

# GSM SIM Server Low Level Protocol Scheme



**AddPac**

**AddPac Technology**

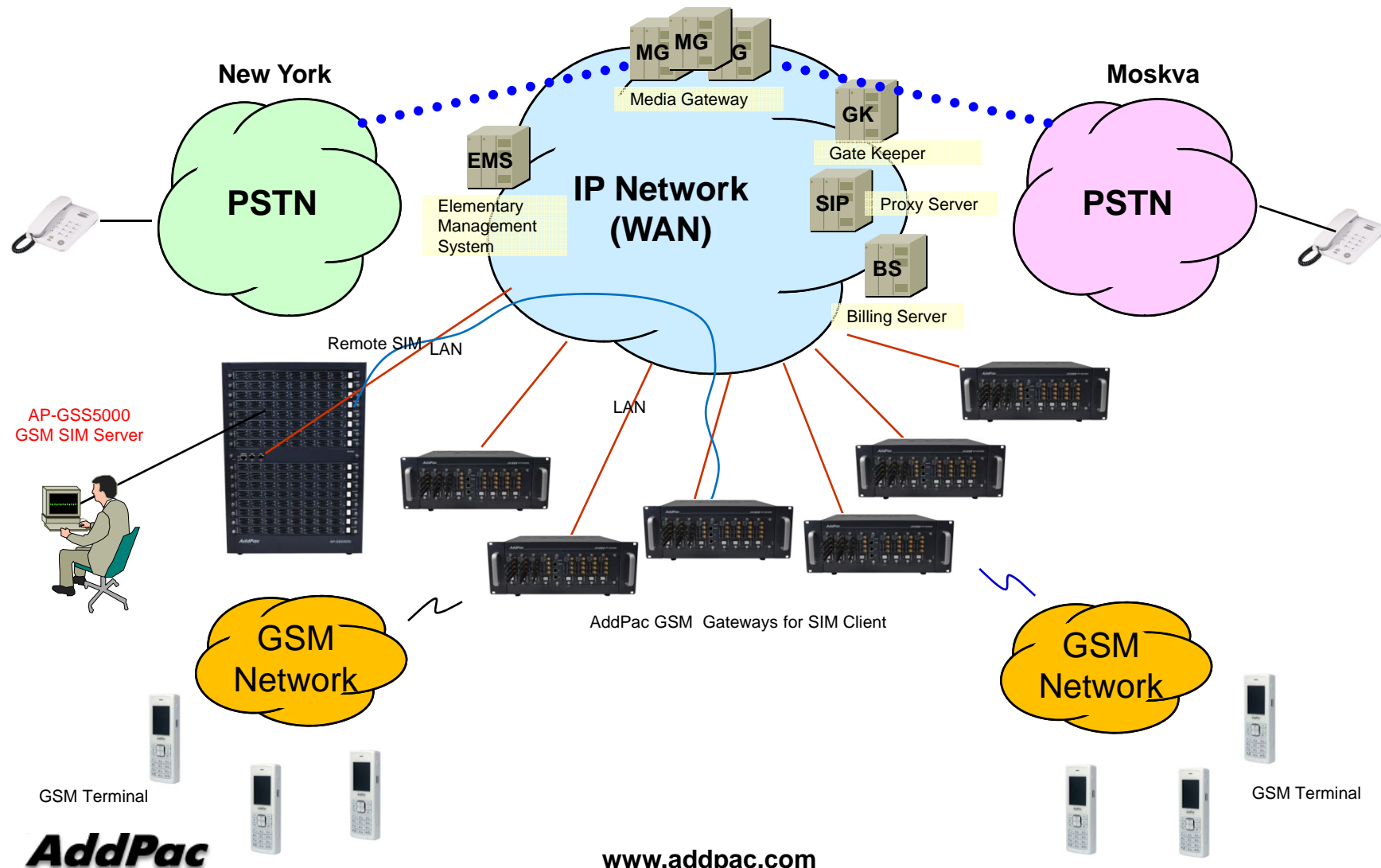
2013, Sales and Marketing

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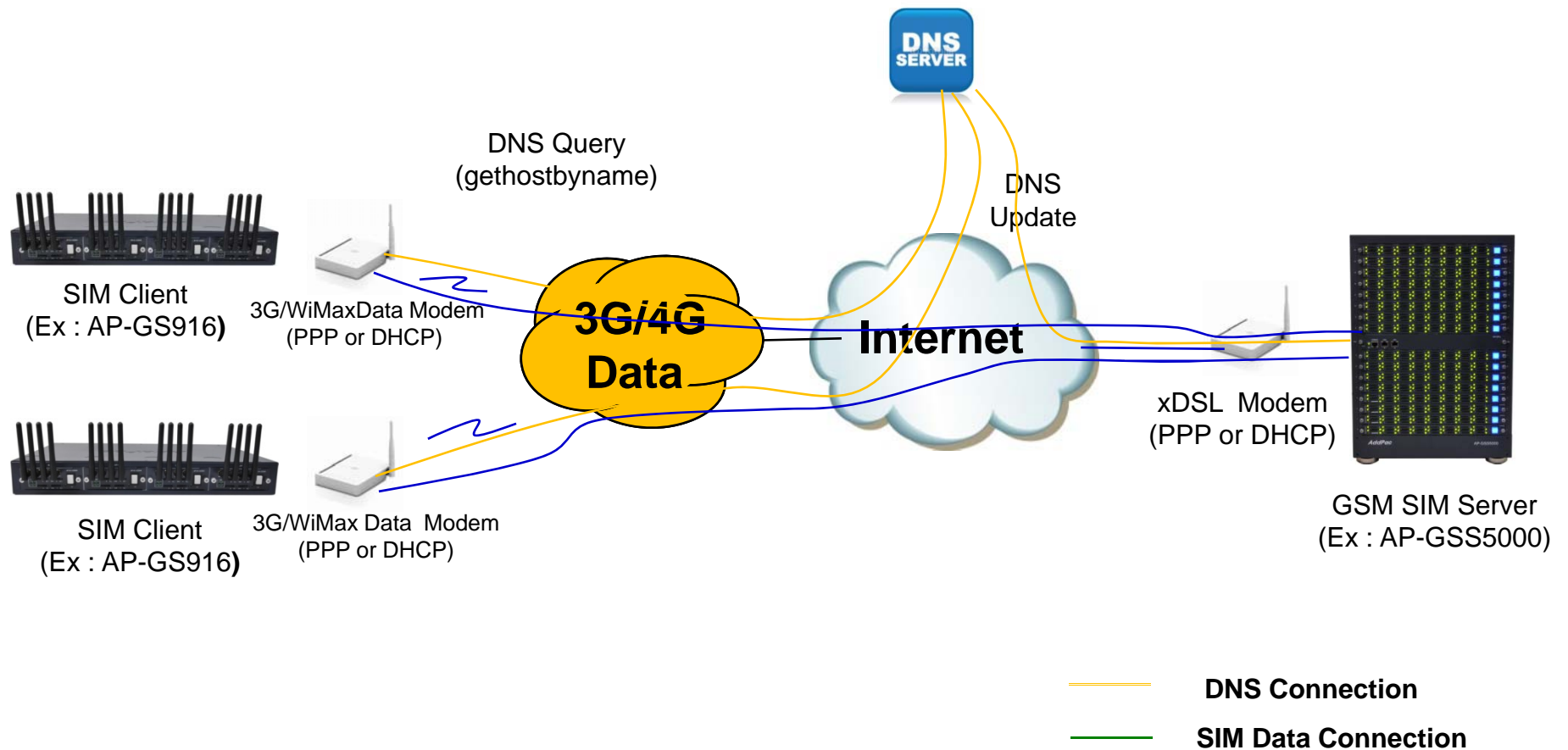
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# General GSM SIM Server Service Diagram



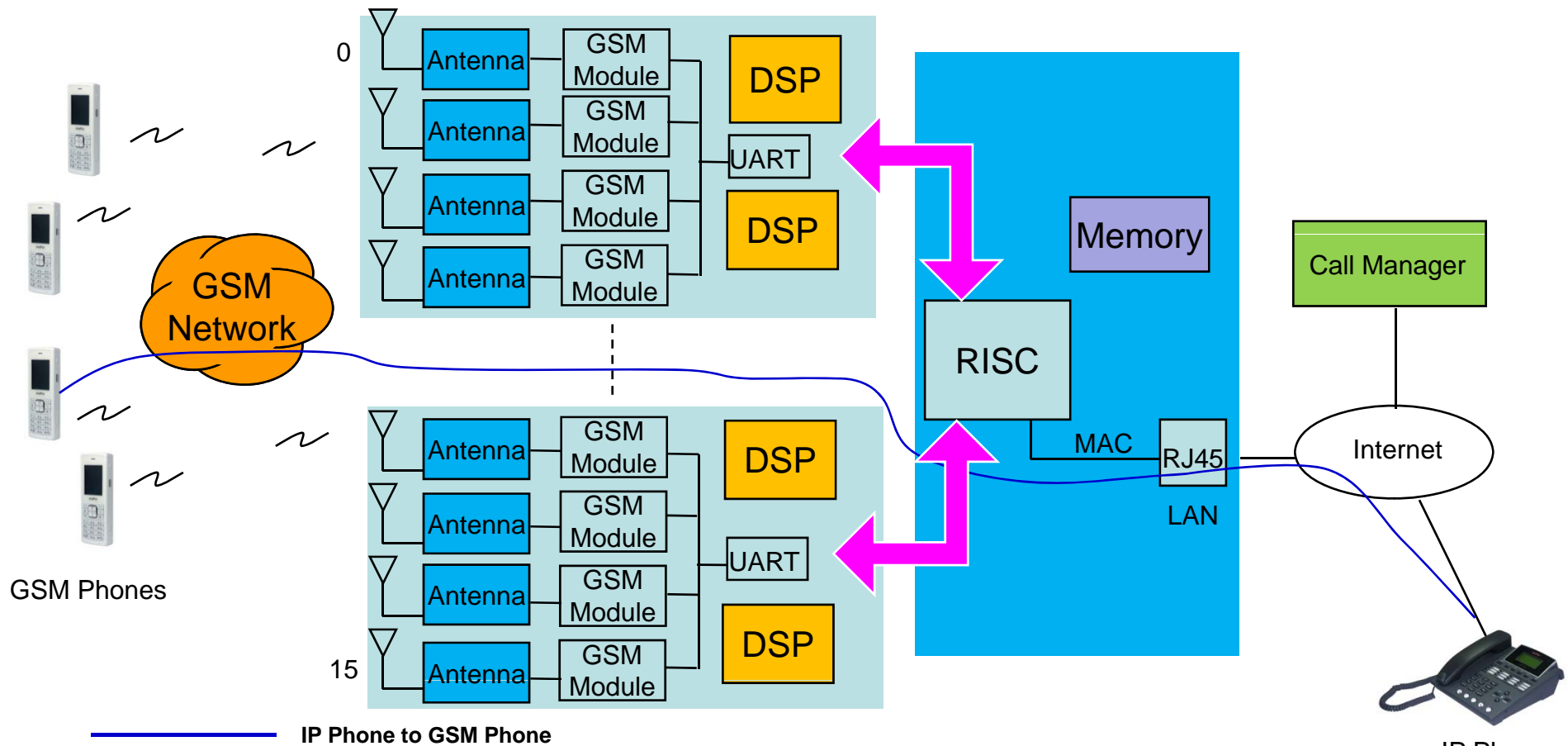
# Dynamic IP Address Environment

## Dynamic DNS



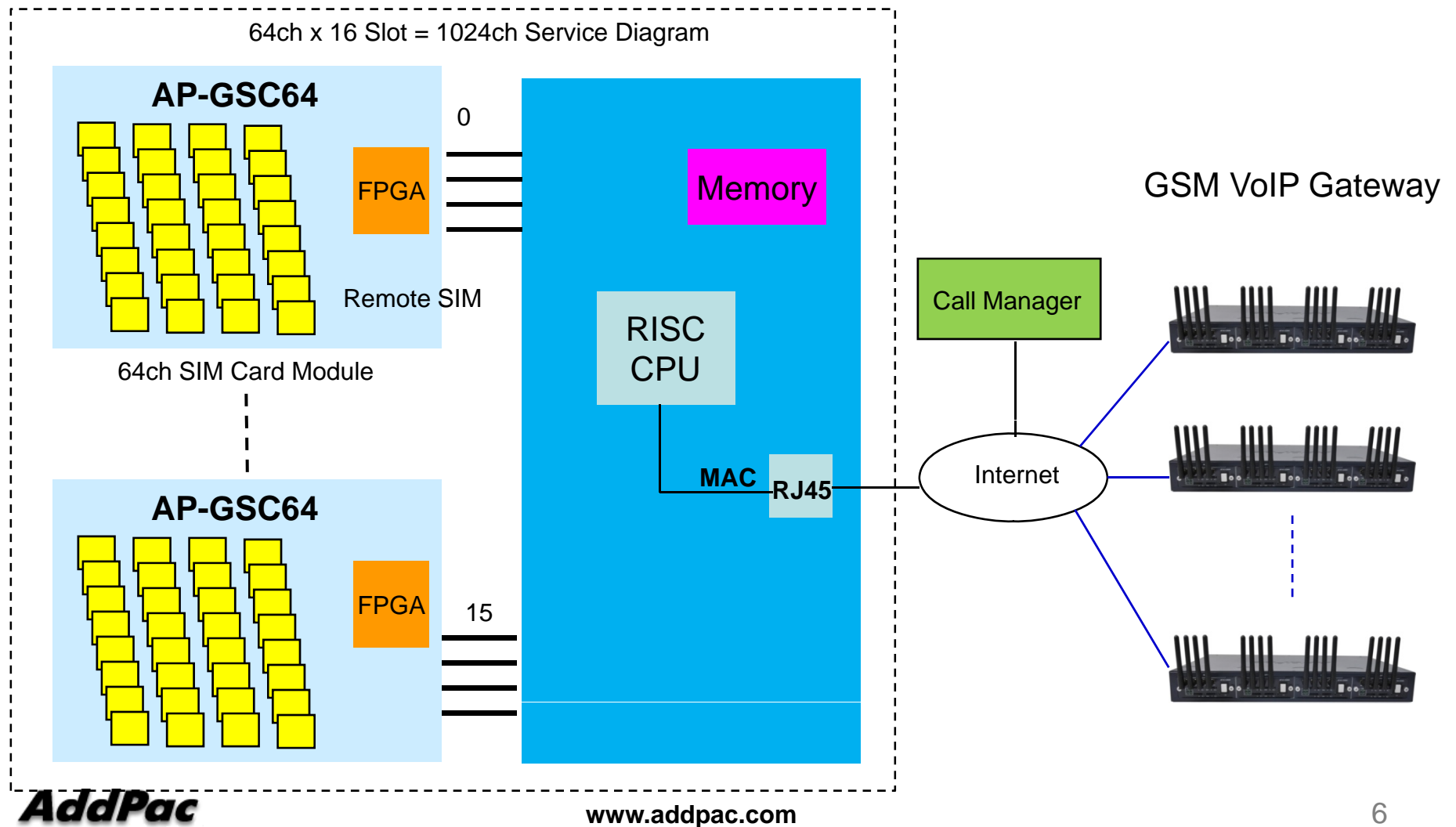
# GSM VoIP Gateway H/W Architecture (Ex : AP-GS916)

AP-GS916 16-Port GSM VoIP Gateway  
Internal H/W Block Diagram



# GSM SIM Server H/W Architecture (Ex : AP-GSS3000)

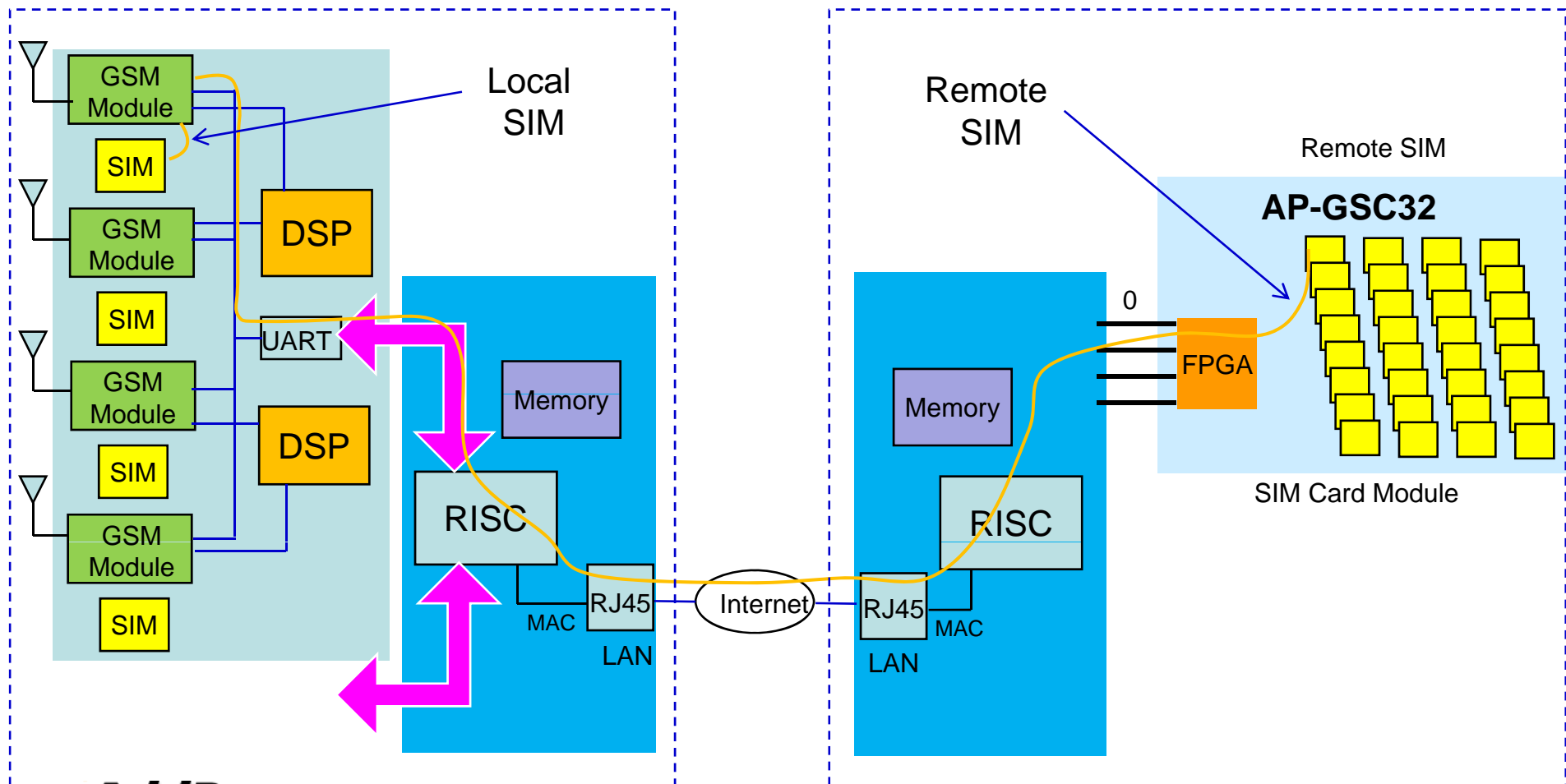
## GSM SIM Server



# Local SIM and Remote SIM Flow

AddPac GSM VoIP Gateway  
(SIM Client)

AddPac GSM SIM Server

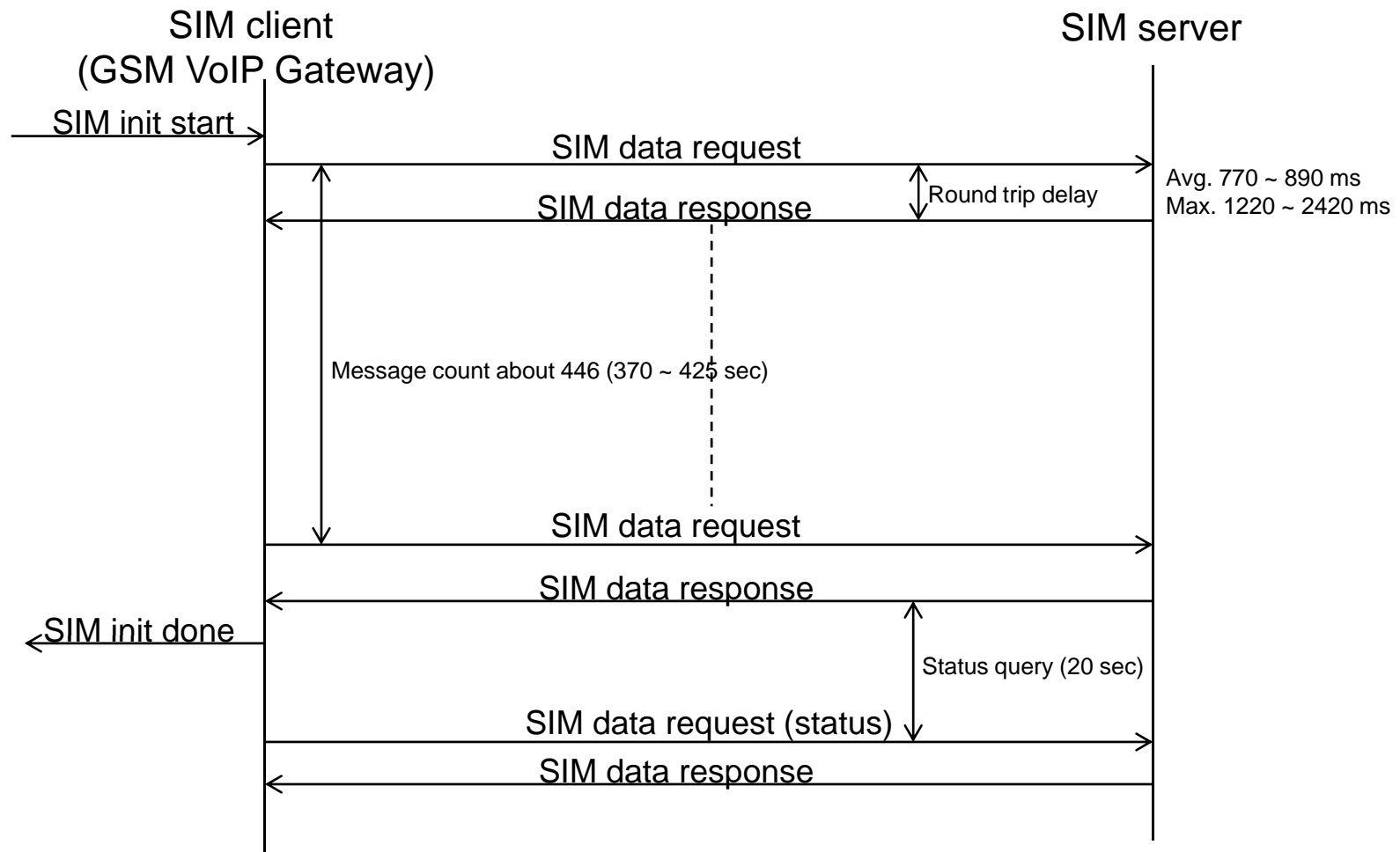




# Remote SIM Initialize Scheme

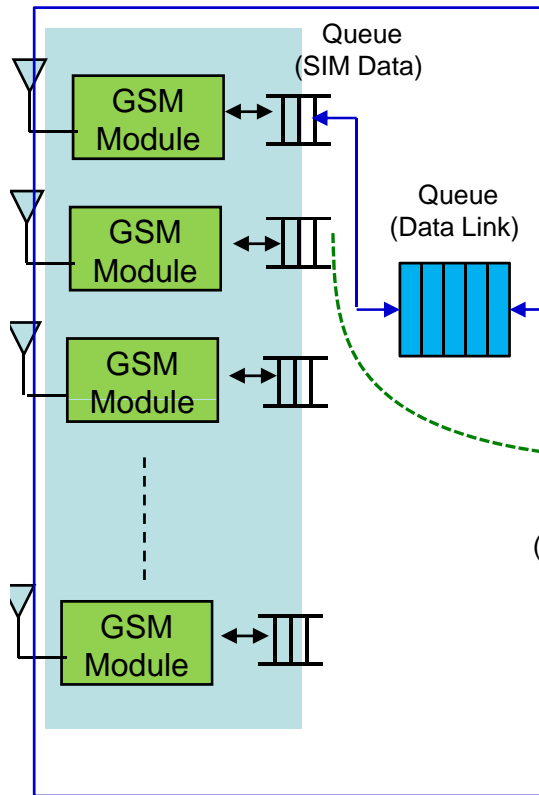


# Remote SIM Initialize (example)

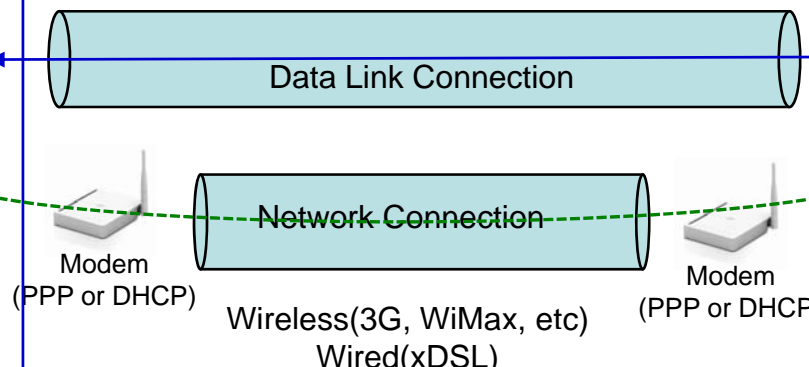
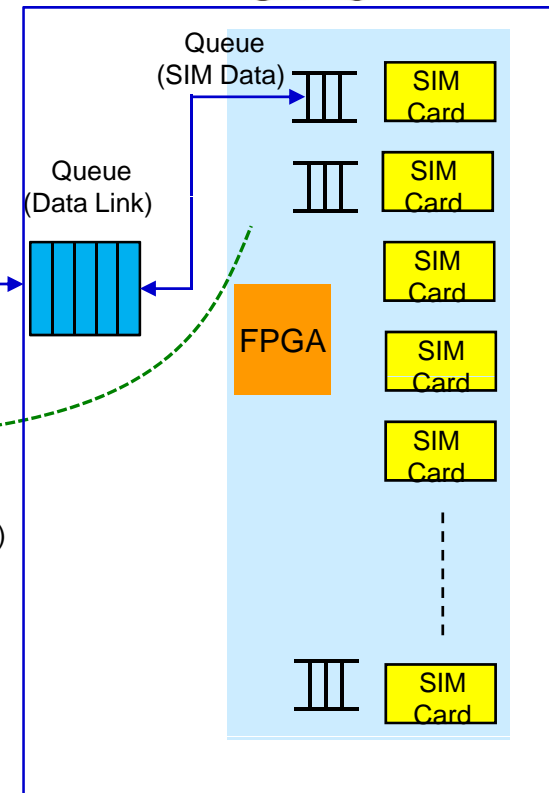


# SIM Service Connection

GSM SIM Client



GSM SIM Server



----- Physical Connection

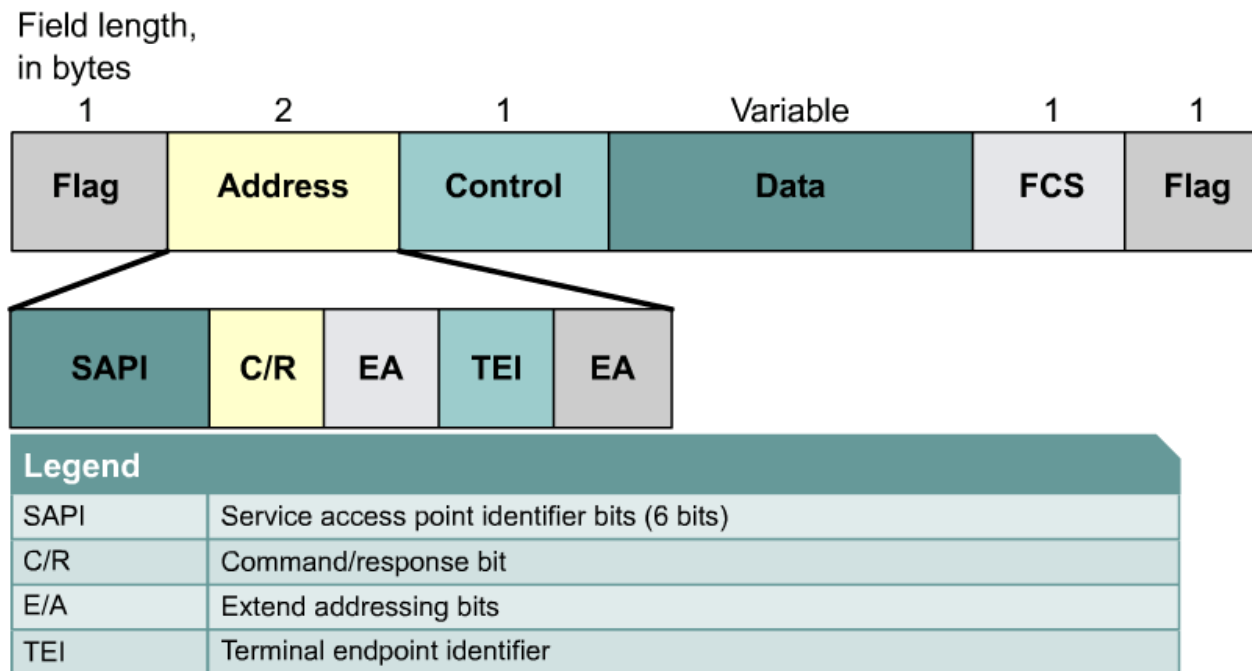


# Data Link Scheme

# Technical Issues

- Access Network Environment for SIM Client
  - 3G Data, WiMAX, etc Wireless Modem
  - “GSM VoIP Service + SIM Data Exchange” is occurred concurrently
  - Characteristic : High Delay, Frequent Packet Loss,  
Frequent Packet Sequence Change,  
Best Effort QoS,  
Abrupt IP Address Change,  
Unstable Power Supply
  - High Performance & Reliable Data Link Protocol must be used
- AddPac Developed Modified LAPD Protocol is used for Remote SIM Data Link Protocol
- This Modified LAPD Protocol is very strong in wireless env. like as 3G network, WiMax.
- LAPD protocol is originally ISDN D-Channel Data Link Protocol

# ISDN LAPD Protocol Frame



# ISDN LAPD Protocol Frame

- The LAPD flag and control fields are identical to those of HDLC.
- The LAPD address field is 2 bytes long.
- **Service access point identifier (SAPI)**, which identifies the portal at which LAPD services are provided to Layer 3.
- The **command/response bit (C/R)**, indicates whether the frame contains a command or a response.
- The second byte contains the **terminal endpoint identifier (TEI)**.
  - Each piece of terminal equipment on the customer premises needs a unique identifier.
  - The TEI may be statically assigned at installation, or the switch may dynamically assign it when the equipment is started up.
  - Statically assigned TEIs range from 0 to 63.
  - Dynamically assigned TEIs range from 64 to 126.
  - A TEI of 127, or all 1s, indicates a broadcast.



# Thank you!

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