The 3GPP and IETF Approaches to Session Control

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Telecom Forum, October 17th, 2006

Outline

3GPP Structure

IETF Structure

System Architecture vs. Protocol Standardization

3GPP-IETF Collaboration

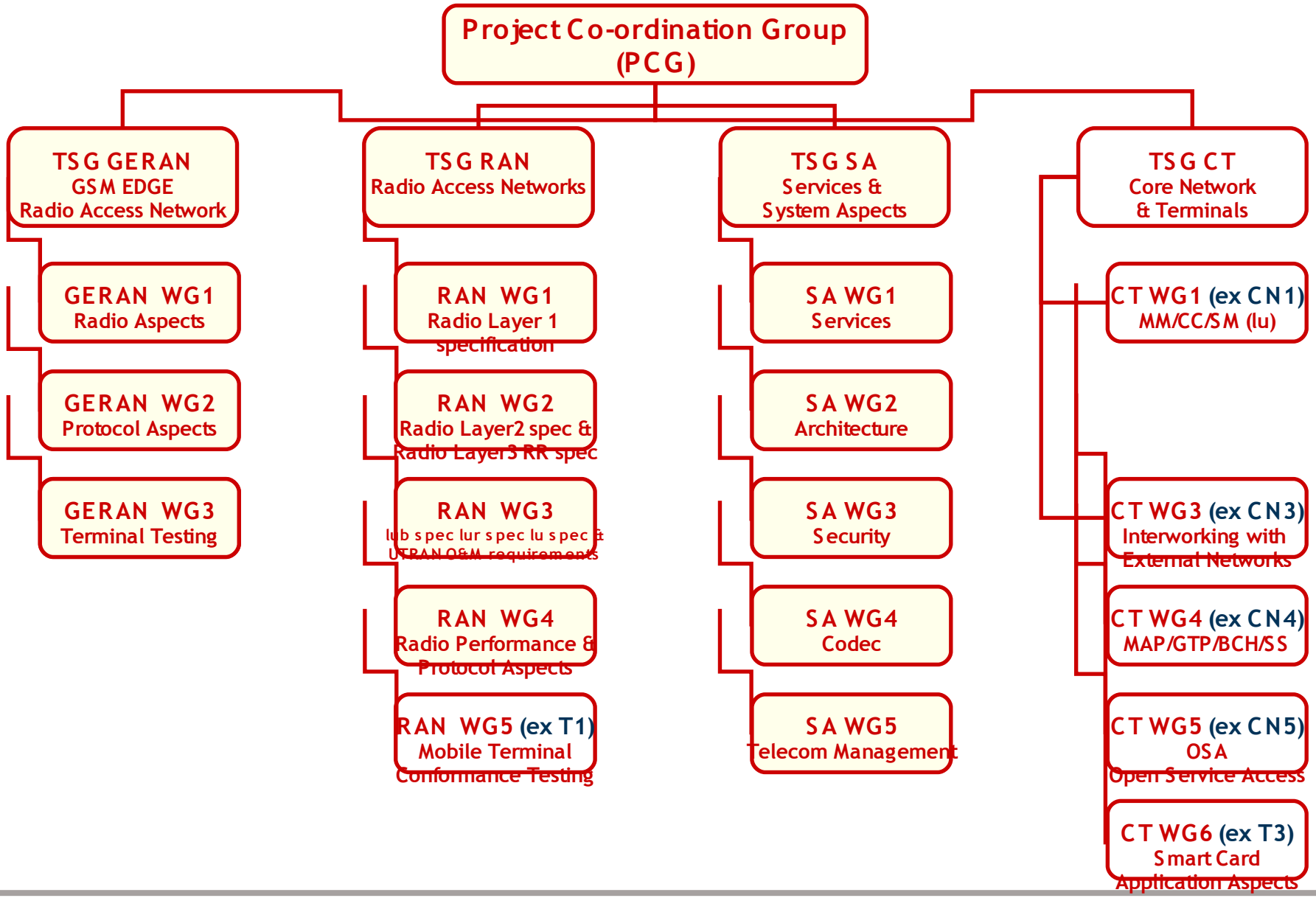
From the SIP Trapezoid to the IMS Architecture

Charging and Policy Control

P-headers and IMS-related Extensions

OMA-related Extensions

3GPP Structure



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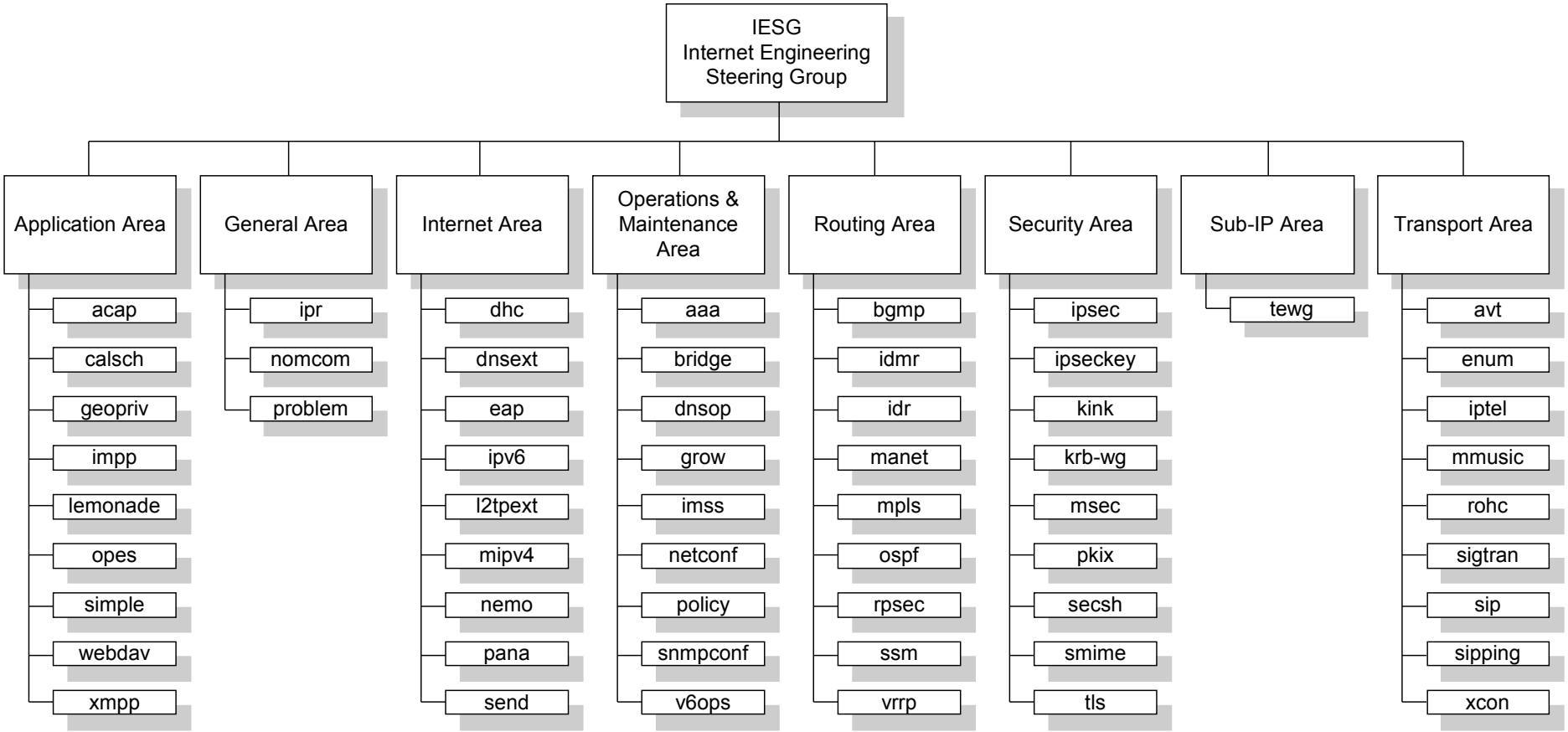
3GPP Deliverables

Technical Reports
Technical Specifications

Stage 1 – Requirements
Stage 2 – Architecture
Stage 3 – Protocol

IETF Structure



RFCs (Request for Comments)

- Standards Track
  - Proposed Standard
  - Draft Standard
  - Standard
- BCP (Best Current Practice)
- Informational
- Historic

System Architecture vs. Protocol Standardization

3GPP specifies the IMS (IP Multimedia Subsystem)

System architecture

- Functions
- Interfaces between functions
- Protocols to be used on each interface
- How to use those protocols

The IETF specifies protocols

Protocol extensions

3GPP-IETF Collaboration

3GPP liaison manager to IETF

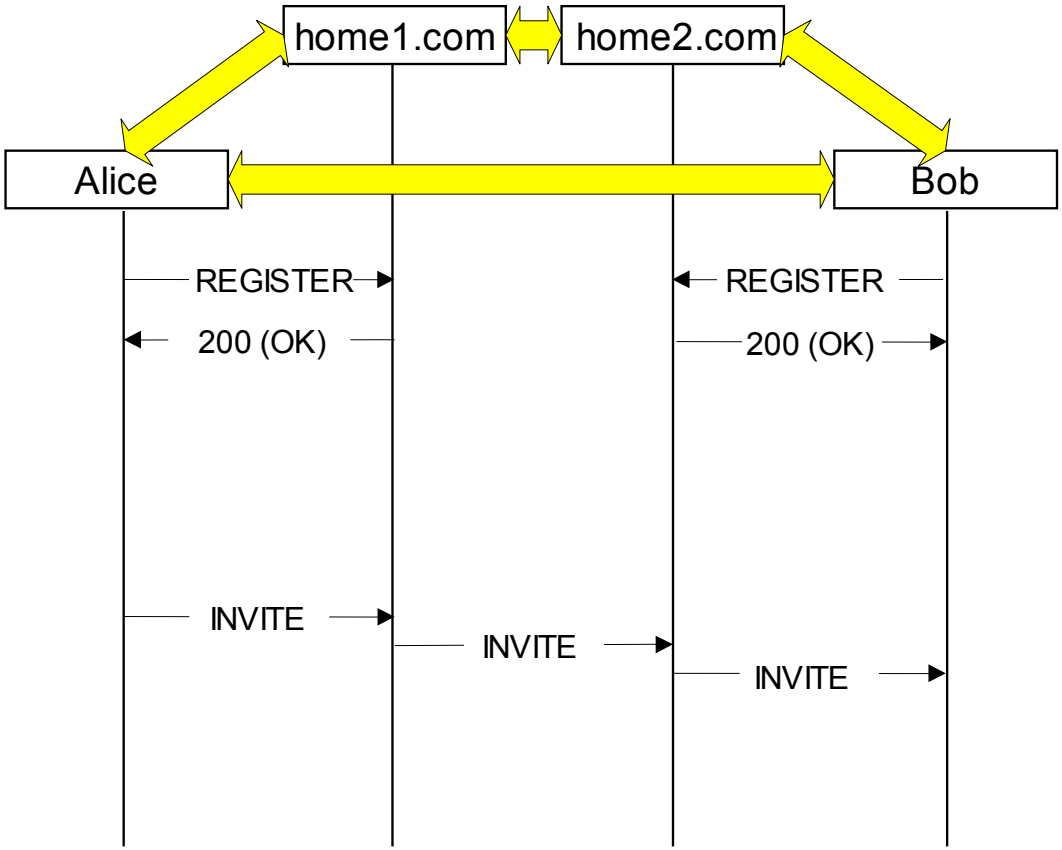
- Hannu Hietalahti

IETF liaison manager to 3GPP

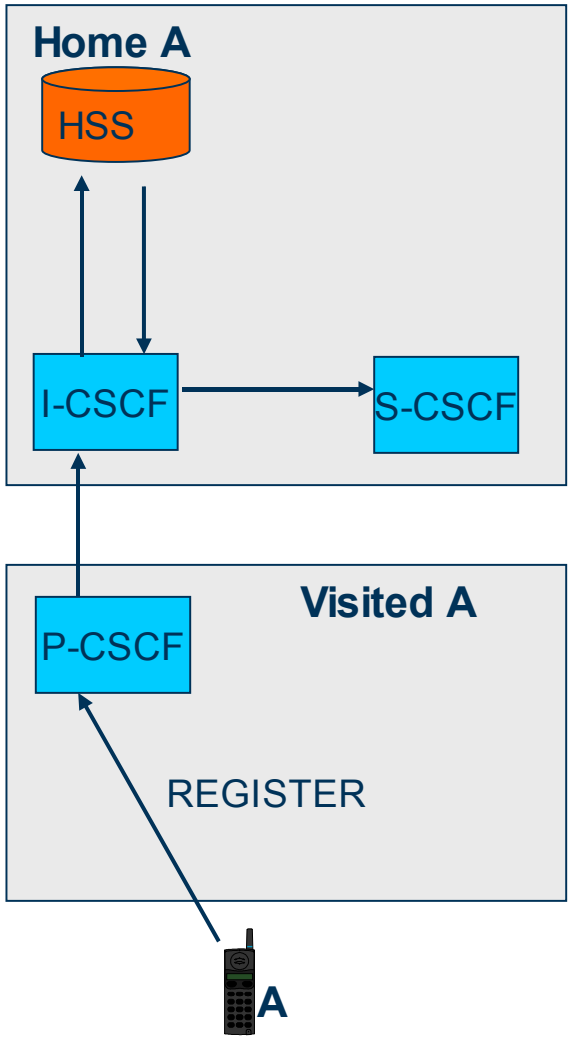
- Gonzalo Camarillo

Mostly engineer-level collaborations

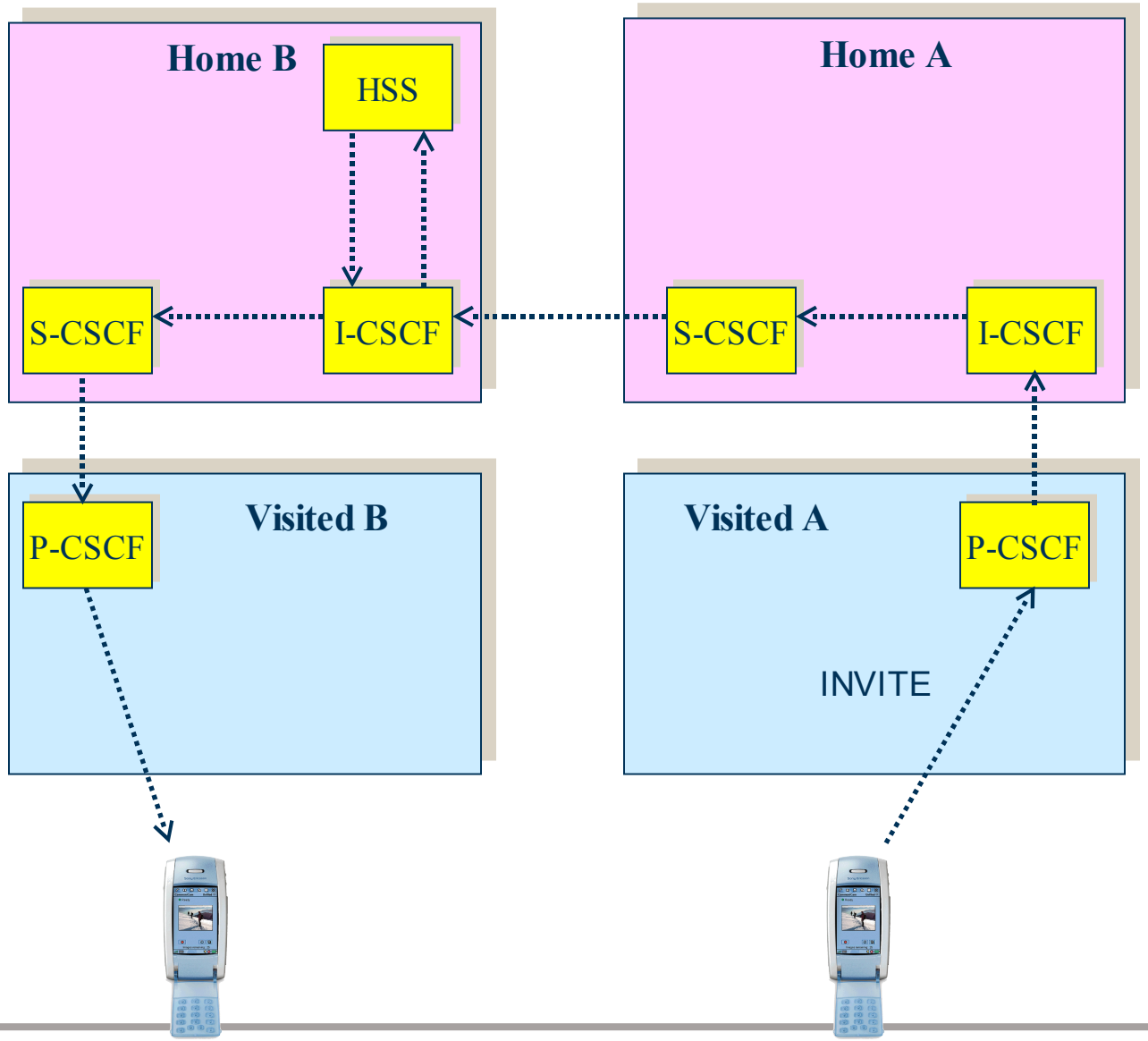
The SIP Trapezoid



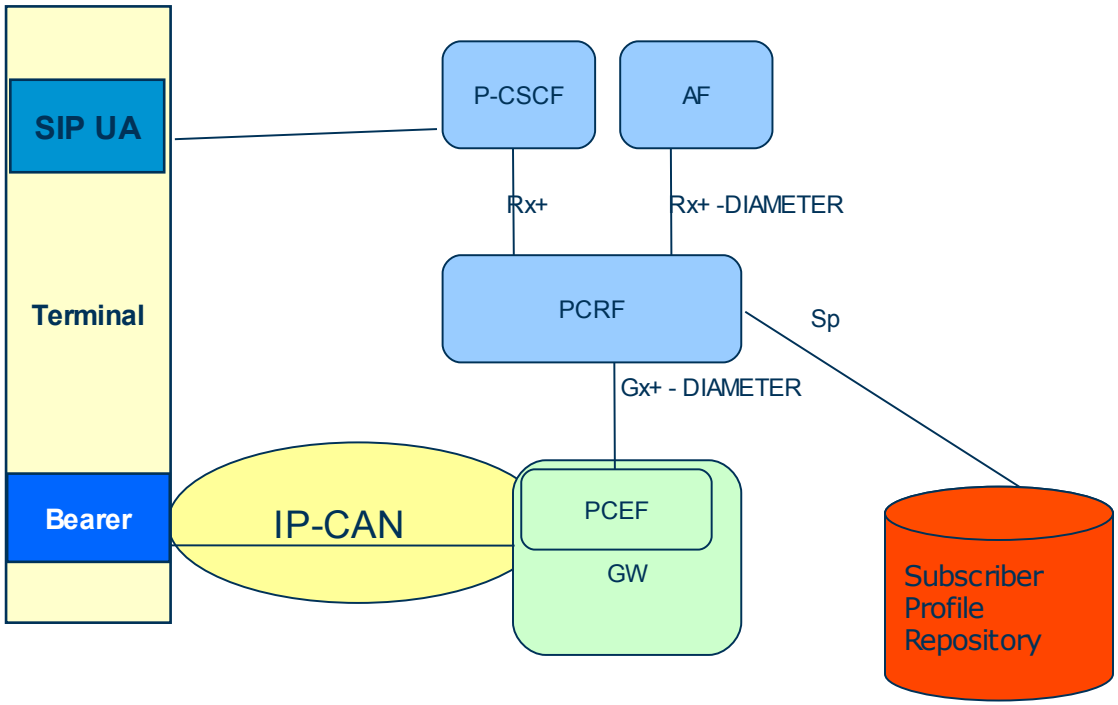
IMS Registration



IMS Session Establishment



Policy and Charging Control Architecture



P-headers

SIP change process

Too much to do in the SIP WG

The SIPPING WG is set up as a filter to study new requirements on general solutions

P-headers are created

- Preliminary
- Private
- Proprietary

Applicability statements for P-headers

Expert review in the SIPPING WG

IMS-specific P-headers

P-Associated-URI
- URIs associated to an address of records

P-Called-Party-ID
- Identity the session was addressed to

P-Visited-Network-ID
- Check roaming agreements and authorize registrations

P-Access-Network-Info
- Information about the access network used by the terminal

P-Charging-Function
- Charging entities for a session

P-Charging-Vector
- Charging identifiers and networks performing charging

P-User-Database
- Optimization for queries to the HSS

Digest using AKA

Authentication and session key distribution in UMTS networks

AKA is mapped to Digest so that it can be used in SIP

Security Agreement

SIP recommends the use of TLS

There are IMS networks based on IPsec

Negotiation of the security mechanism to be used towards the next-hop

- Prevents bid-down attacks

Used between terminals and their P-CSCFs

Used to negotiate IPsec parameters

OMA-related Extensions

P-Answer-State
- Whether or not the terminal was contacted

Answer-Mode
- Requests automatic or manual answer

URI-list services
- Fan out a number of similar requests

Consent framework
- Authorize URI additions to a URI-list service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