IP Based Multimedia Services Platform

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Topics to be Covered

- IMS Motivation and Overview
- IMS within the 3GPP
- Architecture/Components of IMS
- Services Built upon IMS
- Sources for More Information

IP Multimedia Session Domain

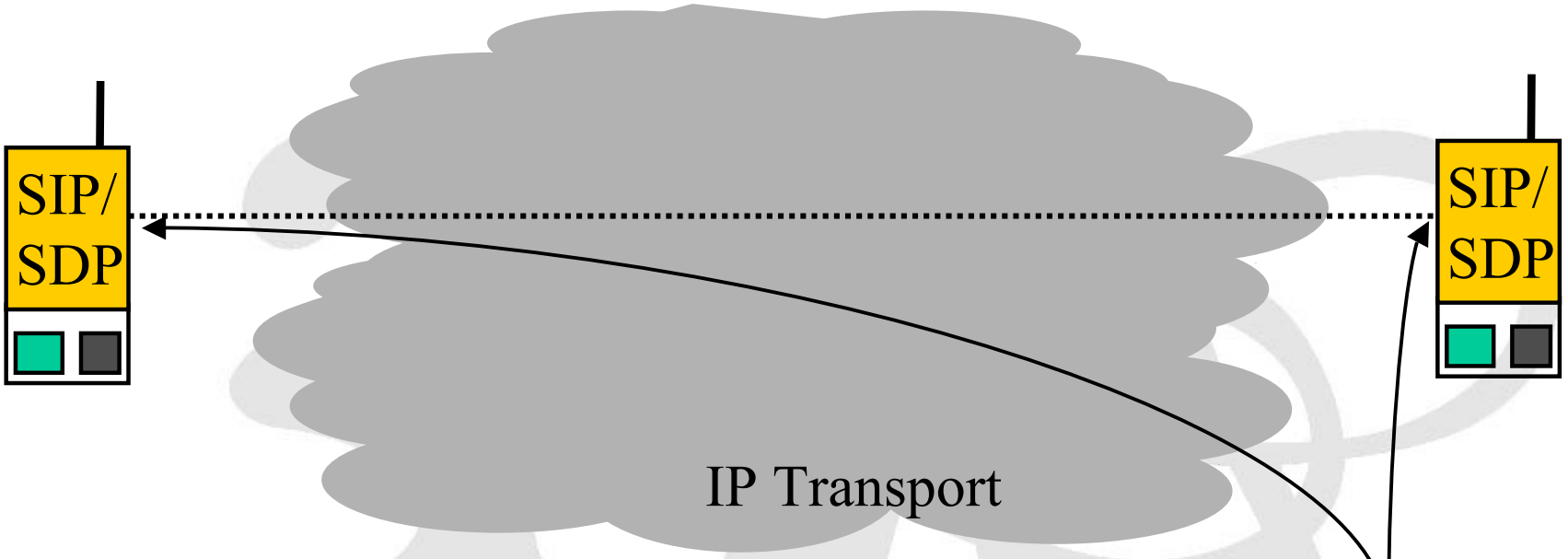
- Multimedia Service Platform based upon internet protocols
  - SIP/SDP
  - Diameter
  - COPs
  - IPv6
- Independent of Radio Access Technology
  - 3GPP currently uses WCDMA, GRPS, EGPRS
- Independent of underlying IP Transport Technology
  - 3GPP currently uses GPRS as IP Transport
- Developed in 3GPP
  - Work begun in mid 1999
  - Called IP Multimedia Subsystem by 3GPP
  - Replacement of term “All-IP”

Advantages of IMS

- Unified Handling of All Information
  - Combining Applications
  - Easy Mixing of Media and Parties
- Flexibility in Resource Utilisation
  - Mix of Network and Terminal Based Resources
  - No Binding to specific providers
- Open Interfaces
  - Sourcing applications from anywhere
  - Common for all user equipment and all application servers
- Access Convergence

A GLOBAL INITIATIVE

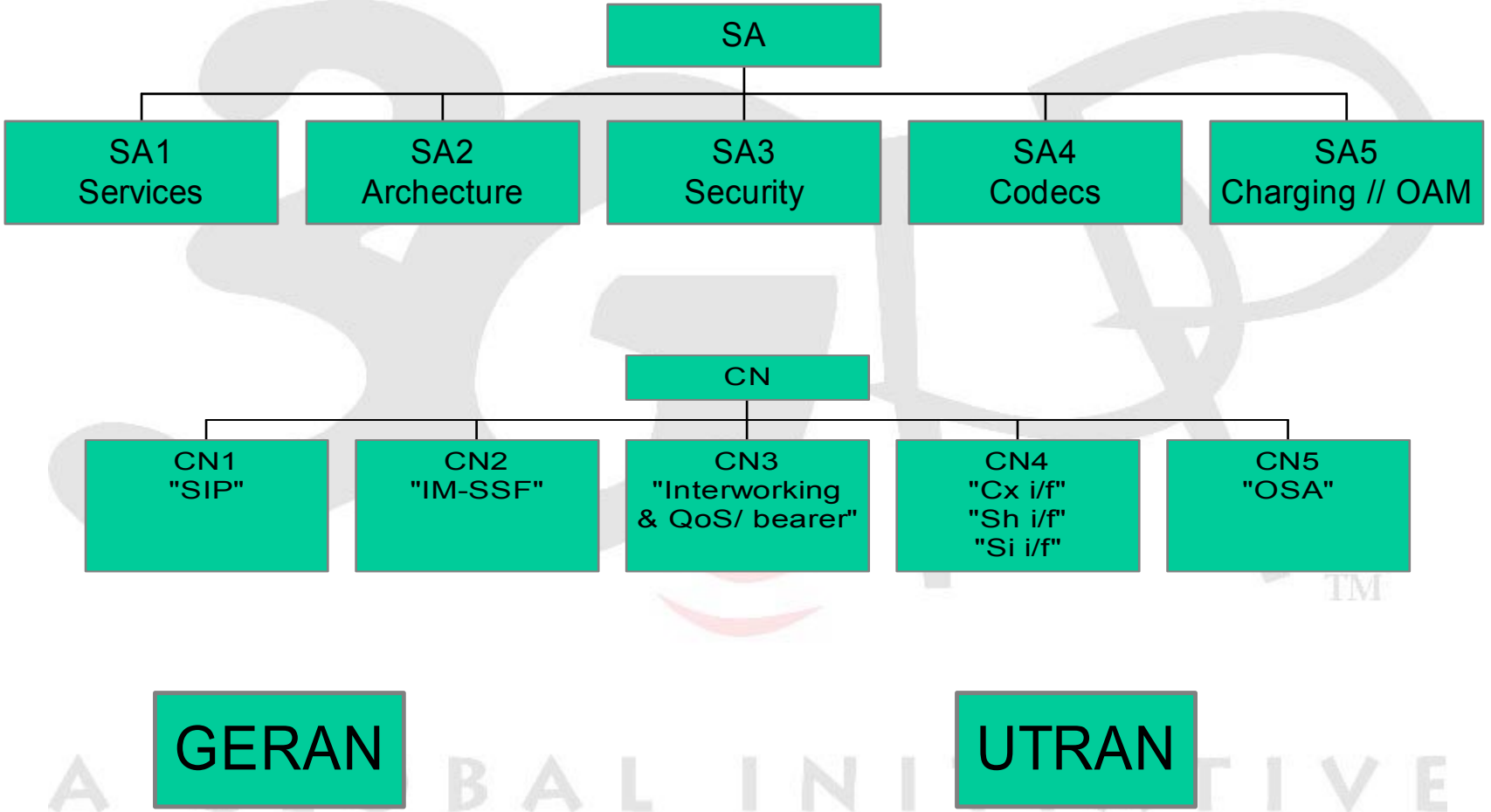
IMS Overview



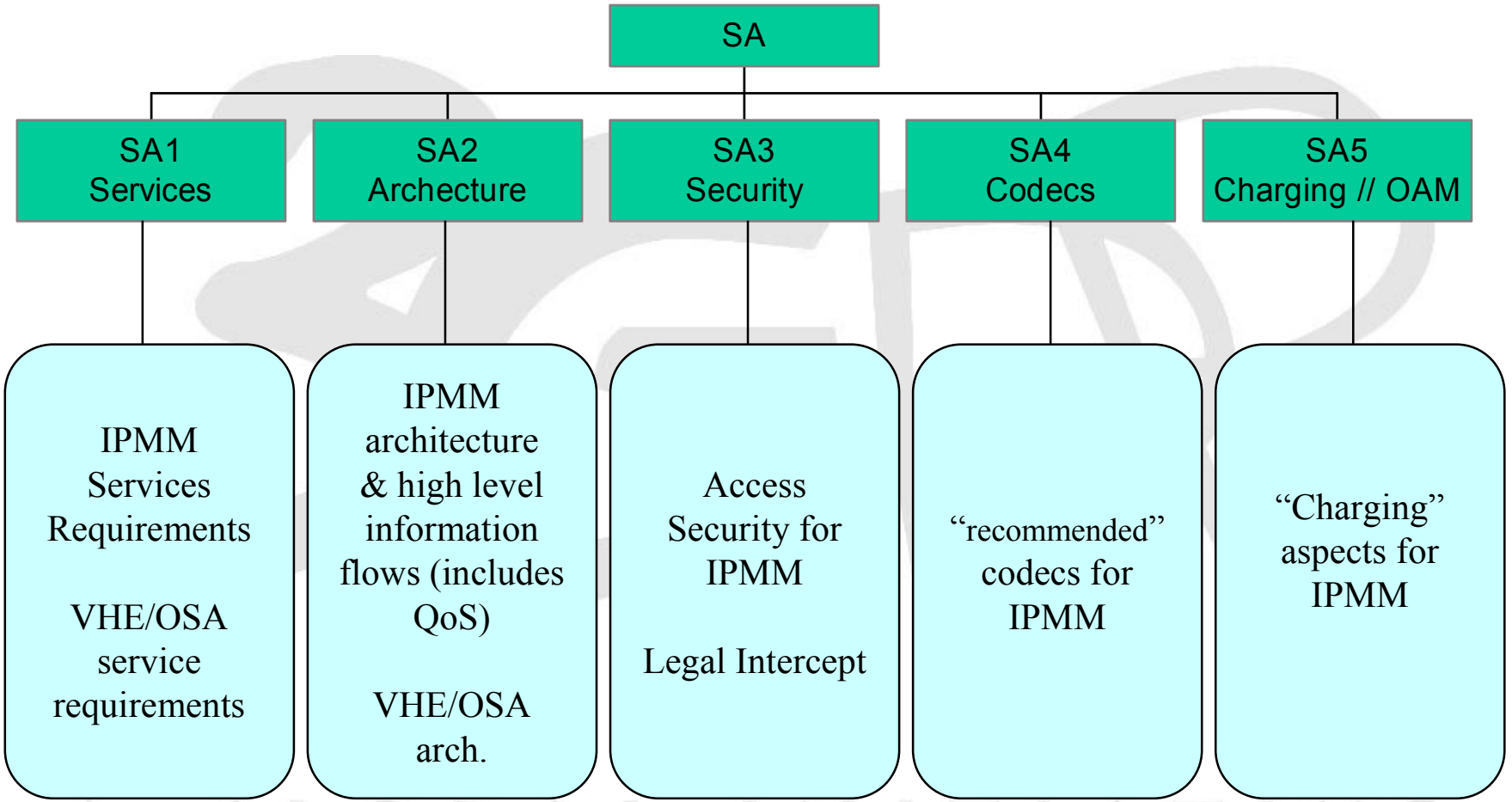
- **Problems with the end-to-end model:**
  - **QoS**
  - **Fraud/Privacy**
  - **Voicemail, forwarding, conf calling**
  - **CS interworking**
  - **Charging**

IMS uses SIP/SDP End to end protocols

IMS activities in 3GPP



IMS activities in 3GPP



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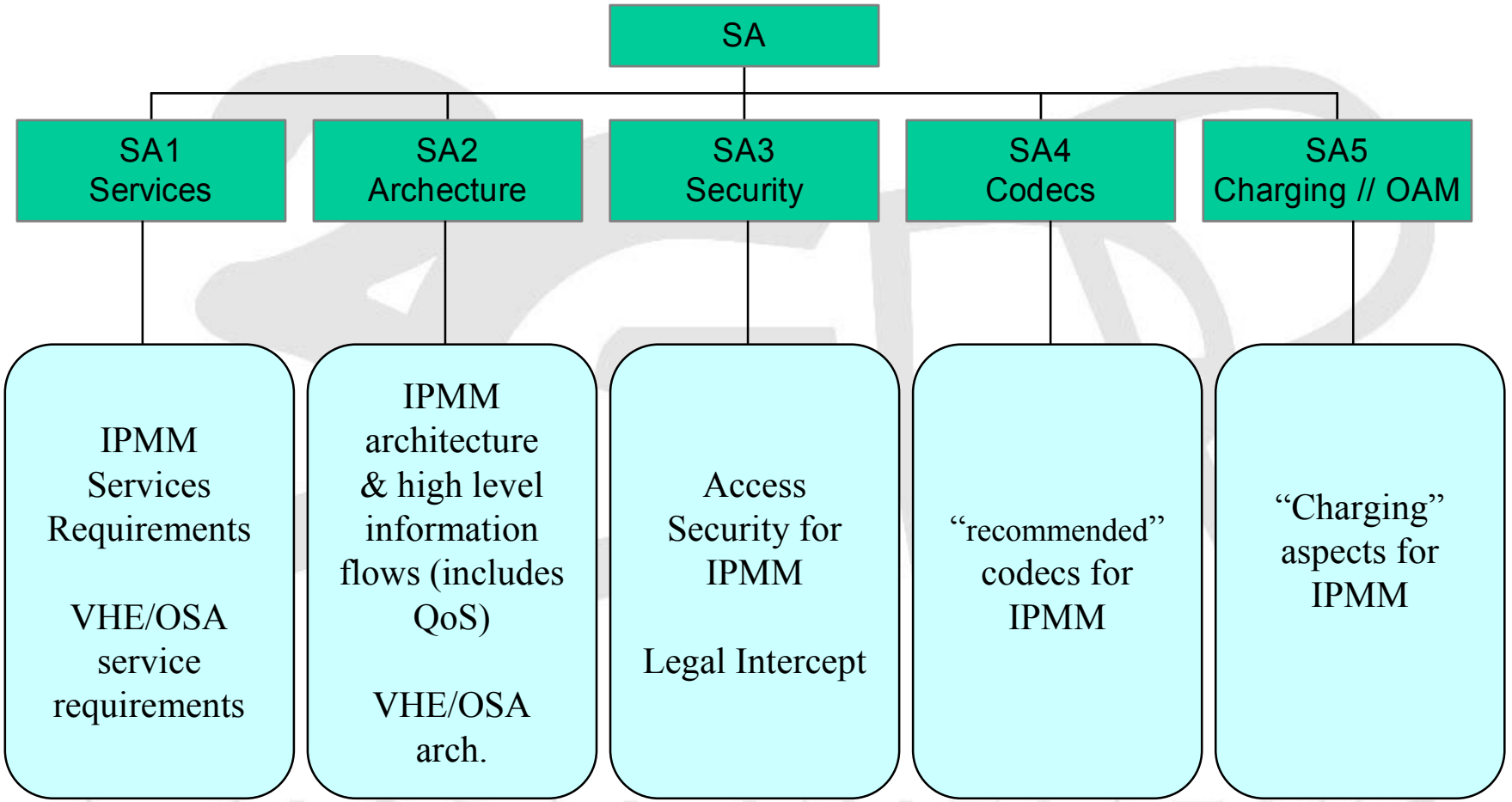

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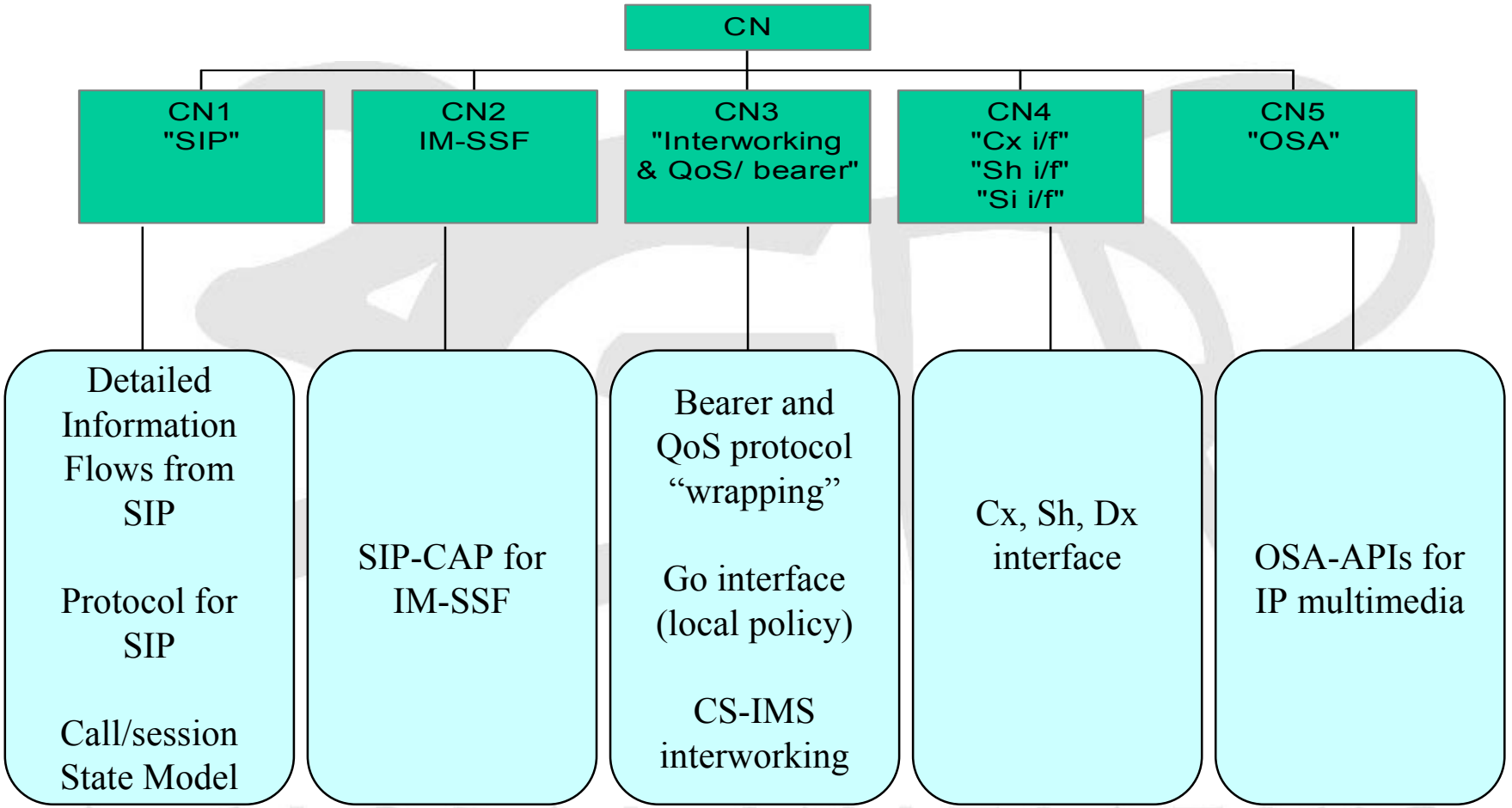

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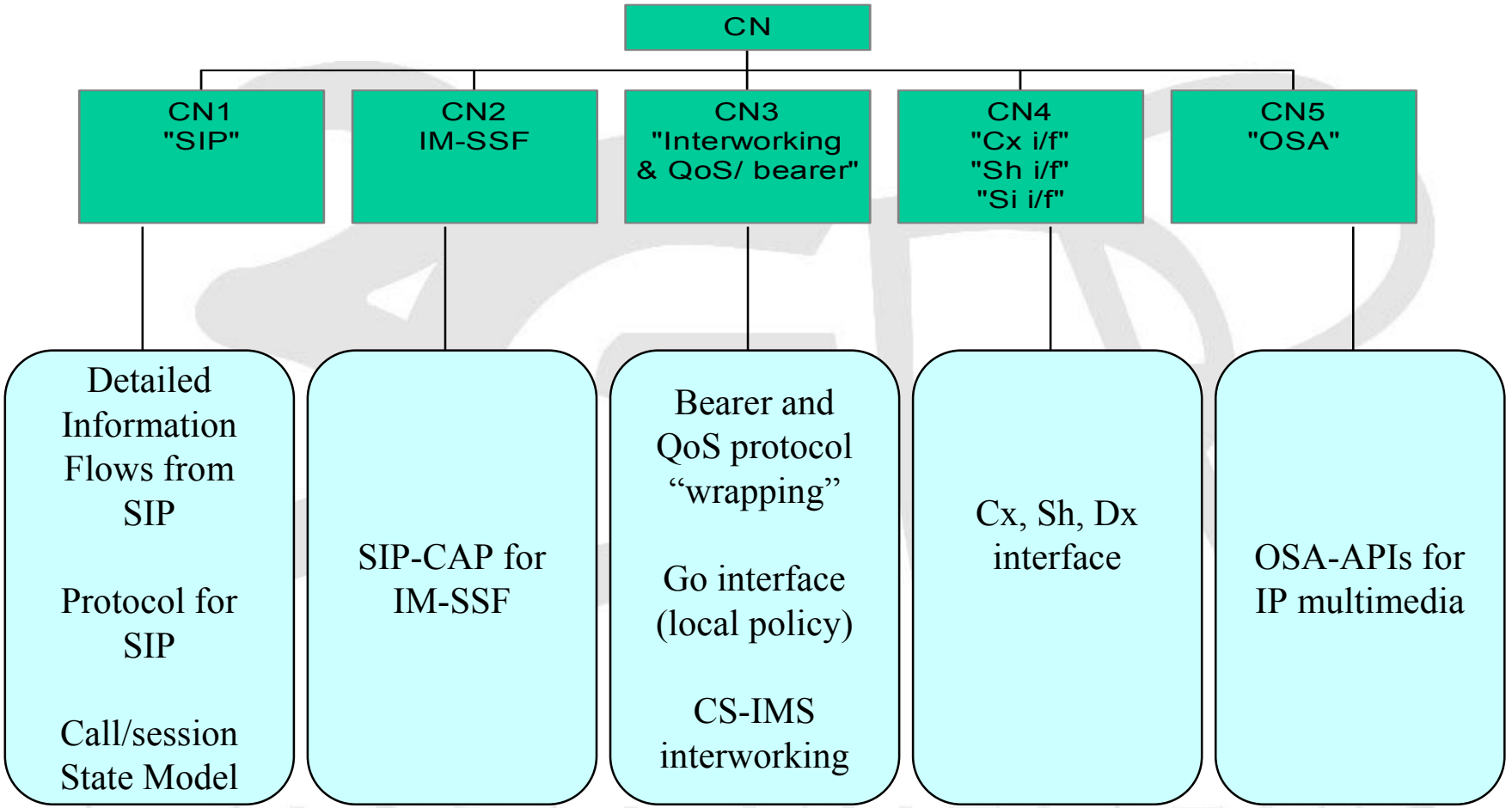
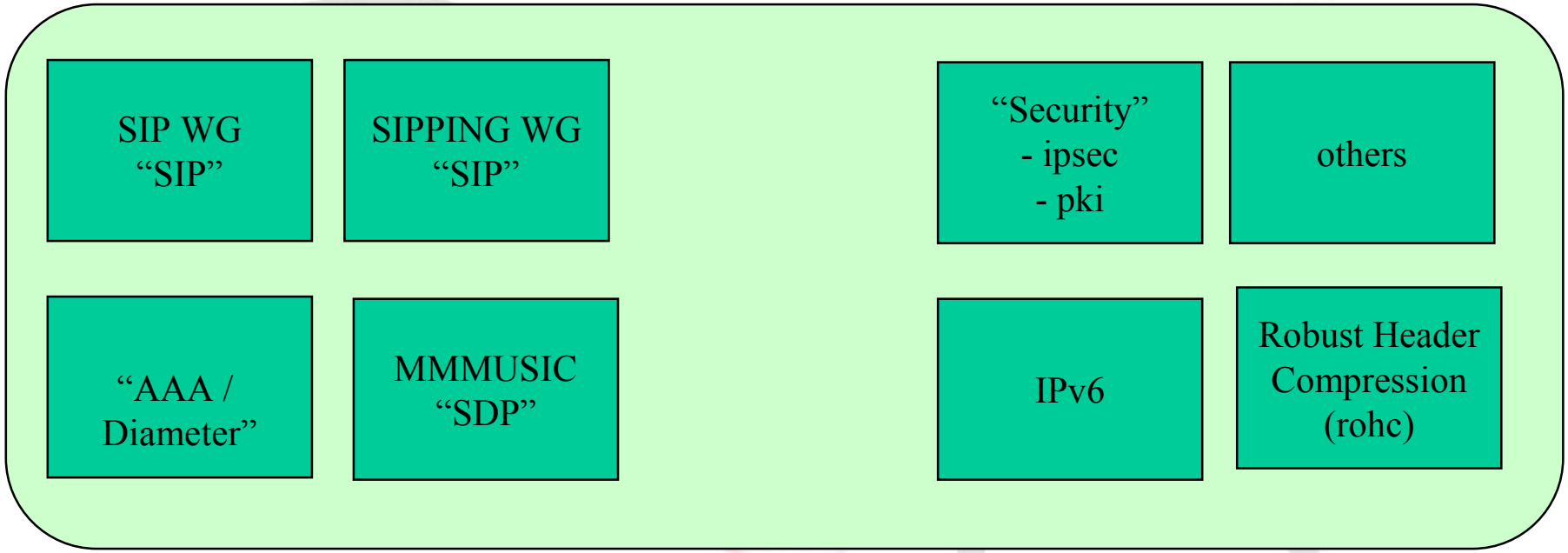
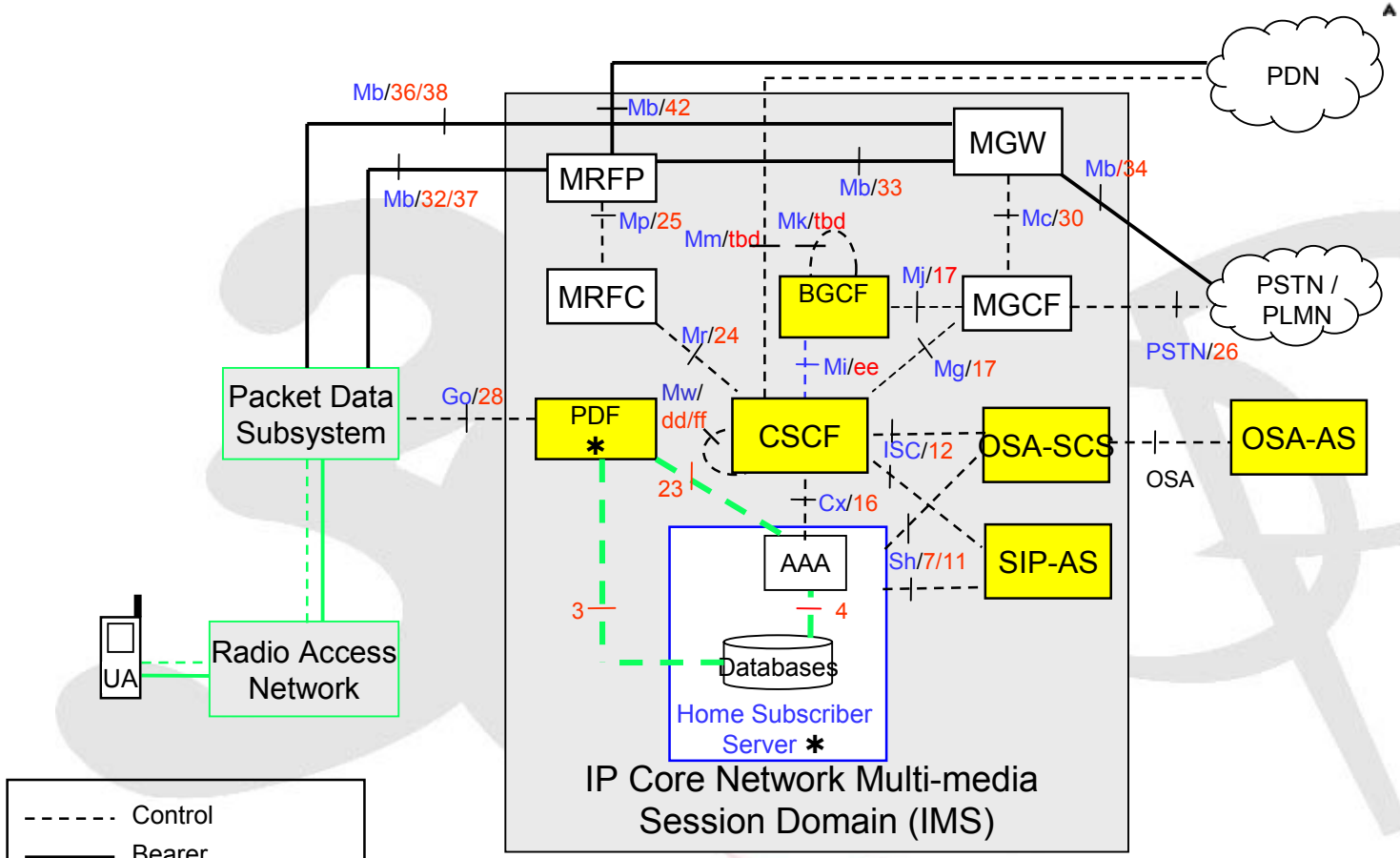


IMS activities in IETF



A GLOBAL INITIATIVE

Harmonized IMS Reference Model



Control
Bearer

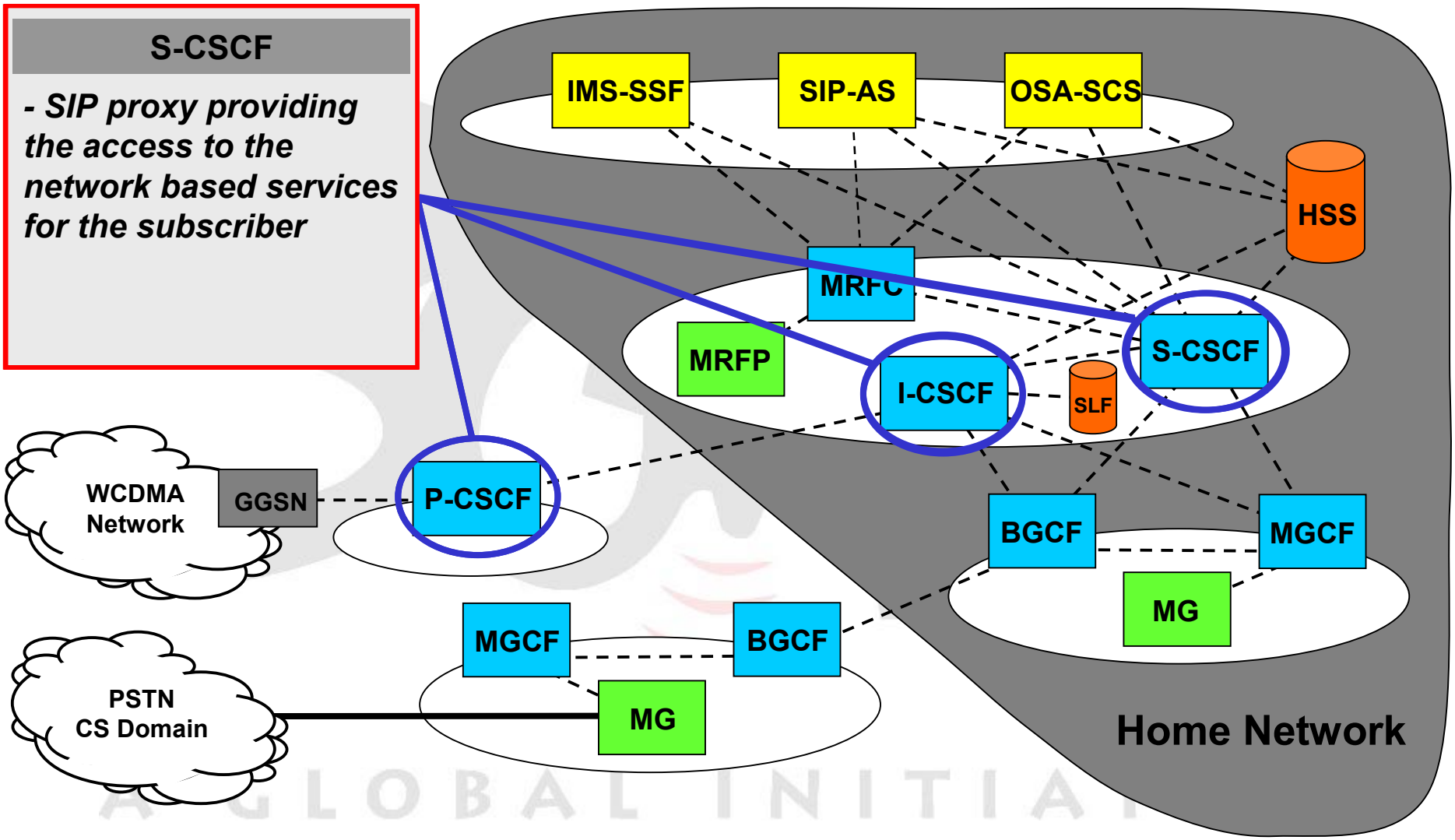
Blue = 3GPP definition
Red = 3GPP2 definition
Black = Common definition
Green = Not Common

* For 3GPP, the PDF is within the P-CSCF. For 3GPP2, the PDF is a network entity of it's own.

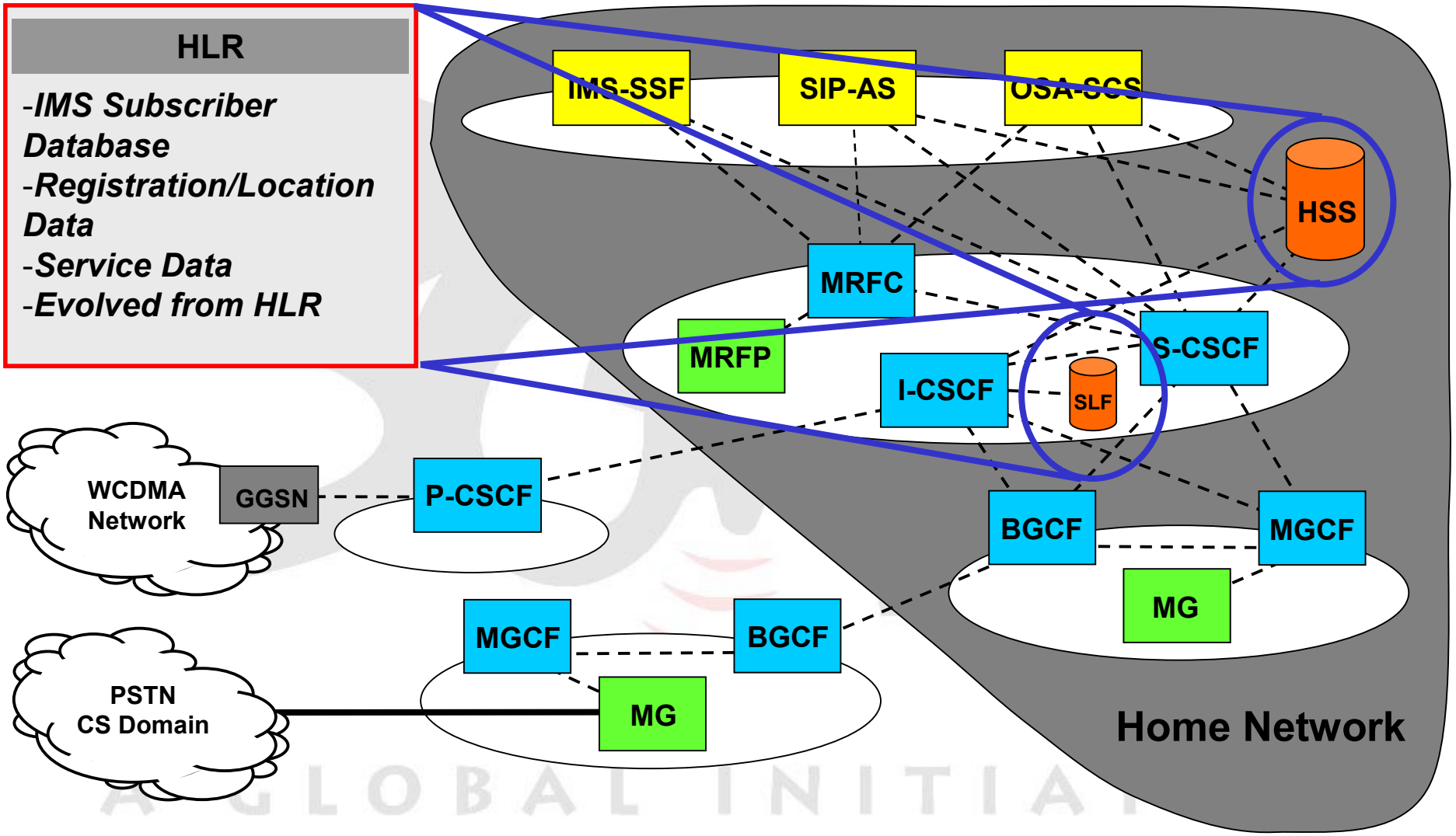
* For 3GPP the HSS also contains HLR functionality which is not shown here. For 3GPP2 the AAA function shown in the HSS is a stand-alone entity.

* Additional interfaces exist in both the 3GPP and 3GPP2 reference models but are not included in this proposal for harmonization.

IMS Architecture – Session Control Function



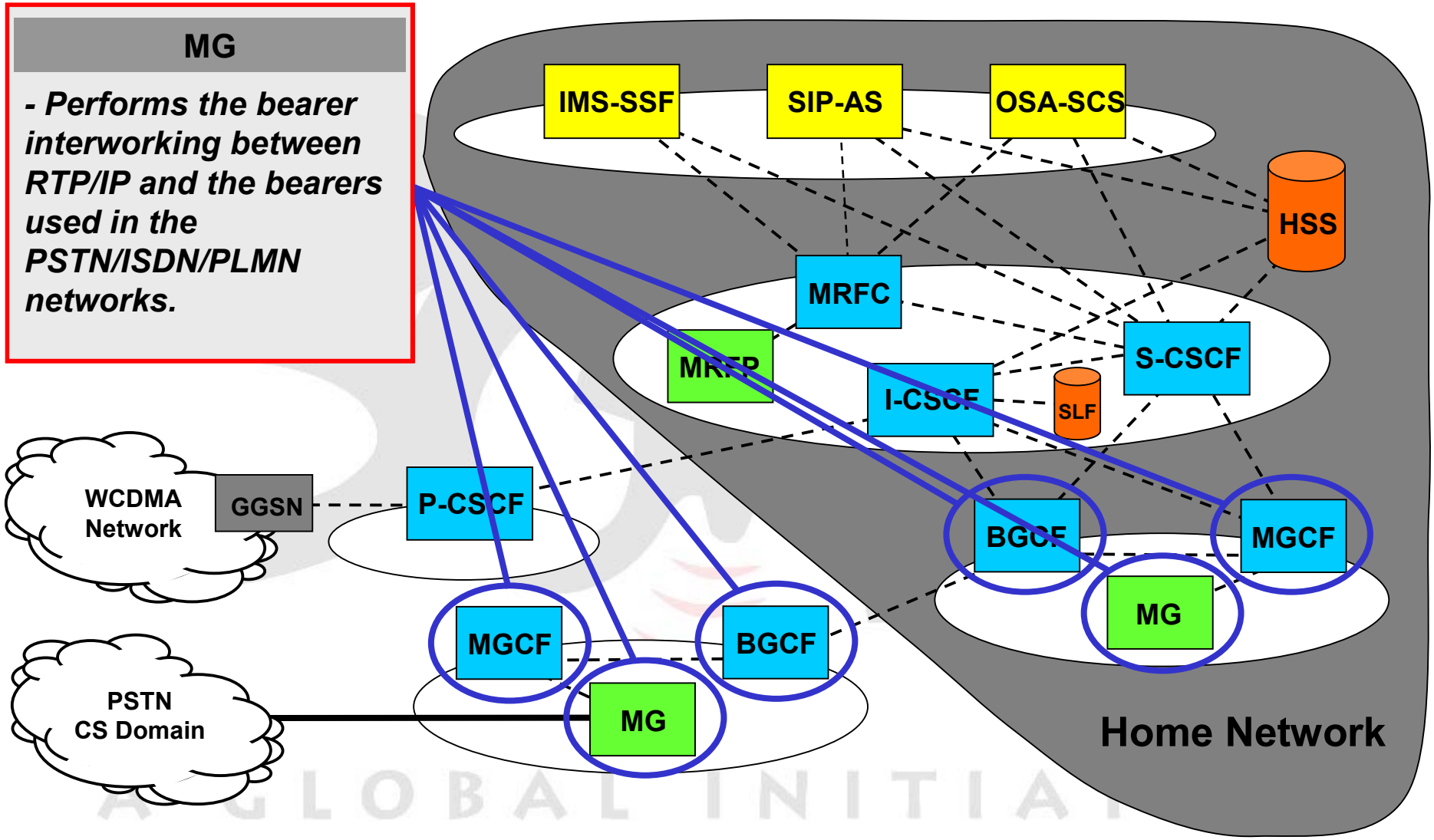
IMS Architecture - Databases



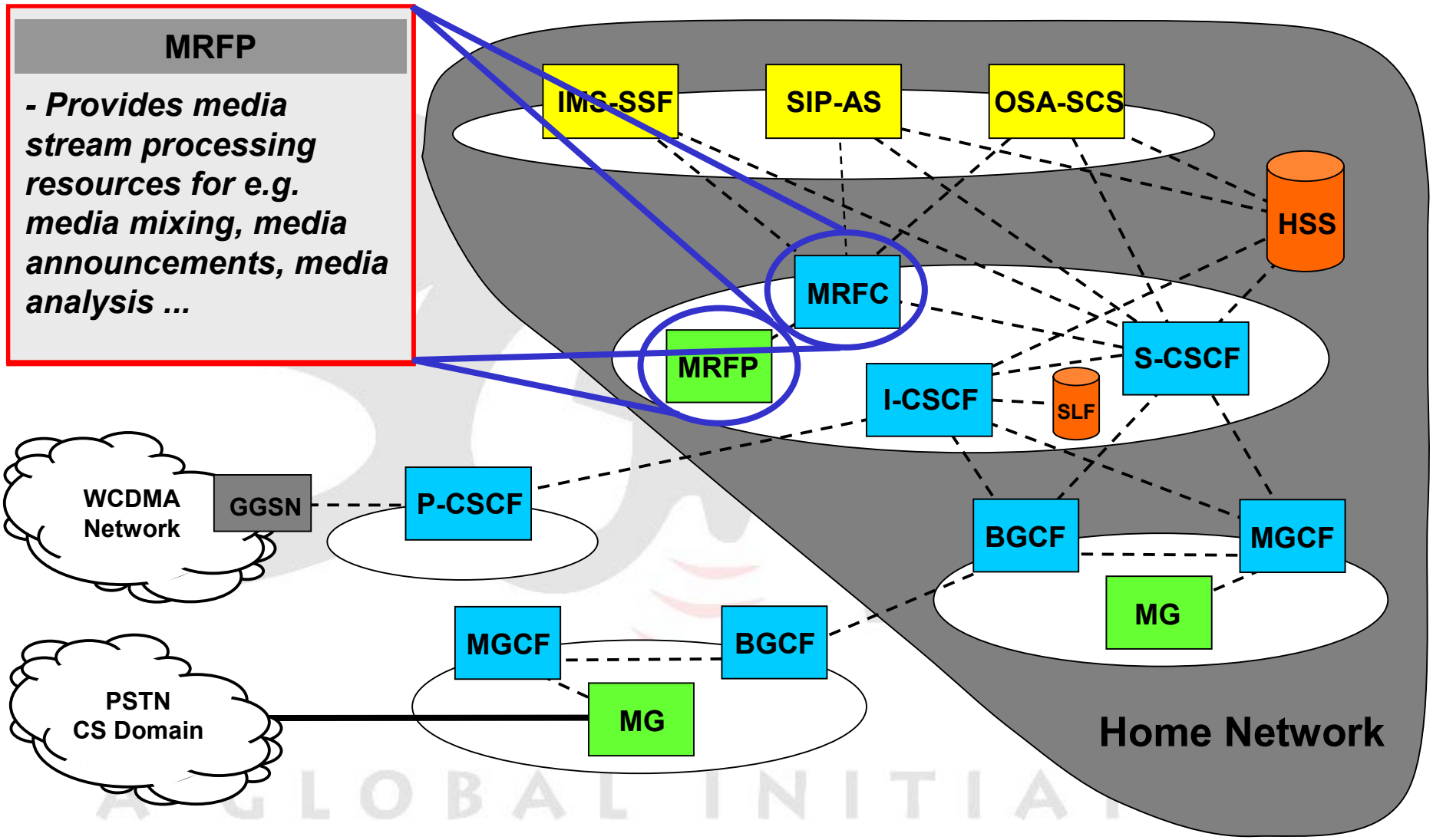
IMS Architecture – Interface to Legacy Networks

MG

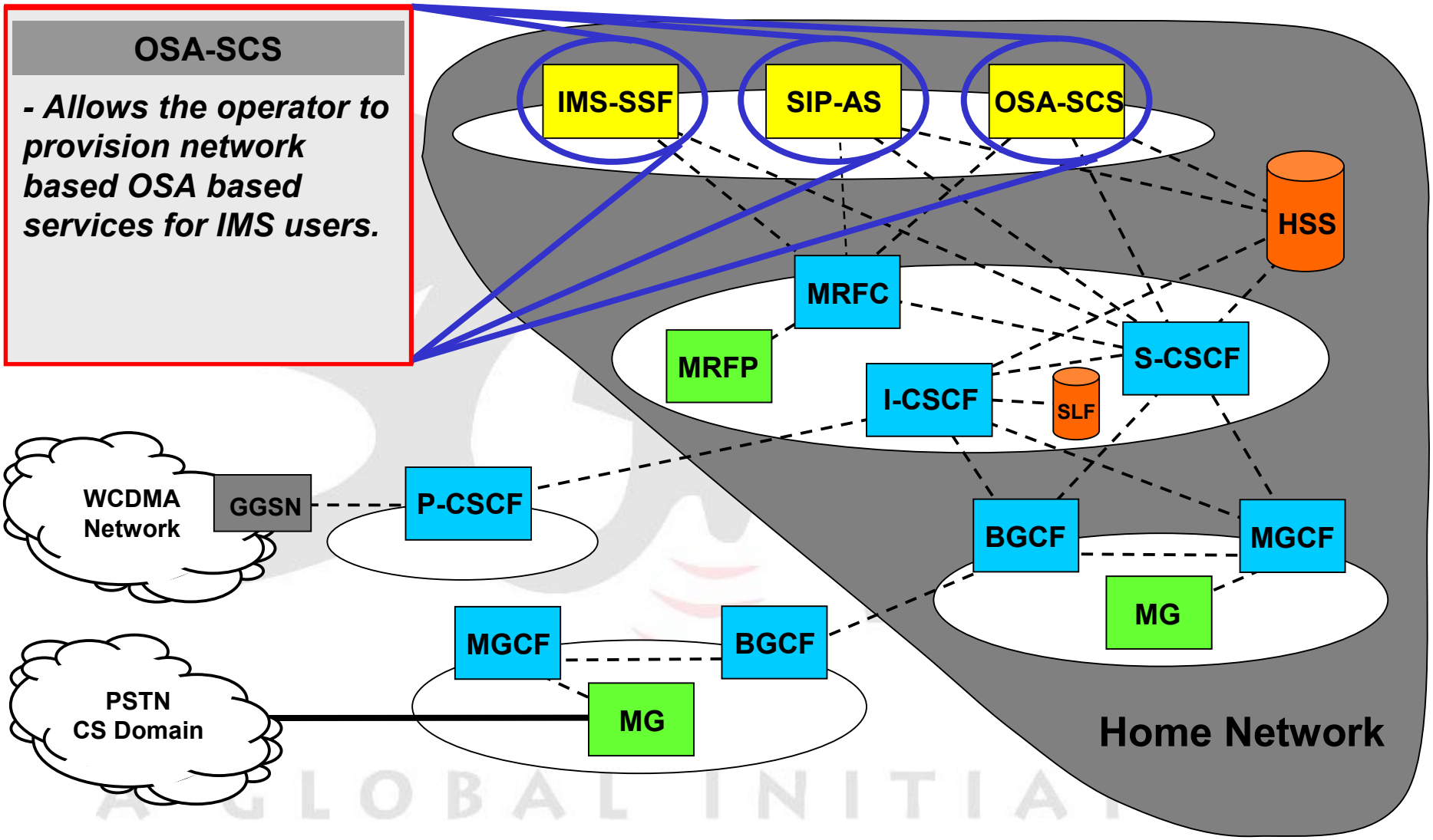
- Performs the bearer interworking between RTP/IP and the bearers used in the PSTN/ISDN/PLMN networks.



IMS Architecture – Media Resources



IMS Architecture – Service Platforms



Services on IMS

- Examples of Services that can be built on IMS
  - Presence
  - Instant Messaging
  - Streaming
- 3GPP Standardizes IMS Service Capabilities NOT Services
- Services are implemented in Home Network
  - Service knowledge not required in visited network
  - Local Services still being worked on
- 3 Service Platforms
  - CAMEL (IMS-SSF)
  - OSA (OSA-SCS)
  - SIP (SIP-AS)

To find out more

- www.3gpp.org
  - Specifications (23.218, 23.228, 24.228, etc.)
  - technical reports (23.815, 23.821, etc.)
  - mailing lists
  - meeting reports
  - contributions
  - IETF dependencies
- www.ietf.org
  - Internet drafts (MMUSIC, SIP, ROHC, AAA, IPV6, RAP, etc.)