



# **Italtel**

**GLOBAL NETWORK SOLUTIONS**

## **Softswitches equipments in NGN Architecture and related services**

**ITU-BDT Seminar on Network Evolution**

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## Changing Scenario (1)

### Telecommunication market

- period of dynamic evolution
- increasing demand to deploy innovative services
- technology constantly opening up new horizons
- growing and developing in terms of quantity and quality
- relationships, information and business less and less dependent on the physical location of the people involved



**Crucial Point: opportunity to interact by exploiting the wide range of available means of communication, taking advantage of the ability to integrate CONVERGENCE with Multimedia Revolution**

## Changing Scenario (2)

### Convergence means

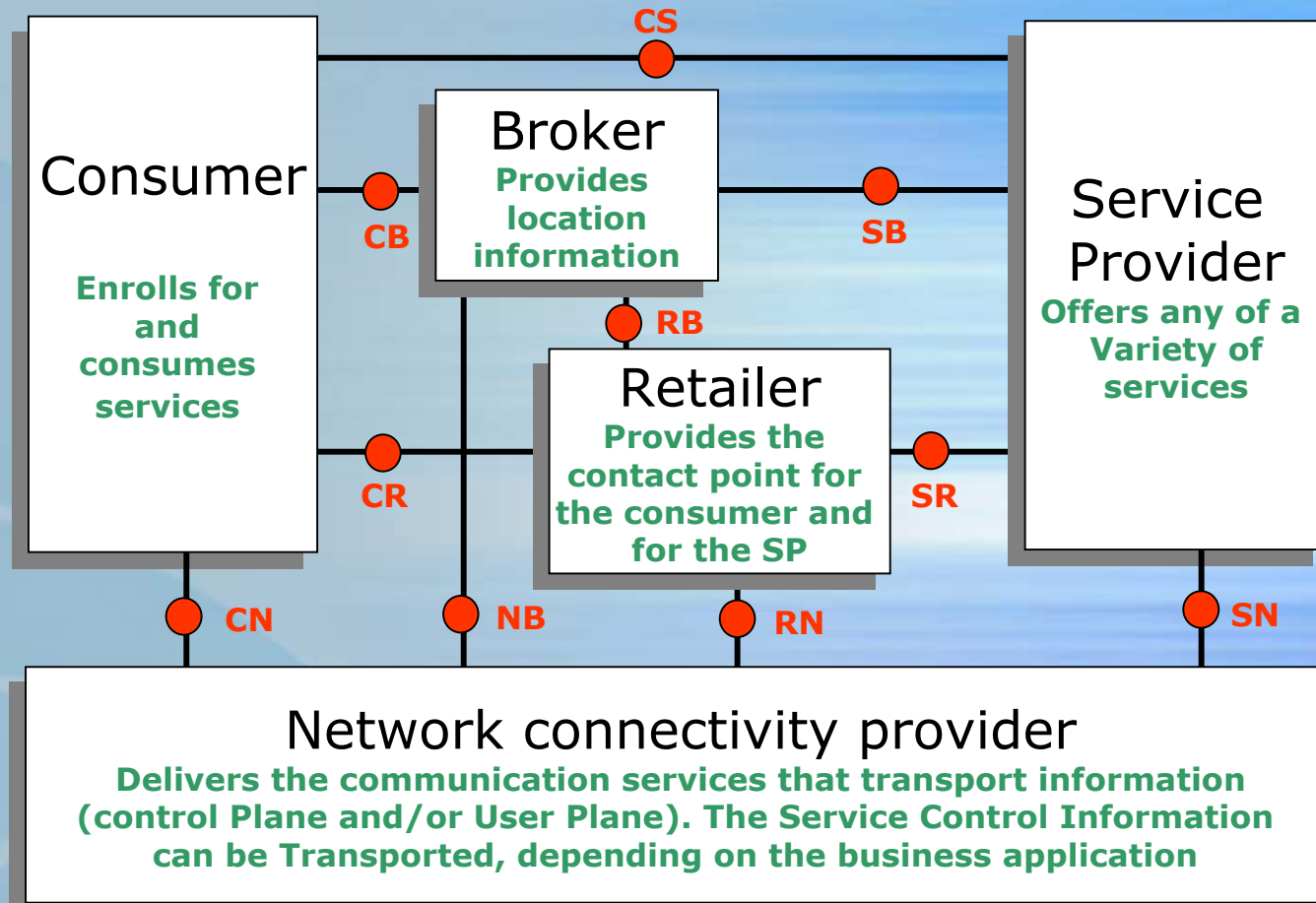
#### New industrial environment

- **New professions** (network operators, service providers, content provider access providers, hardware supplier, tool makers, distributors...)
- **New multiform actors** (system houses, manufactures of final products and systems...)
- **New various marketing means, tools and prices** (embedded software, role of Internet, price from “sold” to “free of charge”...)

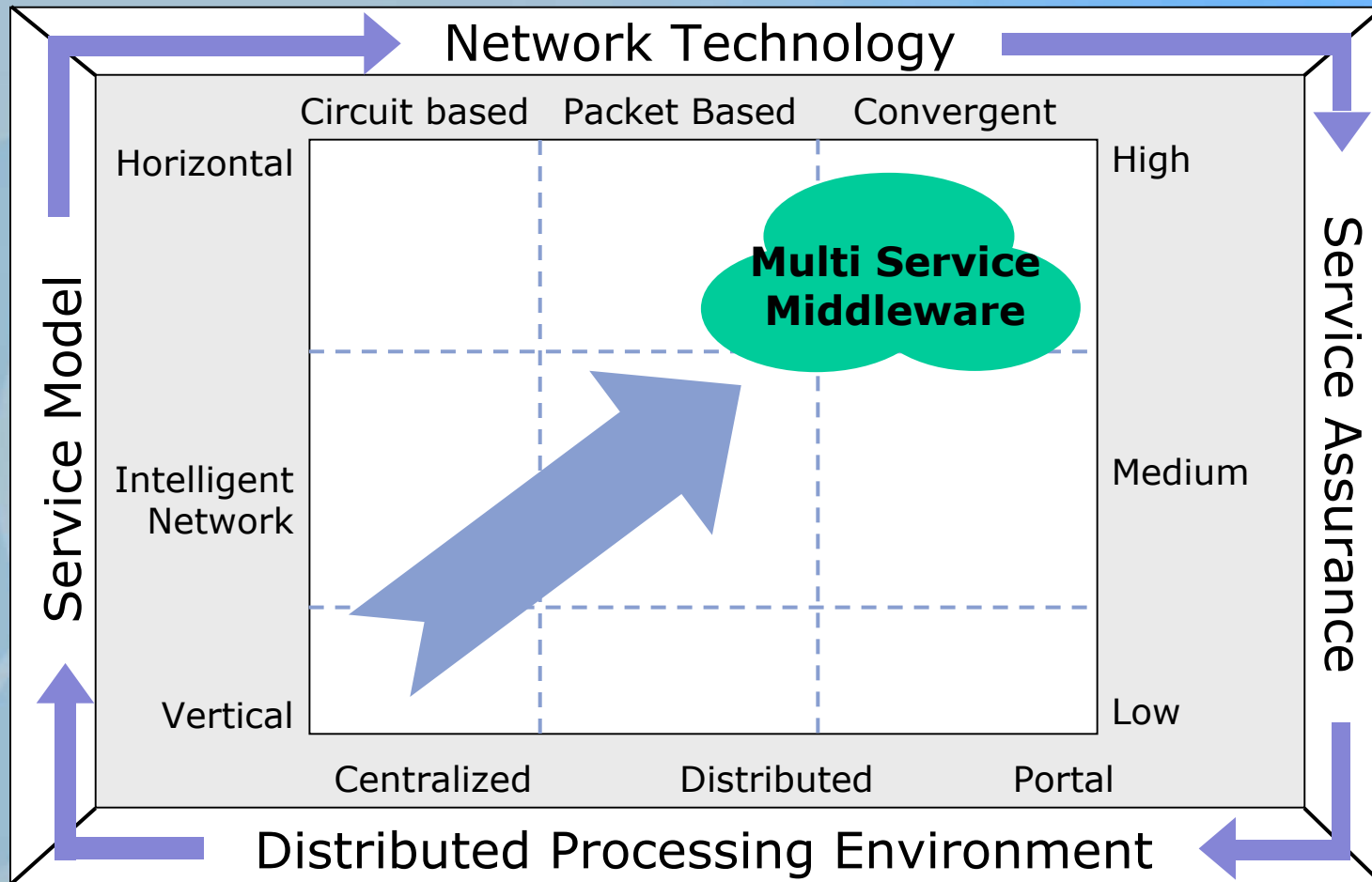
#### New user's expectations and possibilities

**New Business Models and New Relationships between different actors are arising**

# A New Business Model ...



# ... and New Relationships



## Telecommunication is ...

A strategic industry with impact on:

Economy

Growth market in different areas not equally distributed neither in type nor in geography.

Society

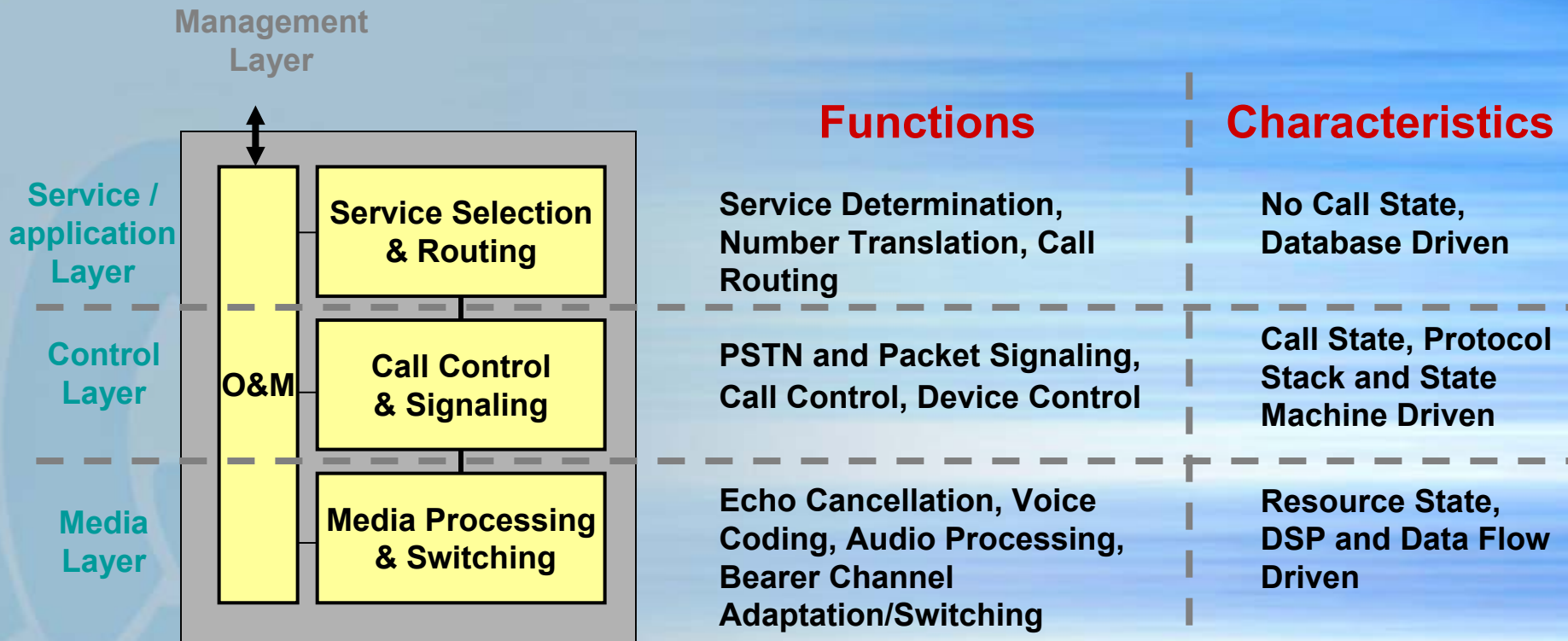
New services, application and content will create new market and new approach to life: will create the Information Society with ...

Technology

Multi access convergence platform (interactive digital TV, 3G mobile, PC at home ...)

Broadband (open platform for convergence, Quality, Security ...)

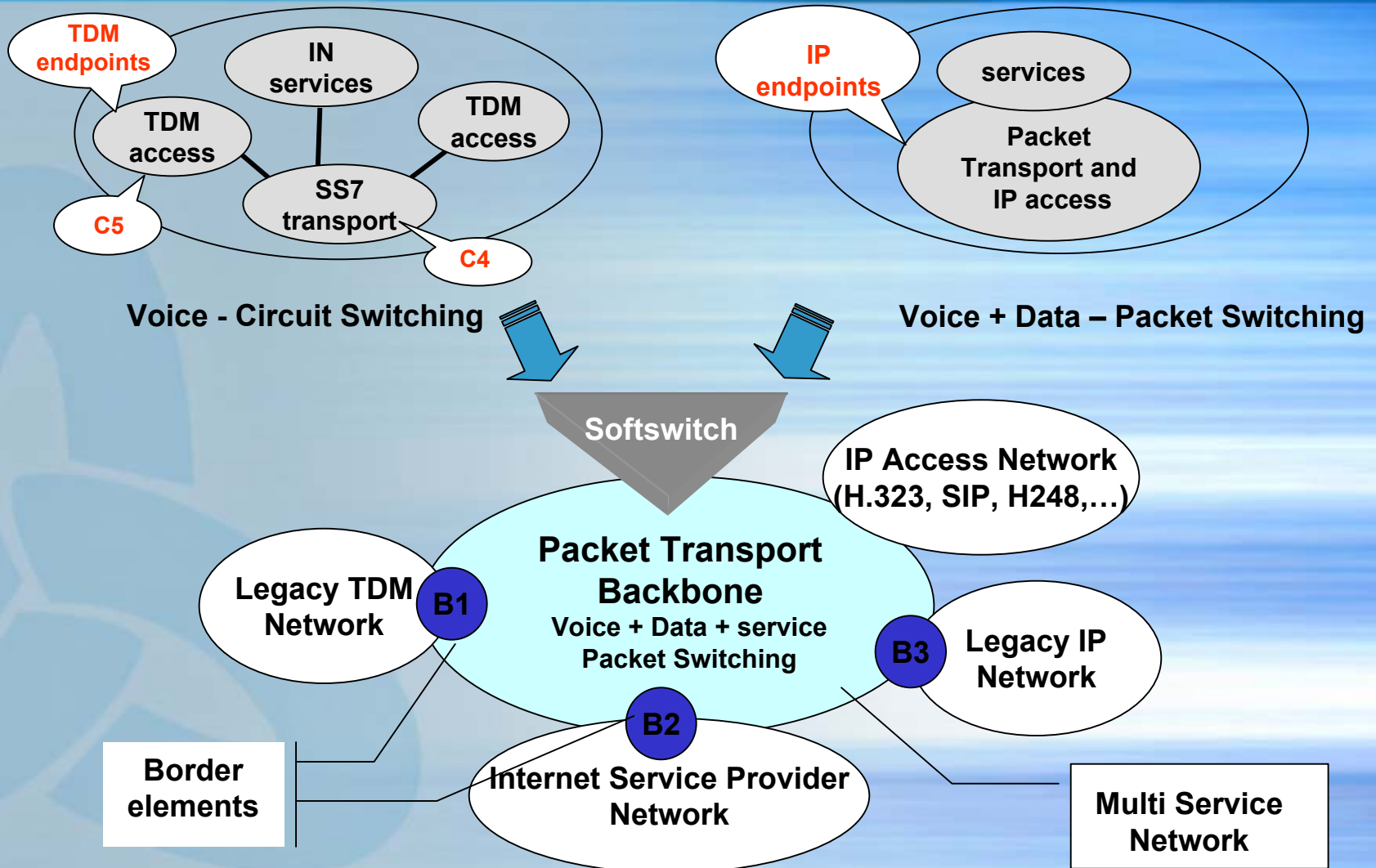
# NGN Network Reference Model



The NGN is the Key to open this “Innovative Place”

# Multi Service Solutions

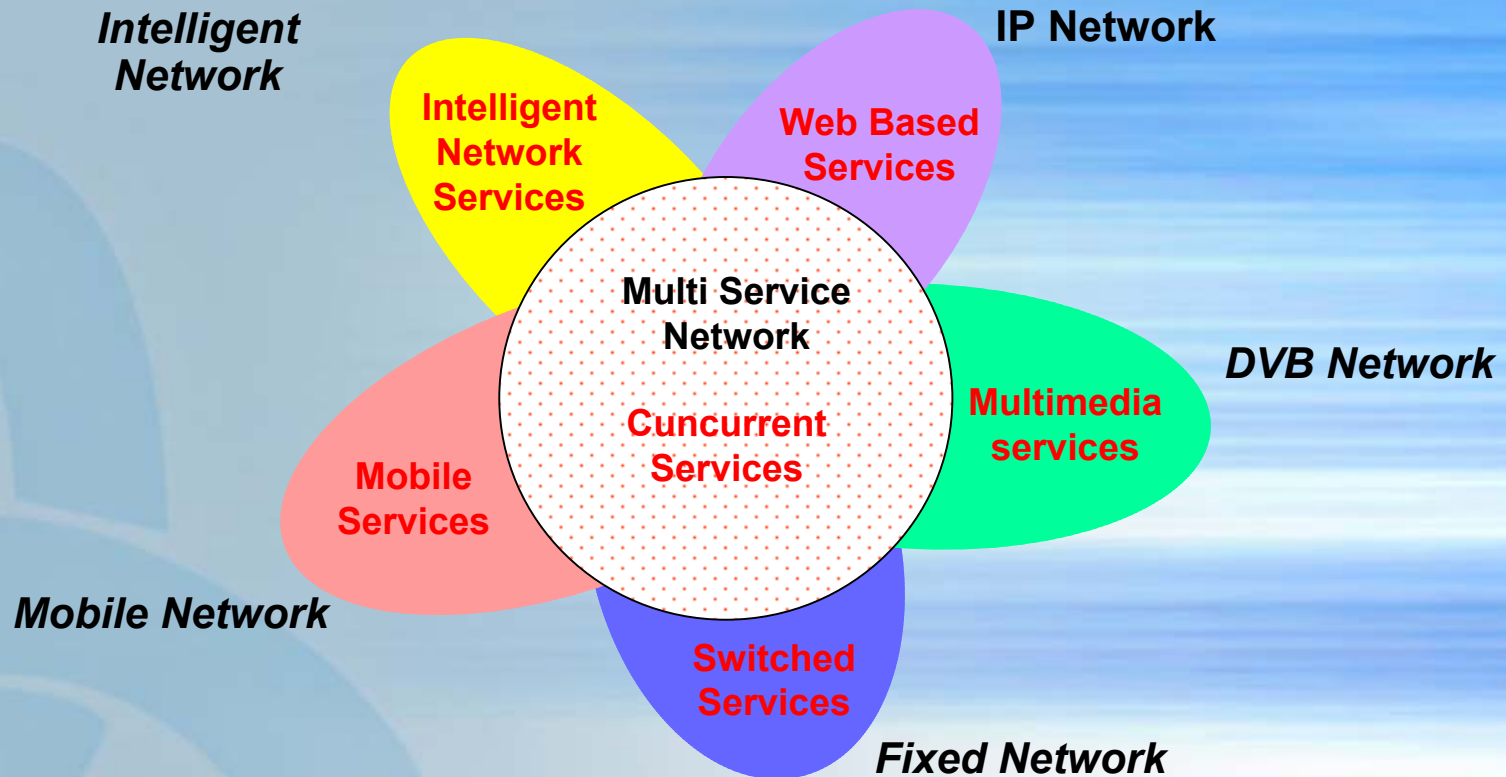
Networks point of view





# Multi Service Solutions

Service point of view



Integrated Multi service framework enables all layers and elements to carry all services and maximize network investments

# The General Evolution of Services point

## Traditional communication services

**Vertically integrated** development with service-level functionalities intertwined with underlying connection management capabilities



Optimized for performance and reliability



Complex to develop and difficult to extend or reuse

Set of available services different when end-user crosses the boundaries between circuit/packet, wireless/wireline, public network/enterprise domains

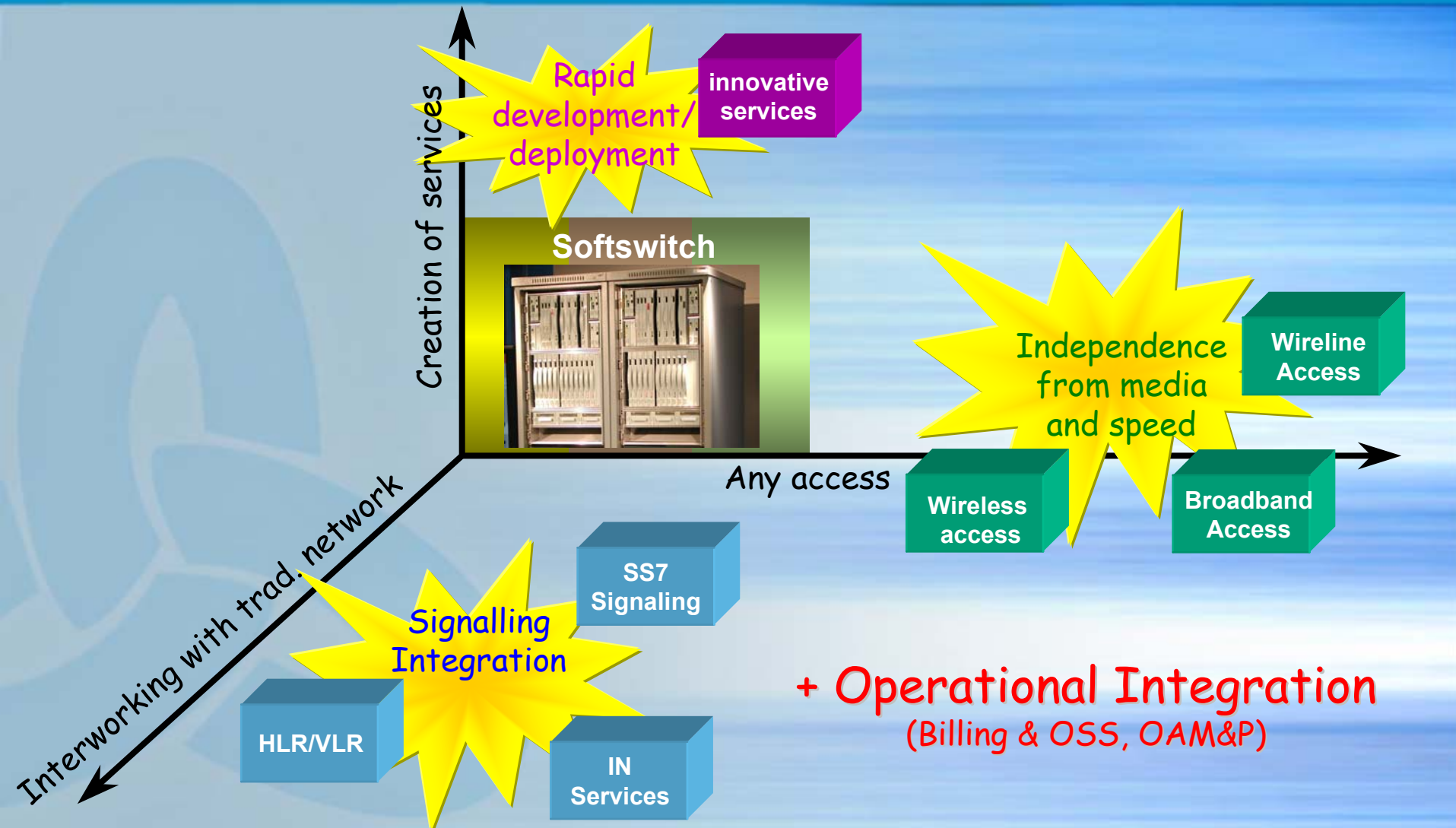
## Converged services

**Horizontal integrated** development with an API approach between application and communication infrastructure

Seamless and consistent across networks domains

The development of seamless services requires a deep understanding of the different protocols, data formats, end-user devices and network capabilities

# NGN Softswitch: driver for implementation

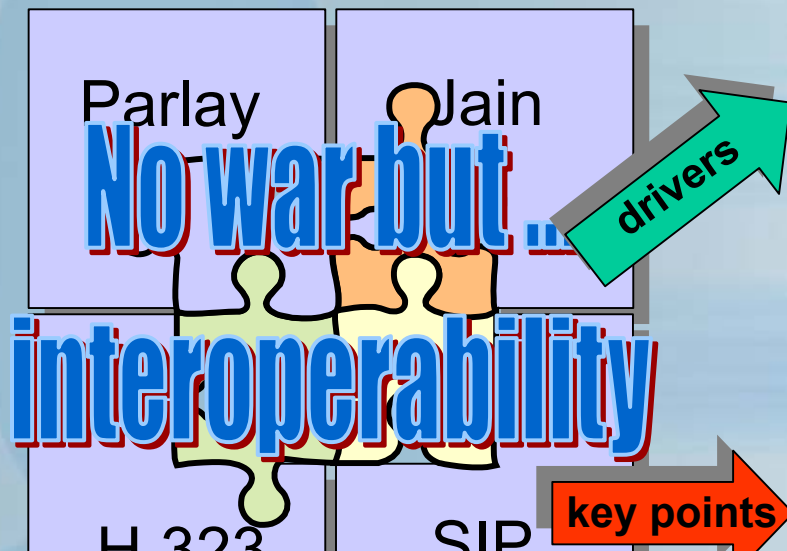




## Softswitch : a Middle war ?

Softswitch: More an architecture than a product

A strong ~~religious~~ battle is fighting ...



Border Elements towards the “legacy”

Security

IP Addressing

QoS

New Network Elements (TG, MG, endpoints ...)

New Interfaces between Network Elements

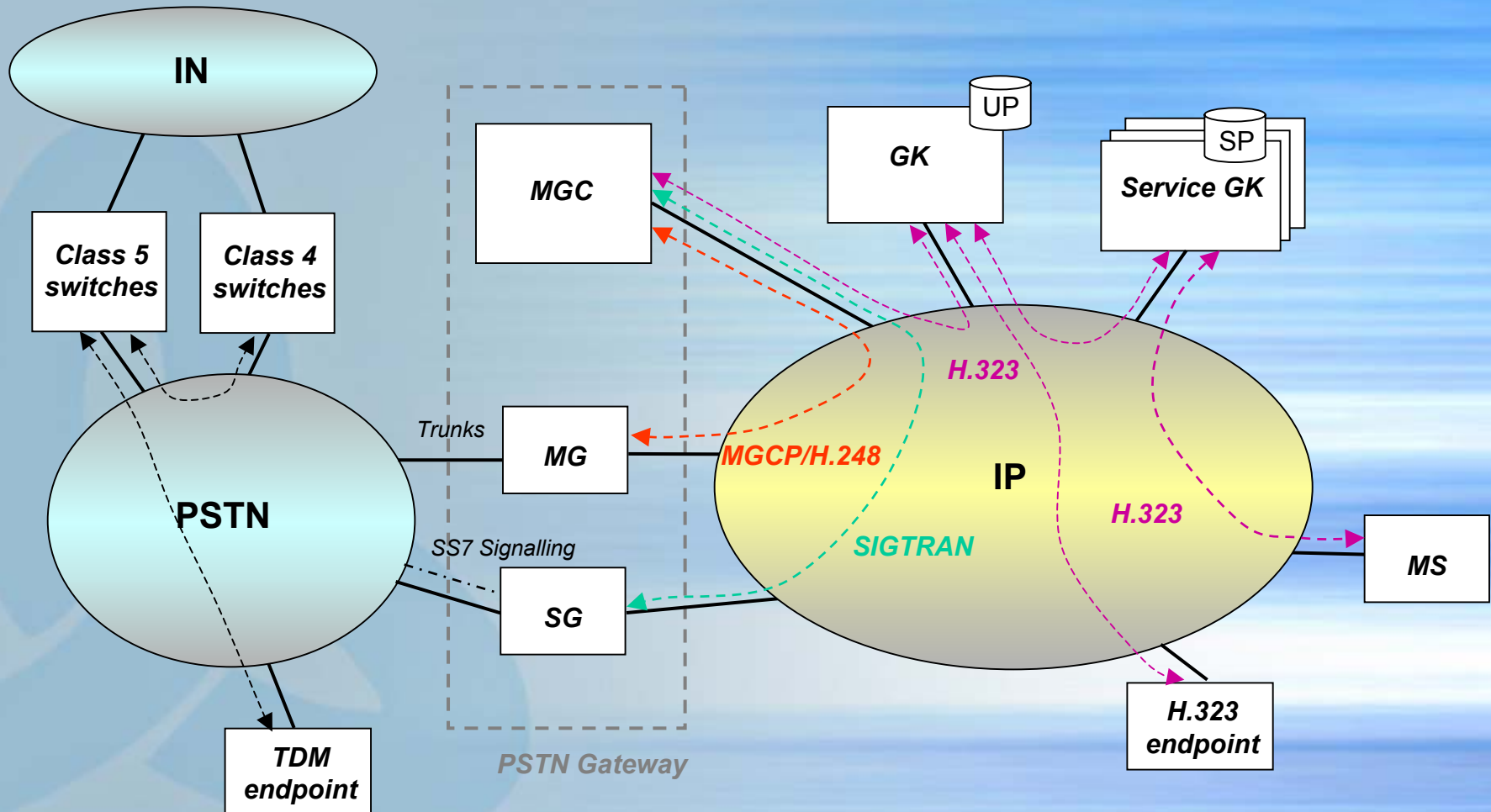
New Functional Layering (AS, MS ...)

Three perspectives of convergence

Transport, user and service point of view

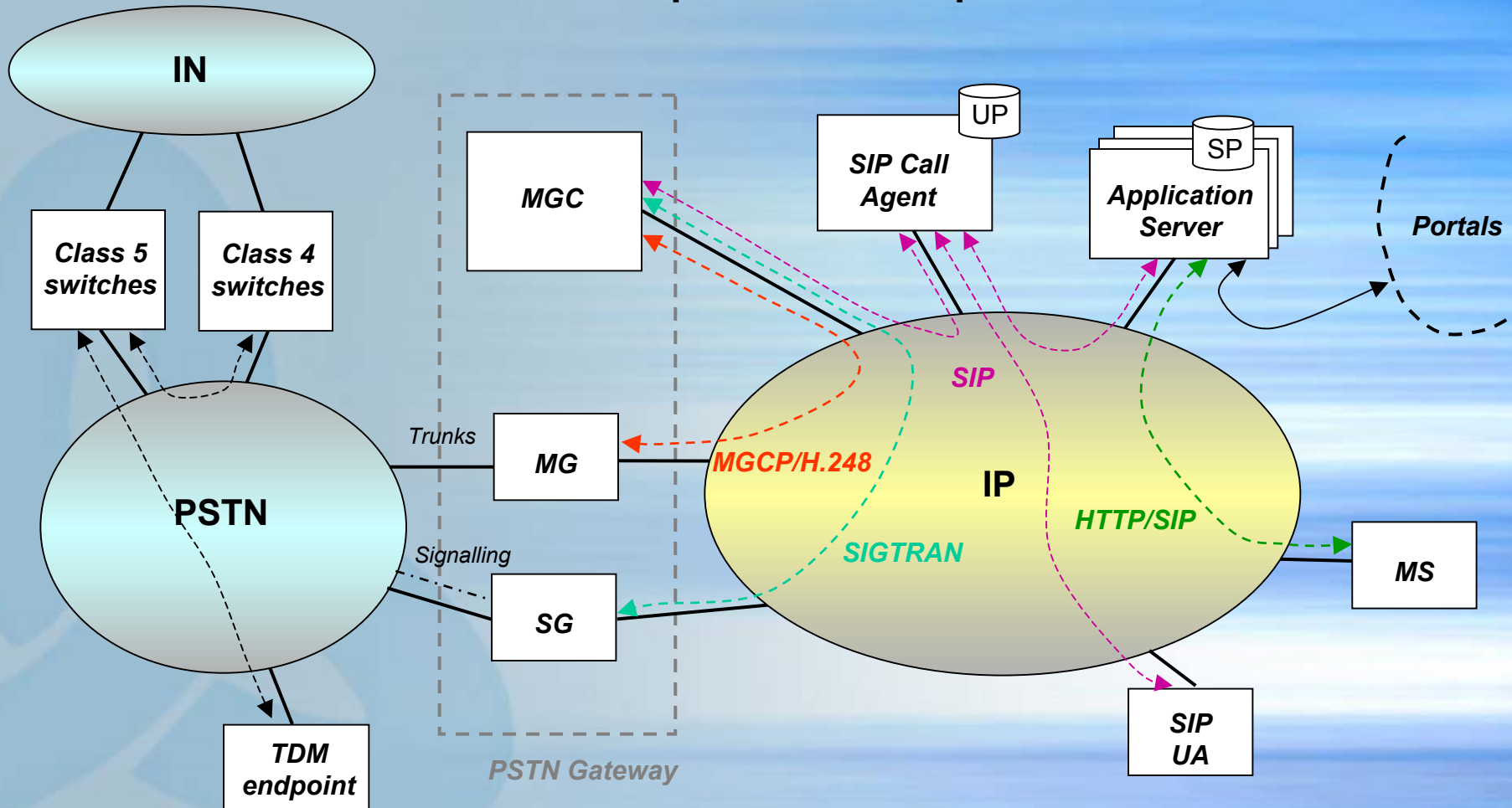
# Legacy TDM and H.323 model

## GW decomposition concept

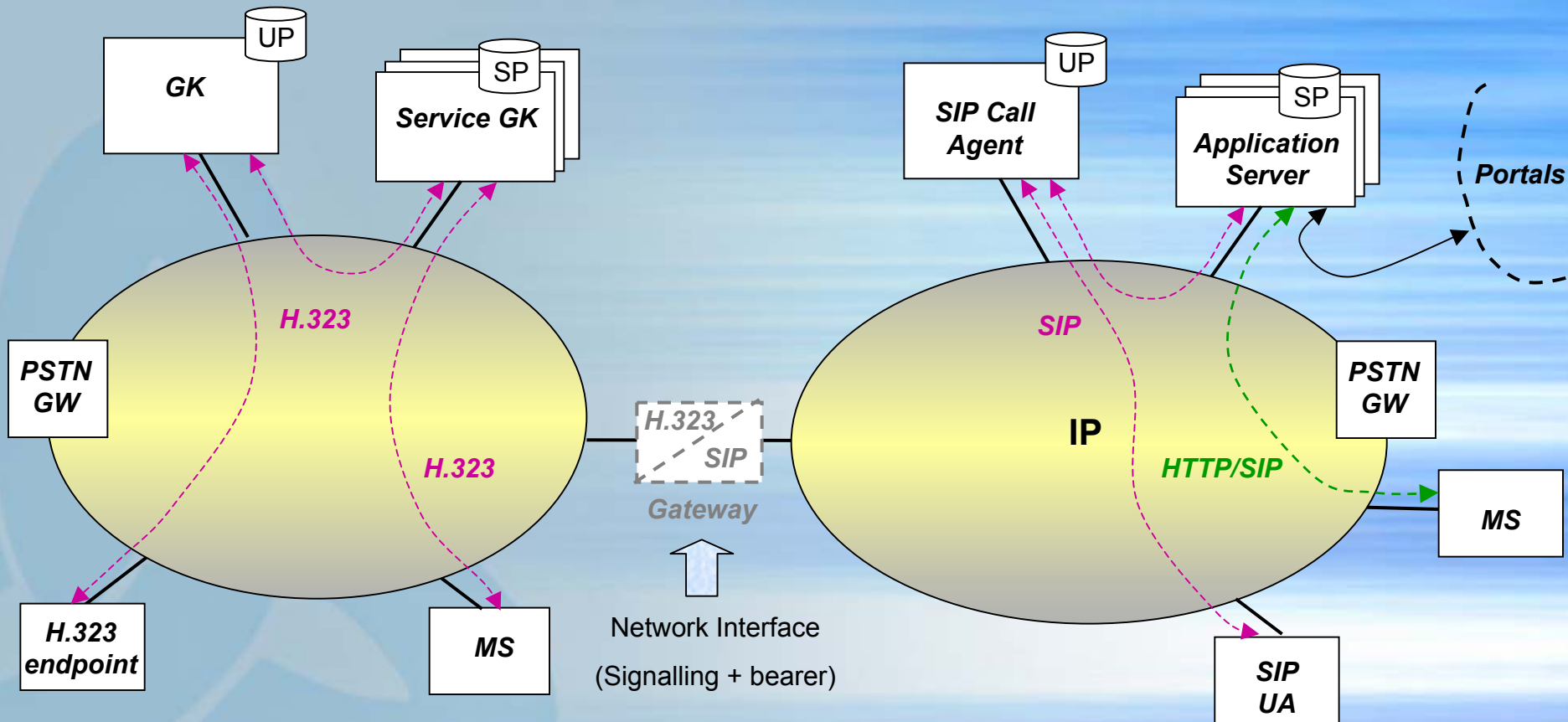


# Legacy TDM and SIP model

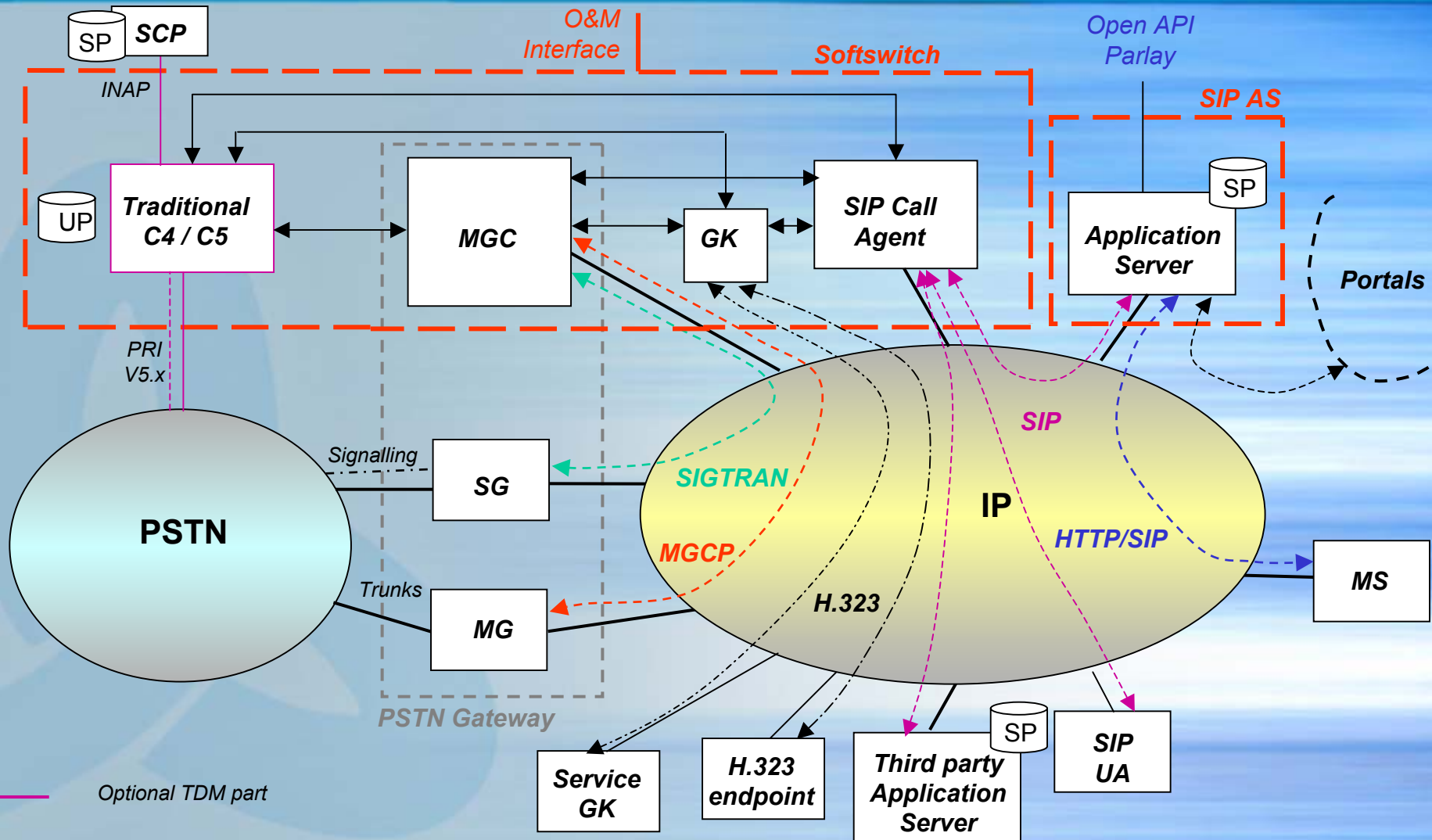
## GW decomposition concept



# H.323 and SIP model



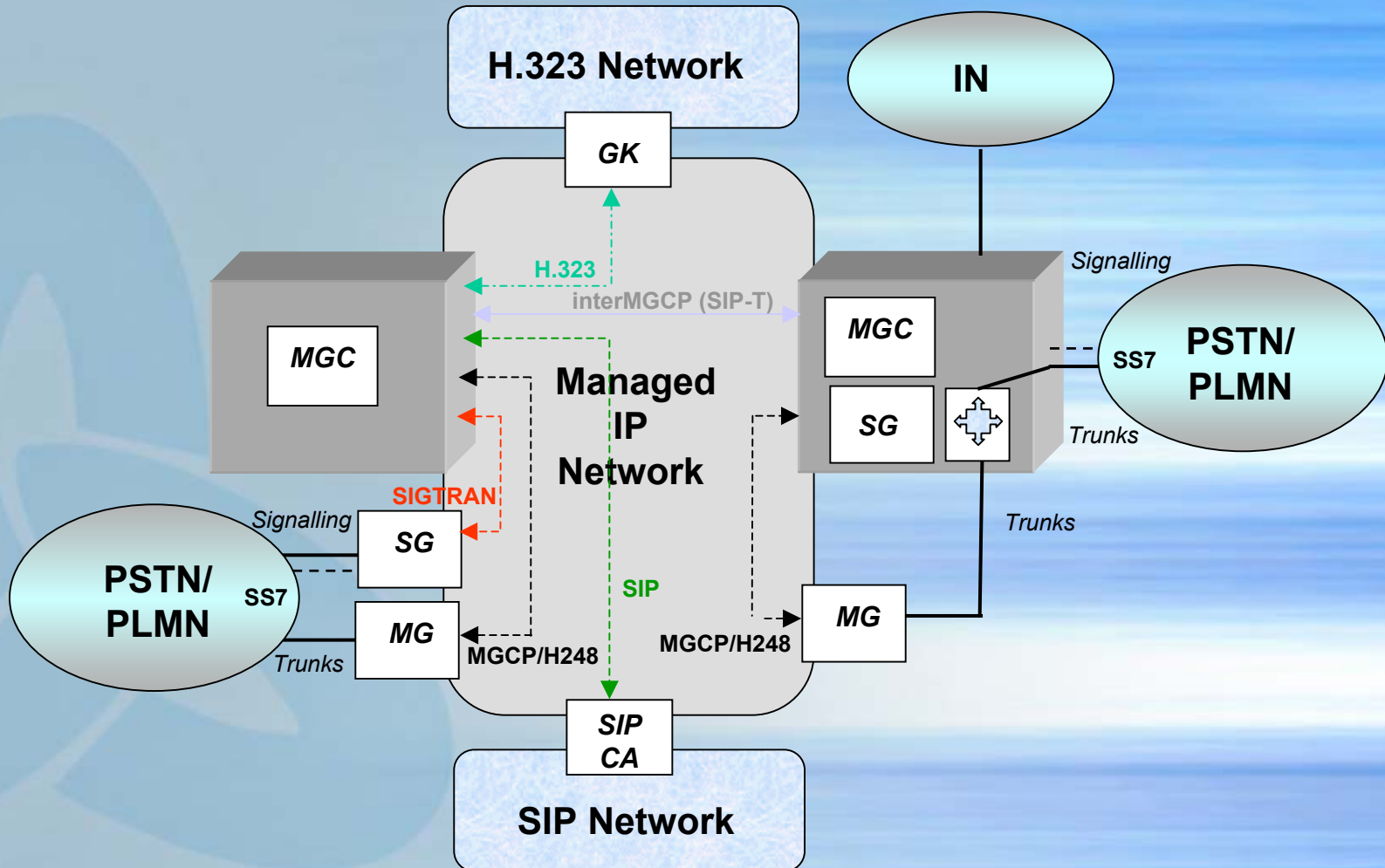
# iMSS Solution architecture Model





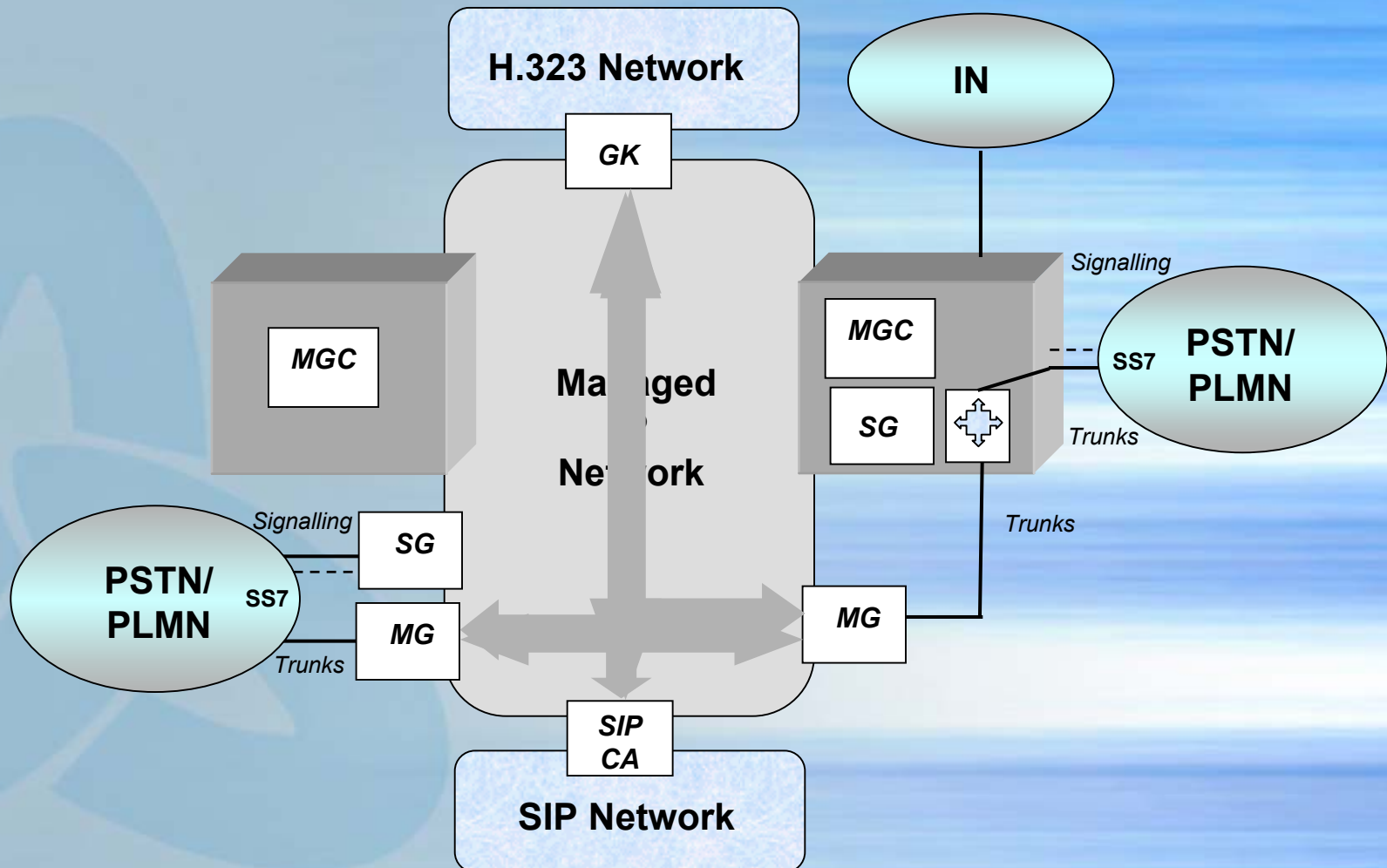
# Border Element towards legacy TDM & IP

## Enhanced C4 + MGC + SG - **Signalling**



# Border Element towards legacy TDM & IP

Enhanced C4 + MGC + SG - **Bearer**



## Key Points - Enhanced Class 4 Solution

### **Italtel Approach's benefits:**

- Separation of Call Control from bearer level
- Integration & Interoperability with legacy networks
- Single Point to Network Management System
- Support for Multiple Gateway Protocols
- Multi POP geographically distributed, single C4 Softswitch

### **Italtel Multi Service Solution (iMSS) lets:**

- Incumbent Operators, fixed and mobile, to gradually upgrade the existing circuit network moving towards NGN infrastructures**
- New Operators to start directly with an NGN infrastructure optimising the interconnection with legacy networks**



## Key Points - Class 5 Solution (Softswitch)

### Italtel Approach's benefits:

Independence of Call Control from User Devices

Integration & Interoperability with legacy users and services

Open Interface with a Service Layer for the introduction of new services allowing new application developers and Service Provider going into the service “carrier” value chain

**Italtel Multi Service Solution (iMSS) lets the operators to connect Legacy users and new IP based users guarantying the end-to-end interoperability in terms of connectivity and services**

# What's a service?

## Different Market Perspectives

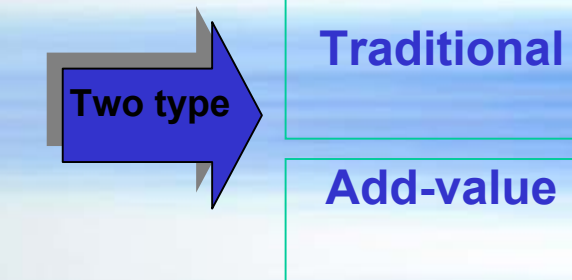
- Services demand by customers
- Services demand from Service Operator



## Different Offering Perspective

- Switched Services (user and network services)
- PVN & VoIP Services (user and network services)
- Intelligent Network
- Multimedia services (VCIP, IPTV, ...)
- Internet Based Services (click to talk, emwi, icw ...)
- Data services
- .....

Voice



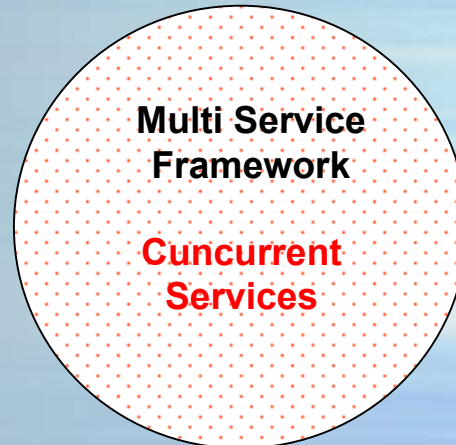
Voice and data

# Service Offer: Some Key Points

Traditional  
Services

**importance to offer voice based  
services also to innovative users**

New kind "behaviour"  
for traditional users and  
call related service model  
for innovative ones

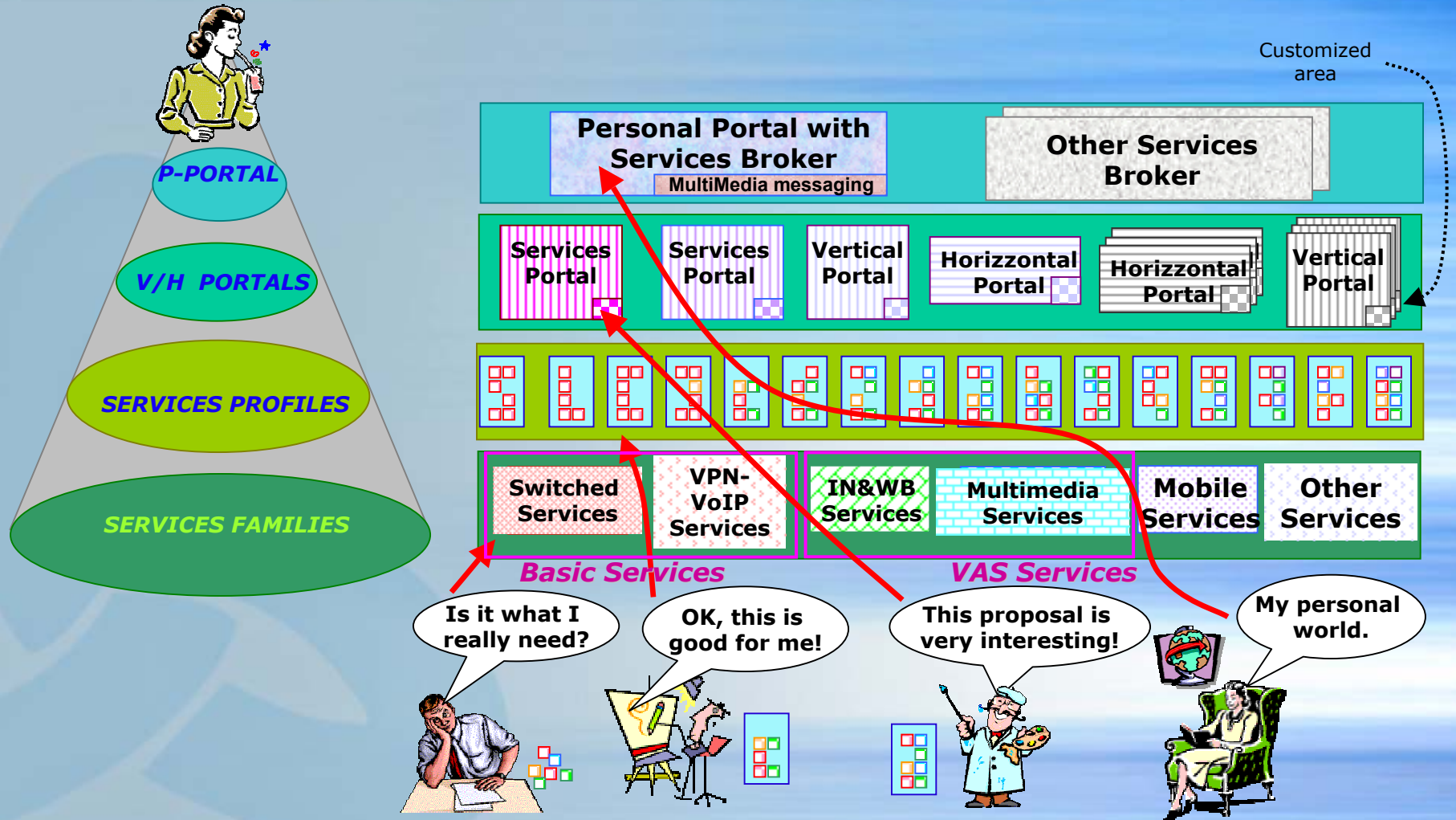


Add-value  
Services

**importance to offer new services  
also to traditional users**

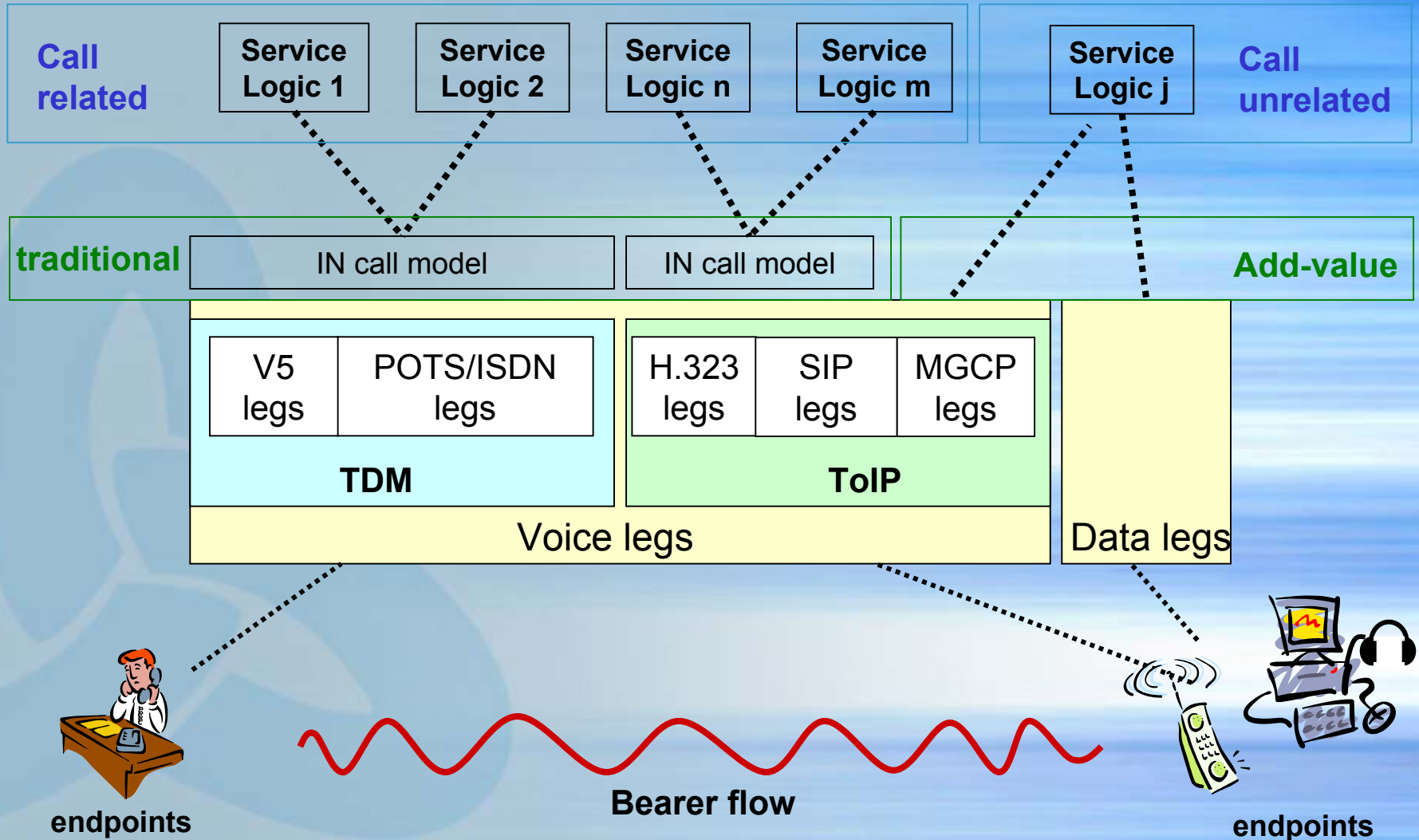
New kind "behaviour"  
for innovative users and  
call unrelated service model  
for traditional ones

# From STS to VAS towards Service Portals

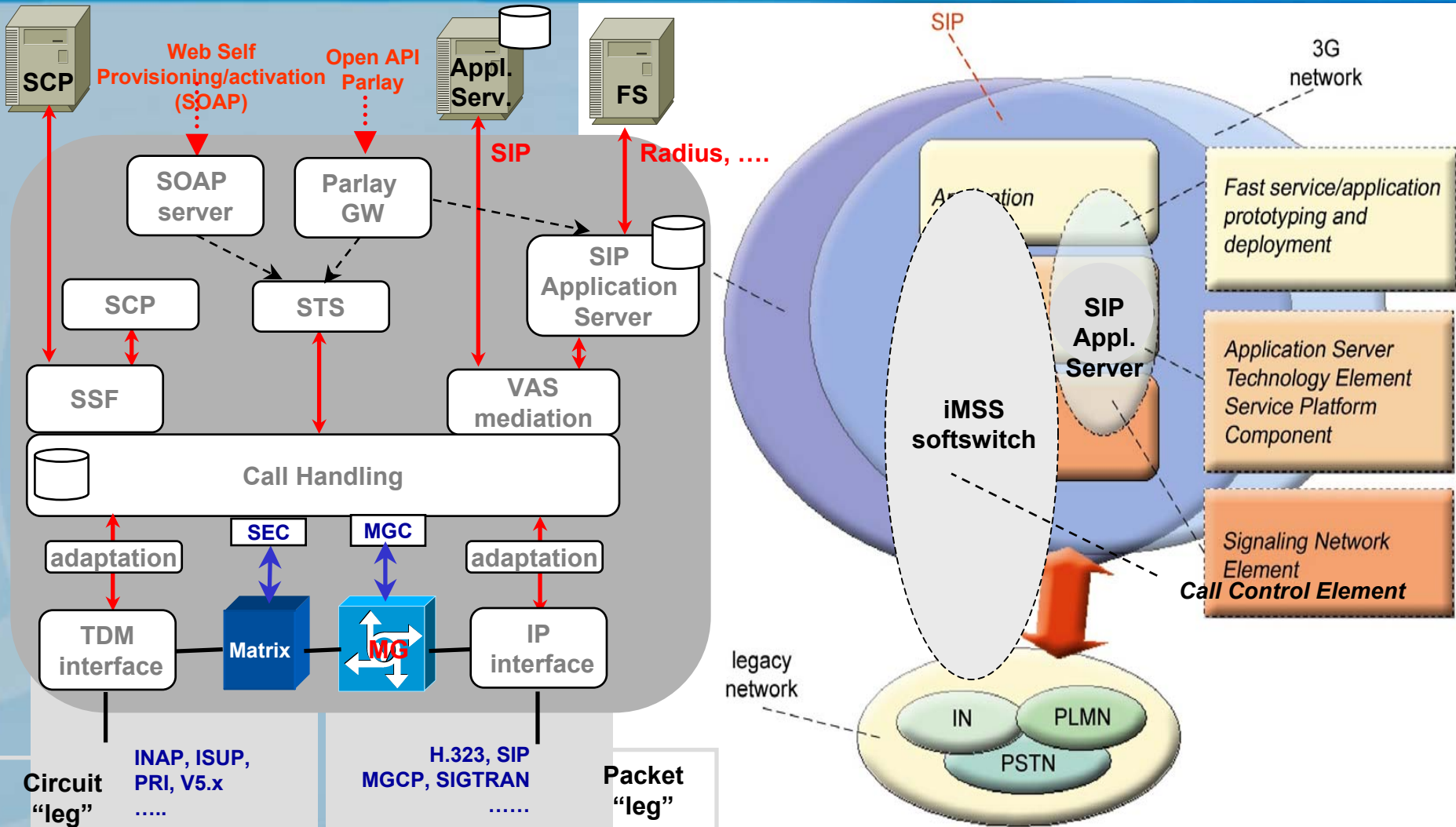




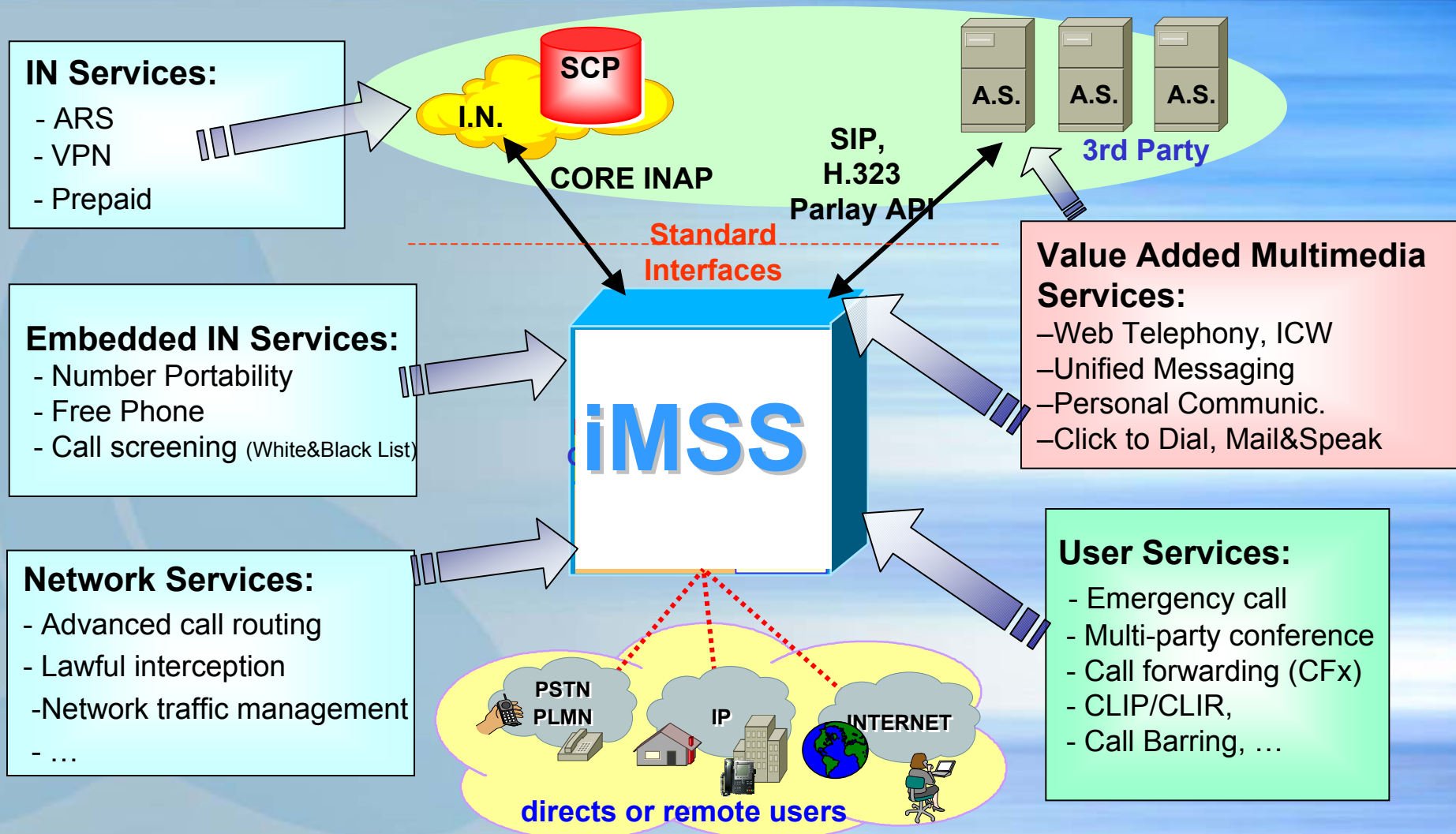
# Service Offer: New complexity



## iMSS Solution: Functional Relationship

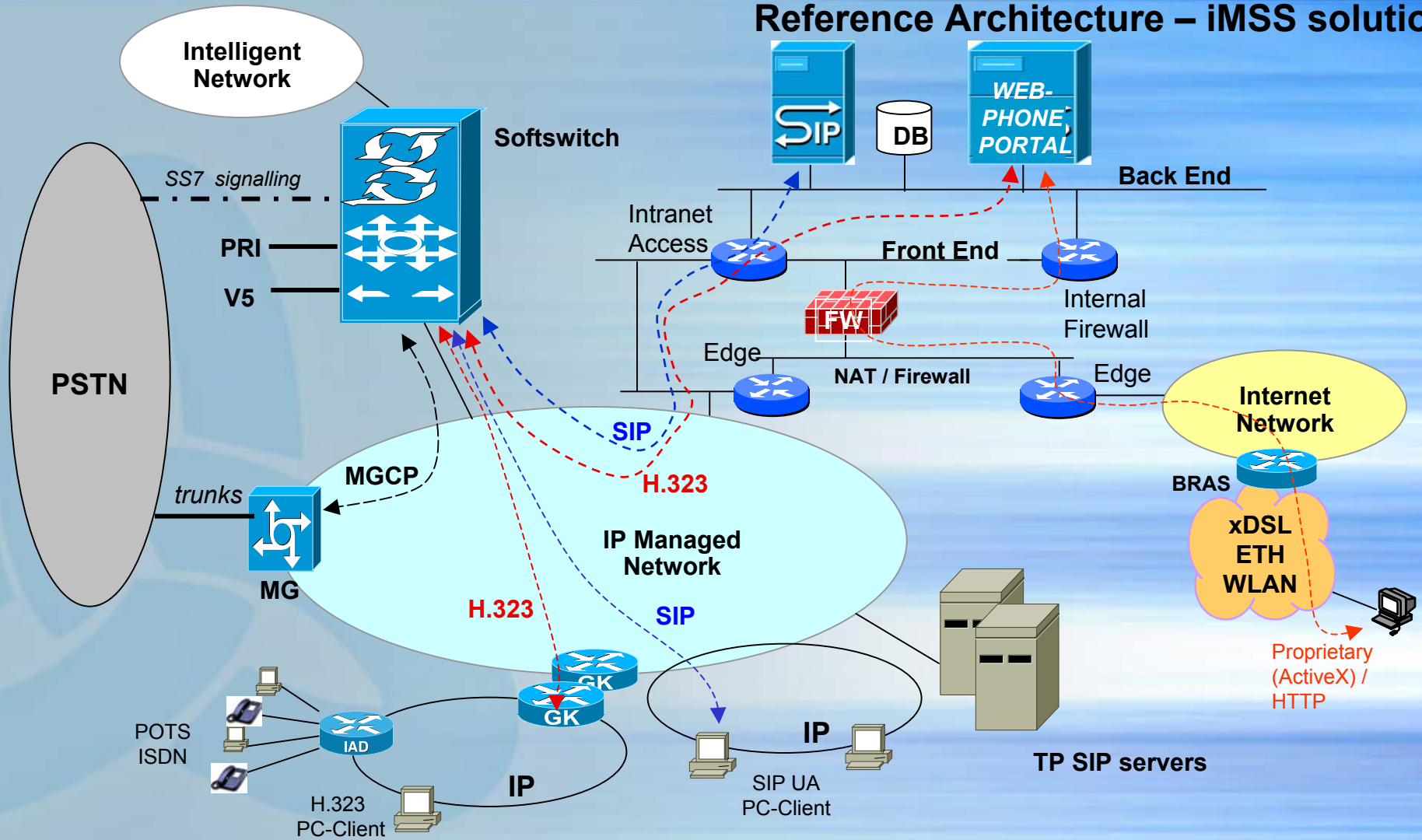


# iMSS: Services & Applications offer



# iMSS: Service LAN "concept"

## Reference Architecture – iMSS solution



## Key Points - Services

**Separation of Call Control layer from Service layer with Standard, Open interface**

**Traditional and advanced services, optimizing resources usage and reducing operational costs**

**Fast deployment and customizing of new services using Service Creation Environment for best time to market**

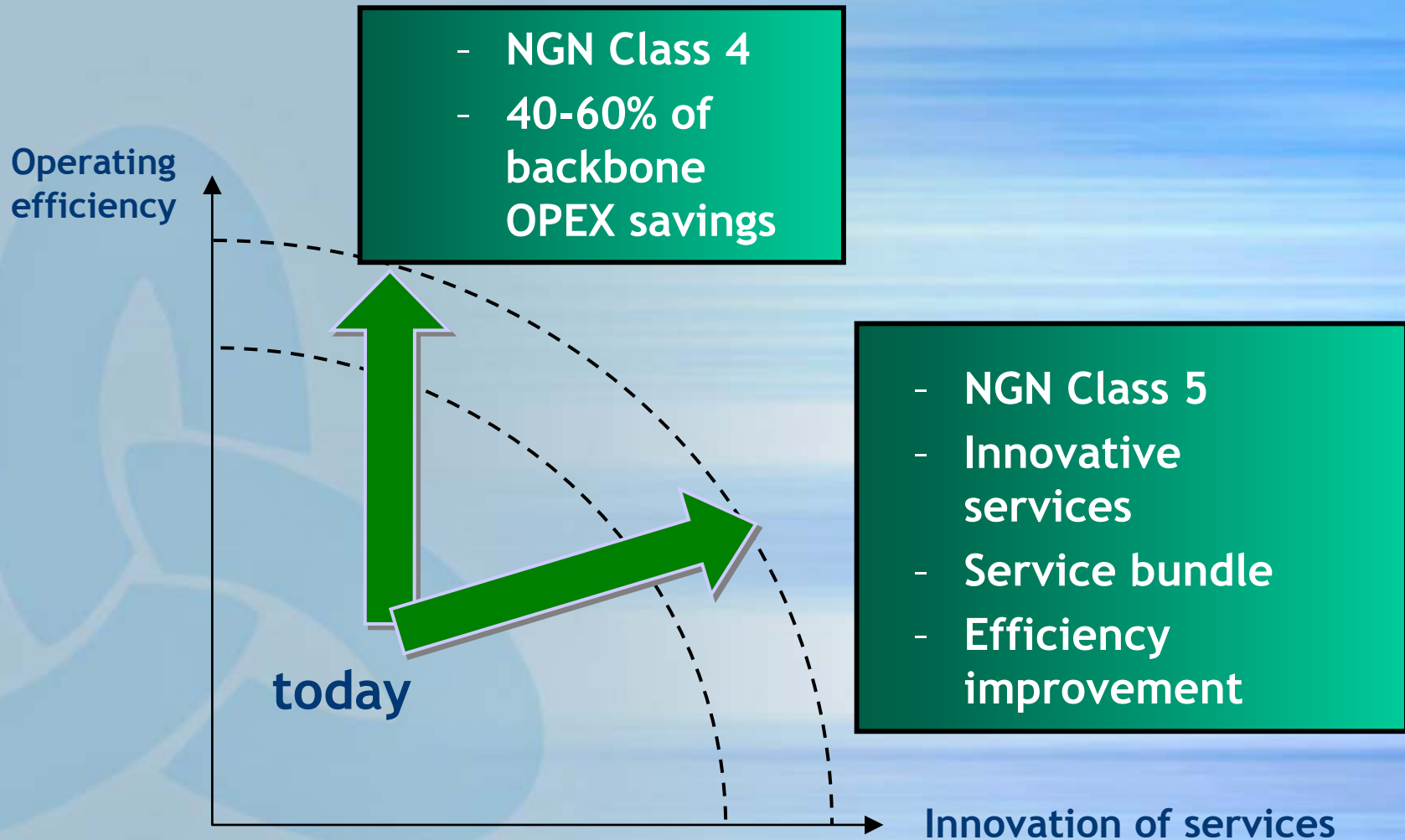
**Fast provisioning and simplified access to network services using current and new user friendly terminals (multimedia or not)**

**Customer Services Profile Management**

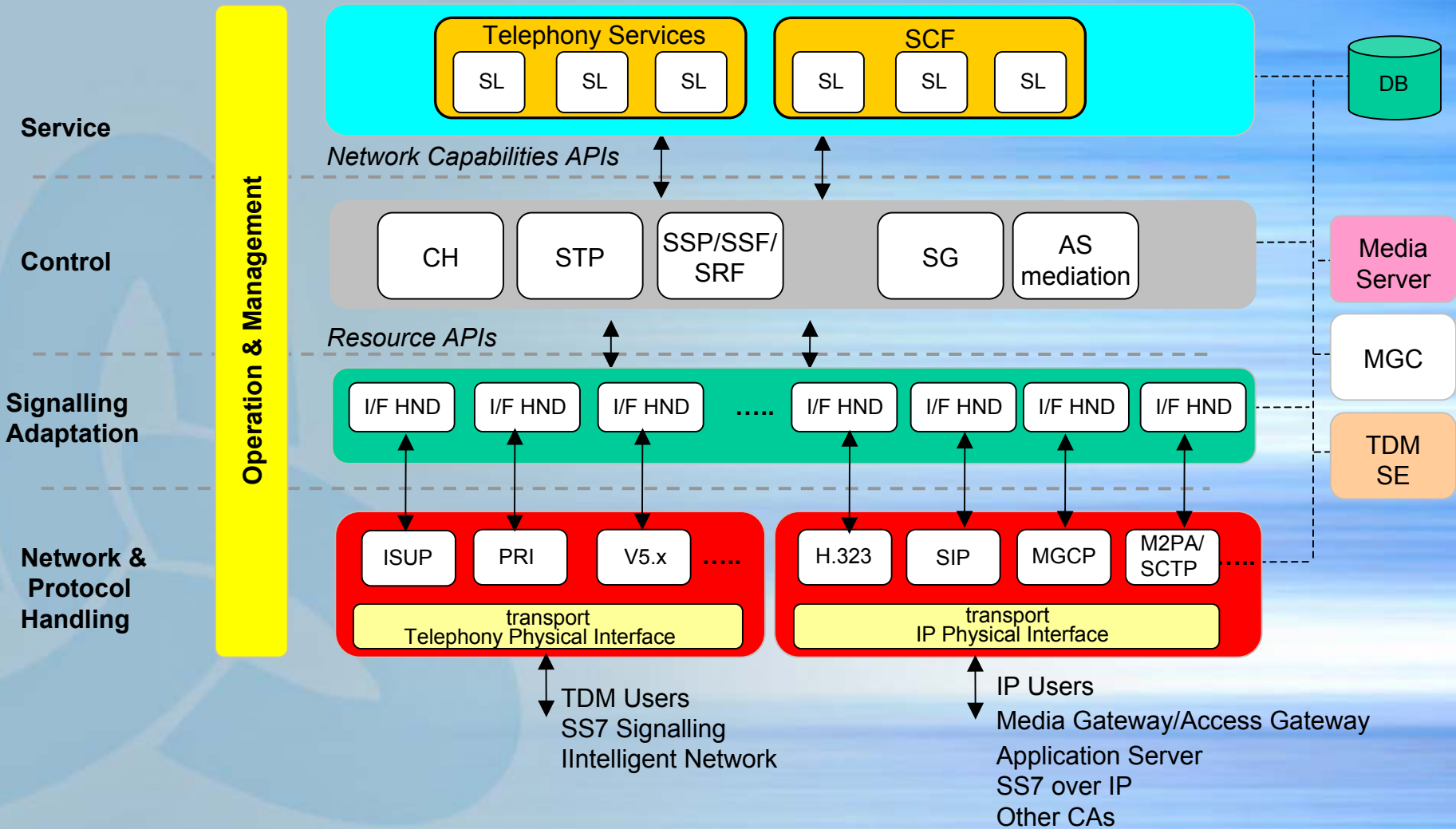
**Service Profiles Evolution Path (soft Profiles upgrades with new**

**Italtel Multi Service Solution (iMSS) lets the operators to offer legacy users and new IP based users the same bouquet of services enabling all layers and elements of the multi service network to carry all services**

# NGN: the answer to Service Provider Challenges



# iMSS Softswitch Functional Model

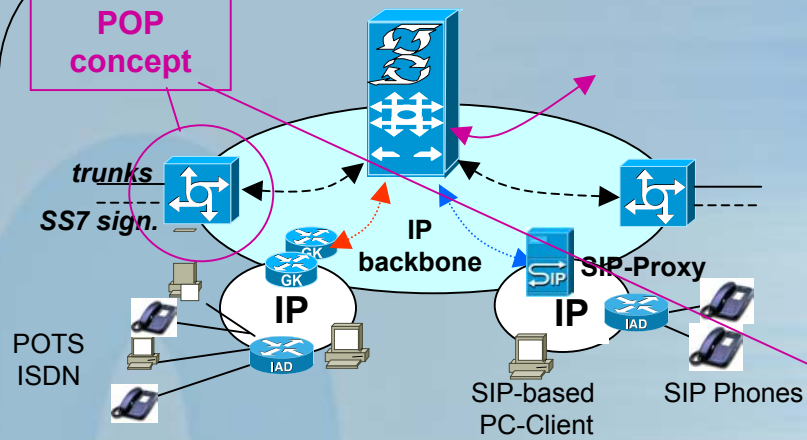


## iMSS Softswitch : POP concept

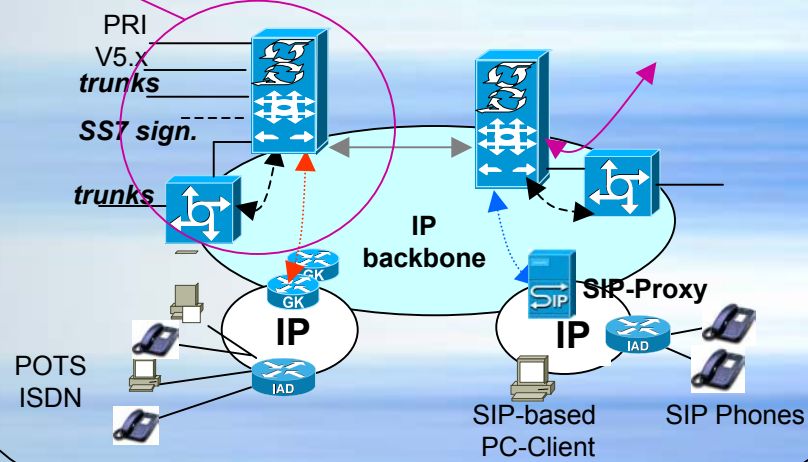
Single site (centralized)

Multi site (distributed)

Pure

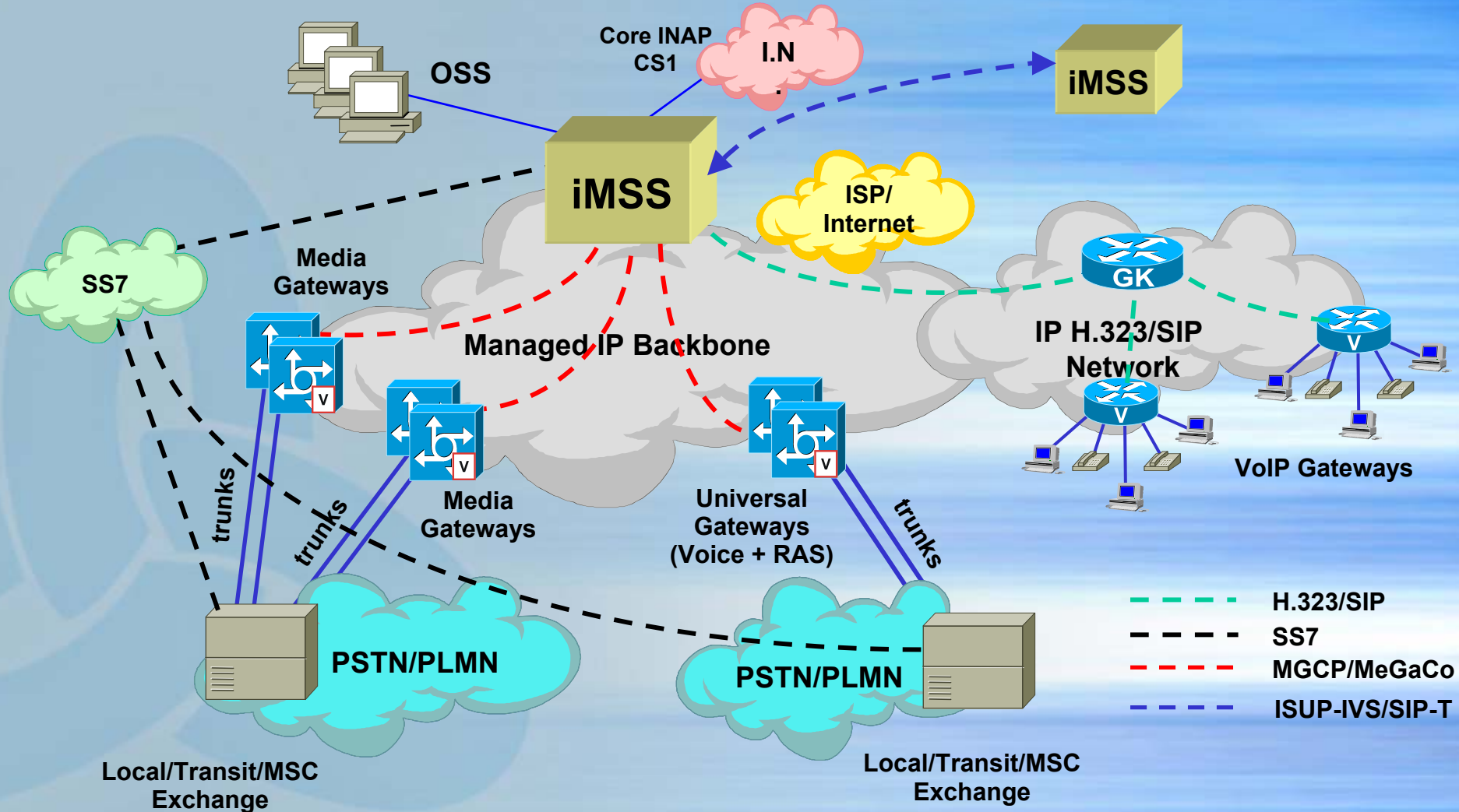


Enhanced



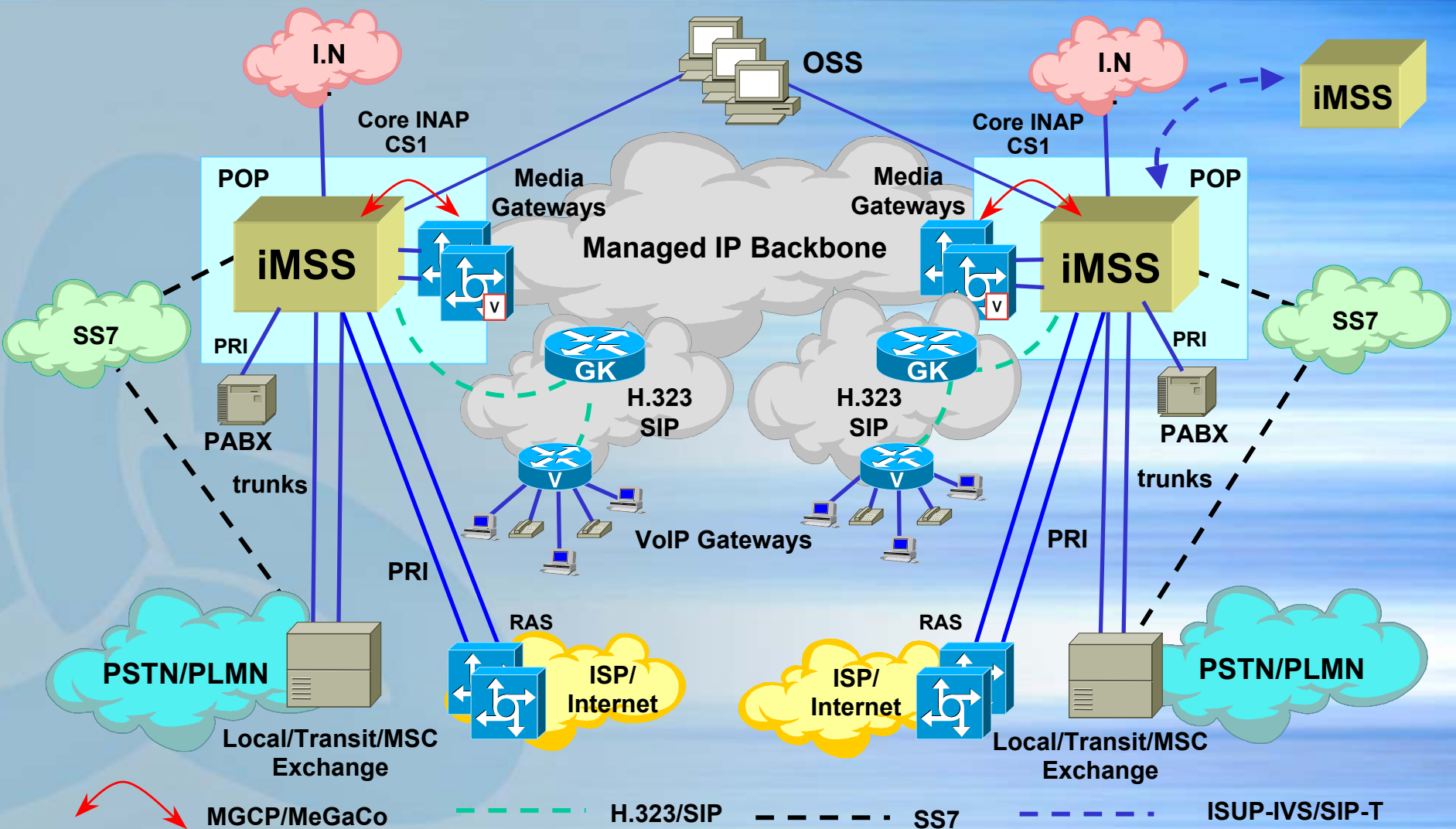


# Voice/Data Integrated Backbone - Pure POP

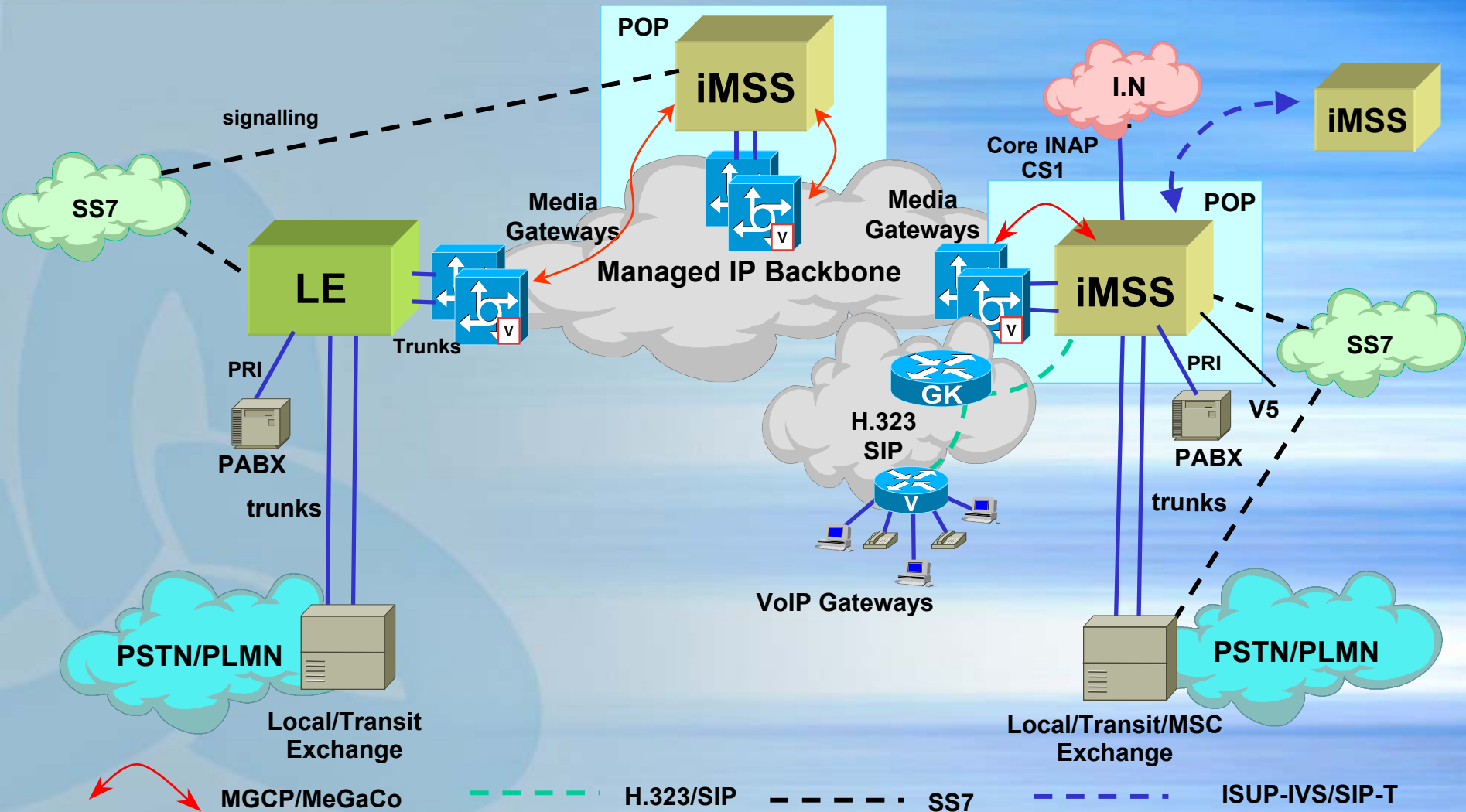




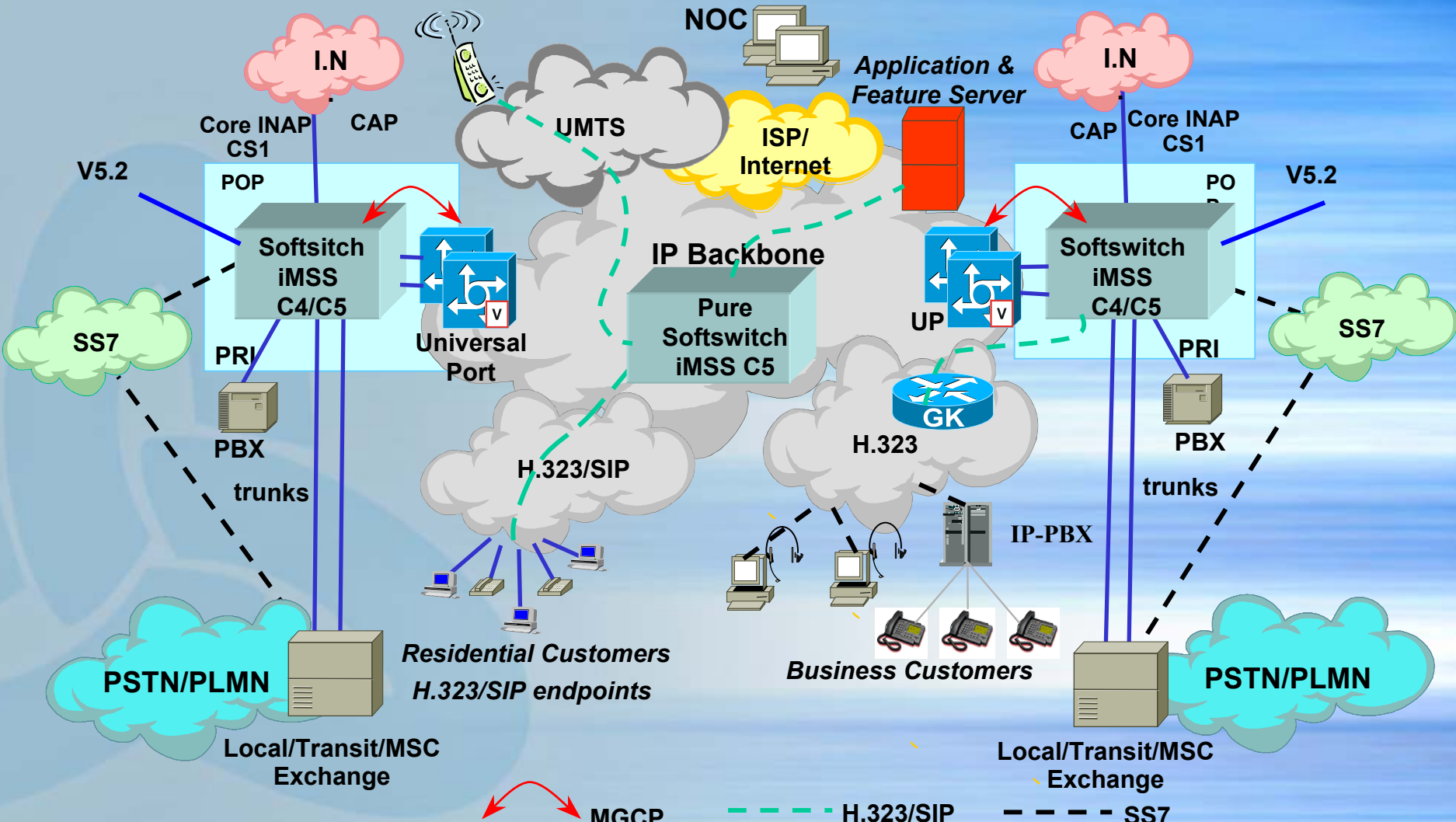
# Voice/Data Integrated Backbone - Enhanced POP



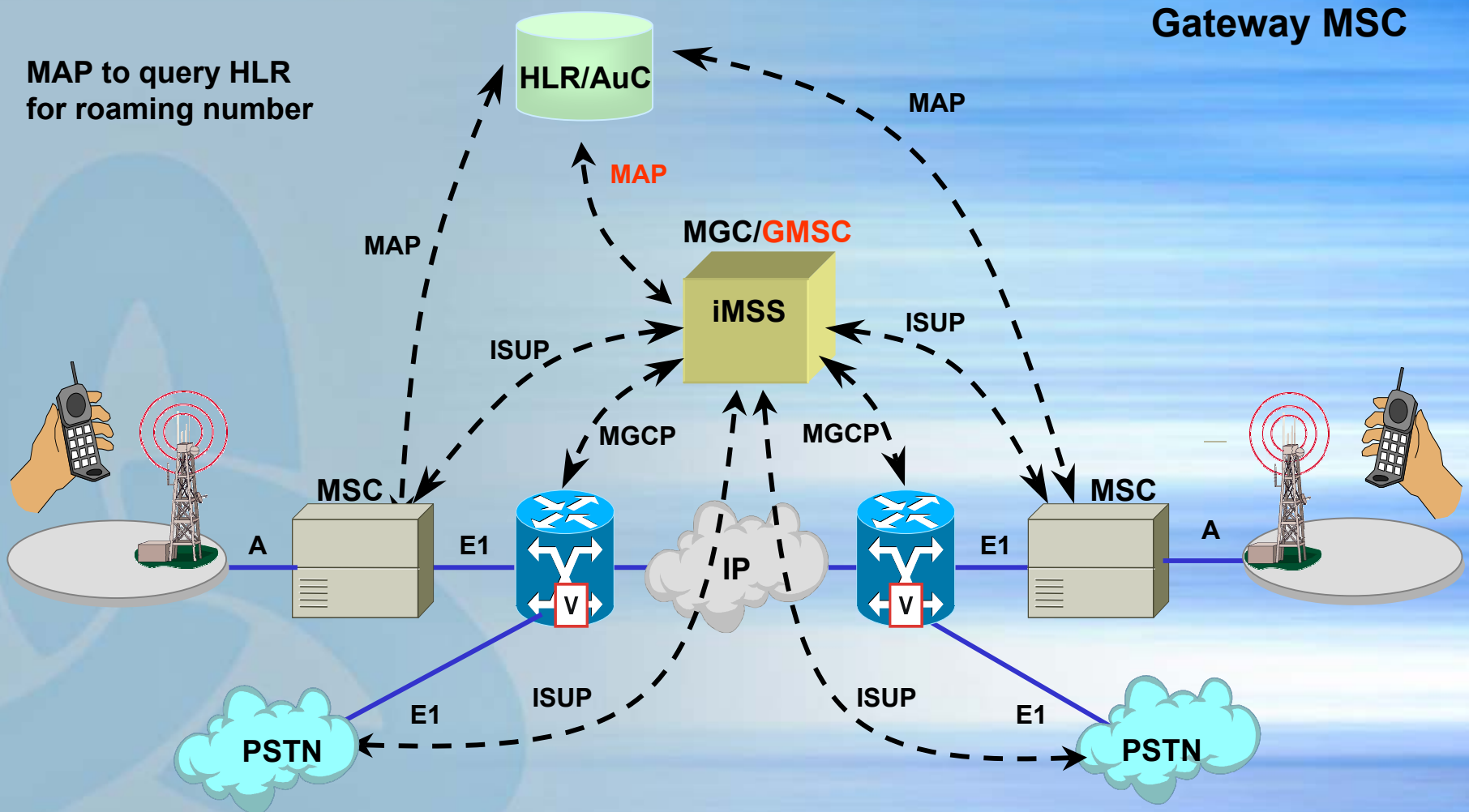
# Voice/Data Integrated Backbone - Mixed POP



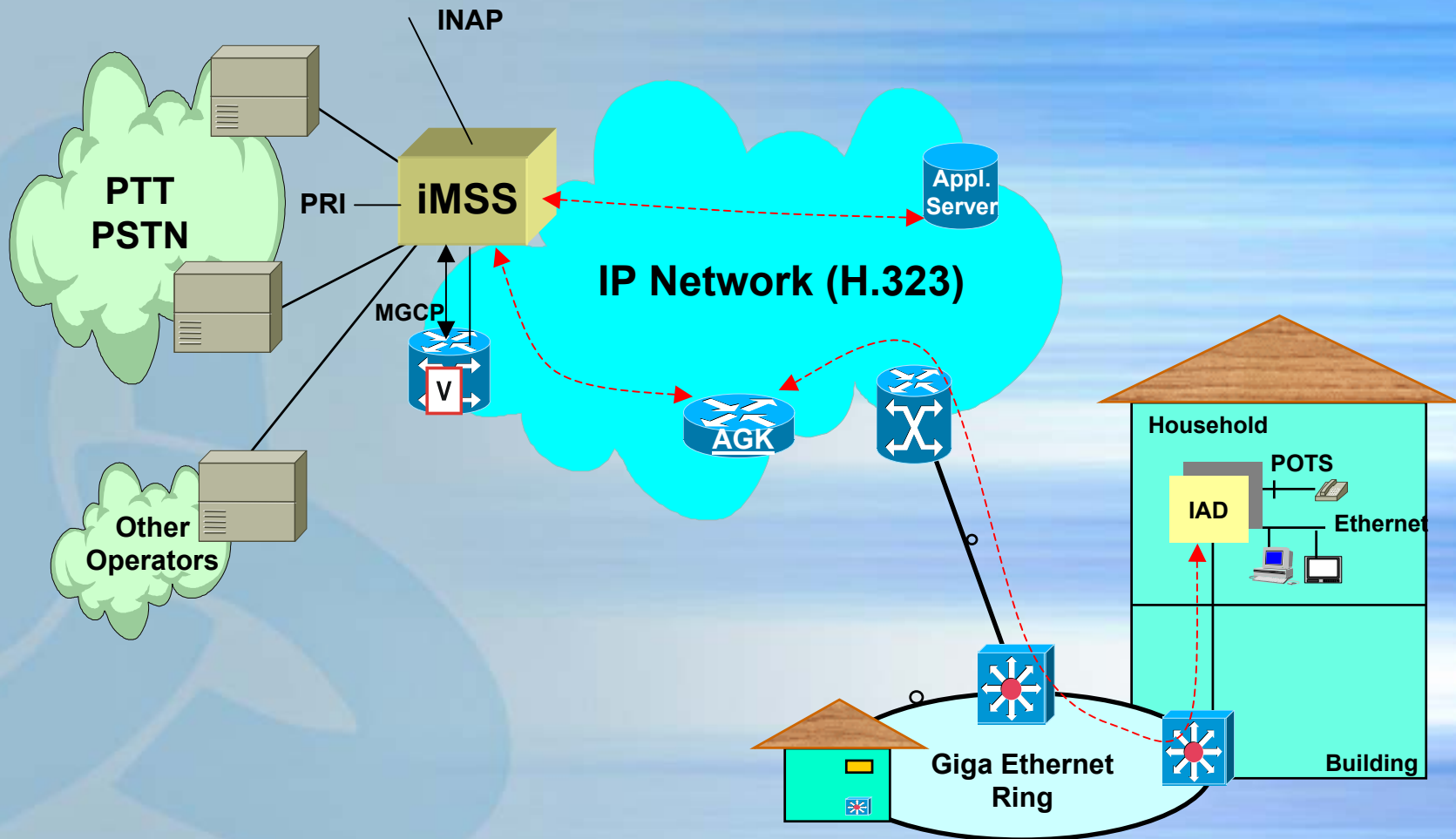
# SIP - Innovative Users Interconnection



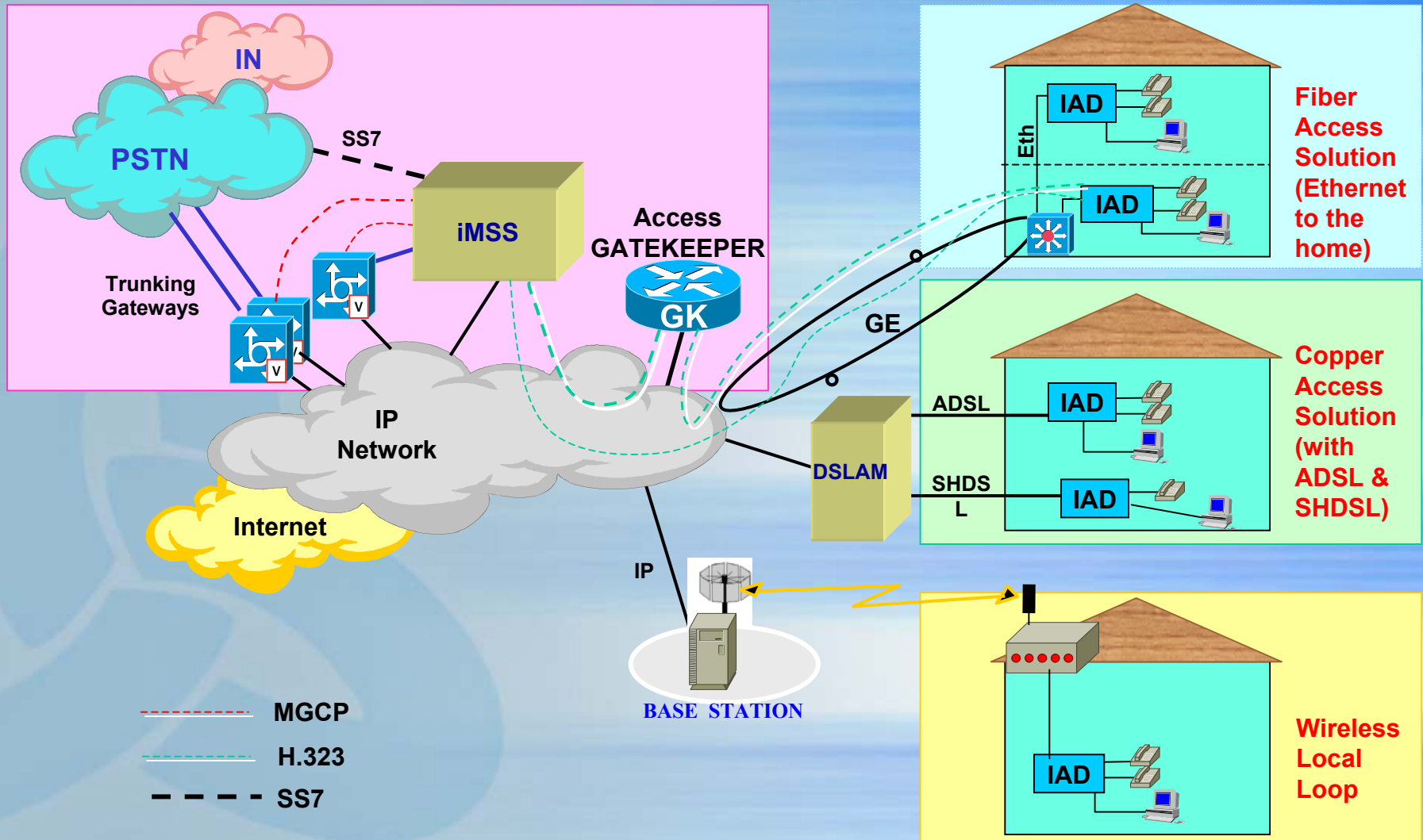
# iMSS Voice/Data IB for Mobile Networks



# iMSS H.323 to PSTN Gateway

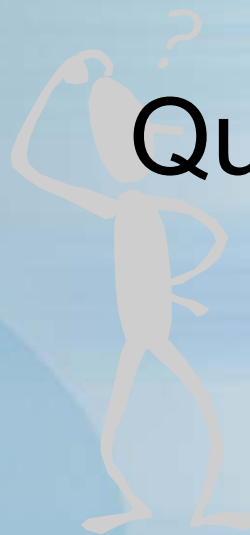


## Access Systems



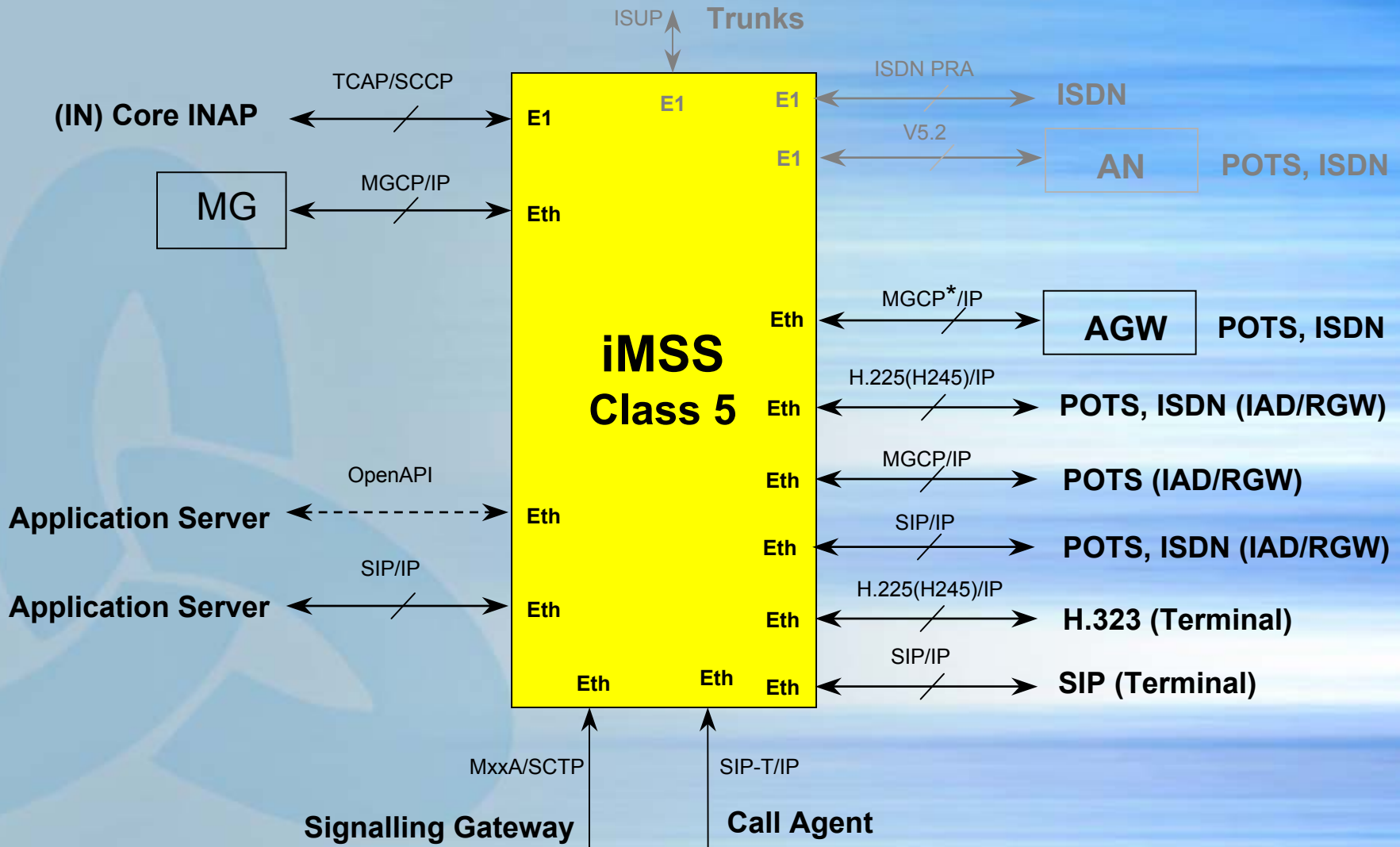
# Thank you!

Questions ?

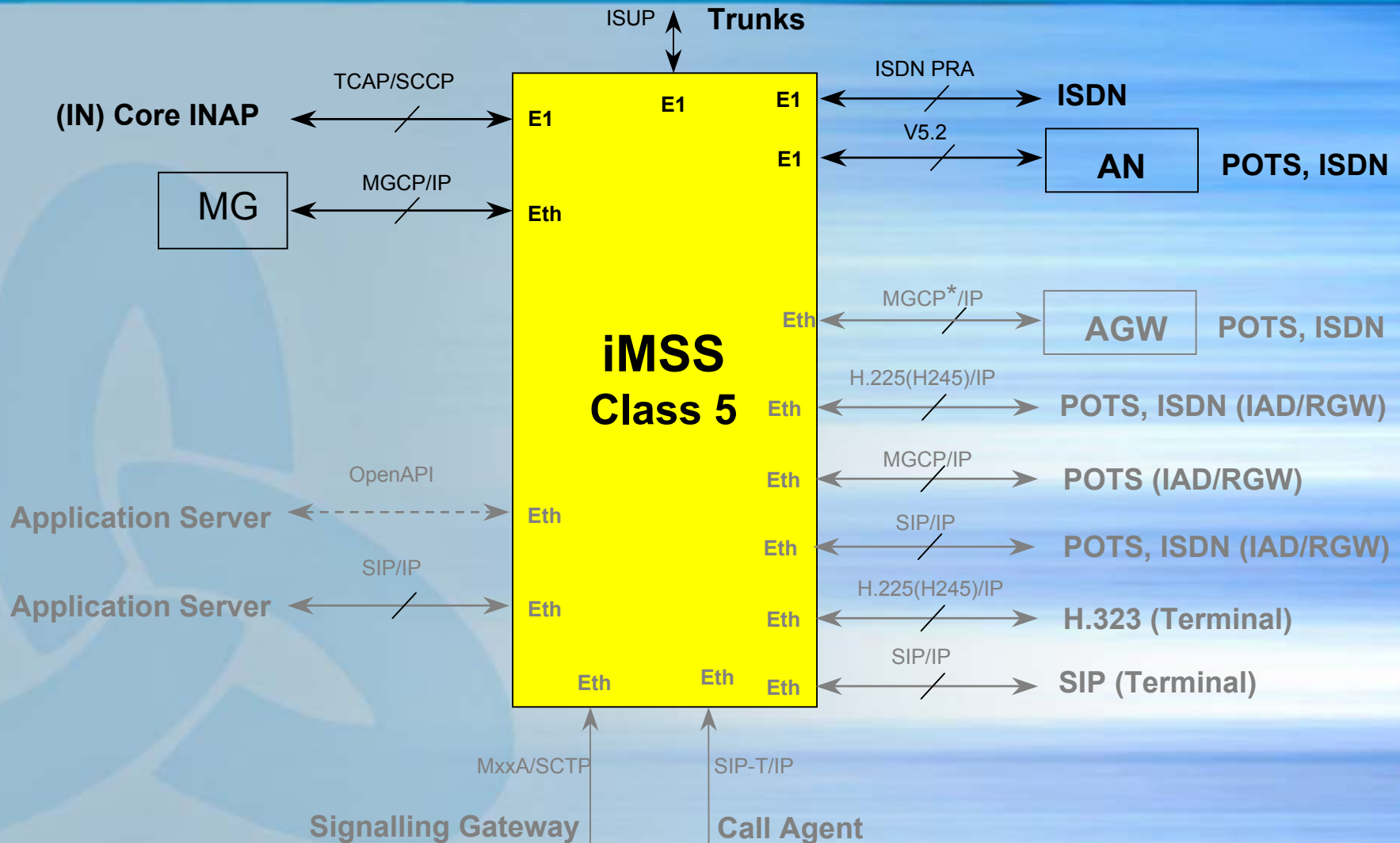




# iMSS C5 Innovative



# iMSS C5 Traditional



# ITALTEL Multi-Service Solution (iMSS)

