# GSM Gateway
# Function Overview

AP-GSM1002 (2-Port)
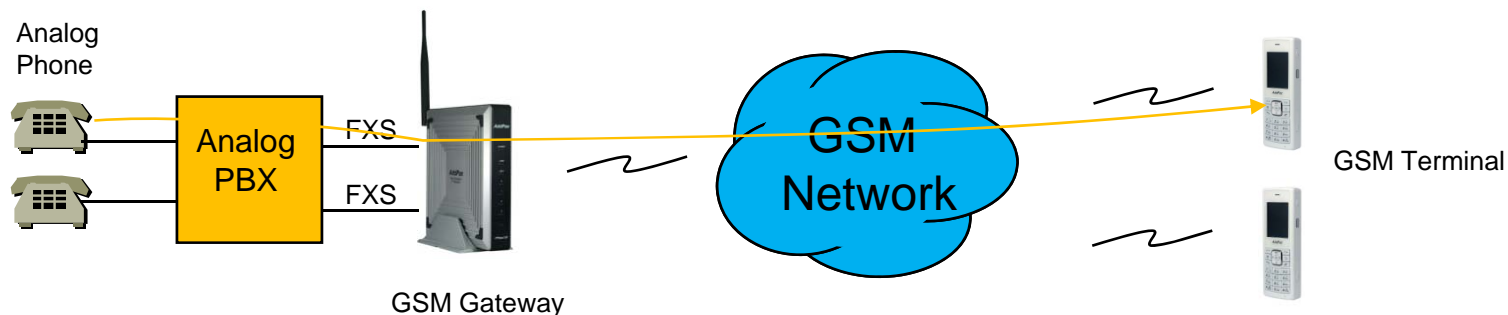
AP-GSM1004 (4-Port)

**AddPac Technology**

Sales and Marketing

AP-GSM1001 (1-Port)

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- GSM Messaging Service
- Radius Server Interoperability
- PIN Code Protection

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# GSM Outbound Call

Analog Phone

Analog PBX

FXS

FXS

GSM Gateway

GSM Network

GSM Terminal

### One(1) Stage Call

| Digits | Dialing → | Dialing → |
| --- | --- | --- |
| | ← Connection | ← Connection |

### Two(2) Stage Call

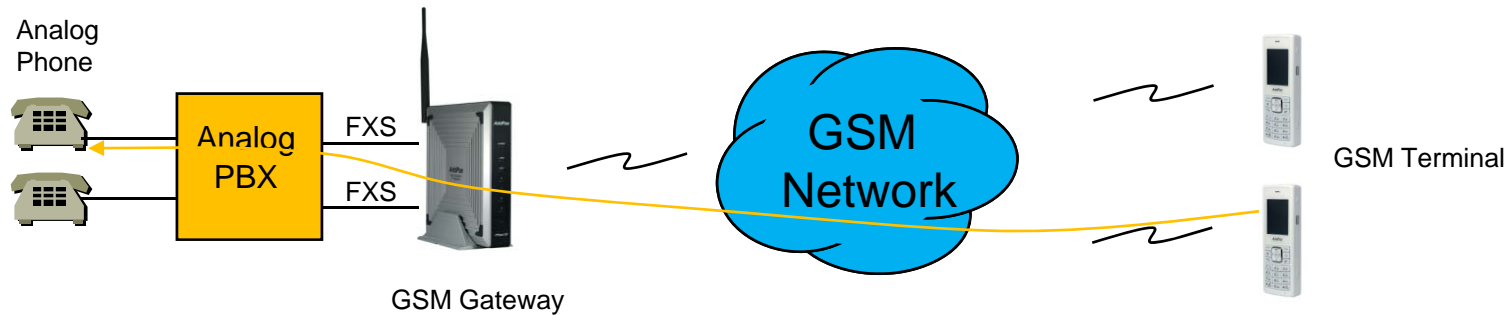| 1st Digits | Connection → | |
| --- | --- | --- |
| | ← Dial Tone | |
| 2nd Digits | Dialing → | Dialing → |

Outbound Call (1 Stage)
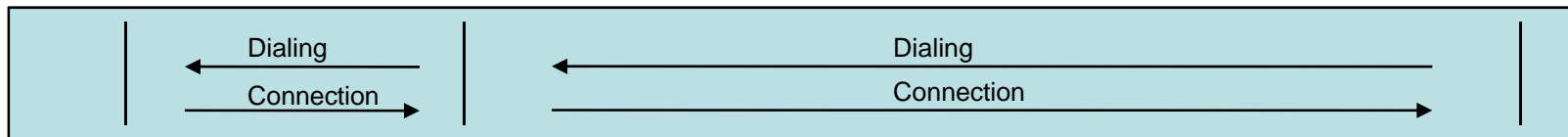: Making call to mobile phone from analog phone connected to FXS directly.

Outbound Call (2 Stage)
: Making call to mobile phone from analog phone connected to FXS after hearing of 2nd dial tone from AddPac GSM Gateway
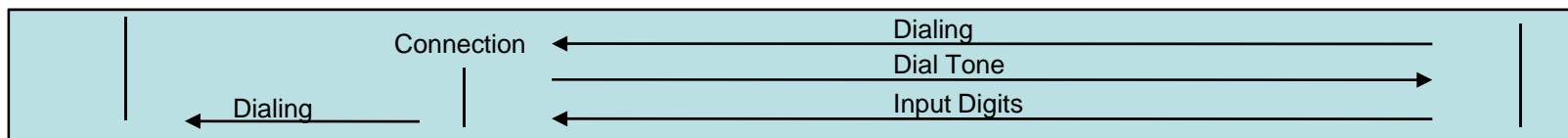
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**www.addpac.com**

# GSM Inbound Call

Analog
Phone

Analog
PBX

FXS

FXS

GSM
Network

GSM Terminal

GSM Gateway

1 Stage Call (Baby Call)

Dialing

Connection

Dialing

Connection

2 Stage Call

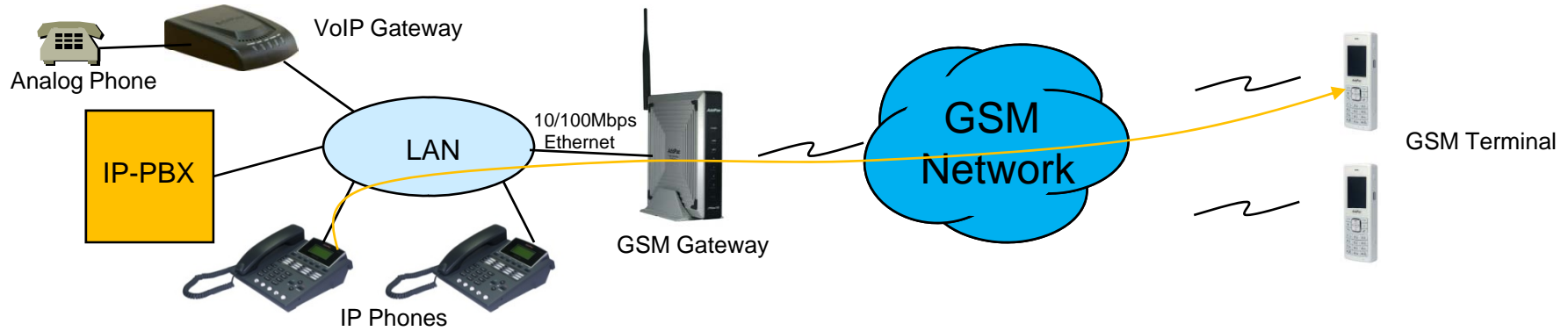Connection

Dialing

Dialing

Dial Tone

Input Digits

Inbound Call (1 Stage) – Baby Call
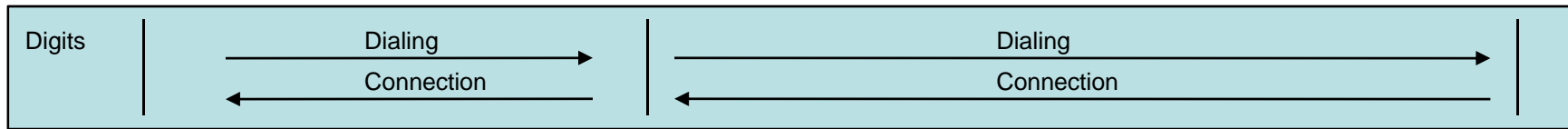: Making call to analog phone connected to FXS directly

Inbound Call (2 Stage)
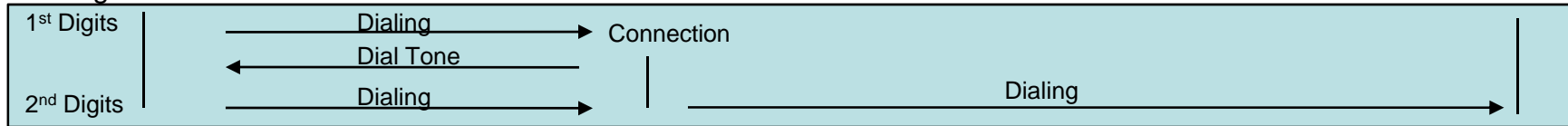: Making call to analog phone connected to FXS after hearing of 2nd dial tone from AP-GS1002

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# VoIP to GSM Outbound Call



**1 Stage Call**

| Digits | | Dialing | | Dialing | |
|---|---|---|---|---|---|
| | | Connection | | Connection | |

**2 Stage Call**

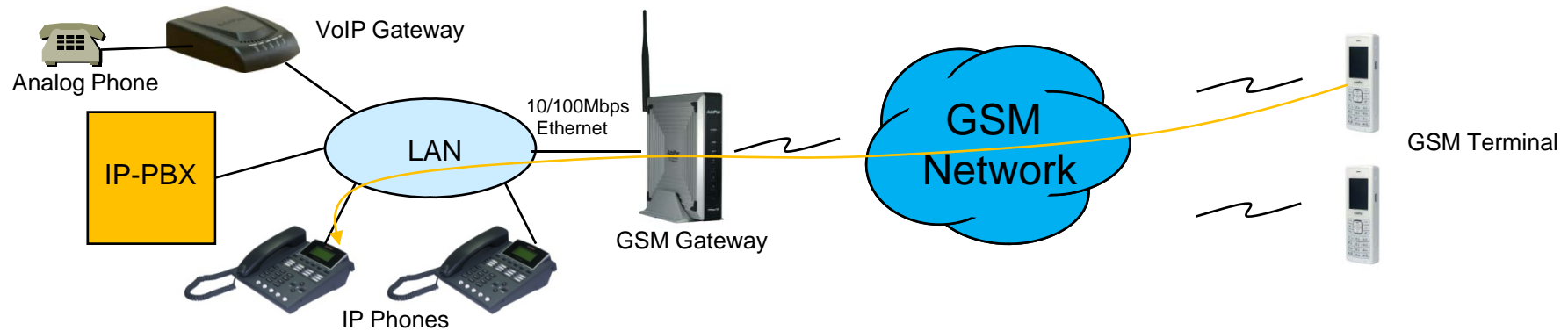| 1st Digits | Dialing | Connection | | |
|---|---|---|---|---|
| | Dial Tone | | | |
| 2nd Digits | Dialing | | Dialing | |

Outbound Call (1 Stage)
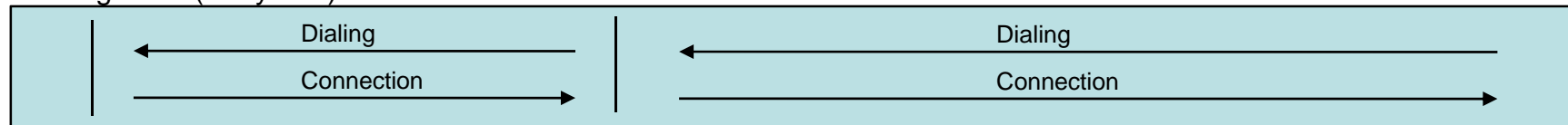: Making call to mobile phone from analog phone connected to VoIP gateway  or IP Phone directly

Outbound Call (2 Stage)
: Making call to mobile phone from analog phone connected to VoIP gateway after hearing of 2nd dial tone from GSM Gateway
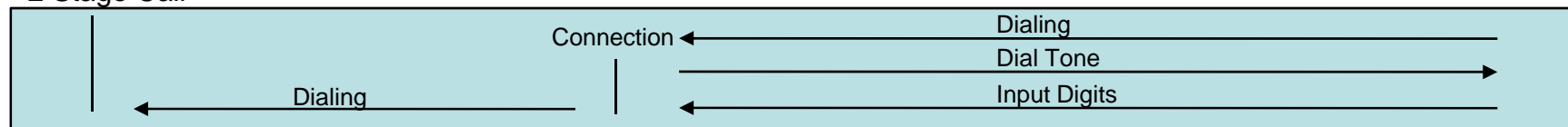
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# VoIP to GSM Inbound Call



**1 Stage Call (Baby Call)**

| ← Dialing | ← Dialing |
|---|---|
| Connection → | Connection → |

**2 Stage Call**

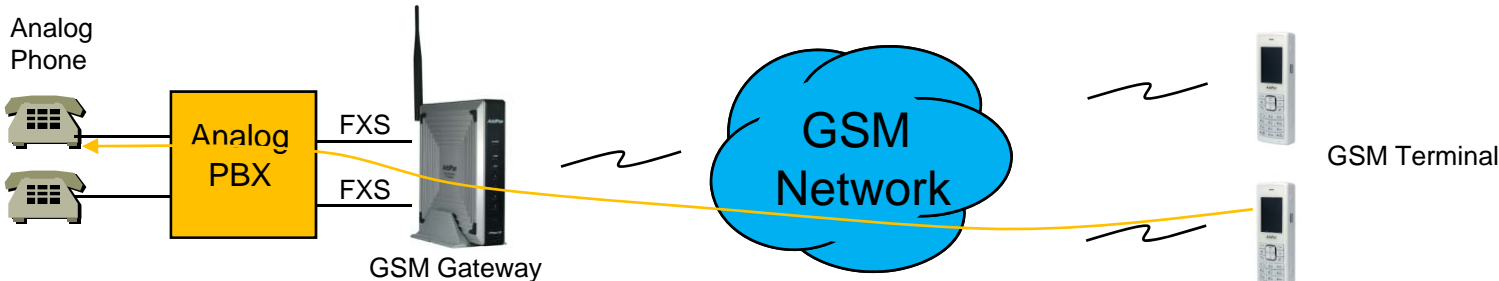| | Connection ← Dialing |
|---|---|
| | Dial Tone → |
| ← Dialing | ← Input Digits |

Inbound Call (1 Stage) – Baby Call
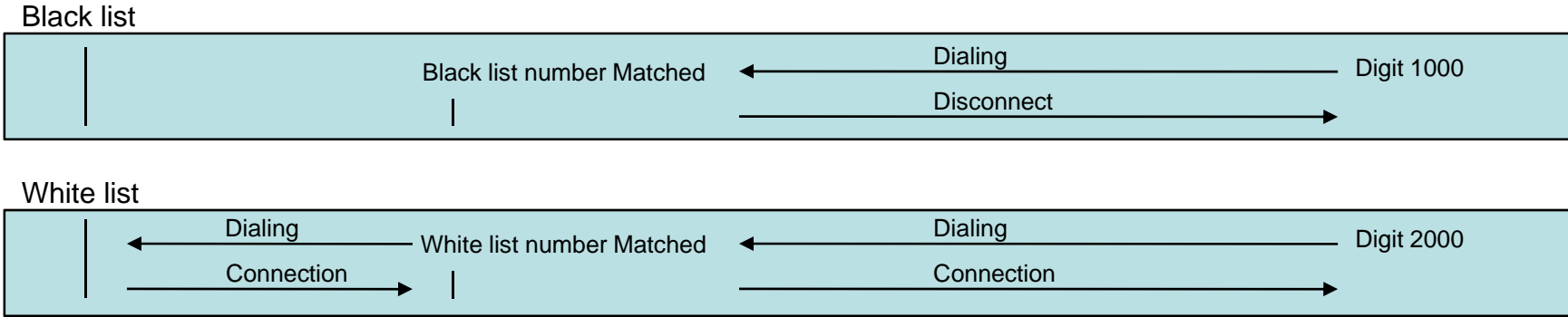: Making call to IP phone in VoIP network directly.

Inbound Call (2 Stage)
: Making call to IP phone in VoIP network after hearing of 2$^{nd}$ dial tone from GSM Gateway

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# GSM Inbound Call Black / White list

Analog
Phone

Analog
PBX

FXS

FXS

GSM Gateway

GSM
Network

GSM Terminal

| Black list | 1000 |
| --- | --- |
| White list | 2000 |

**Black list**

Black list number Matched

Dialing

Digit 1000

Disconnect

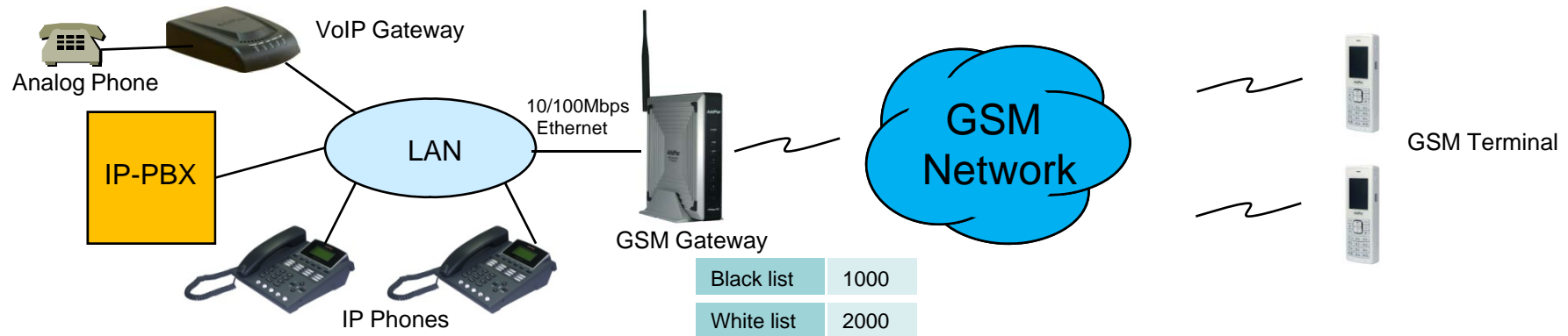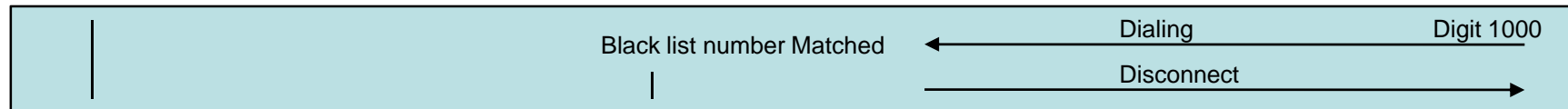**White list**

Dialing

White list number Matched

Dialing

Digit 2000

Connection

Connection

Black list
: The number on black list is restricted to receive call.

White list
: The only number on white list is allowed to receive call

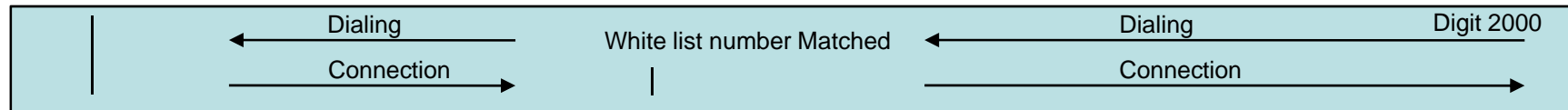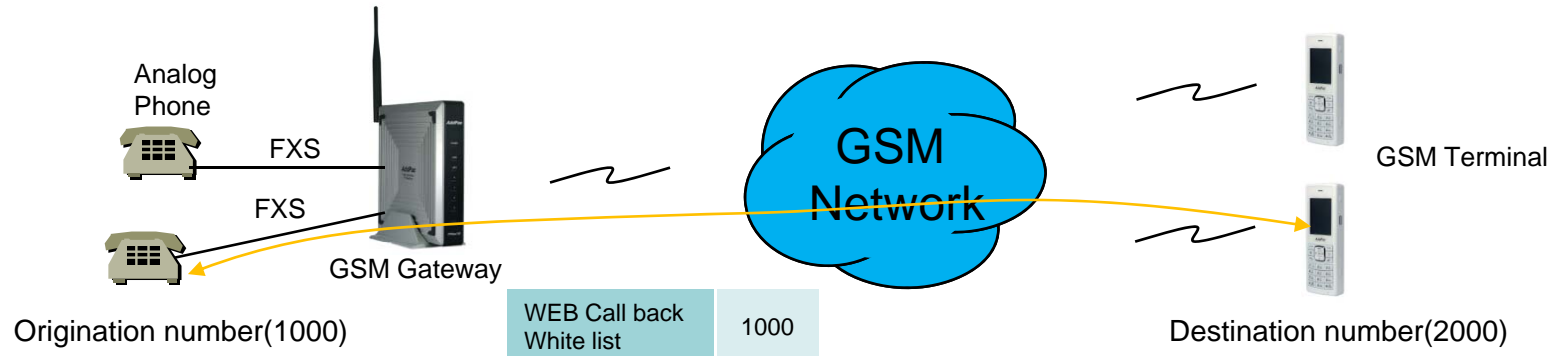**AddPac**

# VoIP to GSM Black / White list



| Black list | 1000 |
|------------|------|
| White list | 2000 |

**Black list**

| | Black list number Matched | Dialing | Digit 1000 |
|---|---|---|---|
| | | Disconnect | |

**White list**

| | Dialing | White list number Matched | Dialing | Digit 2000 |
|---|---|---|---|---|
| | Connection | | Connection | |

Black list
: The number on black list is restricted to receive call.

White list
: The only number on white list is allowed to receive call
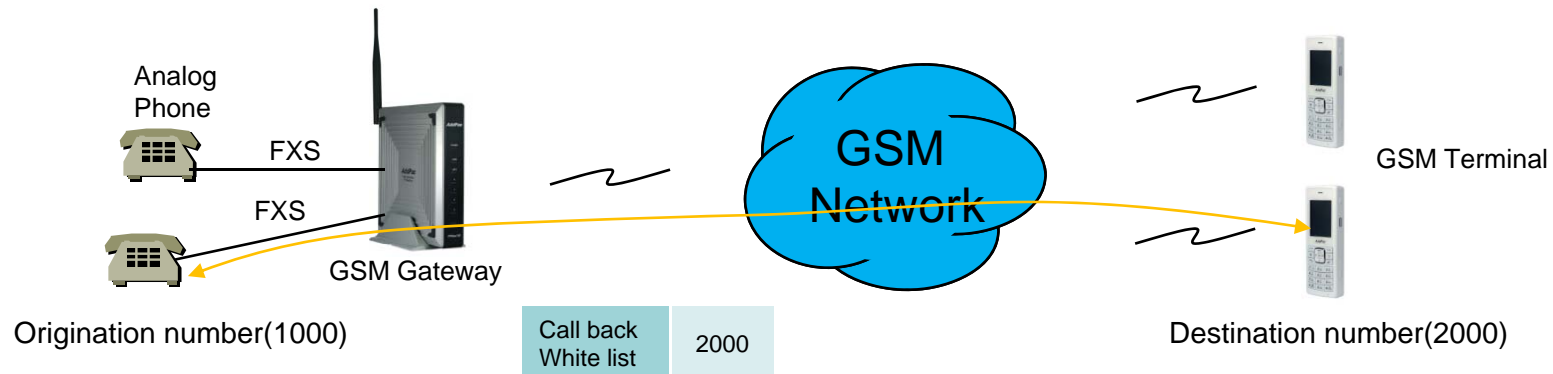
# WEB Callback Service



Analog Phone — FXS — GSM Gateway

Origination number(1000)

WEB Call back White list : 1000

GSM Network

GSM Terminal

Destination number(2000)

WEB Callback Service

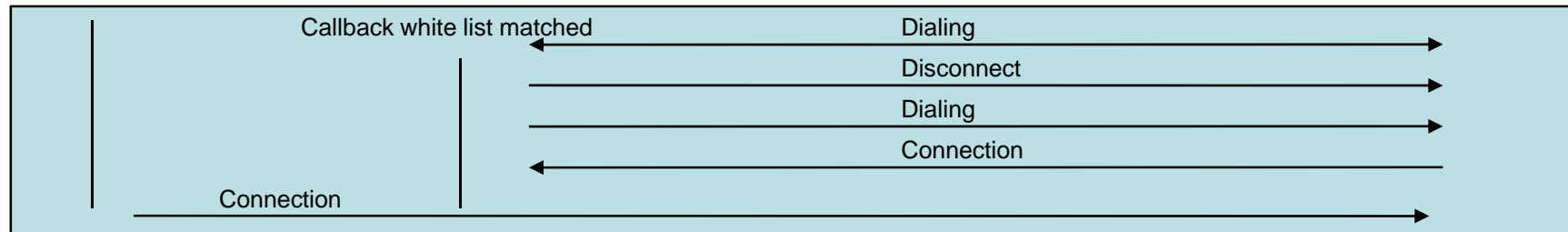| | Digit 2000 | Dialing → |
| | | ← Connection |
| ← Dialing   Digit 1000 | | Call waiting → |
| Connection → | | Connection → |

WEB Callback Service
: The remote call is made by user's control by WEB Interface.
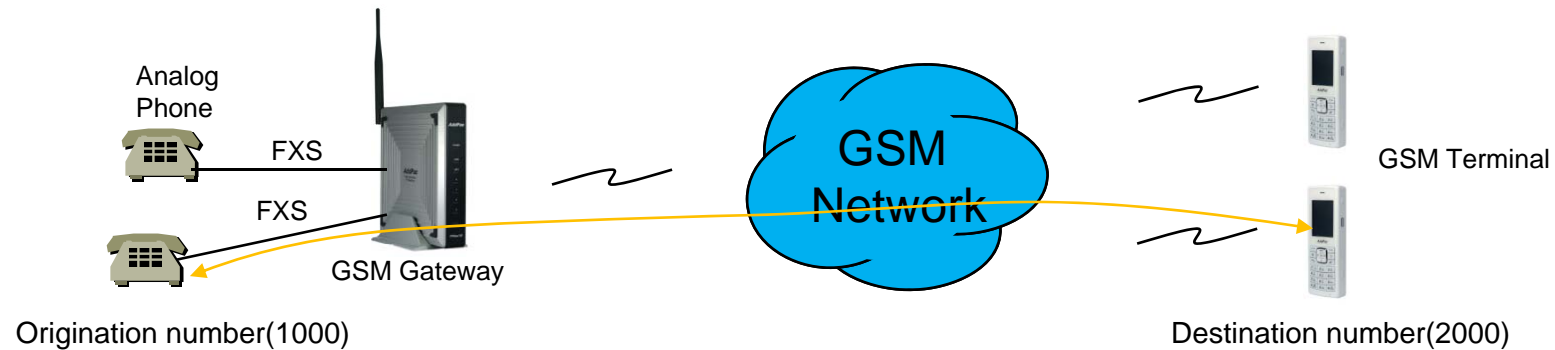  The WEB callback number on white list must be the same of source number.

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# GSM Callback Service

Analog Phone

FXS

FXS

GSM Gateway

Origination number(1000)

Call back White list    2000

GSM Network

GSM Terminal

Destination number(2000)

GSM Callback Service

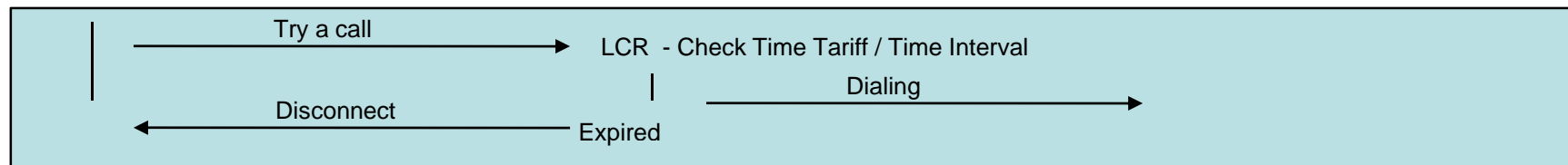| Callback white list matched | Dialing |
| --- | --- |
| | Disconnect |
| | Dialing |
| | Connection |
| Connection | |

GSM Callback Service
: When the user on the callback white list makes call, GSM Gateway disconnects it and makes call back to the user

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# LCR(Least Cost Routing)

Analog Phone

FXS

FXS

GSM Gateway

GSM Network

GSM Terminal

Origination number(1000)

Destination number(2000)

LCR(Least Cost Routing)

Try a call

LCR  - Check Time Tariff / Time Interval

Dialing

Disconnect

Expired

GSM LCR Time Interval
: The only registered user is allowed to use GSM call in the rule of date, week, and time

GSM LCR Time Tariff
: User is able to check remained time, used time listed on LCR, etc

GSM LCR Simulator
: GSM Gateway supports virtual call simulation used on WEB

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# BTS(Base Terminal Station) Control



BTS(Base Terminal Station)
: User is able to choose Cell ID or RSSI of cell by GSM Gateway.
(1) The most powerful signal of cell is chosen.
(2) User selects BTS through Cell ID in cell.
(3) The cell listed is found periodically by user
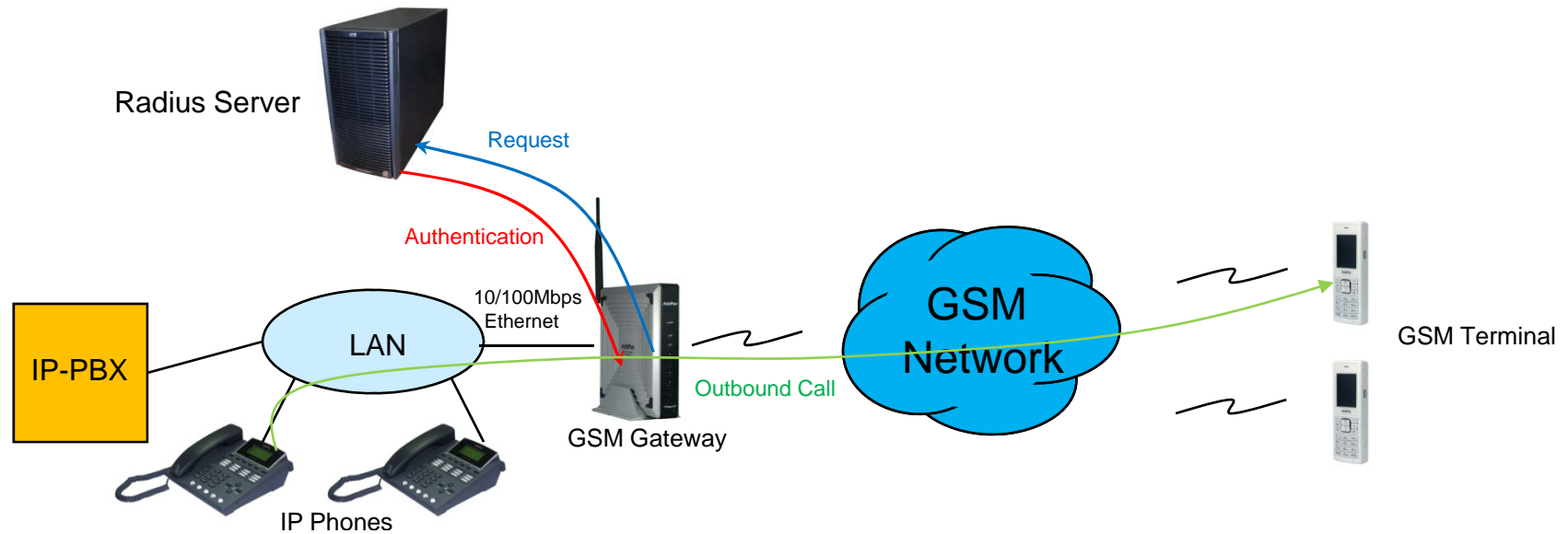
# GSM BCCH Information

# GSM Messaging Service



GSM Messaging Service
: SMS is able to send and receive by GSM Gateway's WEB Interface
: English, Korean, Spanish, Russian, Portuguese

USSD
: In case of using Pre-paid SIM card, checking and recharging  is allowed by GSM Gateway

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# Radius Server Interoperability



Radius Server Interoperability
: When billing system is required, GSM gateway supports radius server interoperability

# Thank you!

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