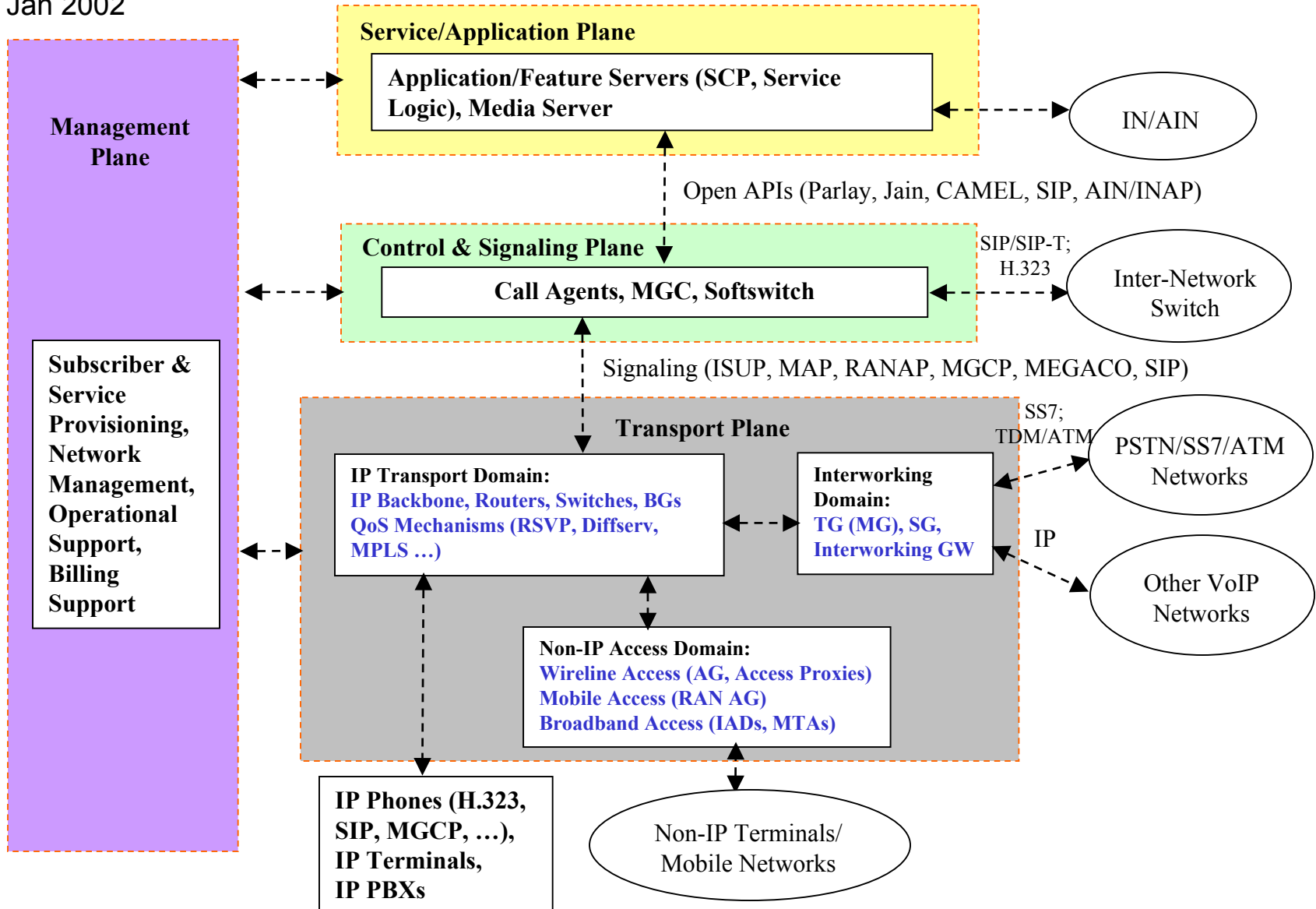
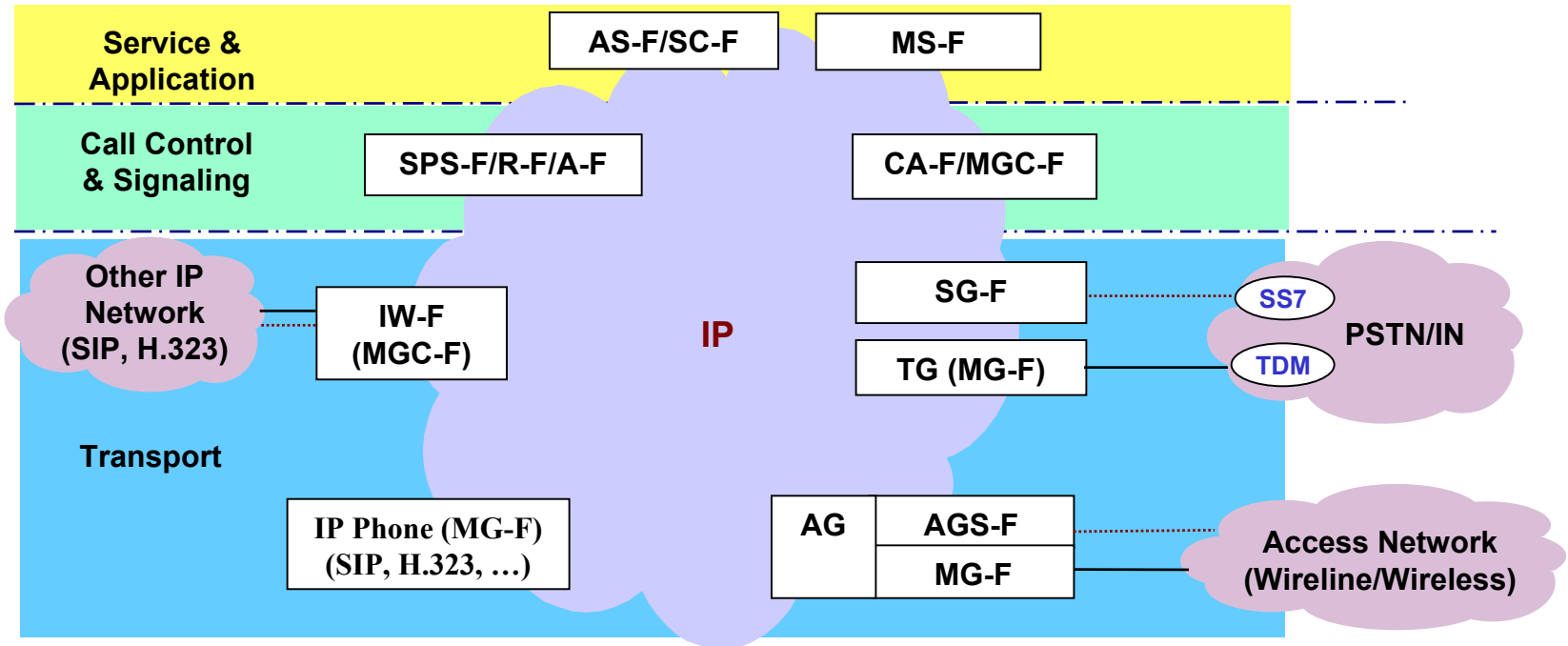




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ISC Reference Architecture – Functional Planes





— Media Signaling

NOTE: Management Function Not Shown for Simplicity

ISC Functional Definitions:

AS-F: Application Server Function;

SC-F: Service Control Function;

CA-F: Call Agent Function;

MGC-F: Media Gateway Controller Function;

SPS-F: SIP Proxy Server Function;

R-F: (Call) Routing Function;

A-F: Accounting Function (e.g., AAA);

MS-F: Media Server Function;

SG-F: Signaling Gateway Function;

MG-F: Media Gateway Function;

IW-F: Interworking Function;

AGS-F: Access Gateway Signaling Function;

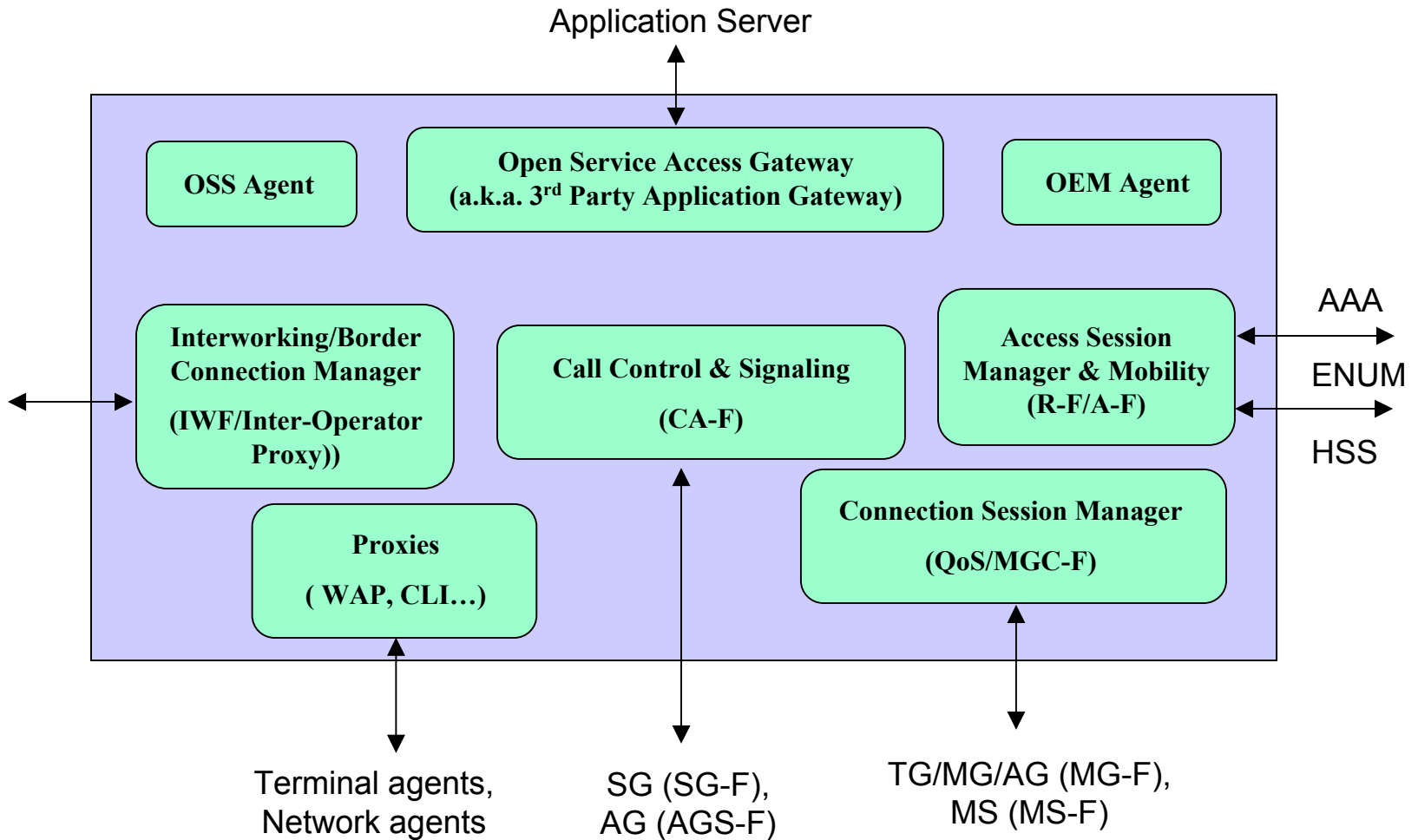
AG: Access Gateway;

TG: Trunking Gateway

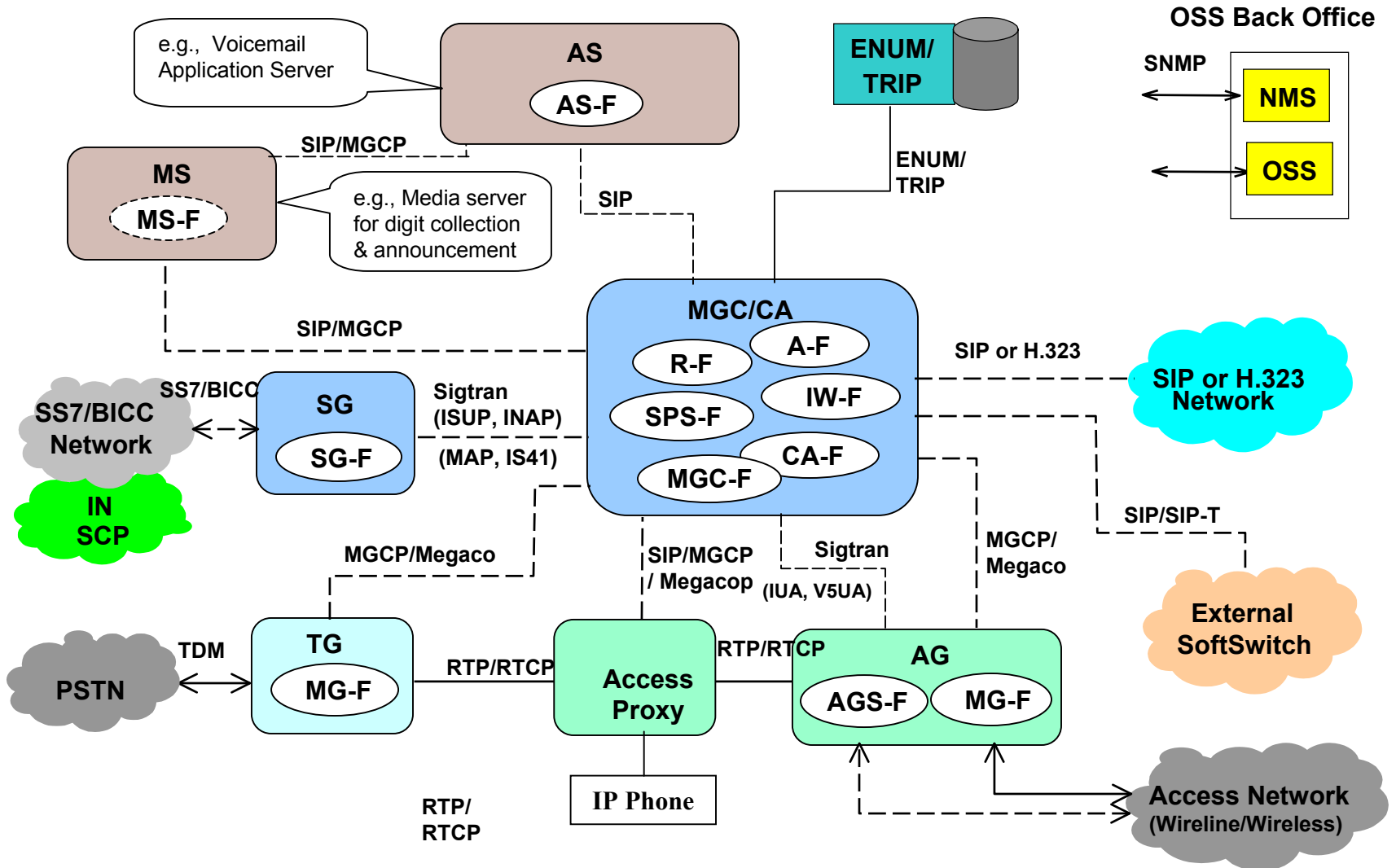


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ISC Reference Architecture – MGC Building Blocks



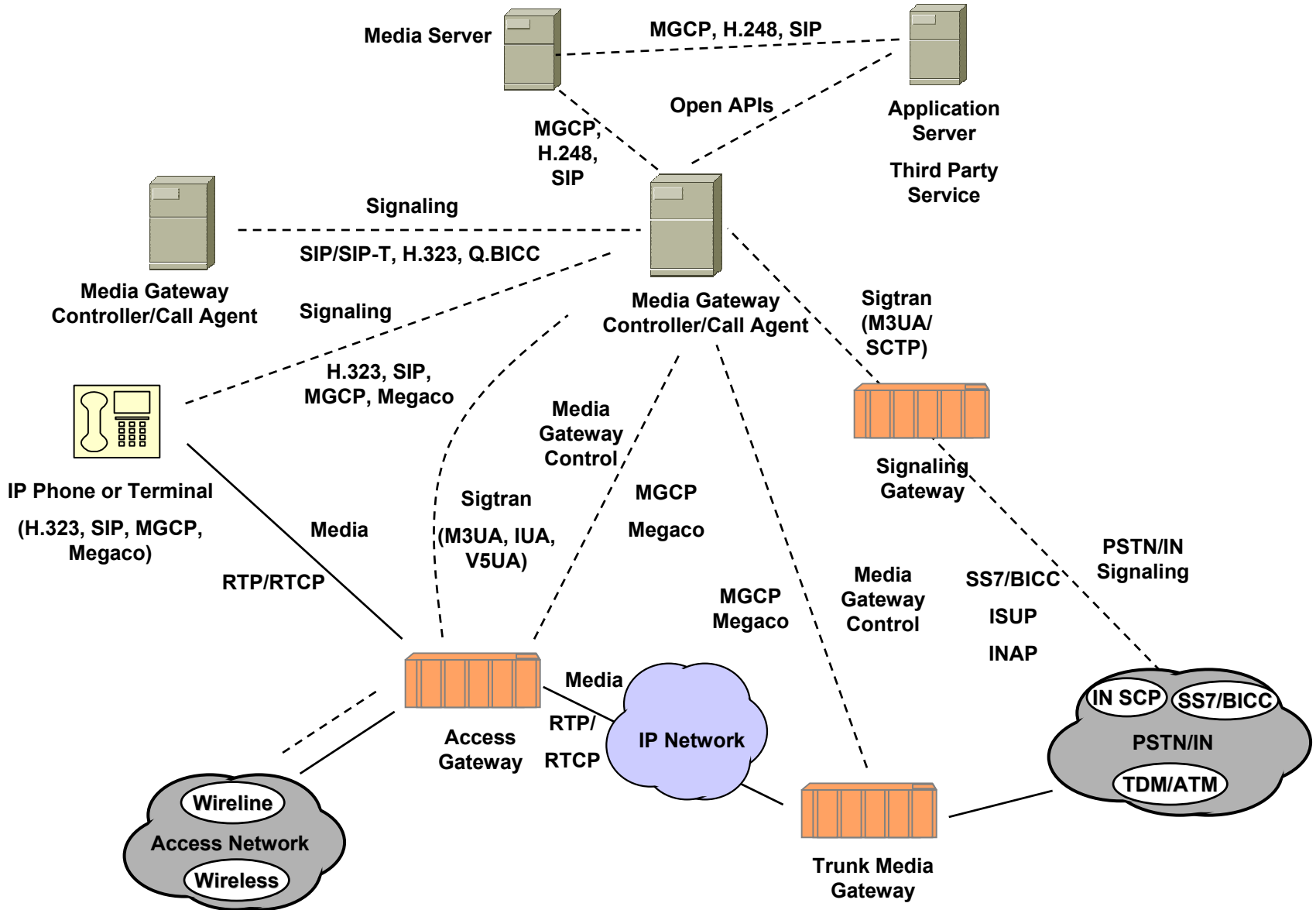
ISC Reference Architecture – Physical Example



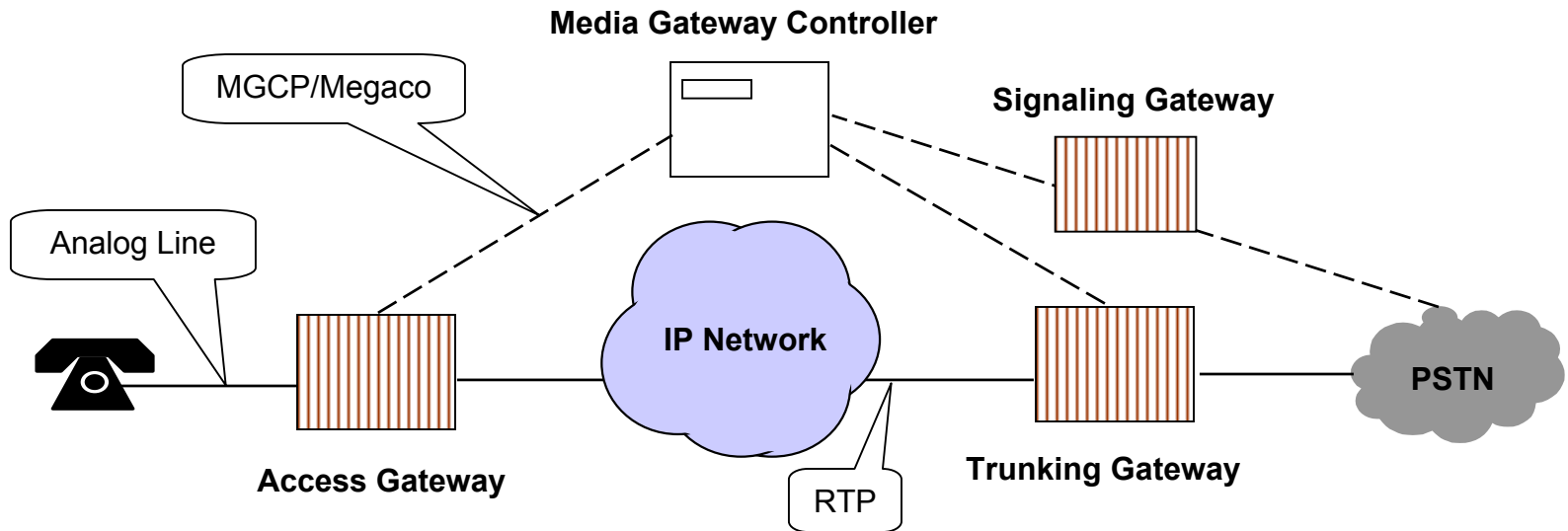
IMPORTANT NOTE: the dashed lines represent the realization of information flows achieved by selecting specific protocol and interfaces to meet service requirements; this figure and its associated protocol choices is informative only.



System Example – Wireline network



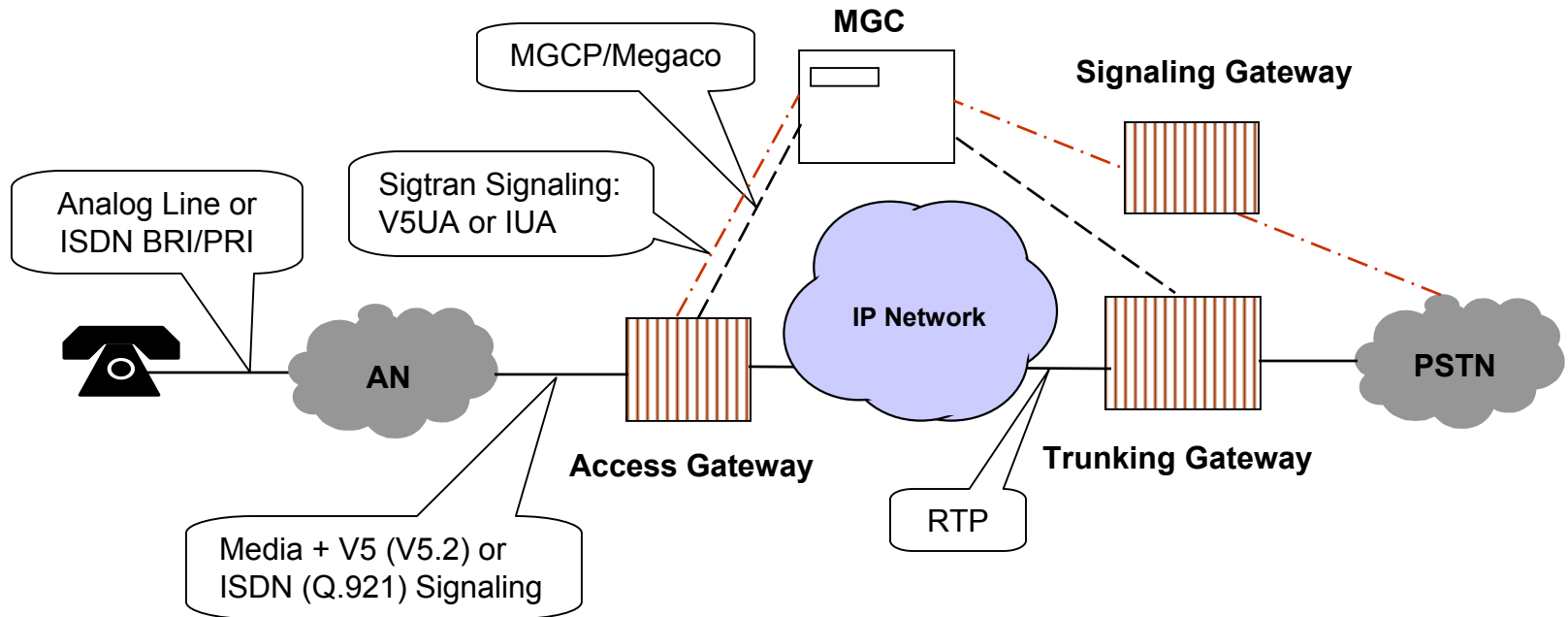
Examples – POTS Carried over IP



NOTE: The Access Gateway here is also commonly called:

- a. Media Gateway (MG), or**
- b. Residential Gateway (RG)**

Examples – Access Network (V5, ISDN) over IP

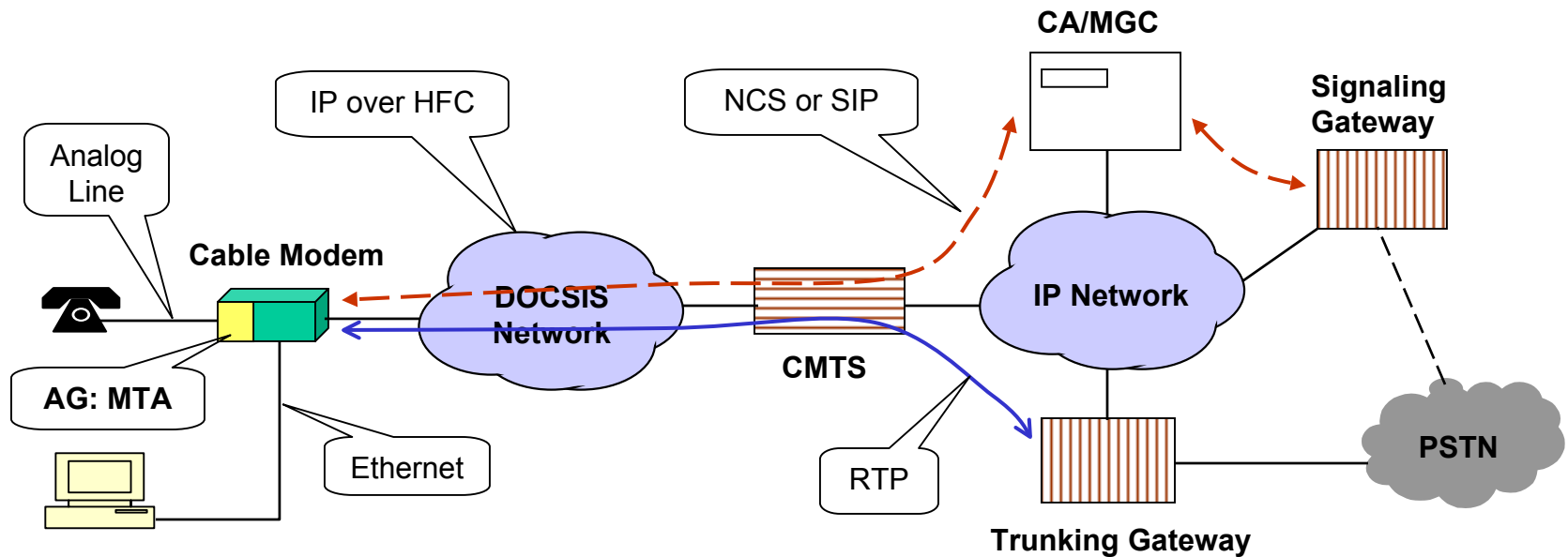


Access Gateway (AG) includes both MG-F and AGS-F

AN: Access Network

BRI: Basic Rate Interface; PRI: Primary Rate Interface

Examples – Cable Network (PacketCable™)



NOTE: The Access Gateway here is called:

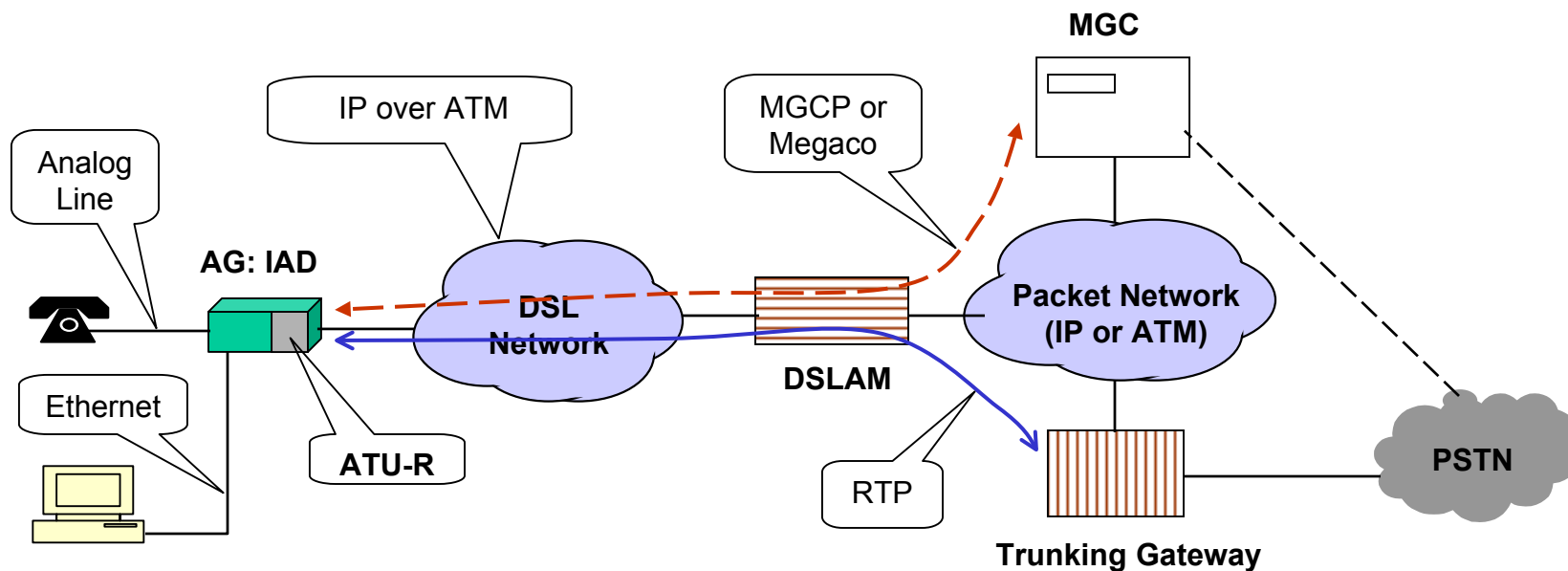
- a. **Multimedia Terminal Adaptor (MTA), or**
- b. **Residential Gateway (RG)**

DOCSIS: Data over Cable System Interface Specification

CMTS: Cable Modem Termination System

NCS: Network Control Signaling (modified MGCP for PacketCable)

Examples – VoDSL and IAD over IP



**NOTE: The Access Gateway here is called:
Integrated Access Device (IAD)**

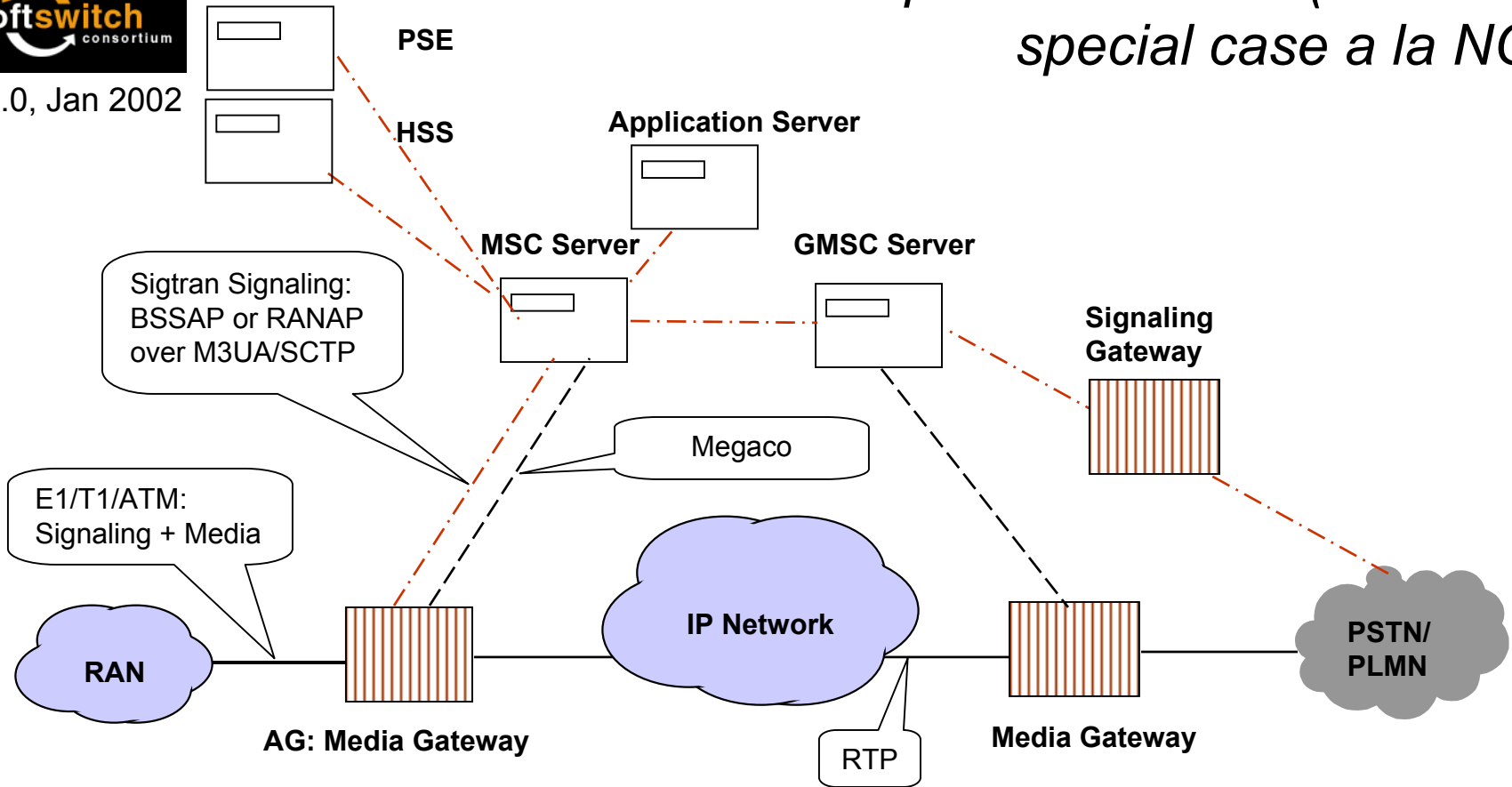
DSLAM: Digital Subscriber Line Access Multiplexer

ATU-R: Asymmetric Digital Subscriber Line (ADSL) Terminal Unit – Remote



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Examples – Wireless (3GPP R99 special case a la NGN)



NOTE: The Access Gateway here is referred to as:

Media Gateway (MG)

RAN: Radio Access Network (GSM or 3G)

MSC: Mobile Switching Center;

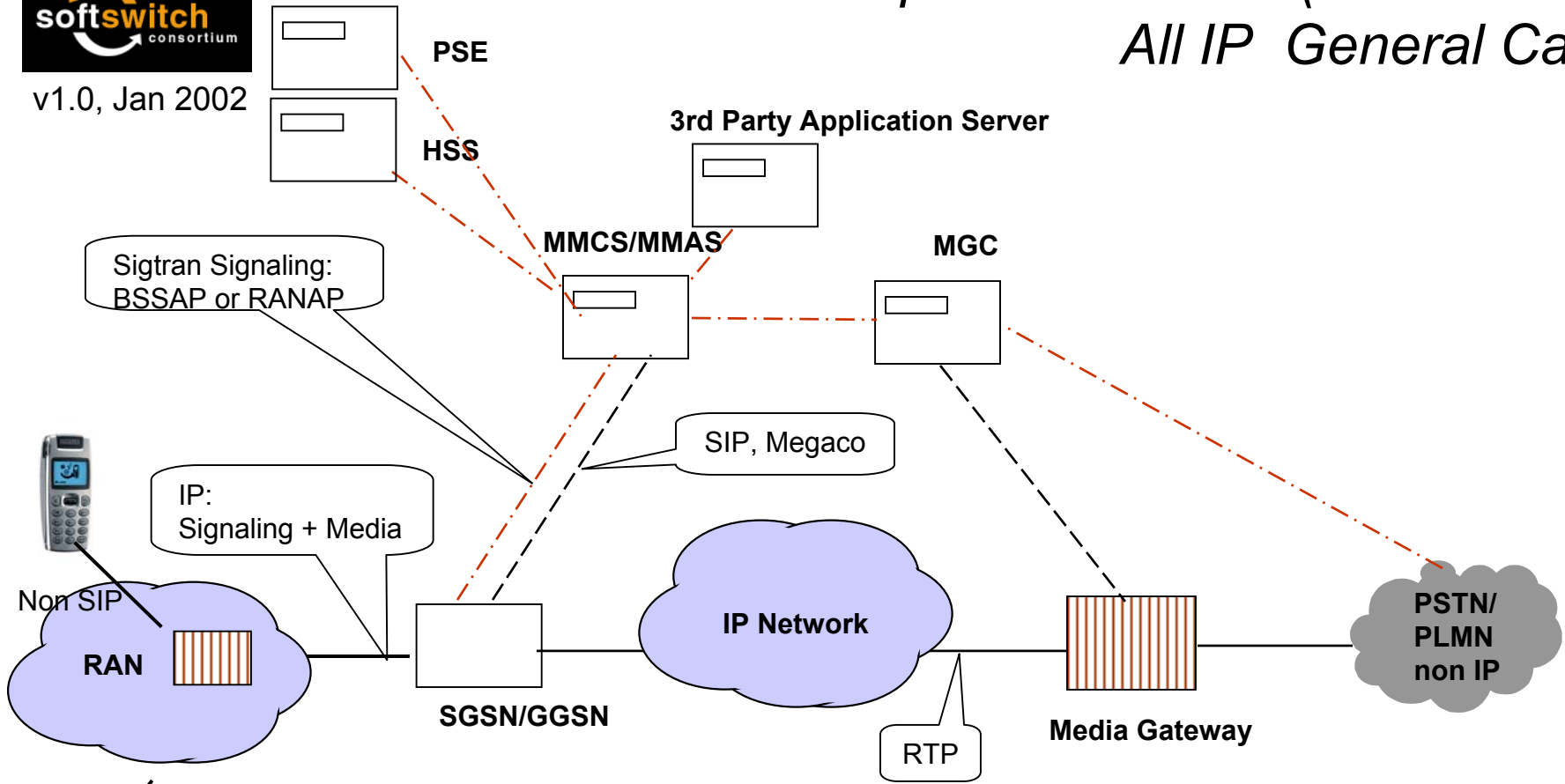
GMSC: Gateway MSC

Note: MSC Server or GMSC Server is equivalent to MGC



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Examples – Wireless (3GPP R2000 All IP General Case)



NOTE: The Access Gateway here is referred to as:

Media Gateway (MG) and can be in the terminal (SIP mobiles) or at the Radio Node Controllers

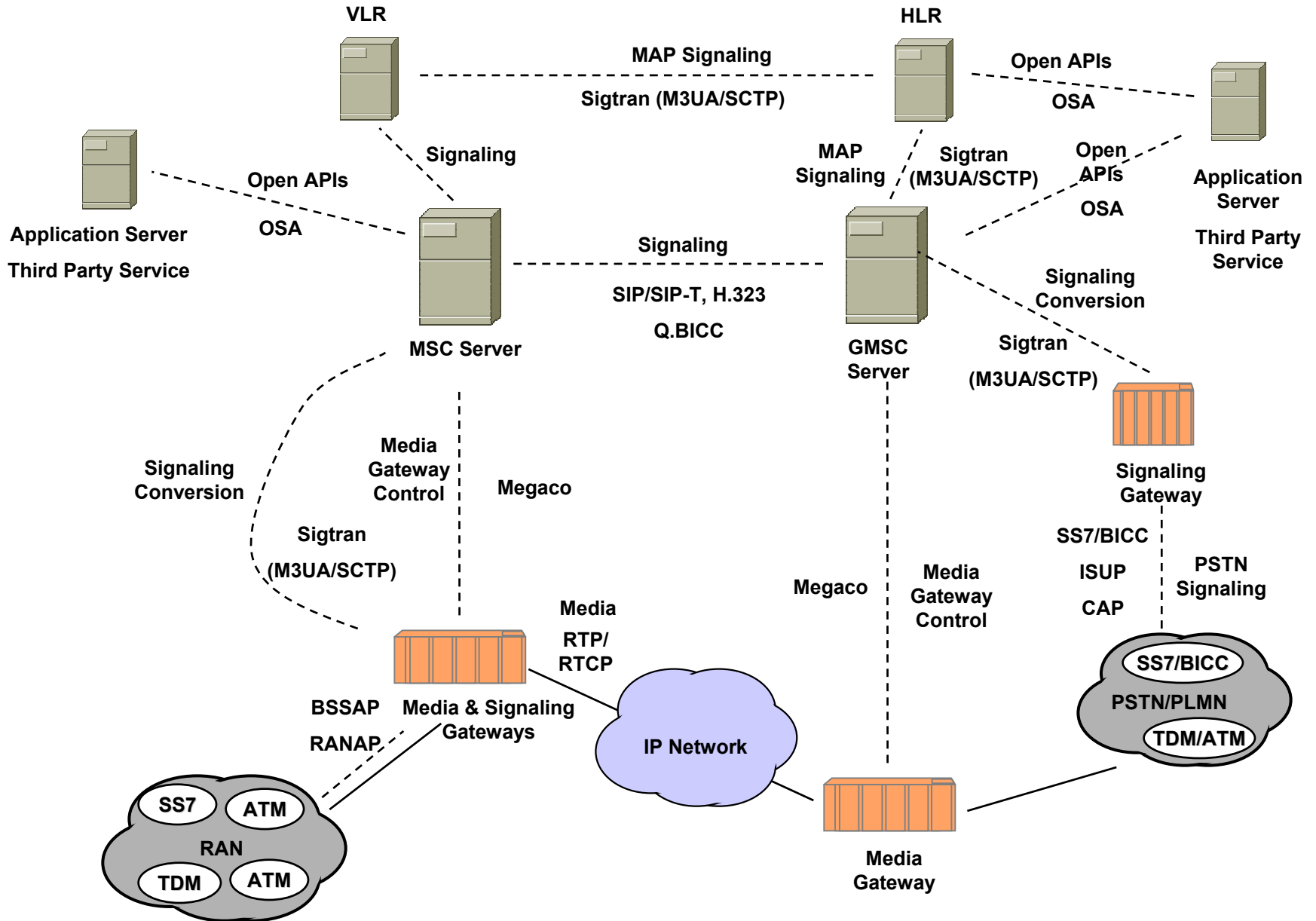
RAN: Radio Access Network (3G)

MMCS: MultiMedia Call Server

MMAS: MultiMedia Application Server



System Example – WCDMA mobile network





Acronyms

- AAA – Authentication, authorization, and accounting (IETF)**
- BSSAP – Base station subsystem application part (GSM, 3GPP)**
- BICC – Bearer independent call control (ITU)**
- CAP – CAMEL application part (GSM, 3GPP)**
- CMTS – Cable modem termination system (DOCSIS, PacketCable™)**
- ENUM – E.164 number (IETF)**
- HSS – Home subscriber system (3GPP)**
- IAD – Integrated access device (DSL)**
- MAP – Mobile application part (GSM, 3GPP)**
- MEGACO – Media gateway control (IETF/ITU)**
- MGCP – Media gateway control protocol (IETF)**
- MMCS/MMAS – Mobile multimedia call server/Mobile multimedia application server (3GPP)**
- MSC/GMSC – Mobile service center/Gateway MSC (GSM, 3GPP)**
- MTA – Multimedia terminal adaptor (PacketCable™)**
- NCS – Network call signaling (PacketCable™)**
- PLMN – Public land mobile network (3GPP, UMTS)**
- PSE – Personal service environment (3GPP)**
- OSA – Open service access (3GPP)**
- RANAP – Radio access network application part (3GPP)**
- SGSN/GGSN – Serving GPRS system node/Gateway GPRS system node (GPRS, 3GPP)**
- SIGTRAN – Signaling transport application network? (IETF)**
- TRIP – Telephony routing interworking protocol (IETF)**
- VLR/HLR – Visitor location register/Home location register (GSM, 3GPP)**