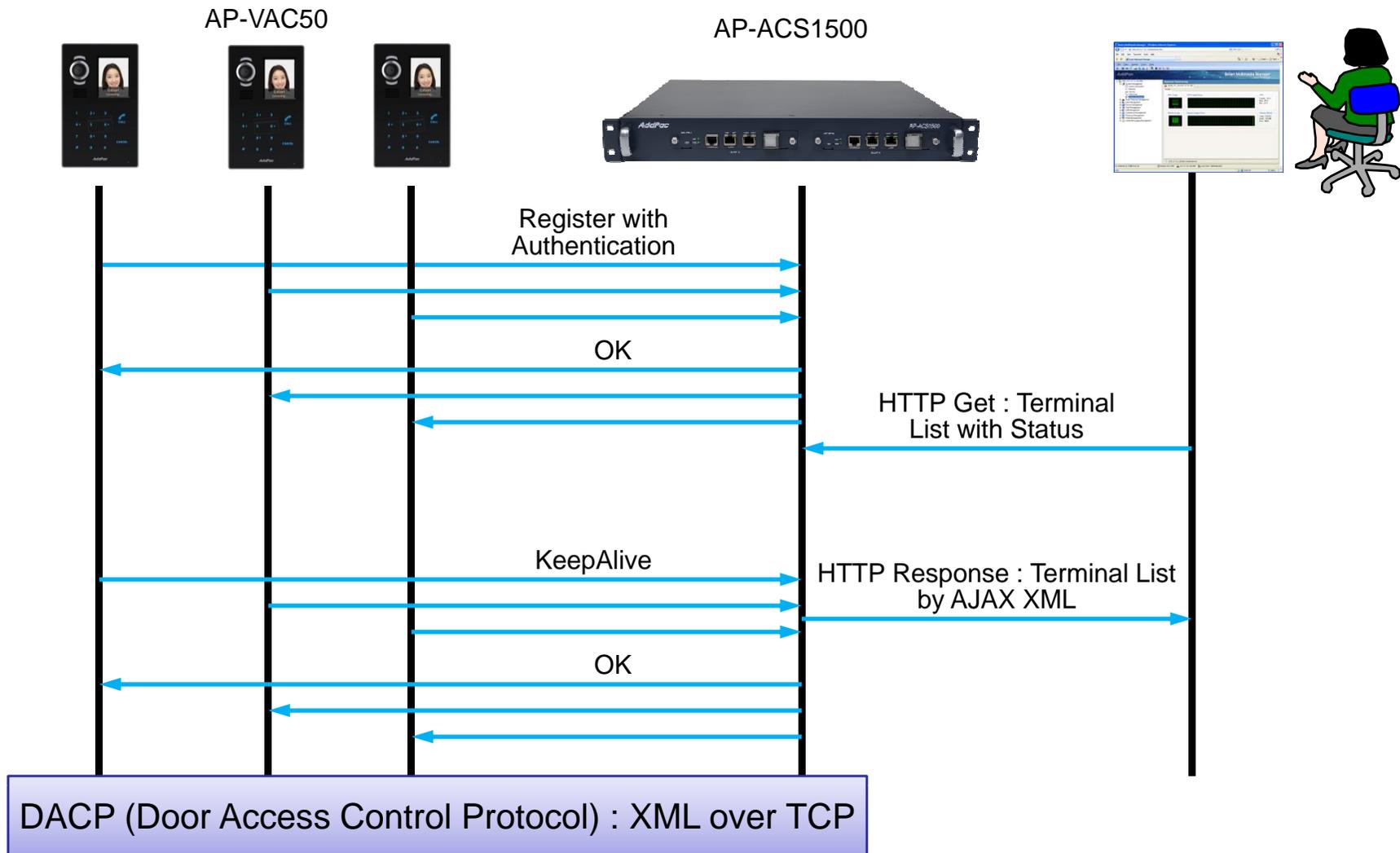




# DACS System Message Flow

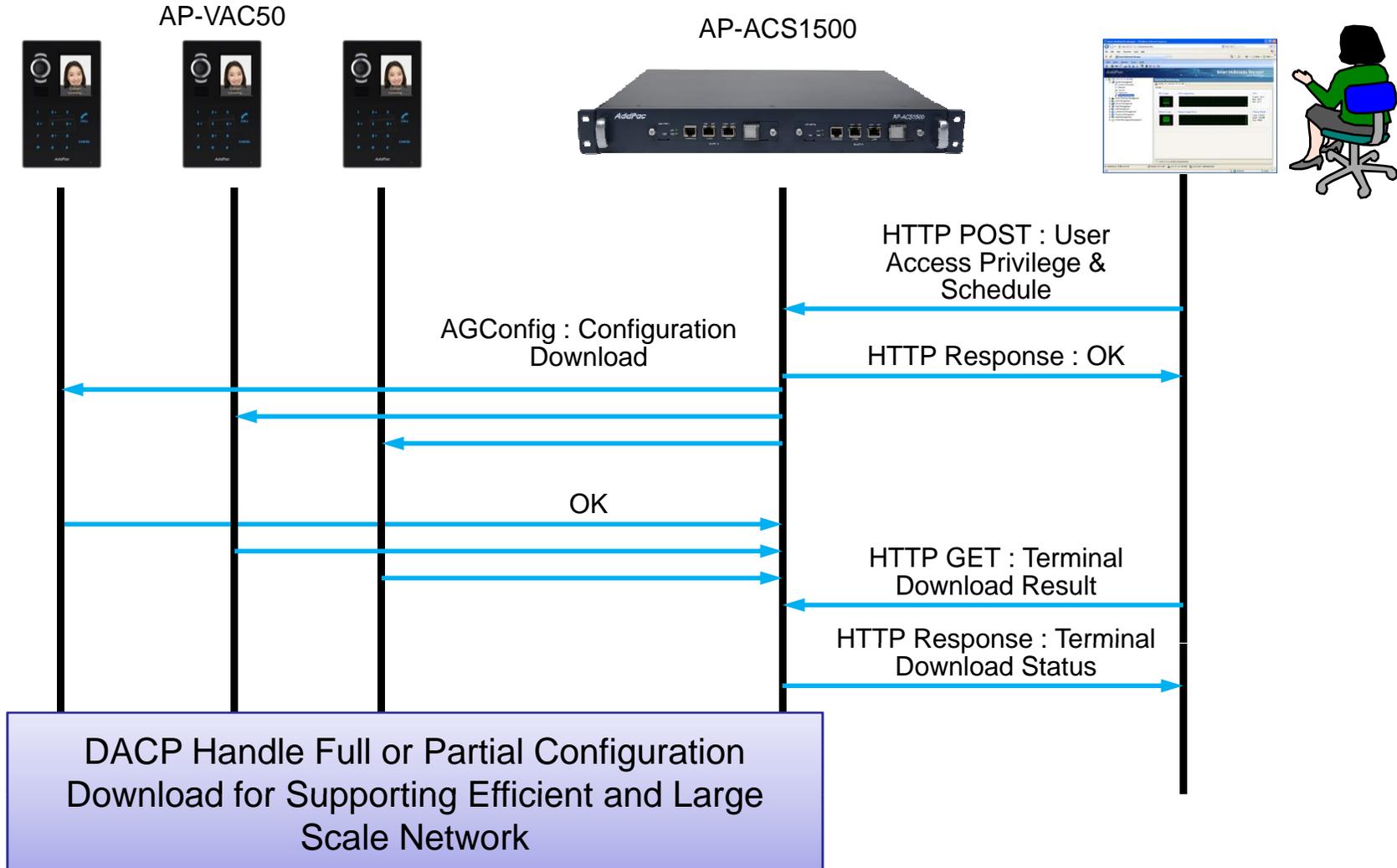
# DACS System Message Flow

## Registration and KeepAlive



# DACS System Message Flow

## Access Privilege and Schedule Download



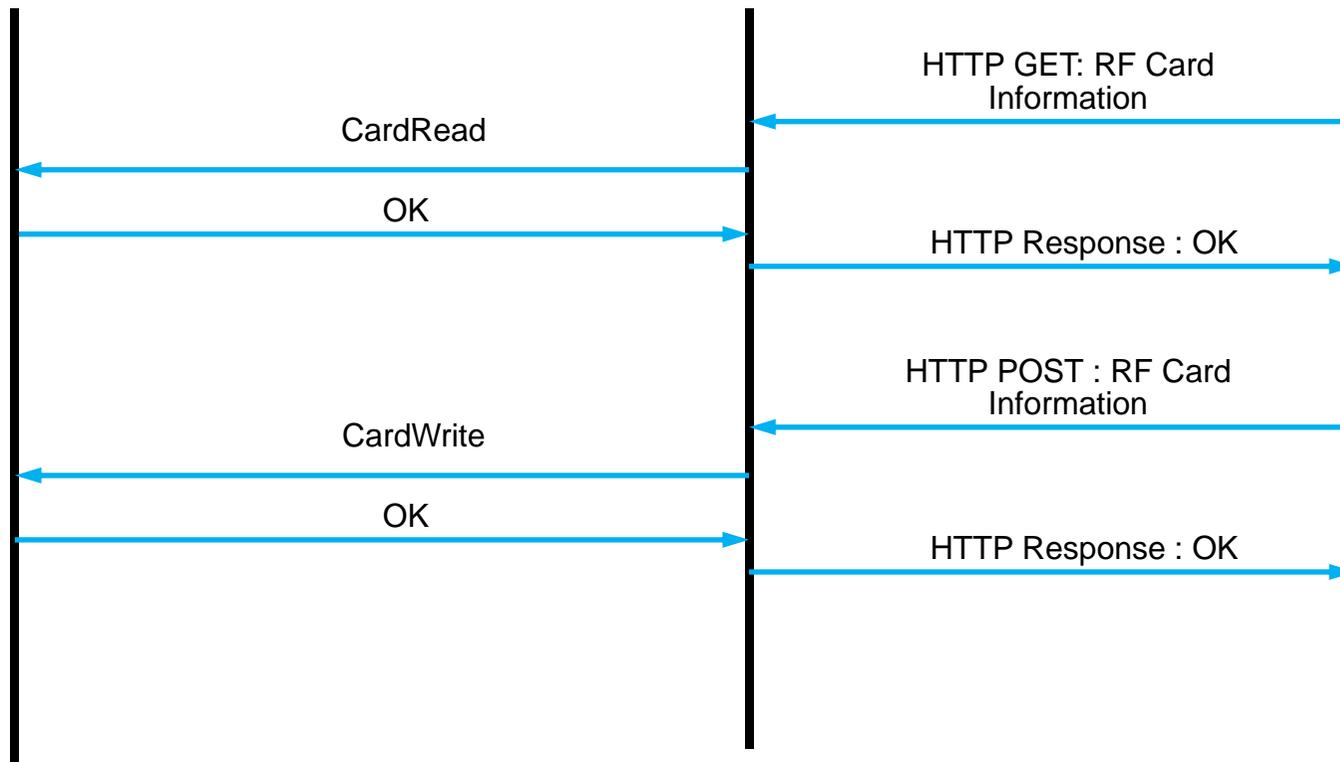
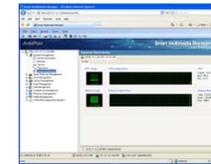
# DACS System Message Flow

## RF Card Read/Write and Registration

AP-VAC50

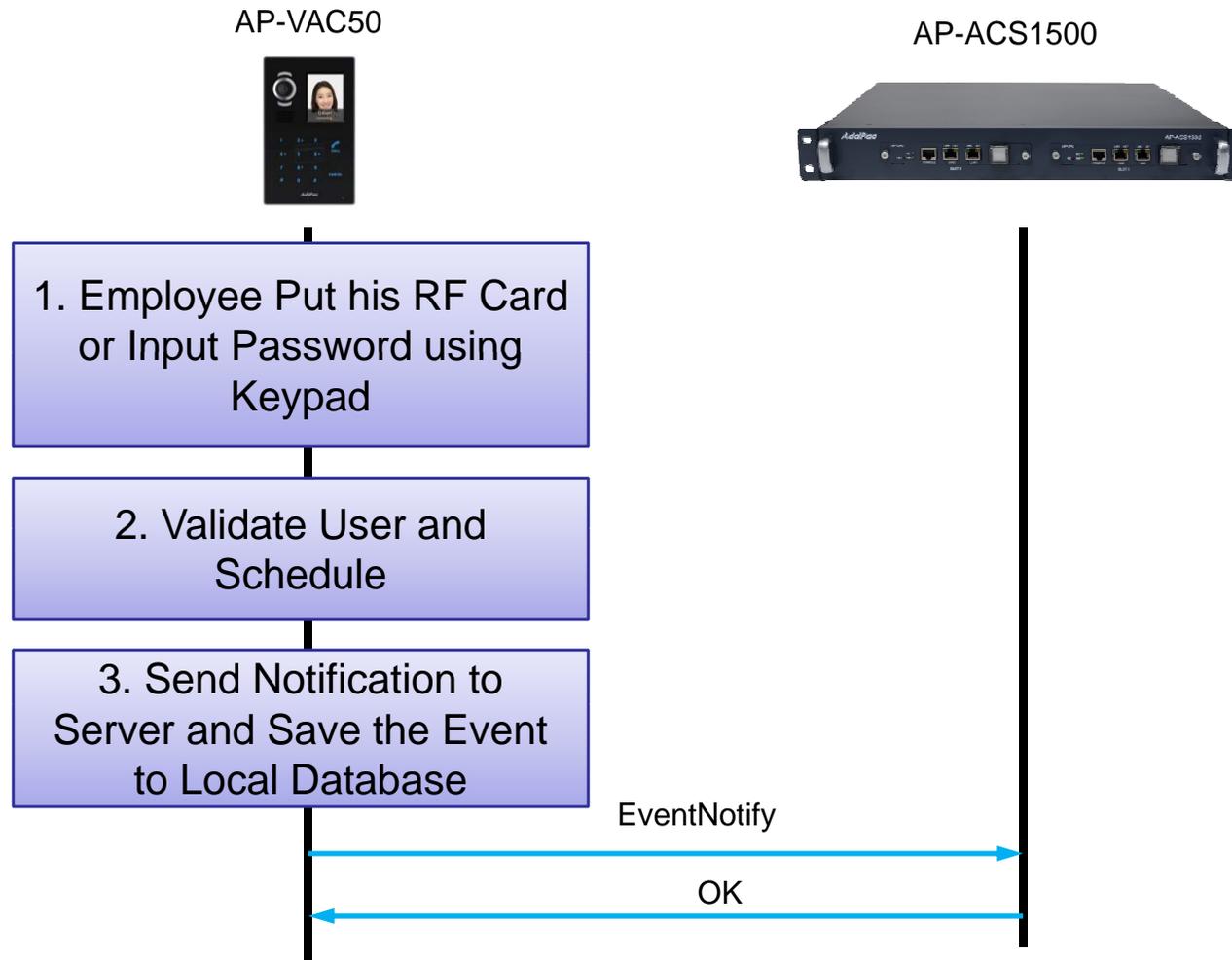


AP-ACS1500



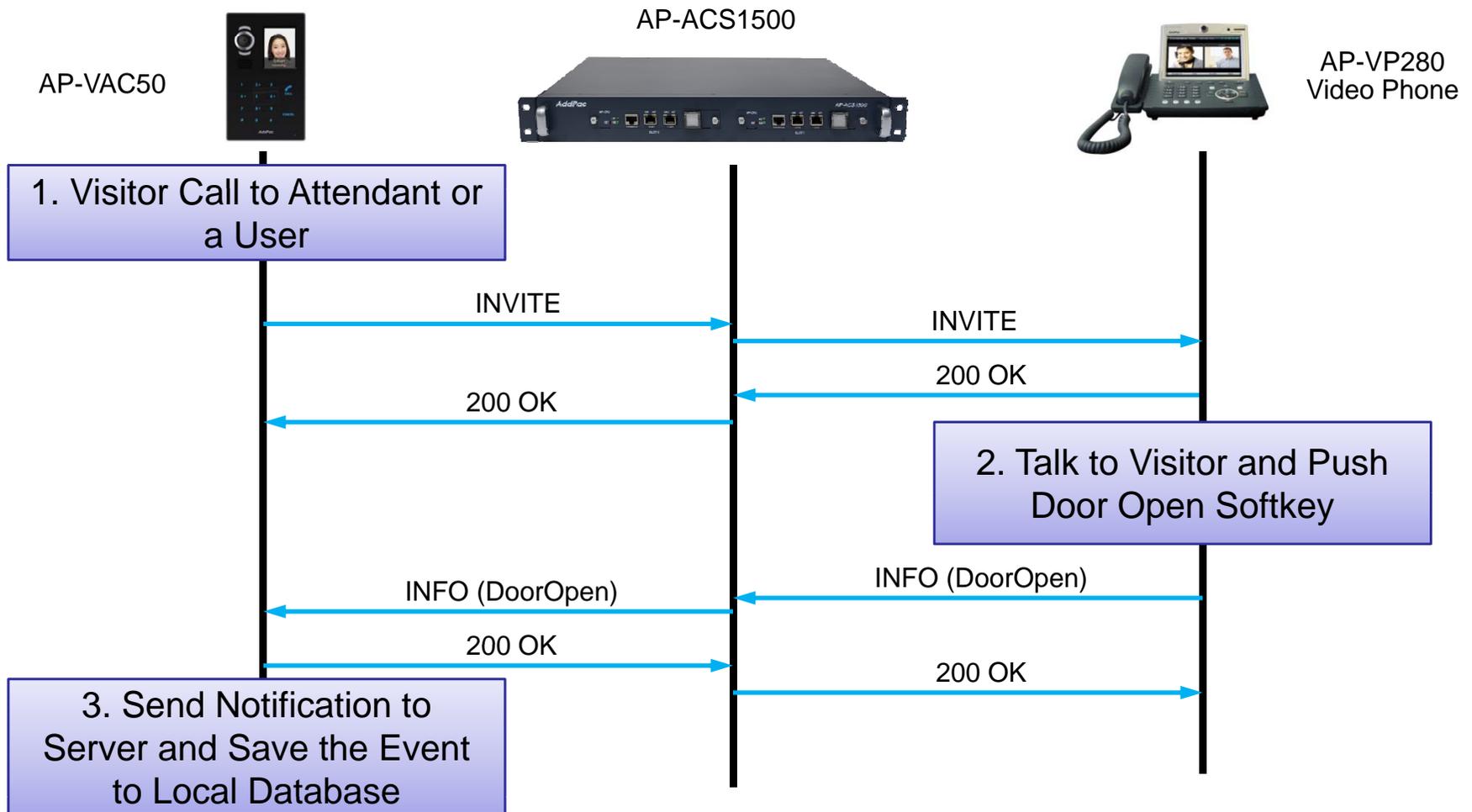
# DACS System Message Flow

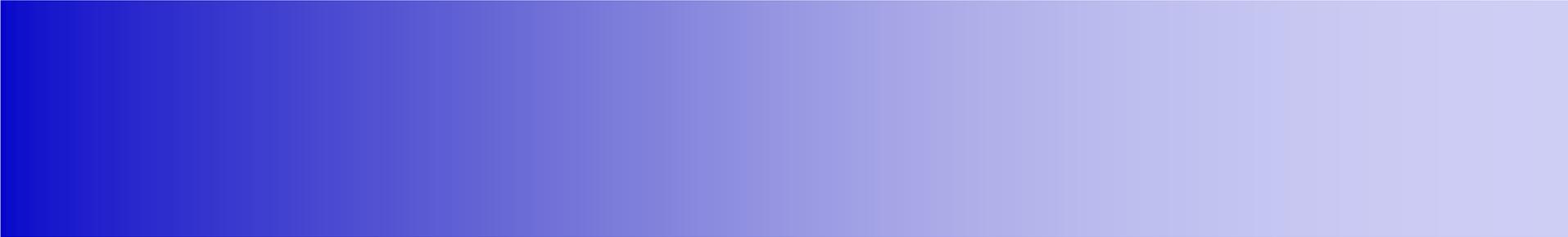
## Door Open by RF Card or Password



# DACS System Message Flow

## Door Open by Other Terminal

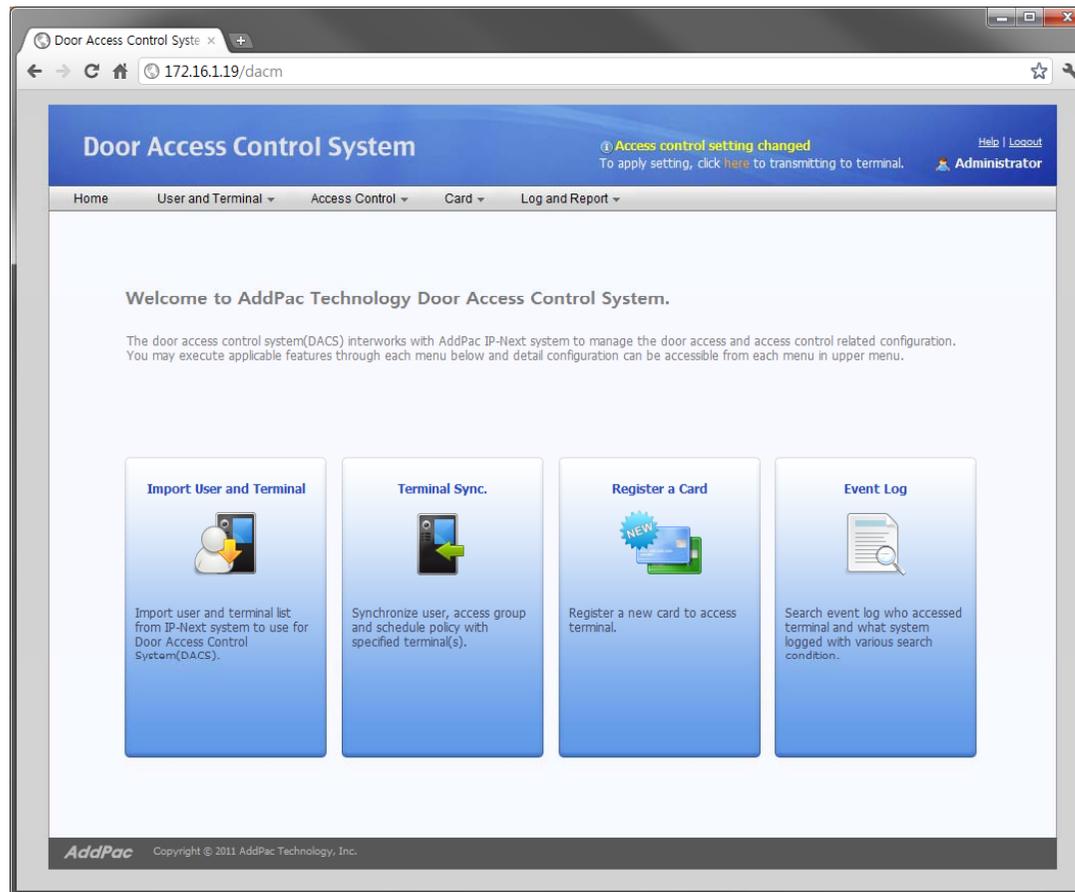




# Door Access Control Manager for AP-ACS1500

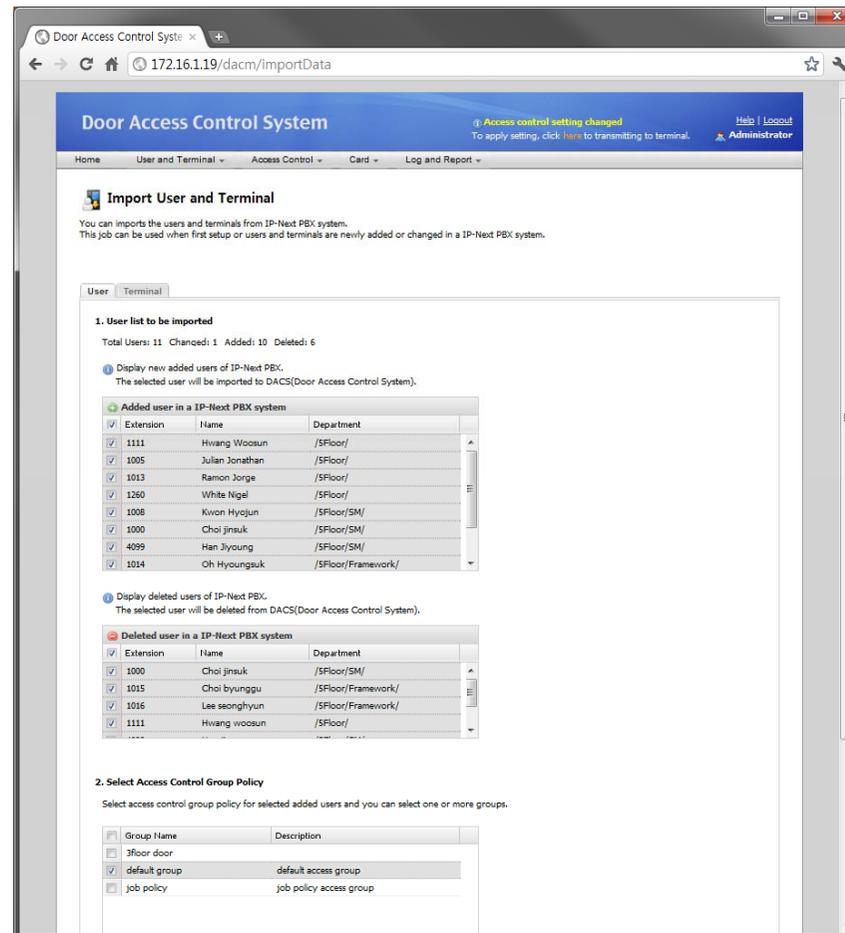
# DACM (Door Access Control Manager)

## Main Web Page



# DACM (Door Access Control Manager)

## Import User and Terminal



# DACM (Door Access Control Manager)

## User List

The screenshot shows a web browser window displaying the 'Door Access Control System' user list. The page title is 'Door Access Control System' and the URL is '172.16.1.19/dacm/userList'. A notification at the top right states 'Access control setting changed' with a link to 'here' and a 'Logout' button. The user is logged in as 'Administrator'. The main content area is titled 'User List' and includes a search bar with a dropdown menu set to 'All Users' and an 'Import User' button. Below the search bar is a table with the following data:

Extension	Name	Department	Access Policy	Date Created	Modify	Delete
1 1000	Choi jinsuk	/SFloor/SM/	Access Allow	2011-07-22 15:50:01		
2 1008	Kwon hyojun	/SFloor/SM/	Access Allow	2011-07-22 15:50:00		
3 1014	Oh hyongsuk	/SFloor/Framework/	Access Allow	2011-07-22 15:50:01		
4 1015	Choi byunggu	/SFloor/Framework/	Access Allow	2011-07-22 15:50:01		
5 1016	Lee seonghyun	/SFloor/Framework/	Access Allow	2011-07-22 15:50:01		

At the bottom of the page, there is a pagination control showing 'Page 1 of 1' and a 'Total: 5' indicator. The footer contains the 'AddPac' logo and 'Copyright © 2011 AddPac Technology, Inc.'.

# DACM (Door Access Control Manager)

## Terminal List

Door Access Control System

Access control setting changed  
To apply setting, click [here](#) to transmitting to terminal.

Help | Logout  
Administrator

Home User and Terminal Access Control Card Log and Report

### Terminal List

Display the registered door phone lists imported from IP-Next PBX system.

Import Terminal

	Terminal Name	Description	Status	Extension	IP Address	Model Name	Version	Date Created	Detail View
1	2floor door terminal	2Floor door ter...	Connected	1006	172.16.10.4	AP-VAC50		2011-07-29 17:08:50	
2	3floor door terminal	3Floor door ter...	Connected	1002	172.16.10.1	AP-VAC20	8.50.001	2011-07-22 15:50:01	
3	5floor door terminal	5Floor door ter...	Connected	1005	172.16.10.2	AP-VAC50		2011-07-29 17:08:50	
4	The main entrance d...	The main entran...	Connected	Required setting	172.16.10.3	AP-VAC100		2011-07-29 17:08:50	

Page 1 of 1 Total: 4

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# DACM (Door Access Control Manager)

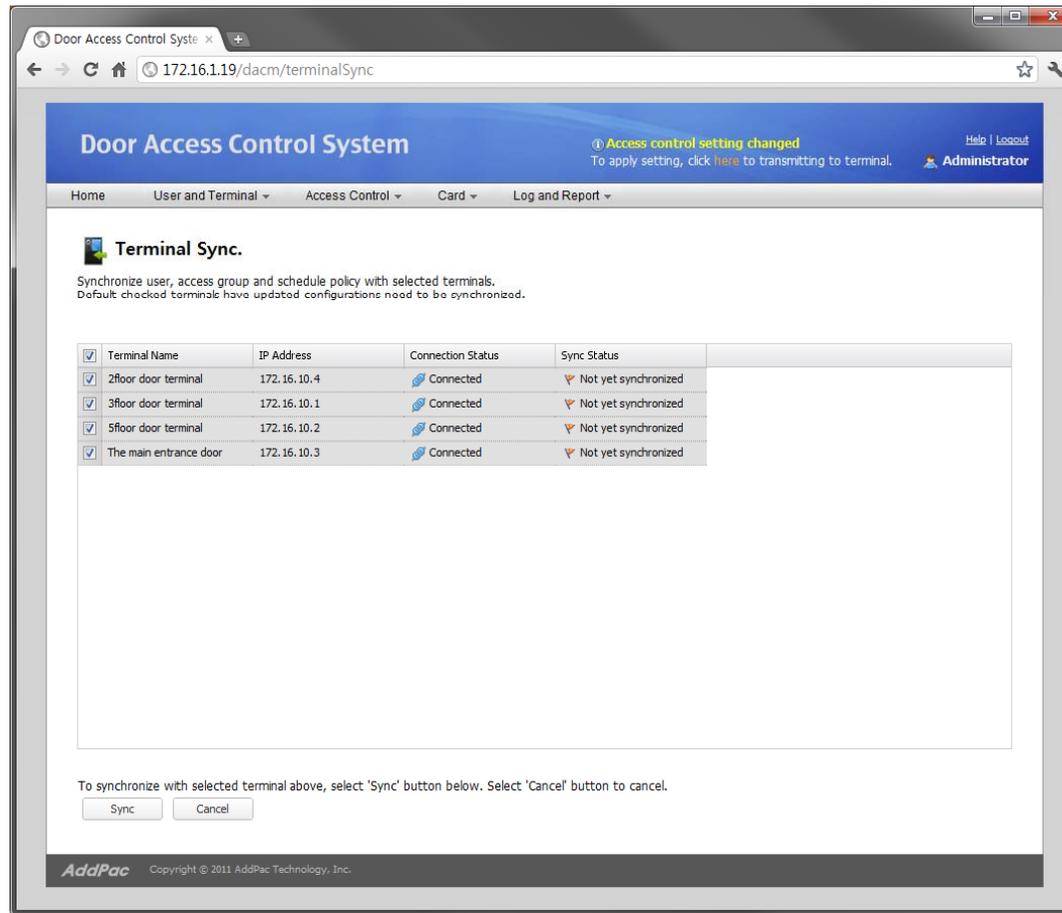
## Access Control Group Management

The screenshot displays the 'Door Access Control System' web interface. The browser address bar shows '172.16.1.19/dacm/accessGroupList'. The page title is 'Door Access Control System'. A notification banner at the top right states 'Access control setting changed' and provides instructions to apply settings. The navigation menu includes 'Home', 'User and Terminal', 'Access Control', 'Card', and 'Log and Report'. The main content area is titled 'Access Control Group' and includes a brief description: 'You can define a new Access Control Group with one or more terminals, users and schedule policy. Also, you can adjust priority of access control group using up/down arrow (or mouse drag/drop)'. A table lists existing groups with columns for Group Name, Description, Schedule Policy, Date Created, Modify, and Delete. The table contains three entries: '3floor door', 'job policy', and 'default group'. A 'Add a Access Control Group' button is located above the table.

Group Name	Description	Schedule Policy	Date Created	Modify	Delete
3floor door		All Allow	2011-06-28 11:37:13		
job policy	job policy access group	working day	2011-07-04 17:06:47		
default group	default access group	All Allow	2011-06-28 11:37:13		

# DACM (Door Access Control Manager)

## Configuration Download to Terminal



Door Access Control System

Access control setting changed  
To apply setting, click [here](#) to transmitting to terminal.

Help | Logout  
Administrator

Home User and Terminal Access Control Card Log and Report

### Terminal Sync.

Synchronize user, access group and schedule policy with selected terminals.  
Default checked terminals have updated configurations need to be synchronized.

<input checked="" type="checkbox"/>	Terminal Name	IP Address	Connection Status	Sync Status
<input checked="" type="checkbox"/>	2floor door terminal	172.16.10.4	Connected	Not yet synchronized
<input checked="" type="checkbox"/>	3floor door terminal	172.16.10.1	Connected	Not yet synchronized
<input checked="" type="checkbox"/>	5floor door terminal	172.16.10.2	Connected	Not yet synchronized
<input checked="" type="checkbox"/>	The main entrance door	172.16.10.3	Connected	Not yet synchronized

To synchronize with selected terminal above, select 'Sync' button below. Select 'Cancel' button to cancel.

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# DACM (Door Access Control Manager)

## RF Card Management

The screenshot displays the 'Door Access Control System' web interface. The browser address bar shows '172.16.1.19/dacm/cardList'. The page title is 'Door Access Control System'. A notification banner at the top right states 'Access control setting changed' and provides instructions to apply settings. The user is logged in as 'Administrator'. The main content area is titled 'Card List' and includes a search filter set to 'All card' and a search input field. Below the search is a table with two columns: 'Serial Number' and 'Extension'. The table contains two rows of data:

Serial Number	Extension	Username	Status	Description	Date Created	Modify	Delete	
1	4000238	1008	Kwon hyojun	✓ Specified	Temporary cards are issued.	2011-07-08 15:59:03		
2	123456789			☐ Unspecified		2011-07-22 16:17:04		

At the bottom of the page, there is a pagination control showing 'Page 1 of 1' and a 'Total: 2' indicator. The footer contains the 'AddPac' logo and copyright information: 'Copyright © 2011 AddPac Technology, Inc.'

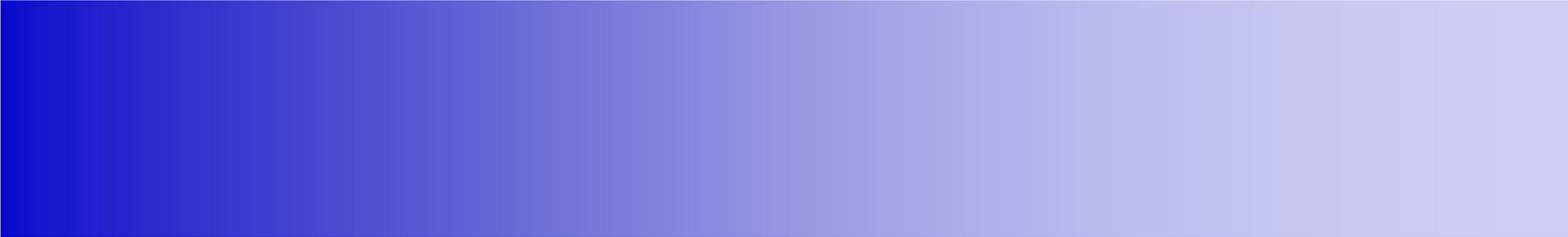
# DACM (Door Access Control Manager)

## Access Log Management

The screenshot shows a web browser window displaying the 'Door Access Control System' interface. The page title is 'Door Access Control System' and the URL is '172.16.1.19/dacm/eventLog'. The user is logged in as 'Administrator'. A notification at the top right states 'Access control setting changed' with a link to 'Apply setting, click here to transmitting to terminal.' The main content area is titled 'Event Log' and includes a search filter section with fields for 'Duration' (11-07-10 to 11-08-09), 'User Extension Number', and 'Event Level' (set to 'Error'). Below the search filters is a table of event logs.

	Time	Level	User Extension	Event
1	2011-07-15 10:27:27	Warning	1000	authentication failure
2	2011-07-15 11:25:27	Notice	1000	registration success
3	2011-07-15 12:21:27	Notice	1200	registration success
4	2011-07-16 09:27:27	Information	1201	door opened
5	2011-07-16 11:27:27	Information	1007	registration success
6	2011-07-16 17:12:00	Notice		security profile downloading completed
7	2011-07-17 18:00:00	Notice		system started

The interface also includes a pagination bar at the bottom of the table showing 'Page 1 of 1' and a total count of 'Total: 7'. The footer of the page contains the 'AddPac' logo and 'Copyright © 2011 AddPac Technology, Inc.'



# IoT Web Manager for AP-ACS1500

# Key Concepts for Enterprise IoT Solution

- **Enterprise Requirements**

- The things in enterprise are controlled on much more complex environment and configurations than home.
- Network conditions and management requirements are also much more various than home.

- **Our Solution**

- We do support flexible configuration of Sensor Controllers and Managers to meet various enterprise requirements.
- We do support several type of Sensor Controllers and Managers to meet various enterprise environments.
- We do support flexible management authority and access control for center/site operators and users.

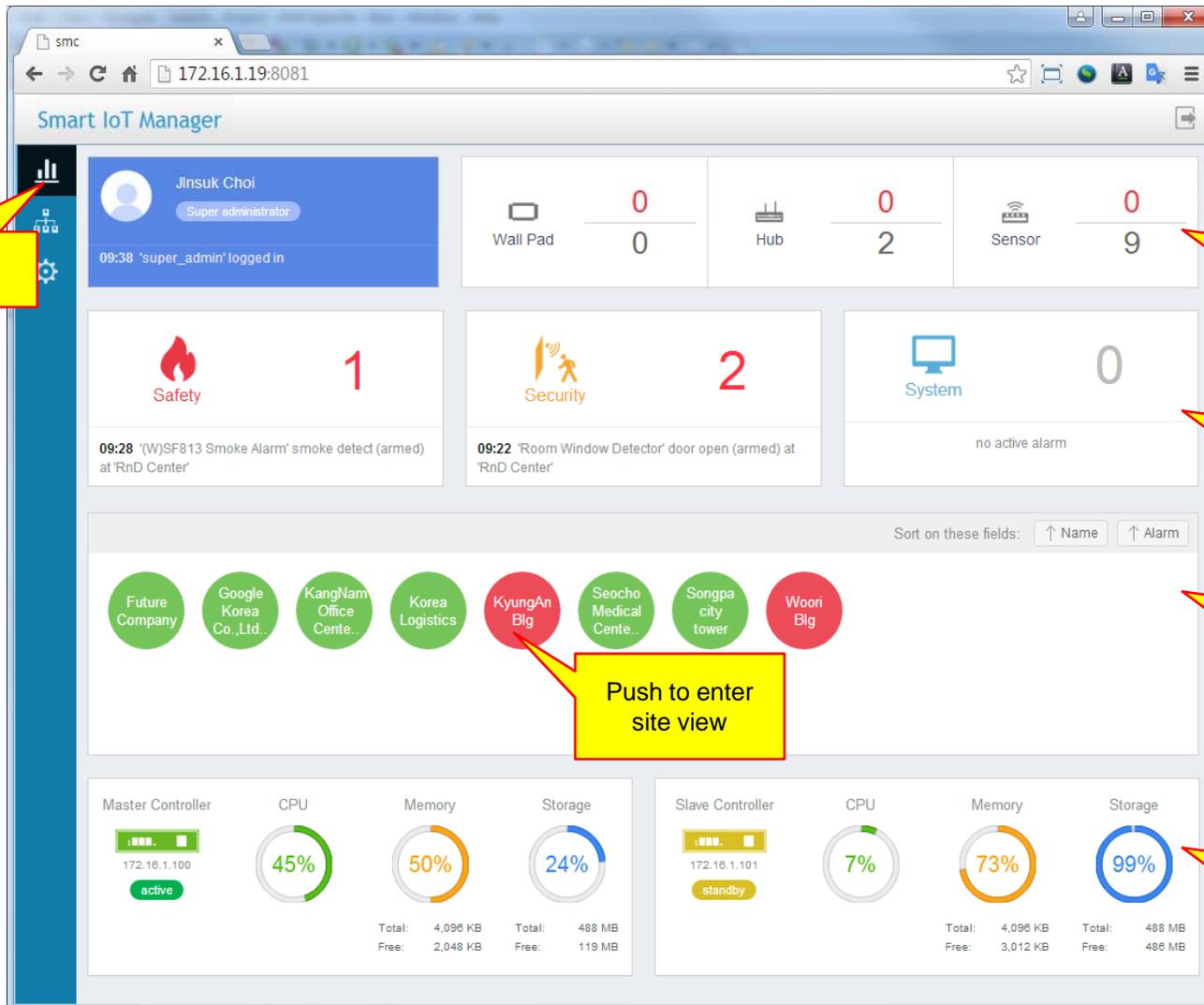
# Sensor Controller and Manager Role

- **Smart Sensor Controller**
  - It controls his section composed by several sensors.
  - It provides his own smart phone app interface, PC web interface and Wall Pad interface to show sensor status and to control the sensors.
  - It provides discovering sensor for inclusion and configure it.
  - This Sensor Hub integrated with Controller provides robust on network and server fault.
- **Smart IoT Web Manager**
  - It monitors controller and sensor status for continuous service.
  - It monitors alarm status of section and device by categorizing to safety alarm, security alarm, and system alarm.
  - It controls multiple sections by task with immediately or schedule downloaded to controllers. (TBD.)

# Hierarchical Administrative Domains

- **Super Administrator**
  - He can manage multiple sites and site operators.
- **Site Operator**
  - A site is logically independent administrative domain which can be a building or a set of offices and buildings.
  - A site is composed by multiple sections build up hierarchically.
  - A site operator can manage all sections in his site.
- **Group Operator**
  - A group operator can view and control his sections in a group.
- **User**
  - An user can view and control his section by Wall Pad, PC web and smart phone app.

# Global Dashboard



Select Global Dashboard

Shows number of abnormal categorized devices

Shows number of active categorized alarms

Shows alarm status of managed sites

Push to enter site view

Shows manager system status

# Site Dashboard

The screenshot shows the Smart IoT Manager interface. On the left, a navigation menu lists sections under 'KyungAn Bldg', including 'RnD Center' (with a red '2' badge), 'SungNam Fact...', '2F\_hr', and '5f\_Hallway'. Below these are other sites like 'DongNam Account Firm', 'KyungAn Cables 8F', 'KyungAn Cables 9F', 'KyungAn Calbes 7F', and 'TOM and TOMS'. A callout 'Select Site View' points to the site selection icon. A callout 'Section Group' points to the 'KyungAn Bldg' header, and another 'Section' callout points to the 'RnD Center' item.

The main dashboard area features a top navigation bar with 'Dashboard', 'Sections', 'Devices', 'Active Alarms' (with a red '2' badge), 'History', and 'Operators'. A user profile for 'Jinsuk Choi' (Super administrator) is shown with a login time of '09:38'. Below this are three summary cards: 'Wall Pad' (0 abnormal, 0 active), 'Hub' (0 abnormal, 2 active), and 'Sensor' (0 abnormal, 9 active). A callout 'Shows number of abnormal categorized devices in this site' points to these cards. Below are three alarm status cards: 'Safety' (1 active alarm), 'Security' (1 active alarm), and 'System' (0 active alarms). A callout 'Shows number of active categorized alarms in this site' points to these cards. The 'Safety' card shows an alarm at '09:28' for 'RnD Center'. The 'Security' card shows an alarm at '09:22' for 'RnD Center'. Below these is a section status bar with four circles: '2F\_hr' (grey), '5f\_Hallway' (grey), 'RnD Center' (red), and 'SungNam Factory' (green). A callout 'Shows alarm status of sections in this site' points to this bar.

At the bottom, there is a table for 'Active Alarms (2)'. A callout 'Shows active alarm list' points to this table.

Date Time	Level	Category	Section	Device	Message
2015-11-12 09:28:33	High	Safety	RnD Center	(W)SF813 Smoke Alarm	smoke detect (armed)
2015-11-12 09:22:16	High	Security	RnD Center	Room Window Detector	door open (armed)

# Section List

Select sections tab

Shows sections in this site and its device, alarm and mode summary

Name	Group	Device			Alarm			Mode	
		Wall Pad	Hub	Sensor	Safety	Security	System	Security	Automation
1 2F_hr	AddPac Co.,Ltd.	-	-	-	-	-	-	🔒	🏠
2 5f_Hallway	AddPac Co.,Ltd.	-	-	-	-	-	-	🔒	✈️
3 RnD Center	AddPac Co.,Ltd.	-	0/1	0/9	-	2	-	🔒	🏠
4 SungNam Factory	AddPac Co.,Ltd.	-	0/1	-	-	-	-	🔒	🌙

Page 1 of 1 Total: 4

# Operator List

Smart IoT Manager

Dashboard Sections Devices Active Alarms 2 History Operators

Select operator tab

	Name	ID	Level	Access Group	Email
1	jhkwon	jhkwon	Site operator		
2	kyung an administrator	ka_admin	Site operator		ka@company.com
3	woori bld admin	woori_admin	Site operator		admin@woori.com
4	AddPac Admin.	addpac	Group operator	AddPac Co.,Ltd.	addpac@addpac.com

Shows site operators and group operators

# Section Dashboard

The screenshot displays the Smart IoT Manager interface. The left sidebar shows a tree view of sections under 'KyungAn Blg', with 'RnD Center' selected. The main dashboard area features several widgets: 'RnD Center' with sub-widgets for Security and Automation; 'Wall Pad' (0), 'Hub' (1), and 'Sensor' (9); 'Safety' (1) and 'Security' (1) with active alarm details; and 'System' (0). Below these is a grid of device icons with their alarm statuses. At the bottom, an 'Active Alarms' table lists two incidents.

Date Time	Level	Category	Section	Device	Message
2015-11-12 09:28:33	High	Safety	RnD Center	(W)SF813 Smoke Alarm	smoke detect (armed)
2015-11-12 09:22:16	High	Security	RnD Center	Room Window Detector	door open (armed)

Select a section

Shows number of abnormal categorized devices in this section

Shows number of active categorized alarms in this section

Shows alarm status of devices in this site

Shows active alarm list

# Device List

The screenshot displays the Smart IoT Manager web interface. The browser address bar shows the URL 172.16.1.19:8081. The main navigation bar includes 'Dashboard', 'Devices', 'Active Alarms', 'History', and 'Section View'. The 'Devices' tab is selected, and the 'Sensor' sub-tab is active. A search bar is present above the table. The table lists various sensors under the 'RnD Center' hub. A yellow callout points to the 'Devices' tab with the text 'Select device tab'. Another yellow callout points to the table with the text 'Shows sensor information in this section'.

Name	Model	IP address	Version	Sensor	Alarm	Disconnected
RnD Center						
Smart Hub						
Front Door Detector	HSM02 Mini Do...	172.16.50.89:60225	8.50.00T	-	-	-
Lamp Dimmer Module	45602 Lamp Di...			-	-	-
Living Room Light	RGBW LED Bulb			-	-	-
PIR Motion Sensor	Ecolink Z-Wave ...			-	-	-
Room Window Detector	HSM02 Mini Do...			-	1	-
Siren	SE812 Siren			-	-	-
Smart Switch	12722 Smart S...			-	-	-
Smoke Alarm	SF813 Smoke ...			-	1	-

# Active Alarms

The screenshot shows the Smart IoT Manager web interface. The browser address bar displays '172.16.1.19:8081'. The main navigation bar includes 'Dashboard', 'Devices', 'Active Alarms' (with a red notification badge '2'), 'History', and 'Section View'. The left sidebar shows a tree view under 'KyungAn Big' with 'RnD Center' selected. The main content area displays a table of active alarms:

	Date Time	Level	Category	Section	Device	Message
1	2015-11-11 15:44:36	High	Security	RnD Center	Smoke Alarm	smoke detect (armed)
2	2015-11-11 15:19:39	High	Security	RnD Center	(W)HSM02 Mini Door/Window Detector	door open (armed)

At the bottom of the interface, there is a pagination control showing 'Page 1 of 1' and a 'Total: 2' indicator.

# Event History

The screenshot displays the Smart IoT Manager web interface. The browser address bar shows the URL 172.16.1.19:8081. The page title is "Smart IoT Manager". The navigation bar includes "Dashboard", "Devices", "Active Alarms 2", "History", and "Section View". The "History" tab is selected, and a yellow callout box with the text "Select history tab" points to it. Below the navigation bar, there is a search bar and a filter dropdown set to "Latest 1 day". The main content area displays a table of alarm events. A yellow callout box with the text "Shows alarm history ." points to the table. The table has columns for "Date Time", "Level", "Category", "Section", "Device", "Message", and "Cleared".

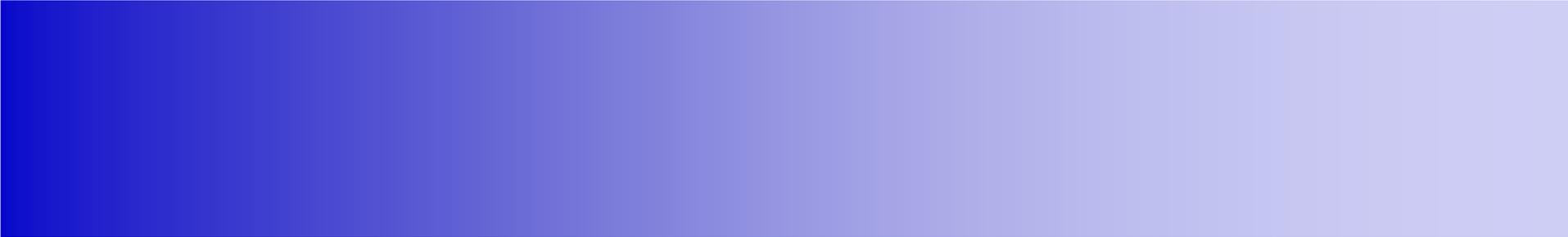
	Date Time	Level	Category	Section	Device	Message	Cleared
1	2015-11-11 15:31:32	Security	RnD Center	Smoke Alarm	Smoke Alarm	alarm (smoke detect (armed)) occurred, id=29	-
2	2015-11-11 15:13:08	Security	RnD Center	(W)HSM02 Mini Door/Window Detector	(W)HSM02 Mini Door/Window Detector	alarm (door open (armed)) occurred, id=28	-
3	2015-11-11 15:08:03	Management	RnD Center			controller registration success, user_id=rnd_admin,ip=172.17.50.200,...	-
4	2015-11-11 14:56:52	Security	RnD Center	(W)HSM02 Mini Door/Window Detector	(W)HSM02 Mini Door/Window Detector	alarm (1699) cleared	system (2015-11-11 14:56:52)
5	2015-11-11 14:56:52	Security	RnD Center	(W)HSM02 Mini Door/Window Detector	(W)HSM02 Mini Door/Window Detector	alarm (1698) cleared	system (2015-11-11 14:56:52)
6	2015-11-11 14:53:20	Management	RnD Center			controller registration success, user_id=rnd_admin,ip=172.17.50.200,...	-
7	2015-11-11 14:27:38	Security	RnD Center	(W)HSM02 Mini Door/Window Detector	(W)HSM02 Mini Door/Window Detector	alarm (door open (armed)) occurred, id=27	-
8	2015-11-11 13:52:17	Management	RnD Center			controller registration success, user_id=rnd_admin,ip=172.17.50.200,...	-

# Section View

Select section view

Shows sensor controller web page of this section

Date	Time	Level	Category	Section	Device	Message
2015-11-11	16:44:36	Security	Security	RnD Center	Smoke Alarm	smoke detect (armed)
2015-11-11	15:19:39	Security	Security	RnD Center	(W)HSM02 Mini Door/Window Detector	door open (armed)



# Thank you!

**AddPac Technology Co., Ltd.**  
Sales and Marketing

Phone +82.2.568.3848 (KOREA)

FAX +82.2.568.3847 (KOREA)

E-mail : [sales@addpac.com](mailto:sales@addpac.com)