

# GPS NTP Server based Time Synchronization for IP Emergency Call Center



**AddPac**

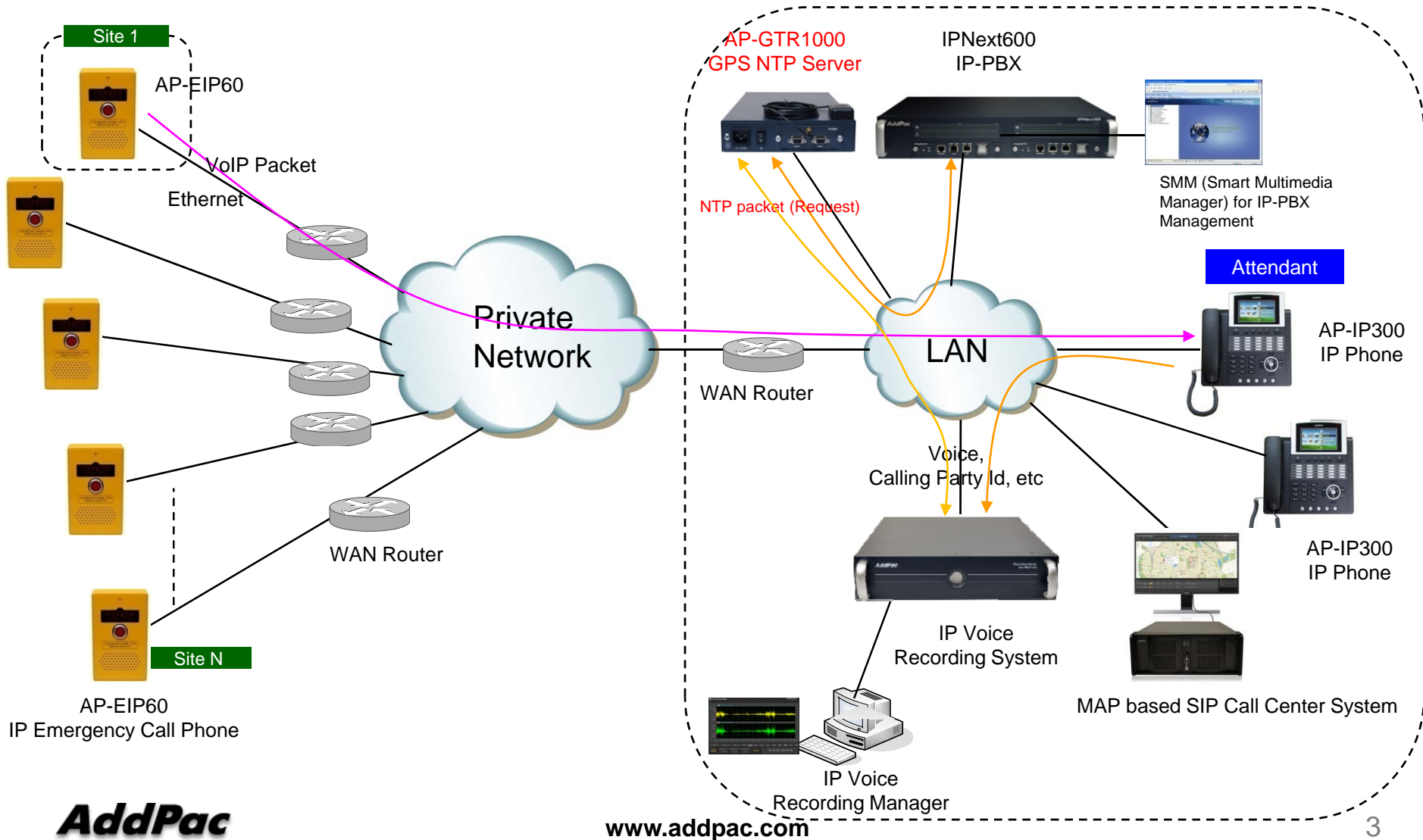
**AddPac Technology**

Sales and Marketing

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- Network Diagram
- Product Solution Table
- IP Emergency Call Phone Comparison Table
- GPS based Embedded NTP Server
- GPS NTP Server based Time Synchronization

# Network Diagram



# IP Emergency Call Solution Product Table






MAP based Management System	SIP Call Manager	SIP Emergency Phone	SIP Phone for Call Center	IP Voice Recording Server	GPS based NTP Server
	 <p>IPNext600</p>	 <p>AP-EIP100</p>	 <p>AP-IP300</p>	 <p>AP-NR1500</p>	 <p>AP-GTR1000</p>
		 <p>AP-EIP70</p>	 <p>AP-IP230</p>		
		 <p>AP-EIP60</p>			





# Emergency Call IP Phone Solution

(SIP VoIP Standard Signaling Protocol)

# Emergency Call IP Phone Comparison Table

Model	AP-EIP100	AP-EIP90	AP-EIP80	AP-EIP70	AP-EIP50
Service Features					
Duplex	Full Duplex (Acoustic Echo Canceller)	Full Duplex (Acoustic Echo Canceller)	Full Duplex (Acoustic Echo Canceller)	Full Duplex (Acoustic Echo Canceller)	Full Duplex (Acoustic Echo Canceller)
Key Pad	3x4 Key Support	N/A	N/A	N/A	N/A
Handset	Support	N/A	N/A	N/A	N/A
Voice Codec	G.711/G.726/ G.729/G.723	G.711/G.726/ G.729/G.723	G.711/G.726/ G.729/G.723	G.711/G.726/ G.729/G.723	G.711/G.726/ G.729/G.723
Signaling	SIP	SIP	SIP	SIP	SIP
Speaker Phone	Support	Support	Support	Support	Support
LAN Port	1	1	1	1	1
PoE(Optional)	Support	Support	Support	Support	Support
Application	Indoor	Outdoor(water resistance)	Outdoor(water resistance)	Outdoor(water resistance)	Indoor

# Emergency Call IP Phone Comparison Table

Model	AP-EIP60	AP-EIP60L
Service Features		
Duplex	Full Duplex (Acoustic Echo Canceller)	Full Duplex(Acoustic Echo Canceller)
Key Pad	N/A	N/A
Handset	N/A	N/A
Voice Codec	G.711/G.726/G.729/G.723	G.711/G.726/G.729/G.723
Signaling	SIP	SIP
Speaker Phone	Support (Internal SPK.Watt is comparative large for Outdoor Env.)	Support
LAN Port	1	1
PoE(Optional)	Support	Support
Chassis	Die-Casting Steel Frame Chassis(Optional) Front, Back (Steel)	Front Panel (Steel)
Application	Outdoor(water resistance)	Indoor

# GPS based Embedded NTP Server for Time Sync. AP-GTR1000





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- Product Overview
- Hardware Specification
- Simple NTP (Network Time Protocol)
- Network Diagram



# Product Overview

## AP-GTR1000 IP based GPS Time Receiver Terminal

- High Performance GPS Time Receiver Terminal Solution
- IP based GPS Time Receiver (Location Free, etc)
- NTP (Network Time Protocol) Sever Solution
- Dual RS232 Port for GPS Time Information Transmission
- LCD Display for GPS Time Information
- External Antenna Interface Support
- Various Antenna Support for GPS Signal
- Blue LAMP for Device Status
- Smart Web Manager for System Configuration & Management
- Window, Linux Simple Socket API Program Support
- Firmware Upgradeable Architecture
- Broadcasting Solution with Outstanding Network Service Capability

# Hardware Specification

AP-GTR1000 IP based GPS Time Receiver Terminal

RISC  
CPU

High-end  
GPS

- RISC Microprocessor Computing Power
- High-end GPS Module Hardware Architecture
- One(1) Module Slot for GPS Module
- LCD Display at Front Side
- Blue LAMP
- One(1) 10/100Mbps Fast Ethernet Interface
- Dual(2) DB-9 RS232C Interface
- Internal Power Supply
- Rack Mount Bracket (Option)
- GPS Antenna (Option)
- Option Module : AP-GPS-RS232
  - Two(2) DB-9 RS232C Interface Port
  - GPS Antenna Interface Port

# Hardware Specification

AP-GTR1000 IP based GPS Time Receiver Terminal

RISC  
CPU

High-end  
GPS

## Front Side



One(1) 10/100Mbps  
LAN

RS232C Console

Status LCD

On-Air Blue LAMP  
& Switch

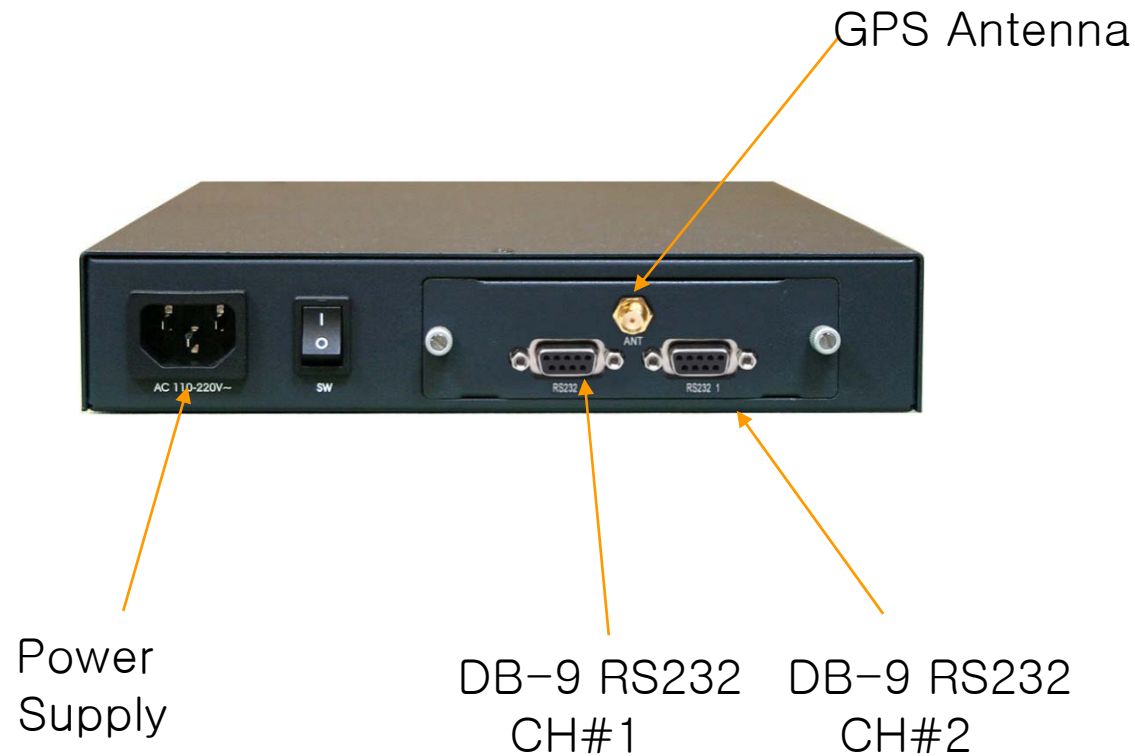
# Hardware Specification

AP-GTR1000 IP based GPS Time Receiver Terminal

RISC  
CPU

High-end  
GPS

## Back Side



# Hardware Specification

AP-GTR1000 IP based GPS Time Receiver Terminal

RISC  
CPU

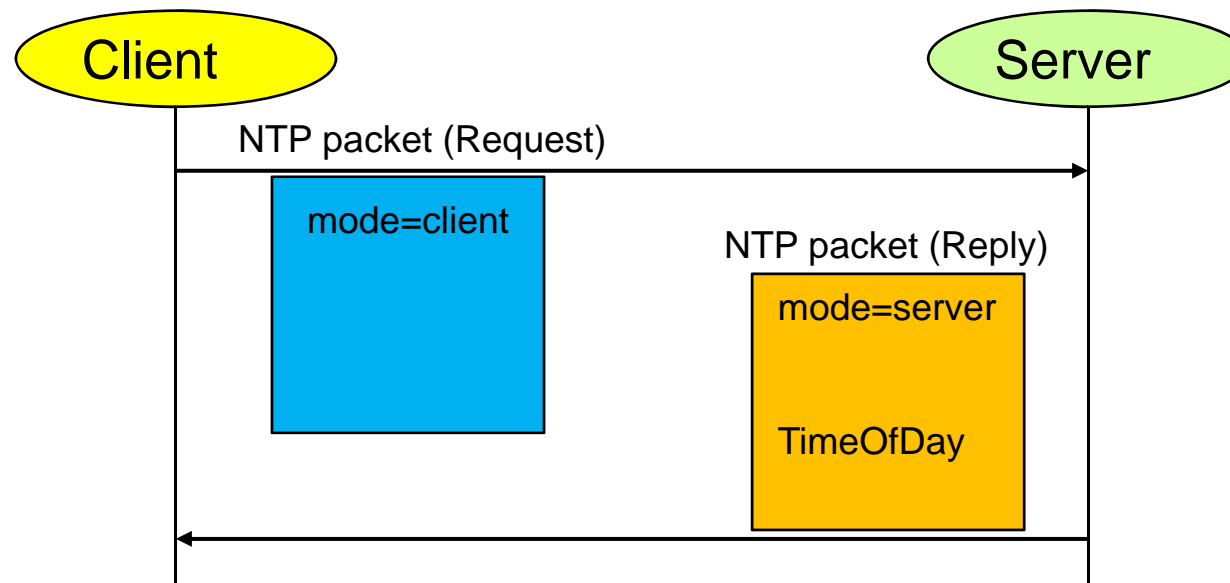
High-end  
GPS

## GPS Antenna

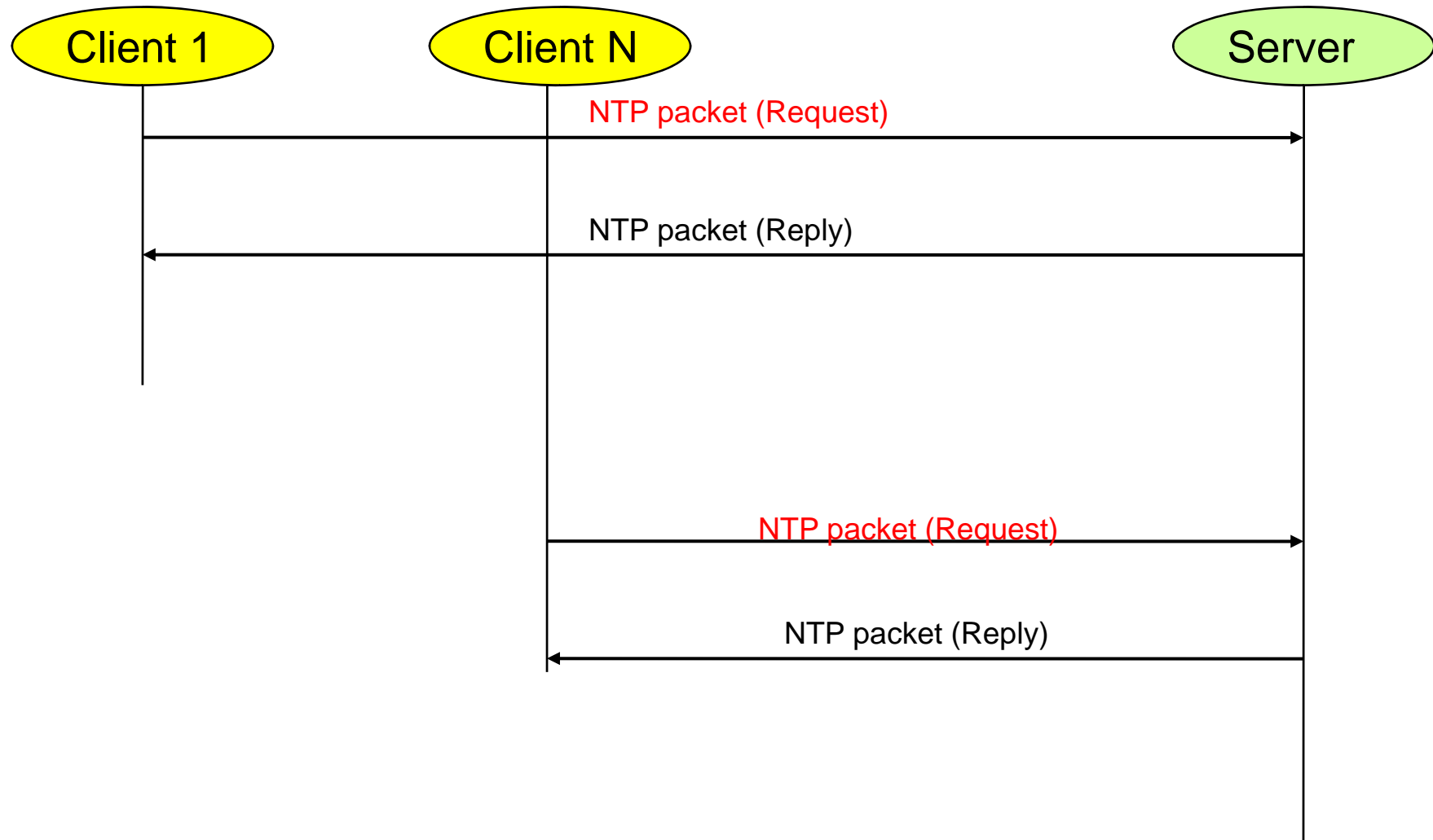


# SNTP (Simple Network Time Protocol)

- Transport : UDP (port number 123)
- Protocol Version : 4
- Client/Server Mode

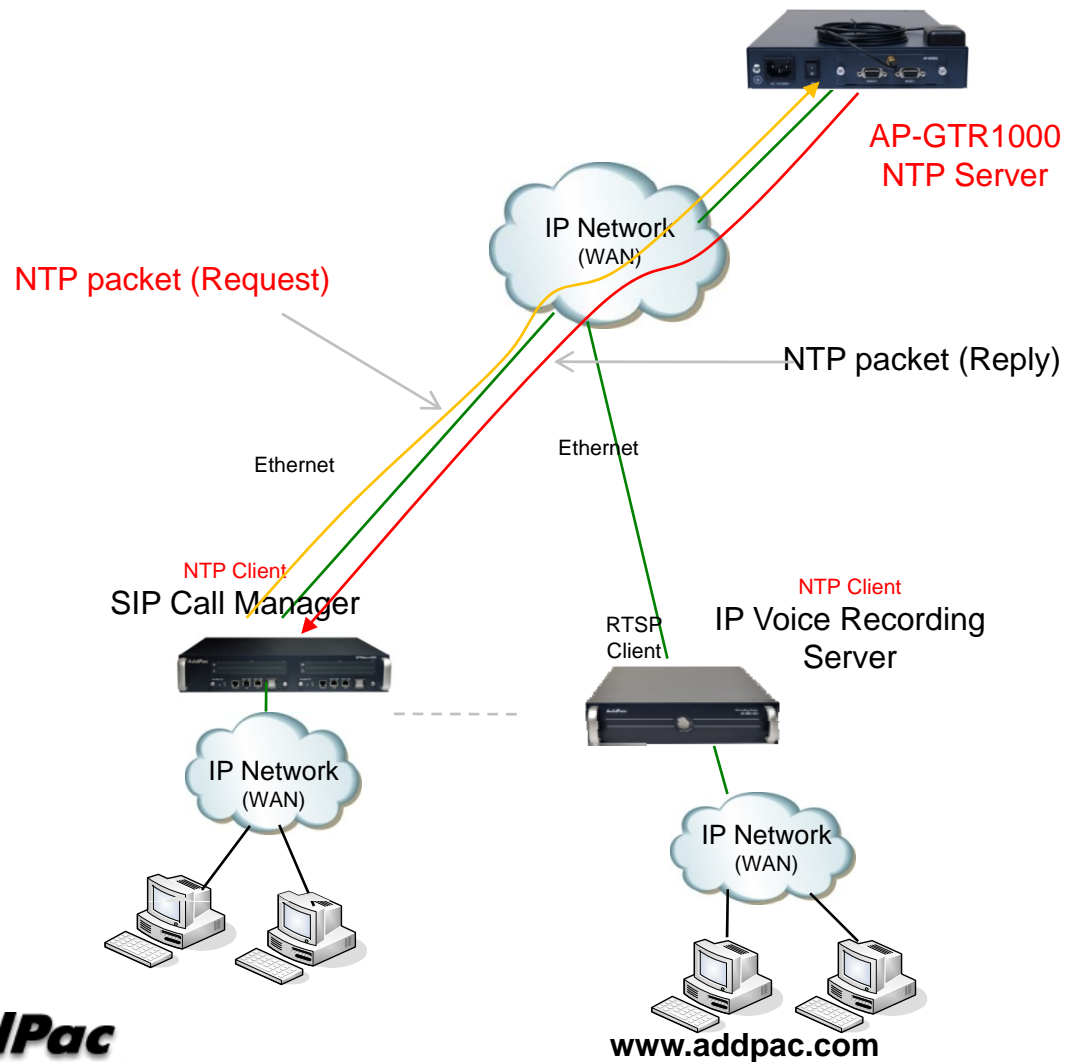


# SNTP (Simple Network Time Protocol)

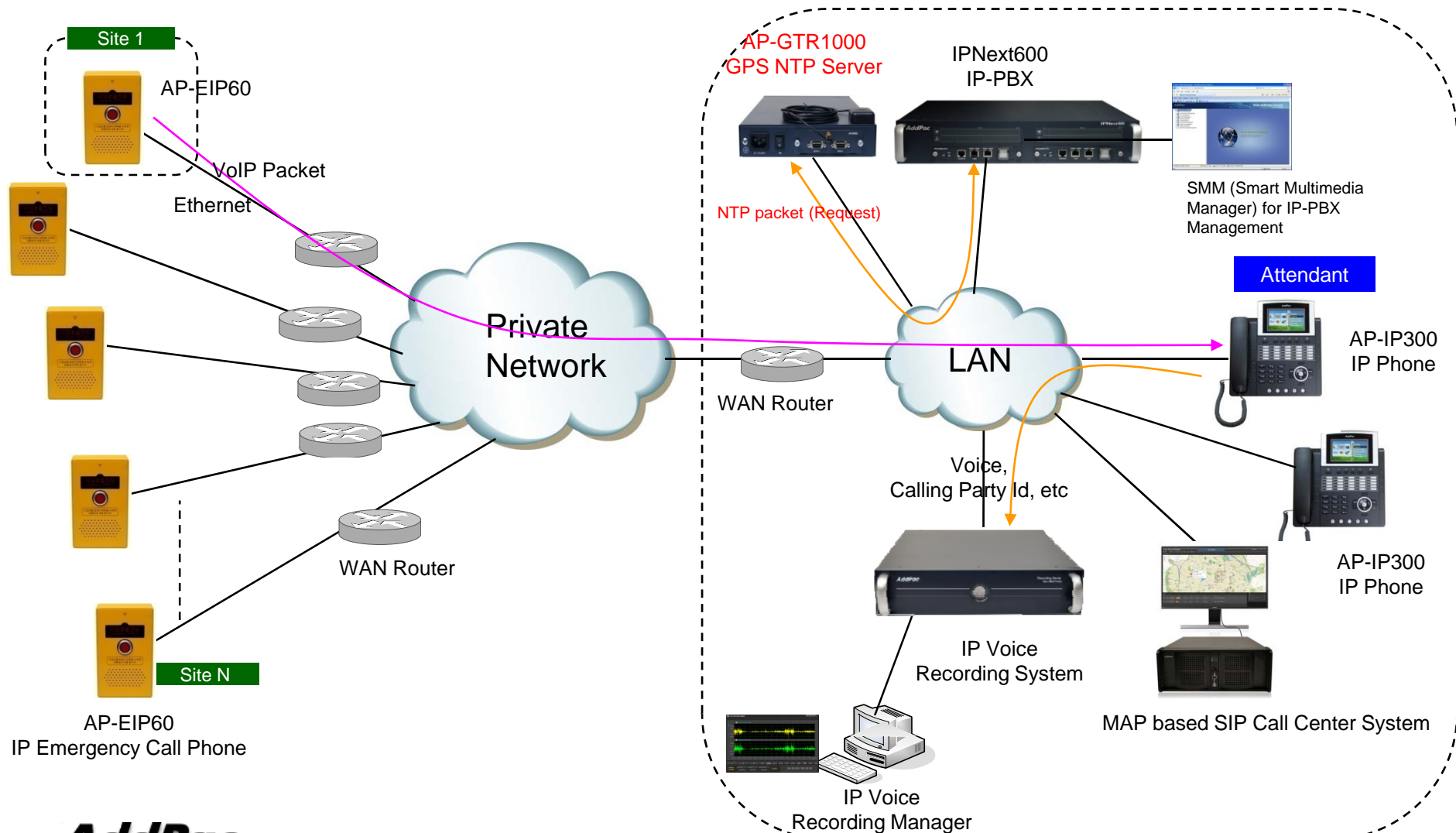





# SNTP (Simple Network Time Protocol)



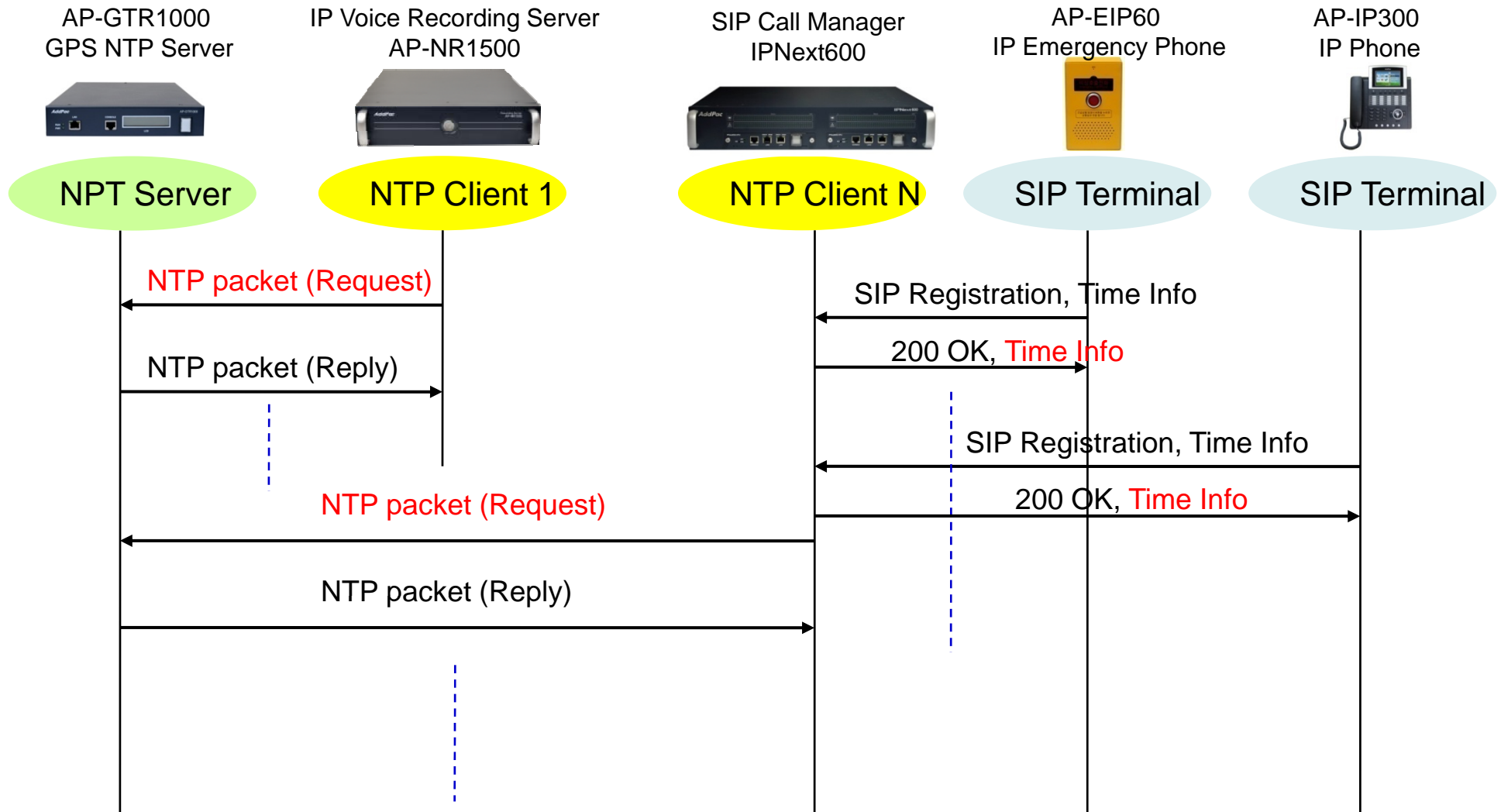
# Network Diagram



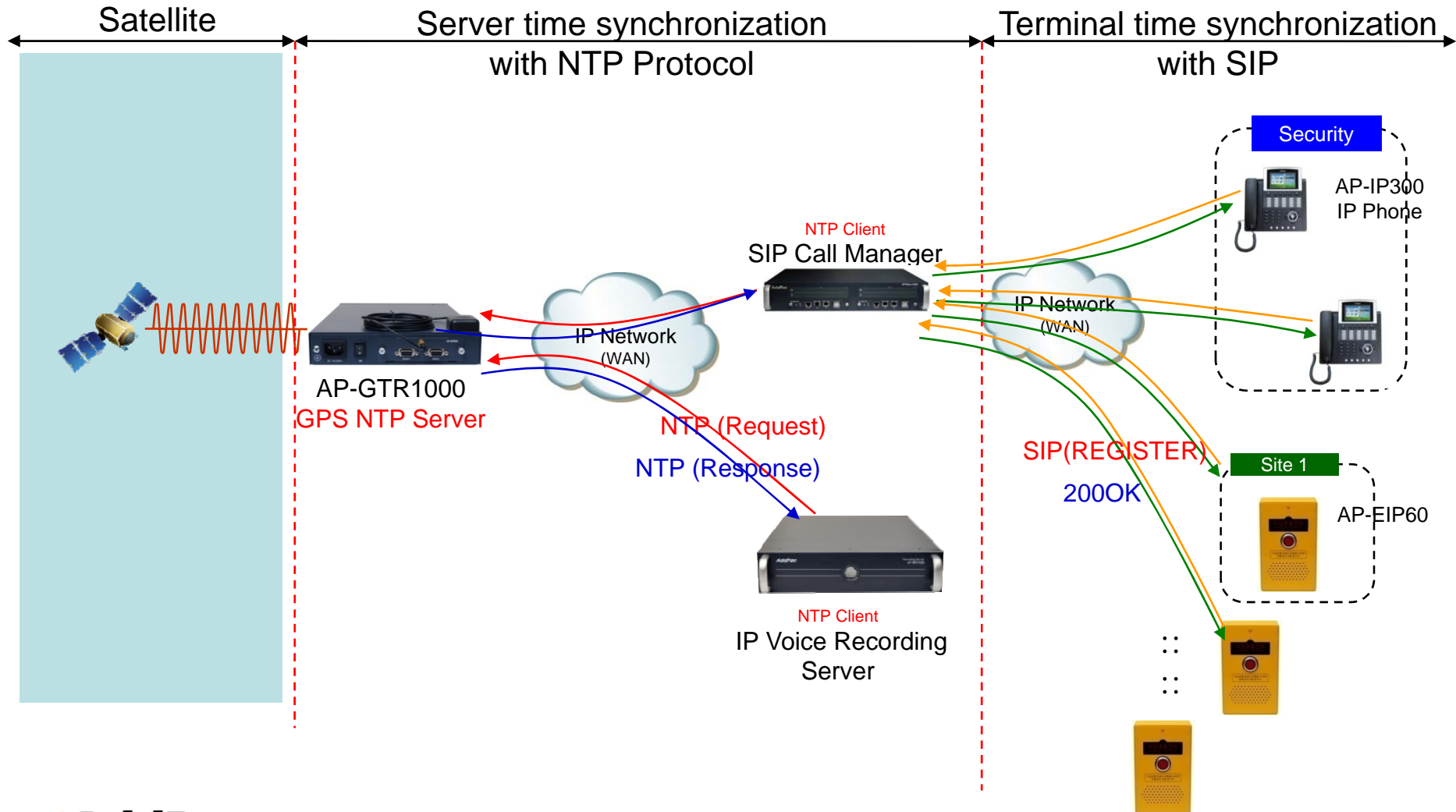


# GPS NTP Server based Time Synchronization

# GPS Time Synchronization (NTP -> SIP Message)



# GPS Time Synchronization (Network Service Diagram)



# SIP Message (REGISTER, 200 OK)

Sending SIP PDU to ( 172.17.50.207:5060 ) from 5060  
REGISTER sip:172.17.50.207 SIP/2.0  
Via: SIP/2.0/UDP 172.17.63.228:5060;branch=z9hG4bK2f5af100a412199;rport  
From: <sip:1004@172.17.50.207>;tag=2f5af100a4  
To: sip:1004@172.17.50.207  
Call-ID: 2fb20d5a-e91e-f167-8000-0002a404bc88@172.17.63.228  
CSeq: 12199 REGISTER  
Date: Thu, 23 Nov 2017 10:10:58 GMT  
User-Agent: AddPac SIP Gateway  
Contact: <sip:1004@172.17.63.228>;expires=60  
Expires: 60  
Content-Length: 0  
Max-Forwards: 70

SIP/2.0 200 OK  
Via: SIP/2.0/UDP  
172.17.63.228:5060;branch=z9hG4bK2f5af100a412200;rport=5060  
From: <sip:1004@172.17.50.207>;tag=2f5af100a4  
To: sip:1004@172.17.50.207  
Call-ID: 2fb20d5a-e91e-f167-8000-0002a404bc88@172.17.63.228  
CSeq: 12200 REGISTER  
Date: Thu, 23 Nov 2017 10:10:58 GMT  
User-Agent: AddPac SIP Gateway  
Contact: <sip:1004@172.17.63.228>;expires=60  
Expires: 60  
Content-Length: 0



# Thank you!

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