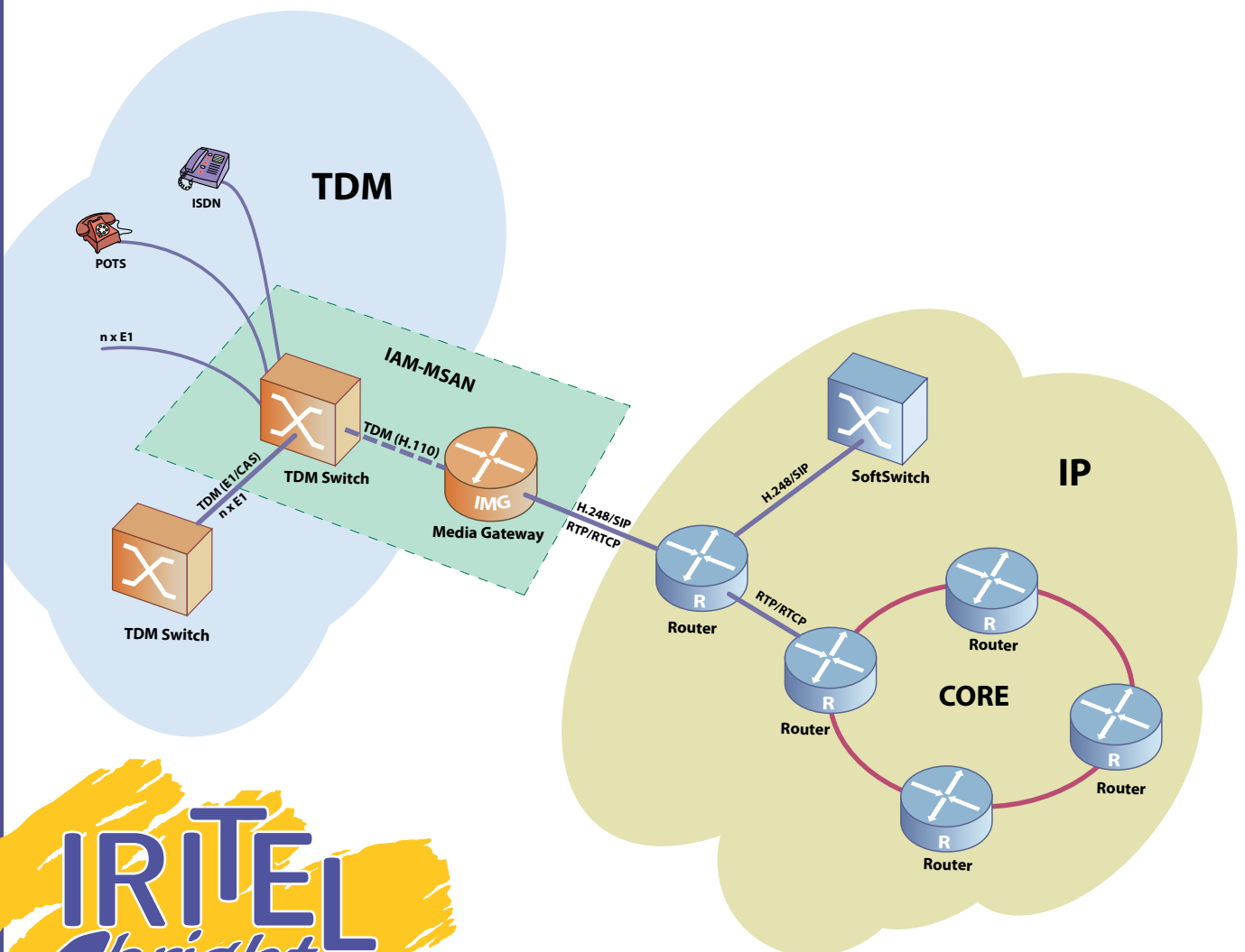




IMG

Media Gateway

- VoIP – TDM to IP telephony switch
- Up to 200 simultaneous VoIP-POTS conversions for 2400 subscribers
- Stand-alone device or part of Integrated access multiplexer IAM-MSAN
- Signaling: MEGACO (H.248) or SIP
- Network management system SUNCE-M or SNMP-based management



Implementation

- IMG connects POTS subscribers with IP network by transforming classic telephone traffic to VoIP and vice versa
- IMG can be realized as a stand-alone device or as a unit of Integrated access multiplexer IAM-MSAN
- IAM-MSAN enables different subscribers (POTS, ISDN, xDSL, Ethernet, X.21, V.35...) to access PSTN and IP networks

Configuration

IMG consists of Engines – software units that can be executed on different hardware platforms and are connected by UDP/

TC/IP protocols. This organisation enables big flexibility and scalability.

IMG contains:

- ME (Media Engine): is working on voice coding/encoding
- SE (Signalization Engine): is dealing with signalization
- AE (Application Engine): controls software applications and functions
- TE (TDM Engine): is dealing with POTS

When IMG is a part of IAM-MSAN it contains ME, SE and AE, and TE functions are performed by IAM-MSAN.

TECHNICAL DATA

Voice packetisation

Voice coders/encoders

G.711 Appendix 1 and 2: Linear PCM 64 kbit/s
A law/ μ law, VAD/CNG, and PLC

G.723.1: MP-MLQ 6.3 kbit/s / ACELP 5.3 kbit/s

G.726: ADPCM 16, 24, 32, 40 kbit/s

G.729 A/B: CS-ACELP 8 kbit/s

GSM-AMR: 4.75-12.2 kbit/s

T.38 Fax Relay: G3 Fax Relay 2.4-14.4 kbit/s

SMV: 0.8-8.55 kbit/s

EVRC: 0.8-8.55 kbit/s

Voice processing, quality enhancements

Echo cancelation: per ITU-T G.168-2000 ECAN 10 ms, 16 ms, 32 ms, 128 ms tail sparse window

Voice detection: analyzes voice activity to detect silence intervals

Packet Loss Concealment: per ITU-T G.711 Appendix 1

Comfort Noise Generation: per ITU-T G.711 Appendix 2

Adaptive Jitter Buffer Manager: fully adaptive or static; de-jitter and packet reordering

Audio Conferencing: support for 3 to N party audio conferences per DSP core

Prompts: playback of prompts from local memory

Telephony Algorithms

DTMF Detect and Generate: per Bellcore GR-506-CORE, TIA 464-B, ITU-T Q.23 and Q.24

DTMF Relay: per RFC 2833

Call Progress Tone Handling: per Bellcore GR-506-CORE, ITU-T Q.35

Caller Identification: per ETSI, NTT and Telcordia algorithms

DSP data transfer

RTP/RTCP: per RFC 1889 and 3550

UDP: per RFC 768

IP: per RFC 791

Signalization

MEGACO: per RFC 3525

SDP: per RFC 2327

SIP: per RFC 3261 – option

Capacity

IMG can handle up to max. 200 simultaneous VoIP connections

TDM H.110 bus capacity (IAM-MSAN) is 2400 subscribers

IMG has: 2 x 10/100 BaseTx interfaces

IAM-MSAN supports up to 6 IMG Media Gateway

Software

Operating system: eLinux (Freescale)

Applications: written in C

Hardware

Processor Power PC II MSC8260

VoIP cores 1 to 2 x DSP MSC8122

Aggregator: DSP MSC 8103

SDRAM 64 MB, **FLASH** 64 MB

Digital Switch: MT90866

Ethernet Switch: ZL50405