Multi-SIM GSM Gateway Human Behavior Service for Anti-SIM Block
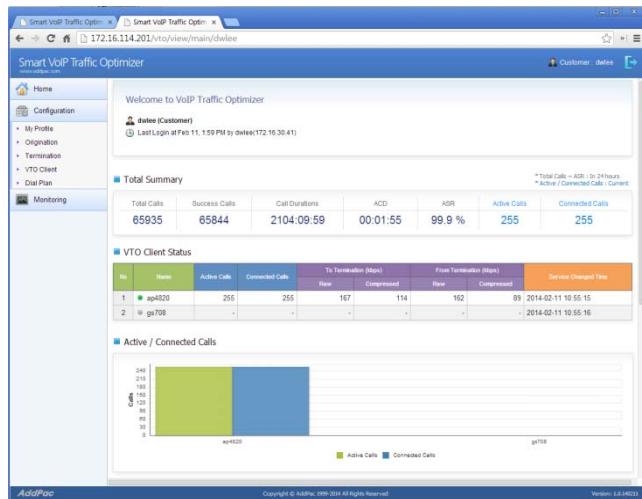
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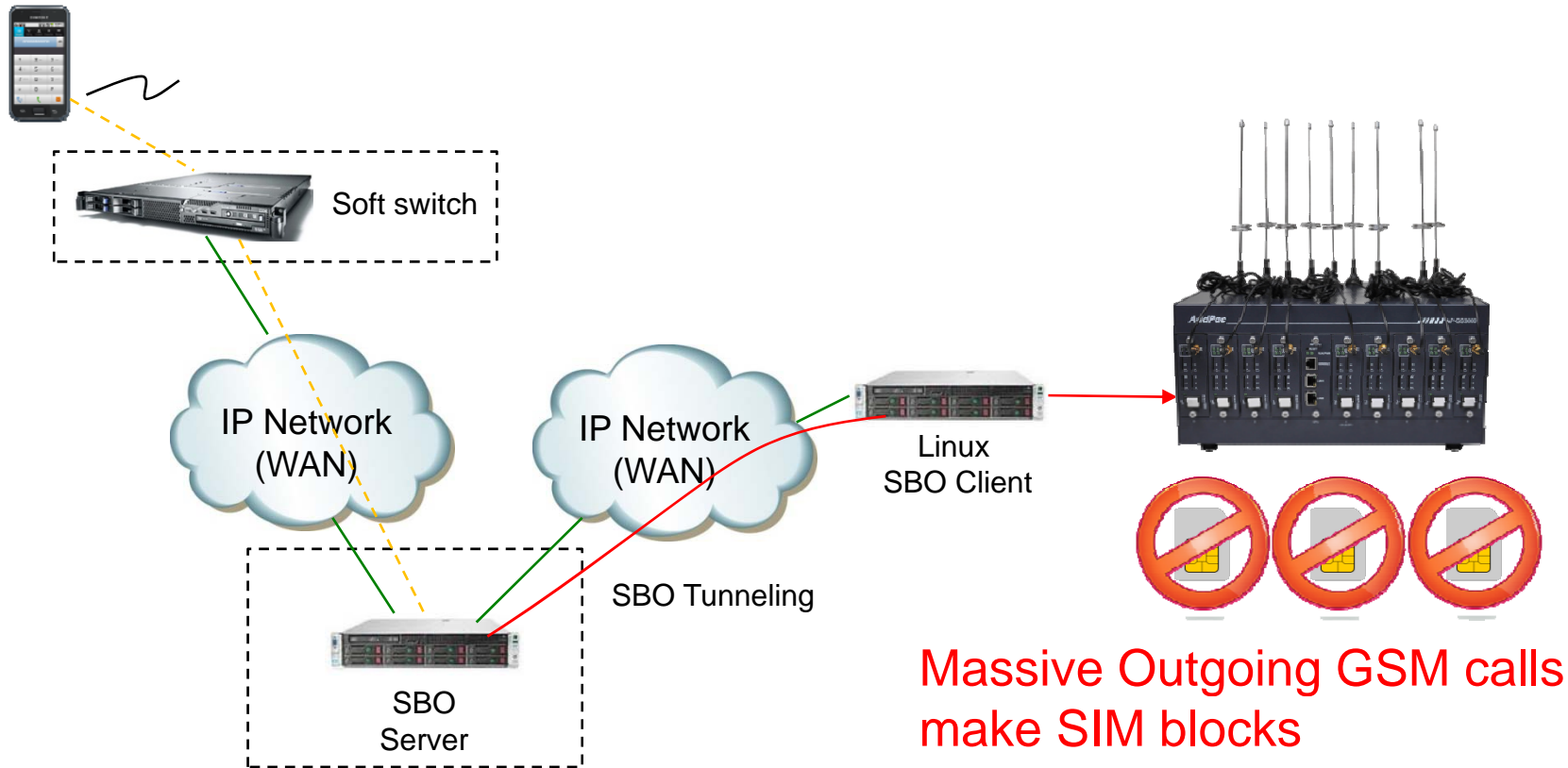2014, Sales and Marketing

Contents

- Current SIM Block Problems

- Do you want Anti-SIM block?

  → Human Cellular Phone Call Pattern Modeling

- Human Cellular Phone Call Pattern Modeling Solution needs Large SIM Pool

- Multi-SIM GSM Gateway with Human Behavior Features

- Who provides Smart Call Routing for GSM Gateways?

- Anti-SIM Block Function Roles

- Network Diagram

- Smart Web Manager for Human Cellular Phone Call Pattern Modeling

Current SIM Block Problems

Other Vendor SBO + normal GSM gateway

Site A (Call Origination)

Soft switch

IP Network
(WAN)

IP Network
(WAN)

Linux
SBO Client

SBO Tunneling

SBO
Server

Massive Outgoing GSM calls
make SIM blocks

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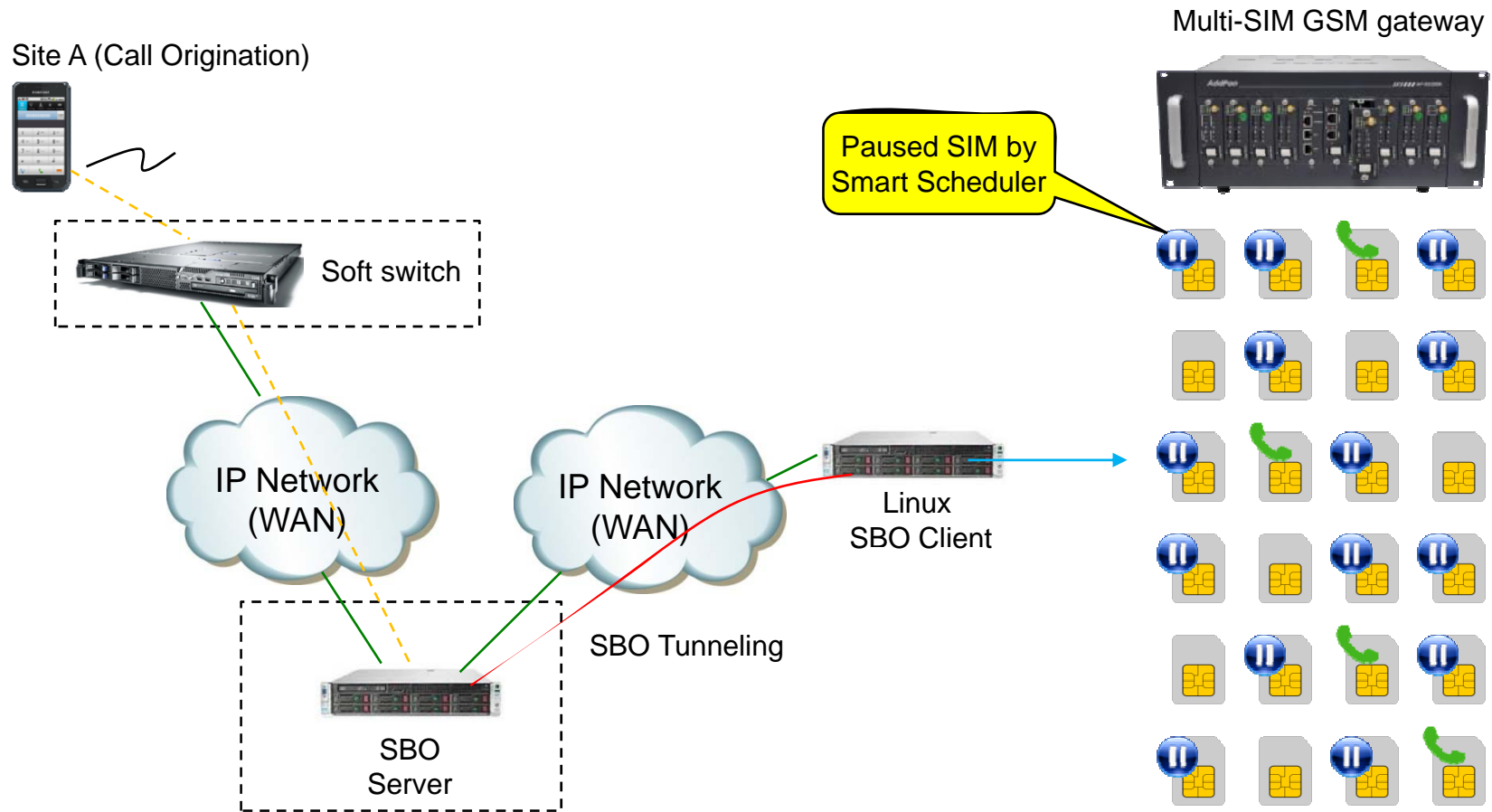
Do you want Anti-SIM Block?
→ Human Cellular Phone Call Pattern Modeling

- Human Cellular Phone Call Pattern at GSM Gateway
    - Make Outgoing and incoming call
    - Real Call Connect for Incoming Call
    - Real Call Answer and Different Call Connected Time
    - Set Max Call Connection Time in day (Ex : 1 or 2 hour per SIM during 1 day)
    - Select the Most Idle(least usage) SIM Card for Termination Call
    - IMEI Auto Change (Using Registered IMEI not Fake)
    - Random Outbound Call Idle Interval
    - etc

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Human Cellular Phone Call Pattern Modeling Solution needs Large SIM Pool

- By limited GSM call quota on gateway, we need lots of GSM ports and SIMs for handling massive calls.

- If you start new GSM call termination business,
  - (Solution) Choose Multi-SIM GSM gateway which has human behavior function.

- If you already have single SIM GSM gateways,
  - (Solution) Upgrade it to support human behavior function and operate more GSM gateways for massive calls.
  - (Problem) It is necessary to support smart call routing from softswitch to gateways.

Multi-SIM GSM Gateway with Human Behavior Feature

Multi-SIM GSM gateway

Site A (Call Origination)

Paused SIM by Smart Scheduler

Soft switch

IP Network (WAN)

IP Network (WAN)

Linux SBO Client

SBO Tunneling

SBO Server

Smart Human Cellular Phone Call Pattern Feature in Multi-SIM gateway provides Anti-SIM Block.

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Who provides Smart Call Routing for GSM Gateways?

- AddPac VTO Service provides the Smart Call Routing from Softswitch to GSM gateways.

- Without VTO service, terminating call to unavailable gateway by exhausted call quota will be failed and decrease ASR (Answer Seizure Ratio).

- VTO Server gathering port status from gateways for load balancing and routing to available gateways.

- Also, the VTO server controls incoming call traffic from Softswitch to increase ASR.

Anti-SIM Block Function Roles

VTO (VoIP Traffic Optimizer) Service

- **GSM Gateway**
  - Use Human Cellular Phone Call Pattern Model
  - Report Service State to VTO Client
- **VTO Client**
  - Relay GSM Gateway Service State Information to VTO Server
- **VTO Server**
  - Act as SIP Proxy Role + VTO Server Role
  - Maintain GSM gateway Service State
  - Call Routing using dial-plan and GSM Service State

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Anti-SIM Block Operation Network Diagram

VTO (VoIP Traffic Optimizer) Service

Site A (Call Origination)

Soft switch

Multiple AddPac GSM Gateway VTO Service

Smart Call Routing

Modem

Switch

GSM #1

IP Network (WAN)

IP Network (WAN)

AP-GS3000
Multi-SIM GSM Gateway
(VTO Client)

GSM #2

Call Traffic Control

Gateway Status Report

GSM #3

VTO Server

Site B (Call Termination)

GSM VoIP Gateways

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Smart Web Manager for Human Cellular Phone Call Pattern Modeling

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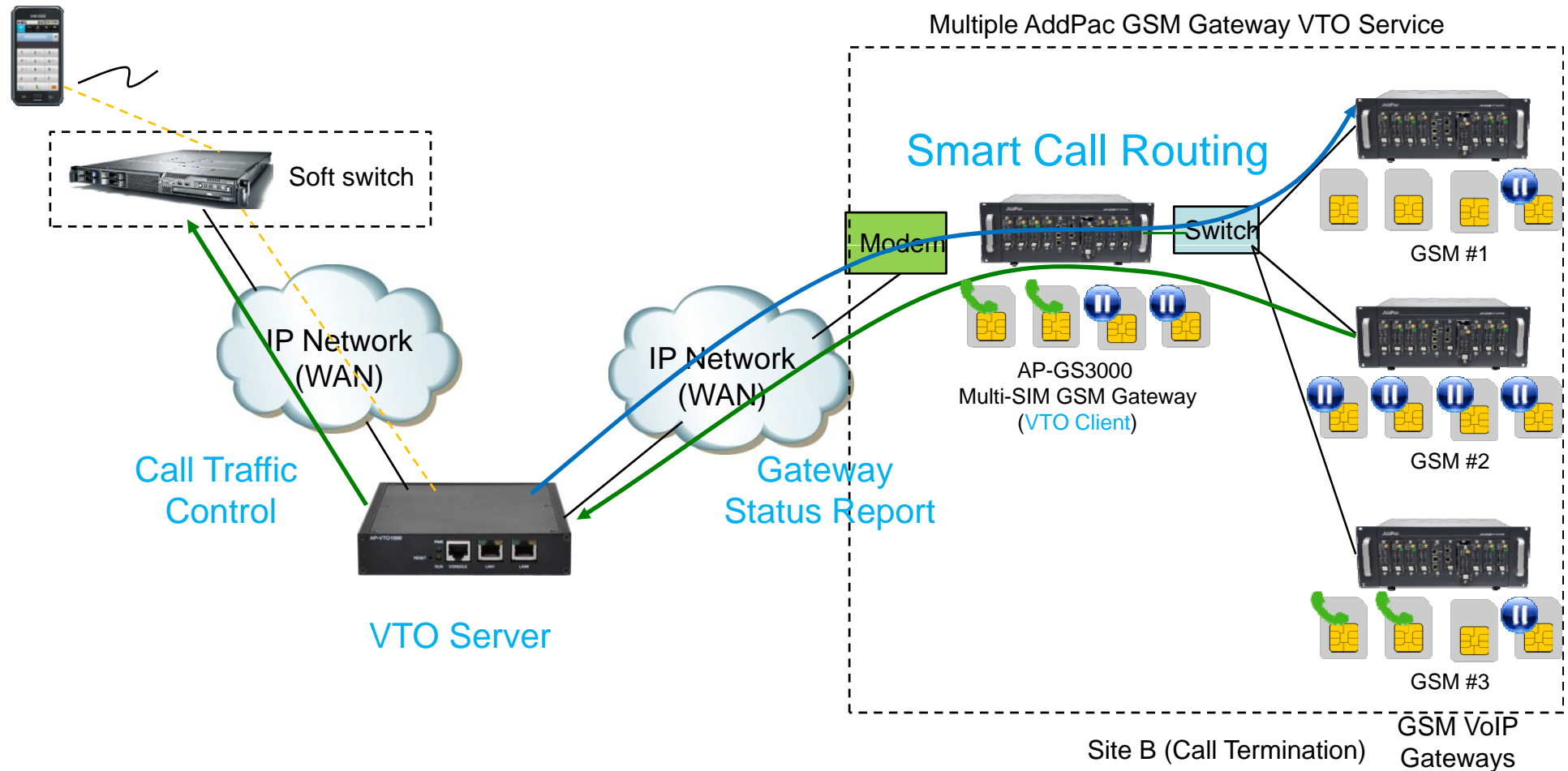
Human Behavior Call Pattern Modeling Features

- ## Auto Mobile Management Call Generation
  - Support inter call idle interval timer.
  - Support management quota for intentional inbound call generation
  - After disconnection of a general call, a intentional inbound call is created (the least hunted port is selected).
  - If a management quota is exhausted, no more intentional call is created.

- ## Intentional Call Inbound Option
  - Support automatic random ring timer.
  - Support random call connection time.

  - *For using this features, my phone number should be gathered by USSD code.*

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Inter Call Idle Interval

Mobile Call Generator

Management Quota(1/3)

Management Quota(2/3)

Smart Web Manager
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System ⊕
Basic ⊕
Advanced ⊖
• Port Control
• Mobile PINs
• Mobile USSD
• **multi-SIM Manager**
• multi-SIM Balance
• multi-SIM USSD
• Fax
• Service
• Filtering
• Security
• Radius
• SNMP
• WEB Callback
• Mobile Callback

Miscellaneous ⊖
• Mobile Summary
• System Status
• Mobile Status
• Mobile Port Statistics
• Call Log

Mutli SIM Port Management

Rotation Policy
- Rotation policy should be configured to tariff-based.
- Tariff policy should be configured to quota-based (previous page).

multi-SIM Rotation Policy

ID	Policy	Tariff Policy	Time Interval	Period (10~3600 mins)	Auto Switch Threshold		Control
					CCF (count)	CSCD (count / sec)	
0	tariff-based	0	n.a.	n.a.	15	10 / 10	☐

Delete

| 0 ▼ | None ▼ | n.a. ▼ | n.a. ▼ | | None ▼ | None ▼ | None ▼ | Add |

* CCF(Consecutive Call Fails) * CSCD(Consecutive Short Call Duration)
* operational status : idle(Idle) active(**Act**) Blocked (**BLK**) over period(OP) SIM detached(**SD**) over quota(**OQ**/OQ) over CCF (**OCF**) over CSCD (**OSD**) SIM operation
fail (**SOF**)
* Oper. : operational status

- Apply rotation policy and tariff policy to the port.
- Confirm the configured rotation policy and remains.

P0:0 0 ▼   ✔ Apply

multi-SIM status

	Port	SIM Bank(0-7)								Rotation ID	Rotation Policy	Remains.	CCF	CSCD
☐		Oper.	**Act**	Idle	Idle	Idle	Idle	Idle	Idle	Idle				
		Ctrl.	☐	☐	☐	☐	☐	☐	☐	☐				
☐	P0:0	**Group1**	✔	✔	✔	✔	✔	✔	✔	✔	0 ▼	quota-based (60 mins)	(3600 secs)	0	0
		Group2	☐	☐	☐	☐	☐	☐	☐	☐	none ▼	no policy	--		

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Management Quota(3/3)

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

AddPac