



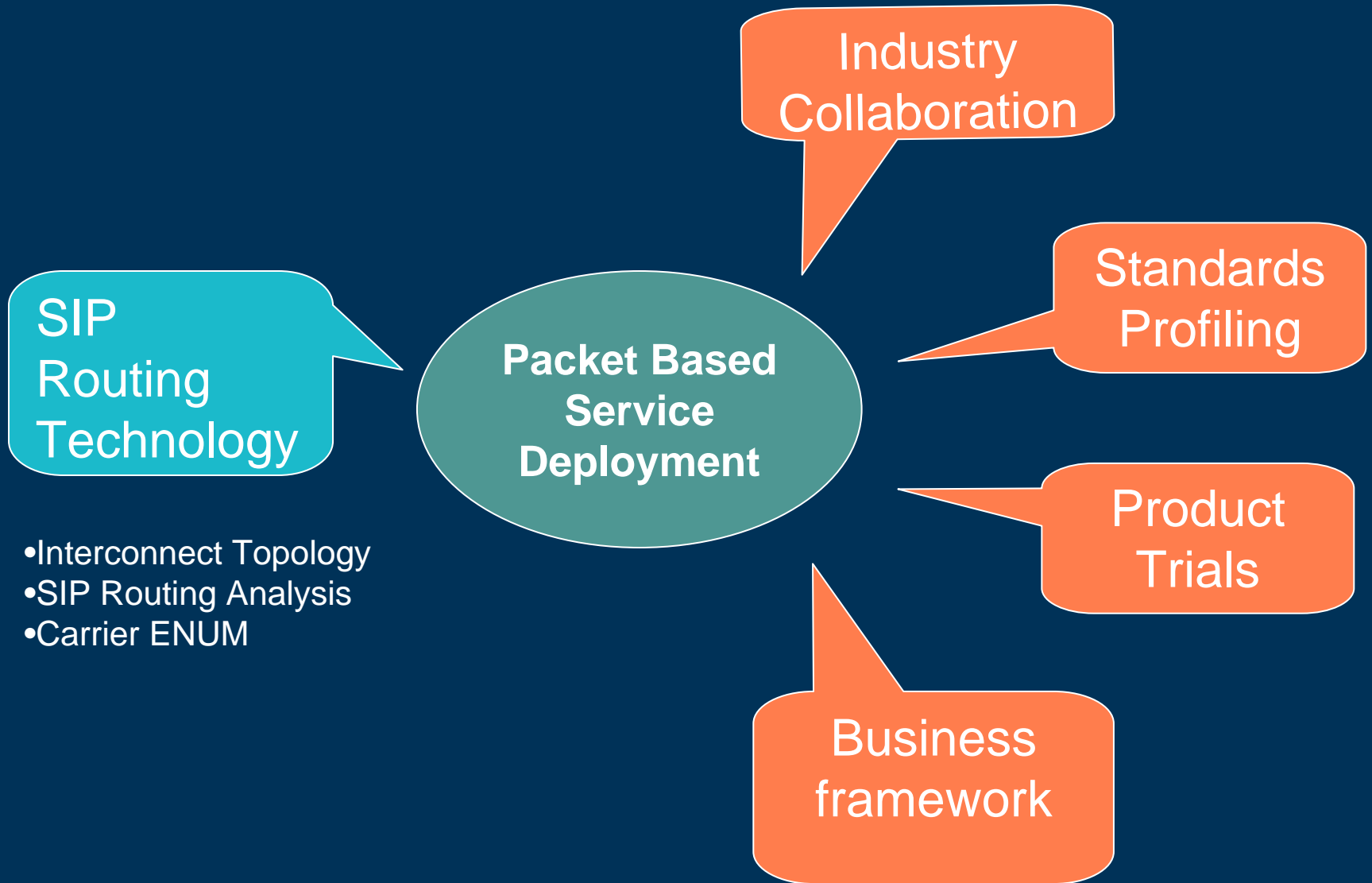
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**WORLD** CONGRESS

# Global SIP Routing and the Role of Carrier ENUM

John Baldwin

# Introduction



# Background

## Industry Assets

Global Addressing  
(E.164 Numbers)

Global Connectivity  
(interconnect)

## GSMA Industry Initiatives

- **IPX**
- **Packet Voice Interconnect**  
Use of IPX & SIP-I
- **Carrier ENUM**
- **RCS**  
Enrichment of CS voice

Ericsson promote and influence how these fit together across interconnected networks. This supports deployment of Packet Based Services

# Global SIP Routing

Technology

# Migration Path Needed to All IP

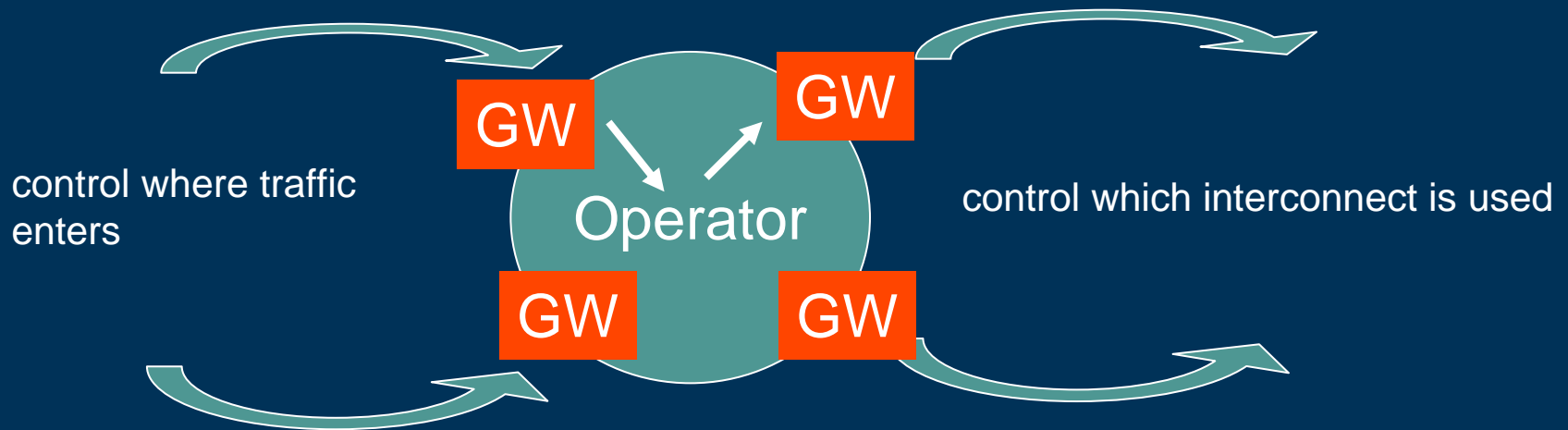
- IP based Interconnects gives
  - Better end-to-end quality TrFO
  - New & Enriched Services (RCS)
- Migration path should consider
  - Parallel TDM & IP networks
  - Different Network Topology with IP
  - Number Portability
  - Services like RCS have CS & IMS components

All IP

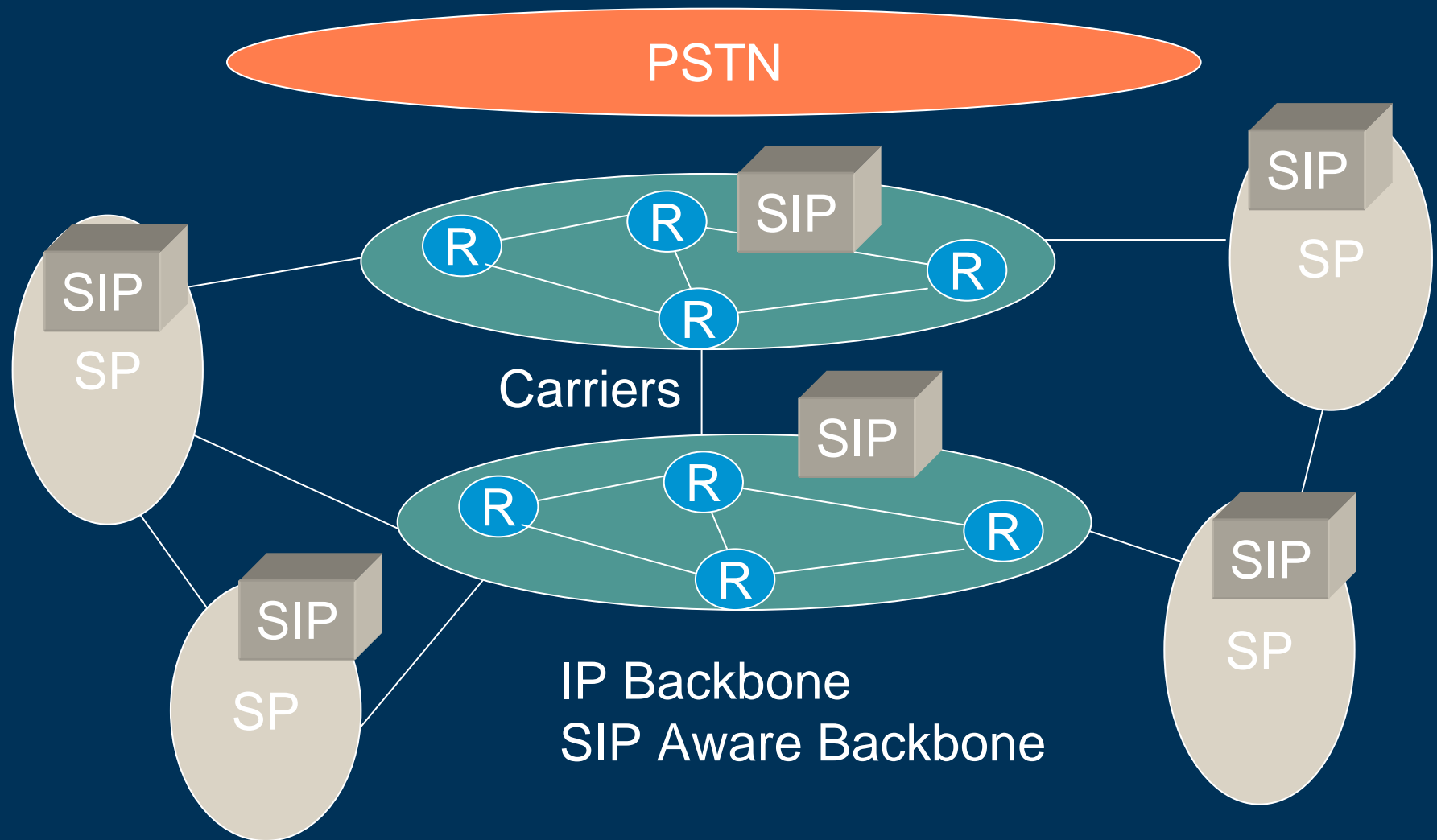
Help is needed and is at Hand

# Routing Requirements

- **Operator** wants to **control routing across their network**, based on
  - Origination
  - Destination
  - Service (e.g. videoshare, IM )
- Wildcards could apply to the above, e.g.
  - All IM traffic exits via a particular gateway
  - All traffic from a Region enters via a particular gateway
- **Carrier** has same requirements



# Global Network Topology



# Originating Routing Analysis

- How to start the routing analysis ?
- Country code analysis is not enough
  - May have direct IP interconnect to far country

E.164



Identify  
Destination  
Operator



Apply local  
routing  
analysis

1. Map E.164 to Destination Operator

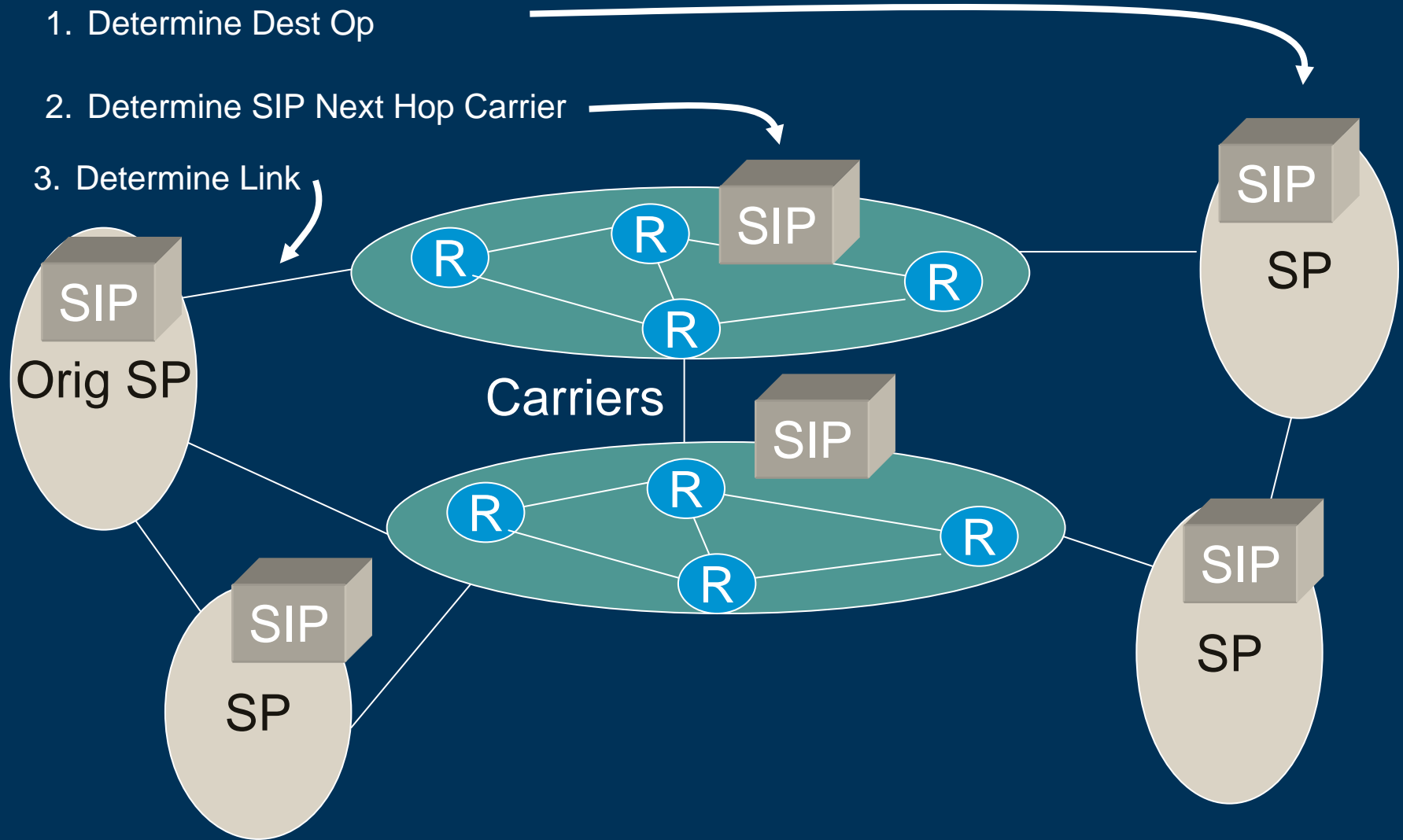
1. Look at available interconnects
2. Determine SIP Next Hop
3. Determine Link to Next Hop

# Routing Example

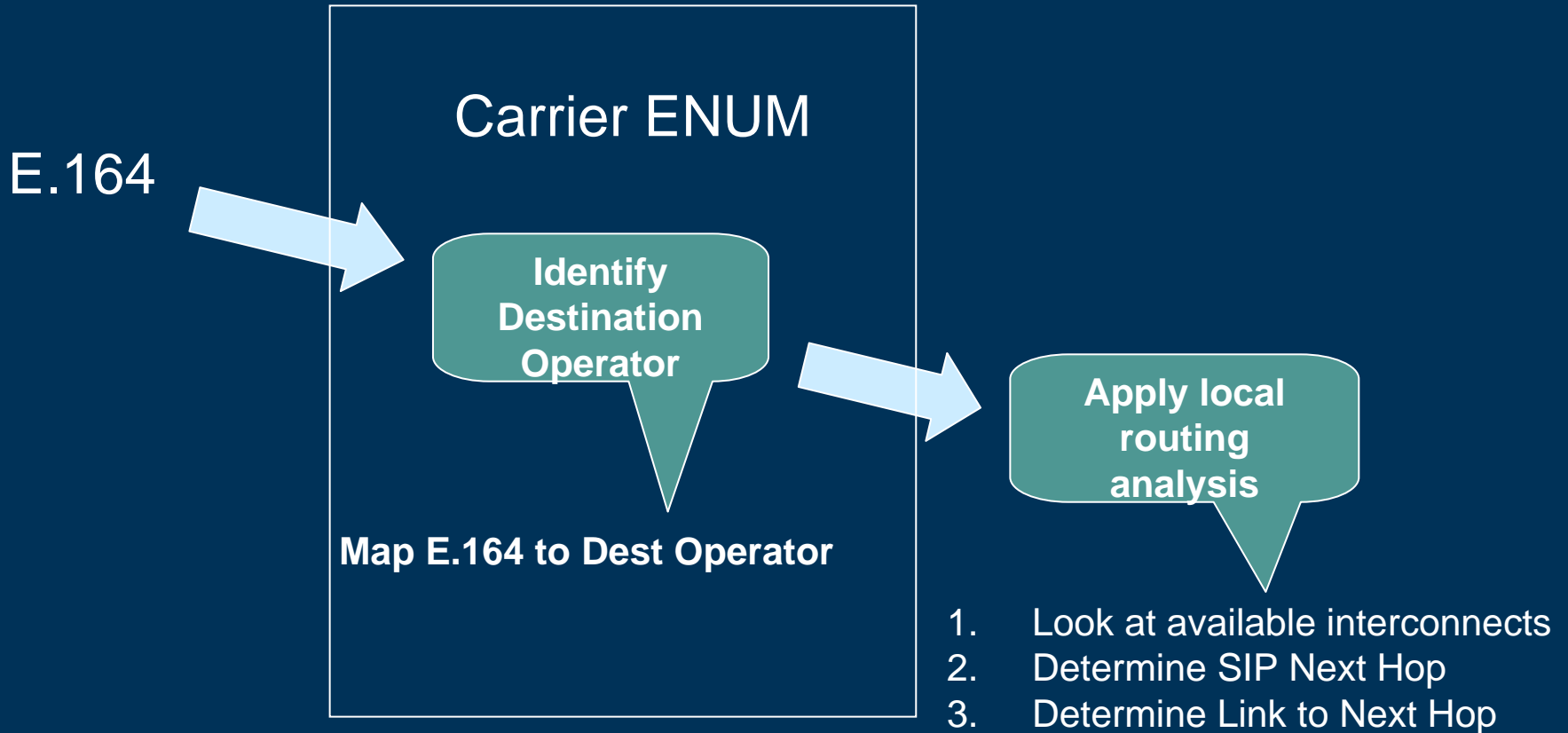
1. Determine Dest Op

2. Determine SIP Next Hop Carrier

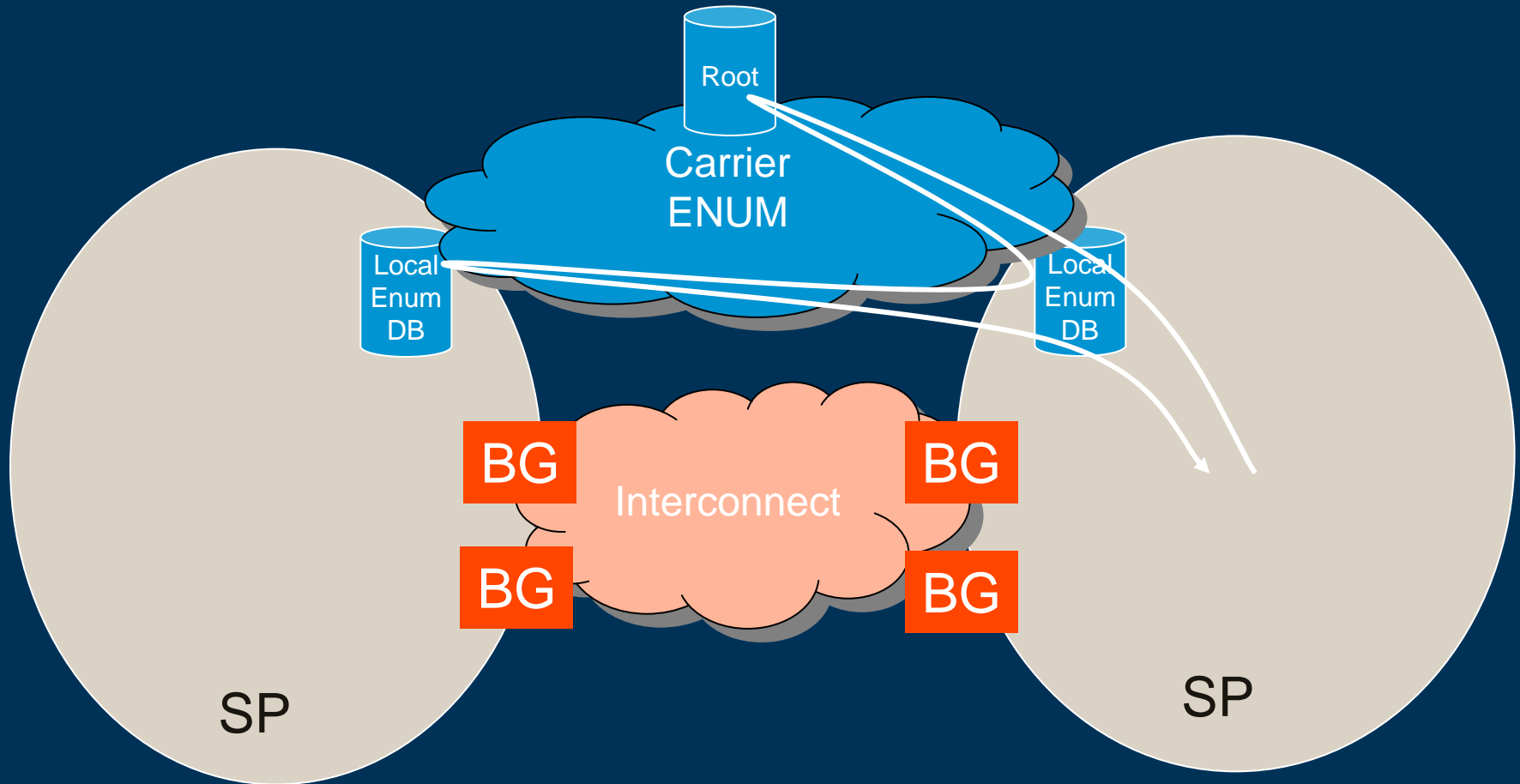
3. Determine Link



# Role of Carrier ENUM



# Connected Networks

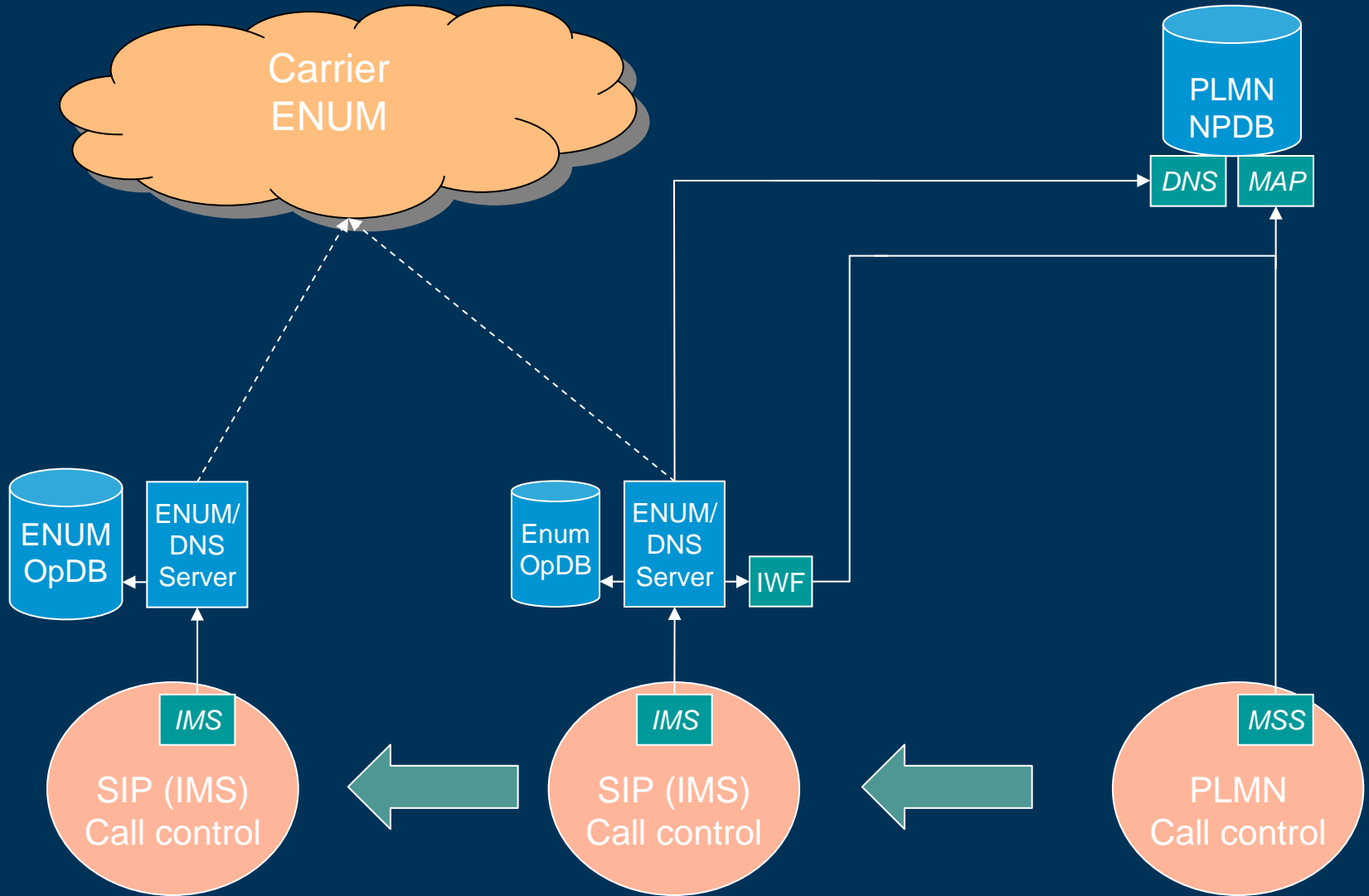


**`sip:+447801123456@mnc001.mcc234.3gppnetwork.org`**

# Benefits of Carrier ENUM

- Co-ordinated Data management
  - Each Operator publishes their own data
- Single Global Resource
  - Available to all members for basic functionality
- With data properties needed for NP Data
  - Uptodate
  - Highly Available
  - Globally Available
  - Trusted
  - Secure
- A big step for ENUM technology
  - Registry concept is good
  - Basing on GRX DNS is good

# Number Portability Solution Migration



# RCS – Rich communications

E.164



Presence incl. Capability Exchange

based on  
OMA Presence Simple

Video Share

based on  
GSMA PRD IR.74

Image Share

based on  
GSMA PRD IR.79

Messaging (One-Shot, Ad-Hoc Group, File-Transfer) SIP, MSRP

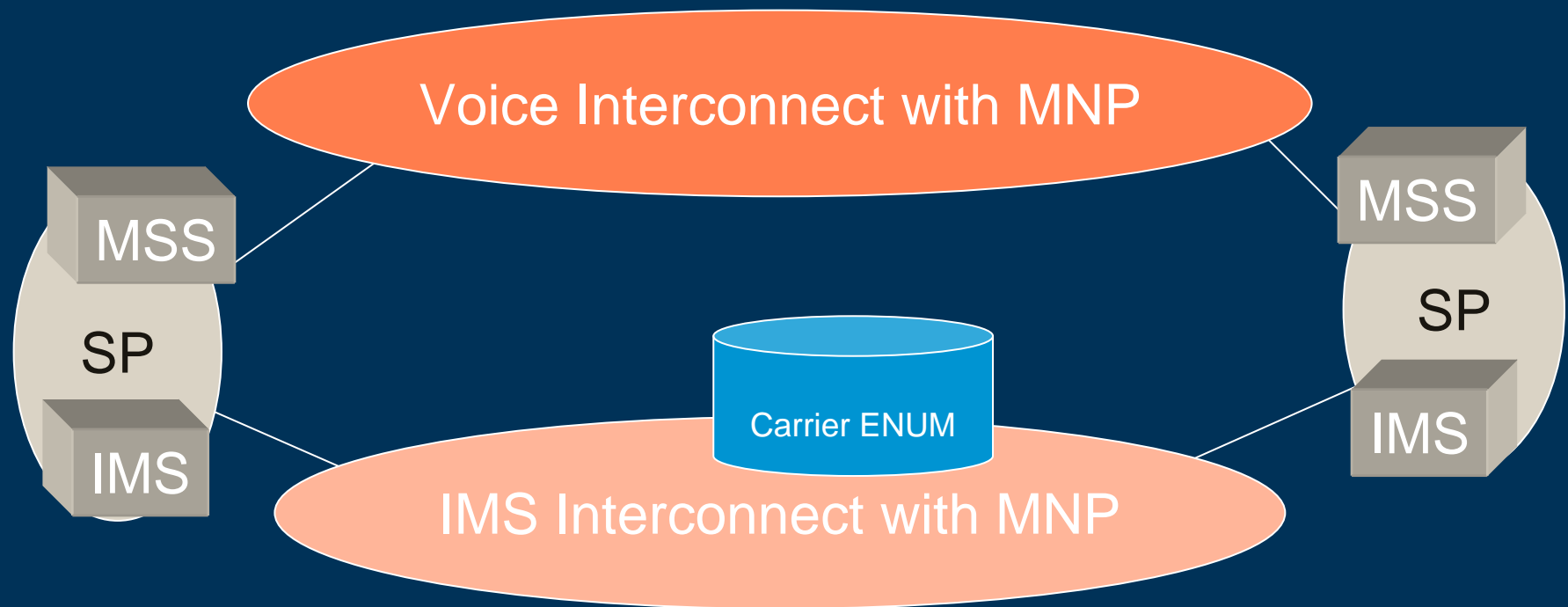
based on  
OMA Simple IM

IMS

CS Voice

CS

# RCS based upon existing E.164



RCS drives IMS Interconnect  
RCS drives IMS MNP

# Other Factors

Beyond Technology

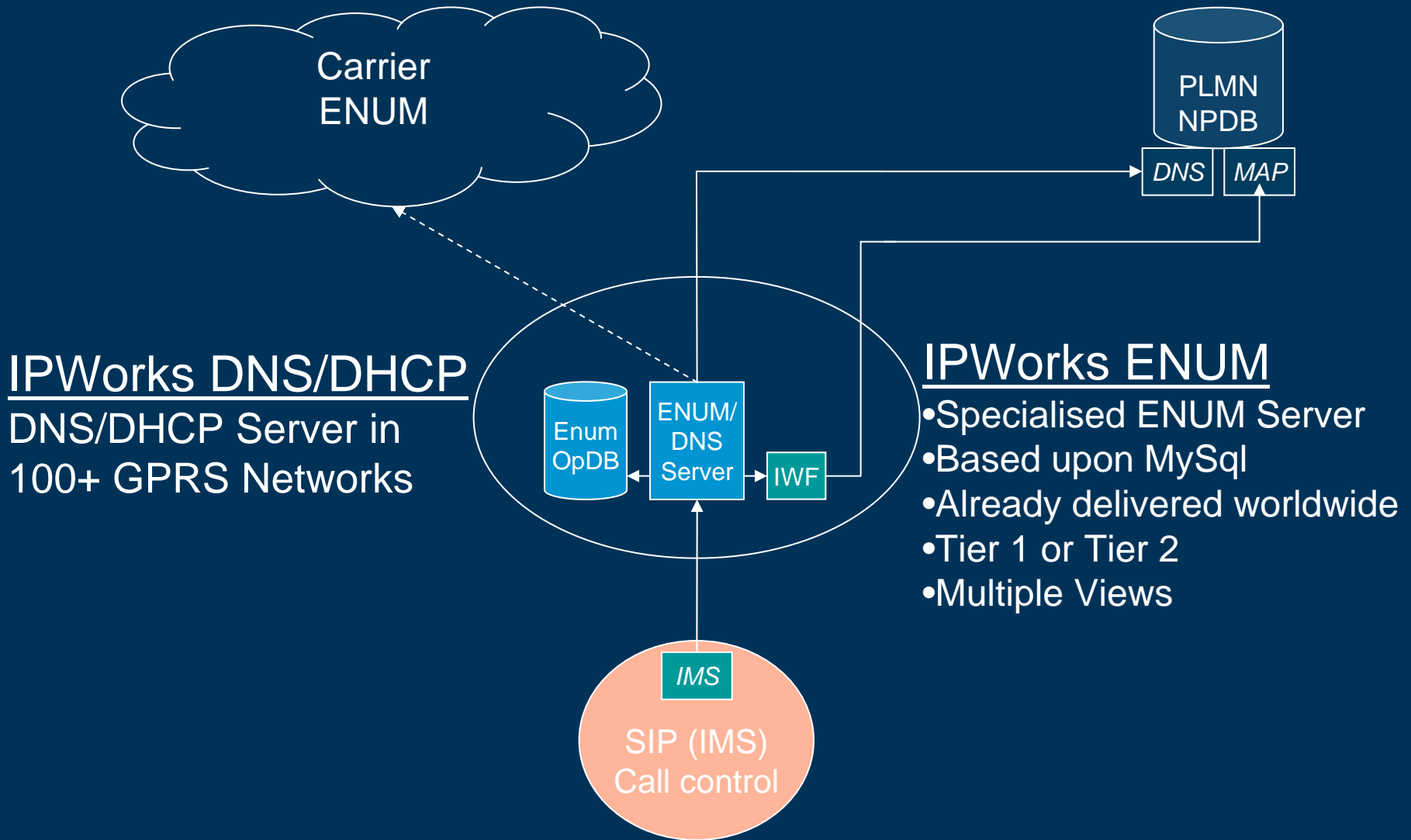
# GSMA Work

- Business Framework
  - How ENUM works for benefit of all parties
  - 3<sup>rd</sup> Party Management of ENUM Root
- Industry Collaboration
  - Needed for new Technology
  - Need to build trust
- Standards Profiling work
- SIP-I Trials
- Carrier ENUM PathFinder Trials



Ericsson  
supporting  
these

# Ericsson IPWorks - ENUM



# Ericsson IMS market position

## Public references

- Telefonica
- TDC
- Elion
- Commander
- Meditel
- Softbank
- Sprint
- KPN
- Vodafone Portugal
- Beijing Netcom (CNC)
- FarEasTone
- Vodafone Czech Republic
- Wilhelm.tel
- Mobistar
- Vipnet
- TIM
- Optimus
- Mobilcom Austria
- Hellas on Line
- Cyta
- Tele Greenland
- Vodafone Iceland
- Invitel, Hungary

- Ericsson has signed 60\* IMS system contracts for commercial launch. All based on the IMS standard.
- 36 of these contracts have been deployed and are running live commercial traffic
- All IMS contracts include a CSCF and HSS and may include one or more of the following :
  - IP Telephony, IP Centrex, Messaging, Push to Talk, weShare, and Presence
- They are distributed over Americas, Europe, Asia-Pacific and Africa and include Fixed network implementations, GSM/GPRS, WCDMA/HSPA

\* In addition to these 60 contracts, which aim for commercial launches, Ericsson has performed a large amount of IMS trials. However, Ericsson does not count trials any longer.

# Conclusion

- **Prime Role for Carrier ENUM** is
  - Map **E.164** to **Destination Operator**
  - Simplify Number Portability
  - Global resource
- **RCS** is a driver for
  - IMS interconnect & Carrier ENUM
- **Ericsson** plays a lead role
  - IMS & IPWorks Products are Available
  - Certified against GSMA Pathfinder
- **GSMA** plays an essential co-ordination role
  - Industry collaboration
  - Trials
    - Pathfinder with Neustar
    - IPX & RCS trials

**ERICSSON** 

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