Parlay/OSA:
an open API for service development

Chelo Abarca, Andy Bennett,
Ard-Jan Moerdijk, Musa Unmehopa

ETSI

Joint API group

Parlay

3GPP
A GLOBAL INITIATIVE

Outline

0- Introduction: the Parlay/OSA API: why, where, what?

1- A closer look at Parlay/OSA

   - Parlay/OSA Framework and Service Capability Features

   - Parlay/OSA current functionality

2- The Parlay/OSA Framework

   - Framework functionality

   - How does it work?

3- Example Parlay/OSA applications

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4- Parlay/OSA standardisation

    - Bodies involved in Parlay/OSA standardisation

    - The Joint API Group

5- The next Parlay/OSA release

6- Summary, contacts

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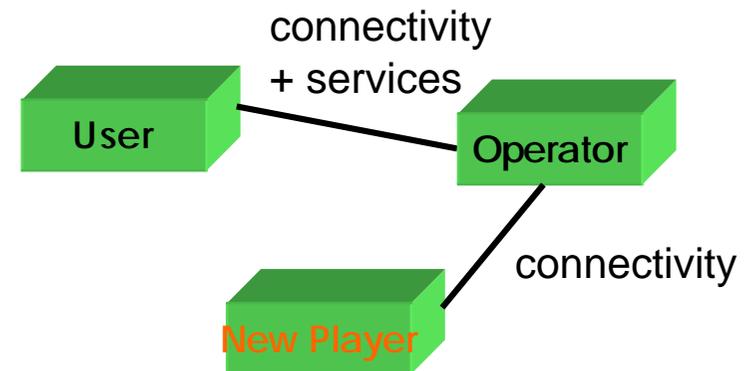
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The Parlay/OSA API: Why? (1/2)

A change in business models has introduced new players in the telecom business

Some want to address users directly

connectivity

| User | | Operator |

services   connectivity

New Player
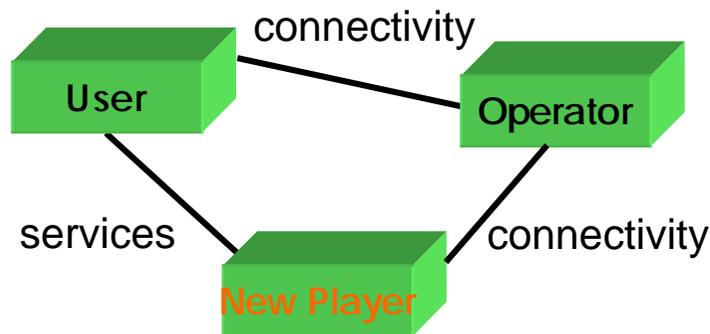
Some prefer to do it via the Network Operator

connectivity + services

| User | | Operator |

connectivity

New Player

But they have something in common:

They compete in the services market...

and they have **no network**!
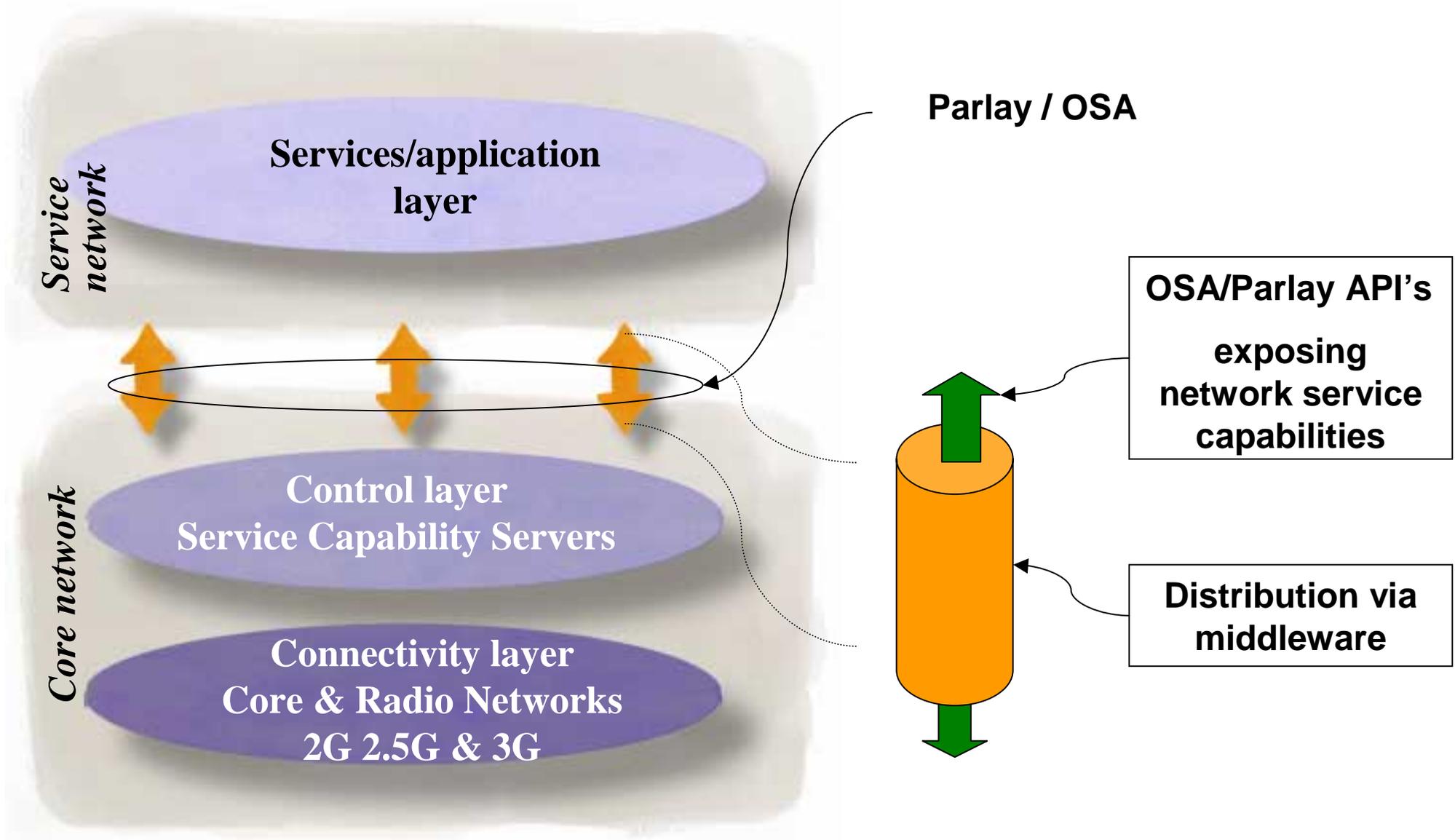
This is a win-win situation!

- It opens new sources of revenue for incumbent Network Operators
    - traffic in their networks increases
    - they may enrich their service offering

- It opens the telecom business to newcomers
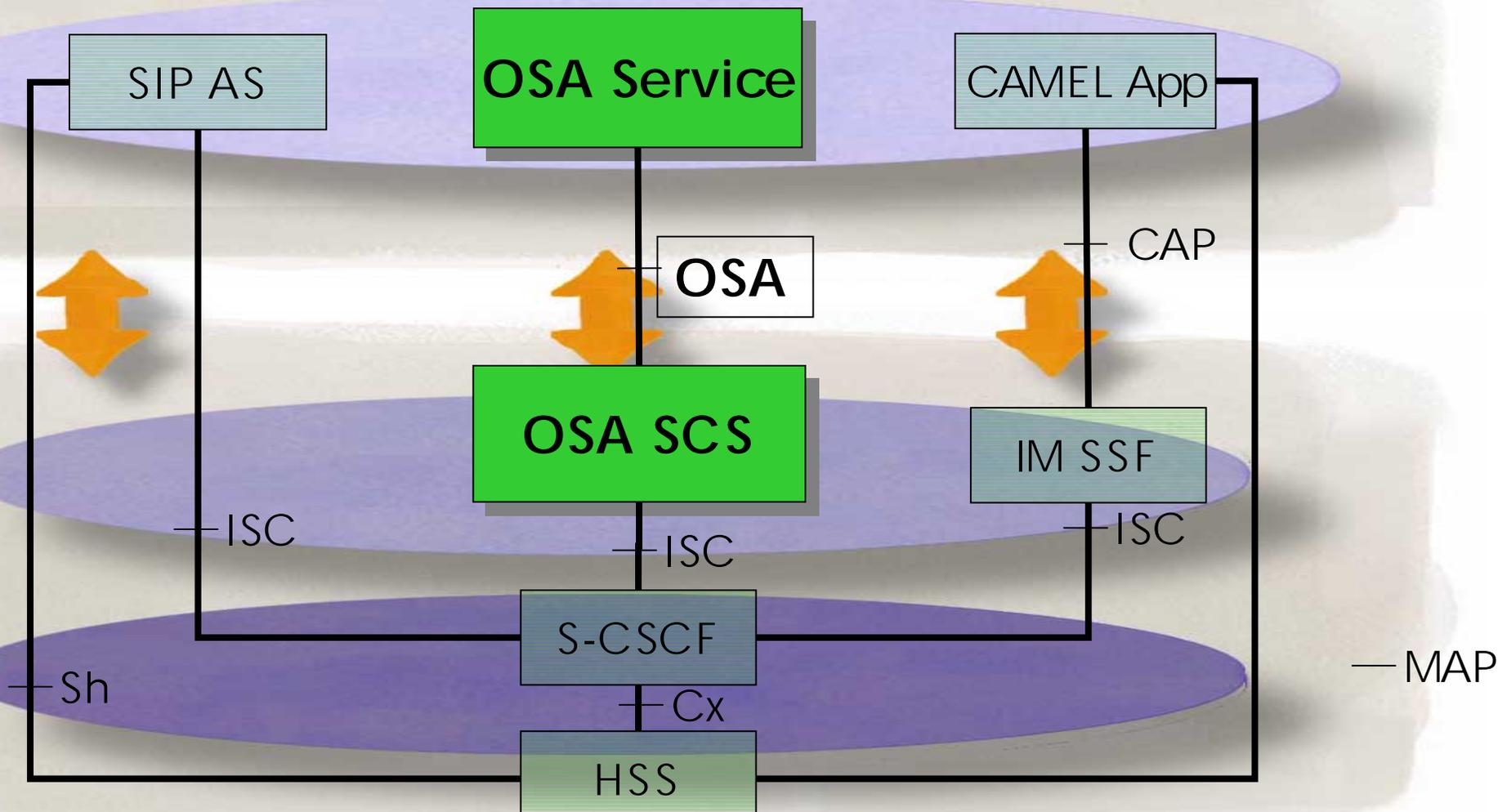   - VNOs, MVNOs, ASPs, ...

So we only need a technical enabler:

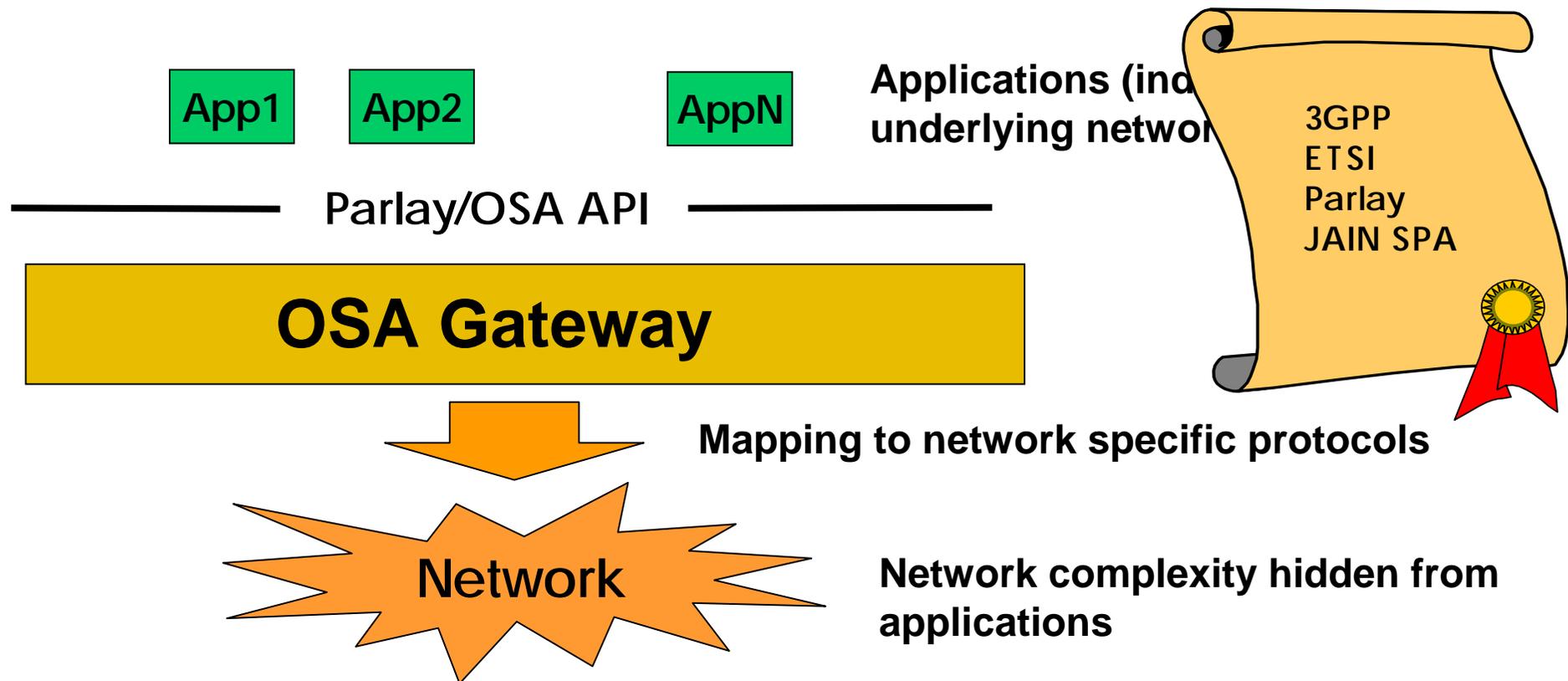**Parlay/OSA**

The Parlay/OSA API: Where? (1/2)

The UMTS Example

The Parlay/OSA API: What? (1/2)

Parlay/OSA (Open Service Access) is an API that enables operator and 3rd party applications to make use of network functionality through a set of open, standardised interfaces

App1 App2 AppN

Applications (inc
underlying networ

Parlay/OSA API

OSA Gateway

3GPP
ETSI
Parlay
JAIN SPA

Mapping to network specific protocols

Network

Network complexity hidden from applications

Opening up of network by means of standardized APIs based on open technology. This leads to :

- Shorter TTM for applications / services due to abstraction and open technology (developer community orders of magnitude larger than telco developer community)
- Applications can also be developed and deployed by 3rd parties (creative, new innovative services).
- Applications can be network independent (multi-access / multi-service)
- Applications can be combination of
  - different capabilities
  - enterprise data with network functionality

leading to new innovative services.

Combining Telecom & Datacom
The developer community is out there

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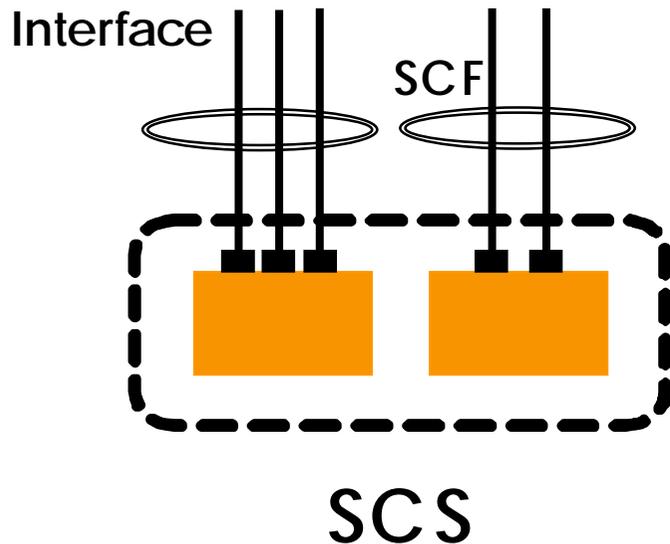
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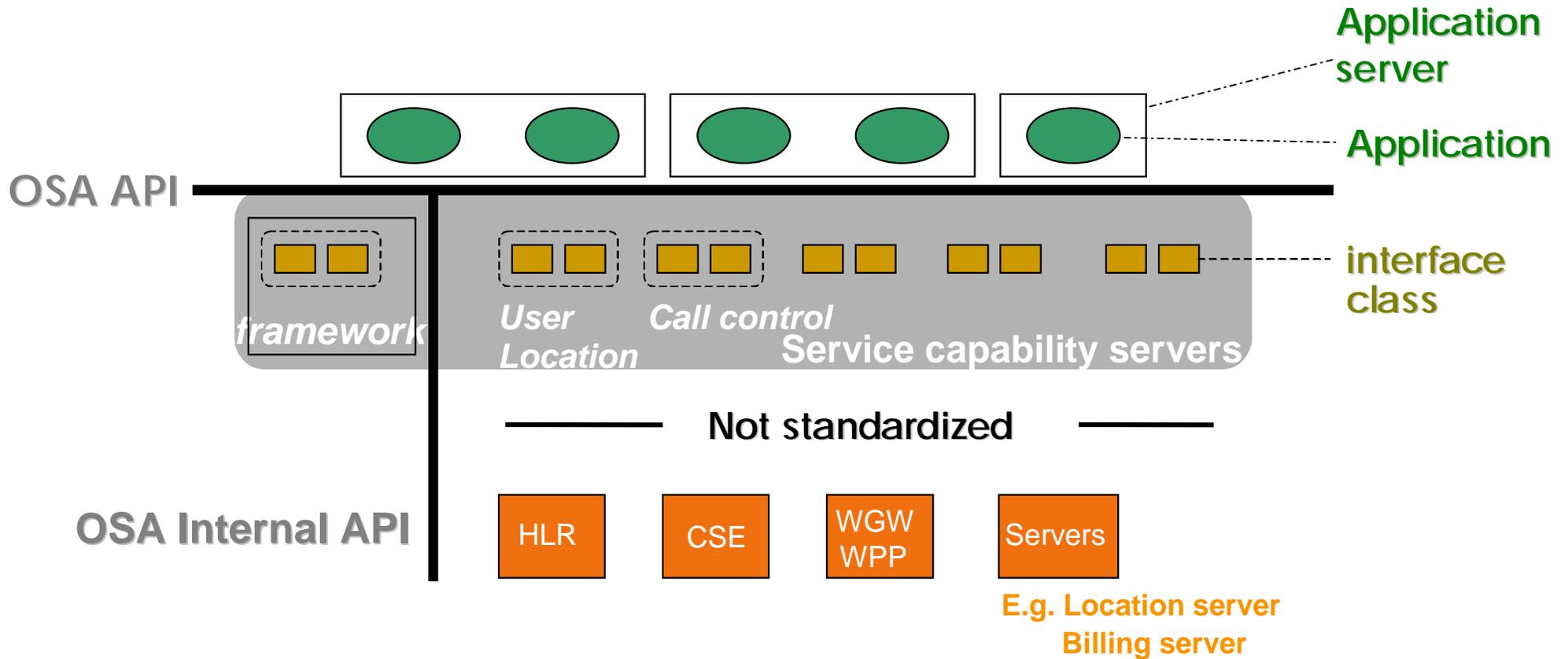5- The next Parlay/OSA release

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Parlay/OSA Terminology: SCSs and SCFs

Interface

SCF

SCS

- The Parlay/OSA Gateway consists of several **Service Capability Servers (SCS)**: functional entities that provide Parlay/OSA interfaces towards applications.

- Each SCS is seen by applications as one or more **Service Capability Features (SCF)**: abstractions of the functionality offered by the network, accessible via the Parlay/OSA API. Sometimes they are also called **services**

- The Parlay/OSA SCFs are specified in terms of interface classes and their methods

Parlay/OSA = Framework + A Set Of SCFs

ETSI

Joint API group

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Application server

Application

OSA API

interface class

framework

User Location

Call control

Service capability servers

Not standardized

OSA Internal API

HLR

CSE

WGW WPP

Servers

E.g. Location server Billing server

One of the Parlay/OSA SCSs is called the Parlay/OSA **Framework**, and is always present, one per network

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Current Parlay/OSA SCFs

Call Control	**The Call Control family, with capabilities ranging from setting up basic calls to manipulating multimedia conference calls (see Note 1)**
User Interaction	**Obtain information from the end-user, play announcements, send short text messages, etc**
User location / User status	**Obtain location and status information**
Terminal capabilities	**Obtain the capabilities of an end-user terminal**
Data session control	**Control of data sessions**
Generic Messaging	**Access to mailboxes (see Note 2)**
Connectivity Management	**Provisioned QoS (see Note 2)**
Account Management	**Access end-user accounts**
Content based Charging	**Charge end-users for use of applications / data**

Note 1: Multimedia and Conference Call Control not part of 3GPP OSA Release 4
Note 2: Not part of 3GPP OSA Release 4

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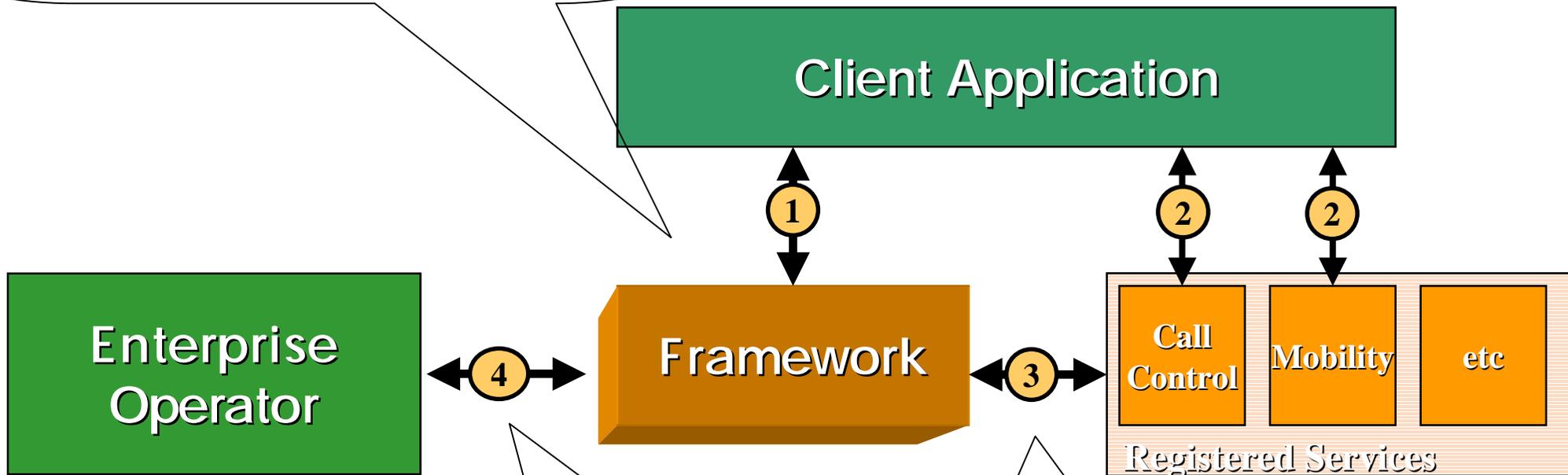
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The Parlay/OSA Framework

- control of access to the network
- integrity management
- discovery of network functionality

Client Application

1

2

2

Enterprise Operator

4

Framework

3

| Call Control | Mobility | etc |

Registered Services

- Application subscription to services

- SCF registration
- support of multi-domain

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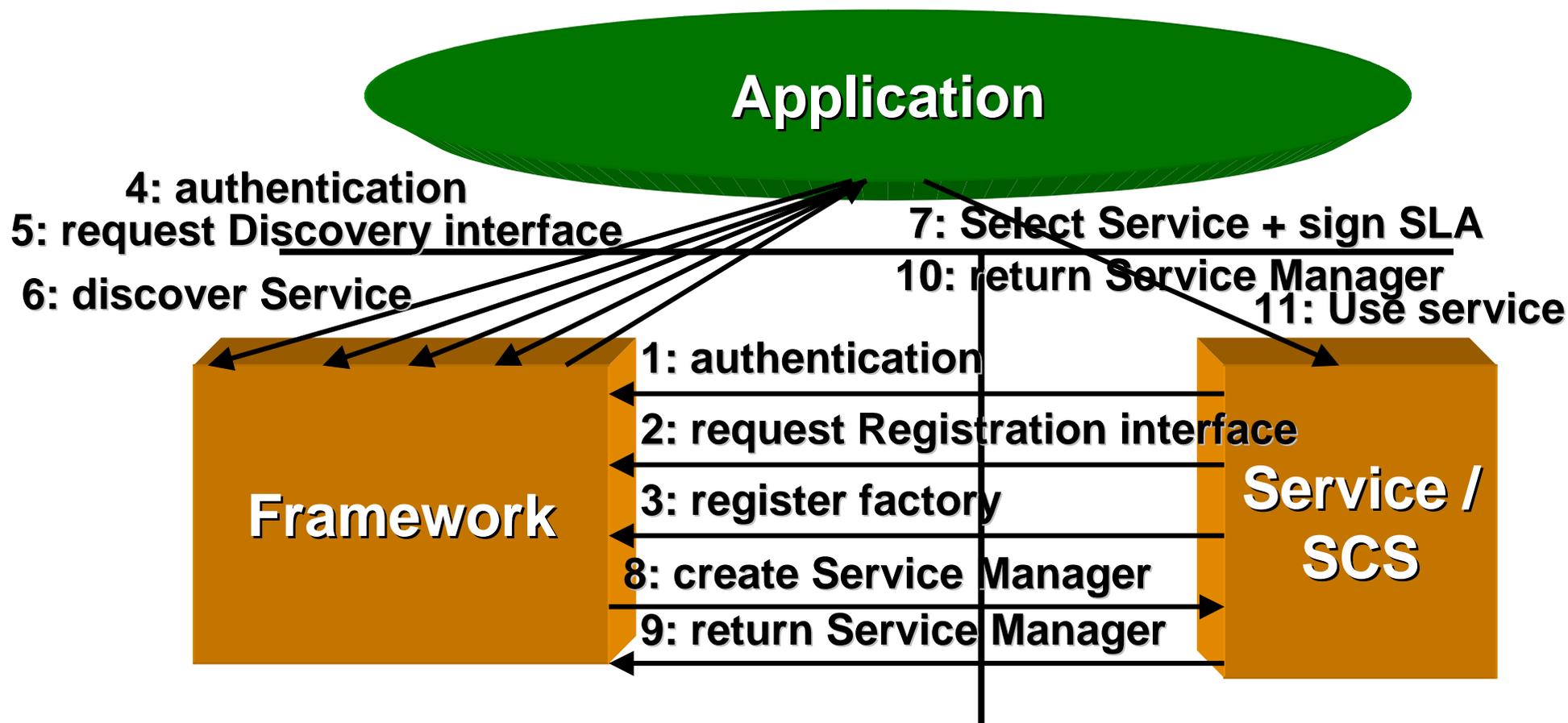
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How does the FW work ?

Application

Framework

Service / SCS

4: authentication

5: request Discovery interface

6: discover Service

7: Select Service + sign SLA

10: return Service Manager

11: Use service

1: authentication

2: request Registration interface

3: register factory

8: create Service Manager

9: return Service Manager

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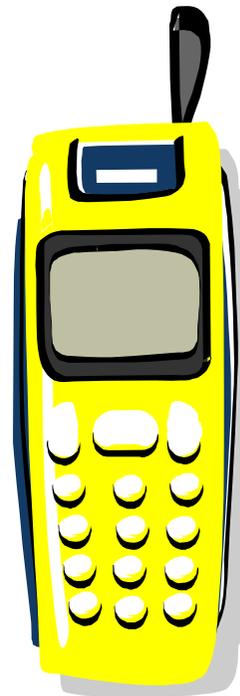
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Information Application

The user dials in to the application to access information,
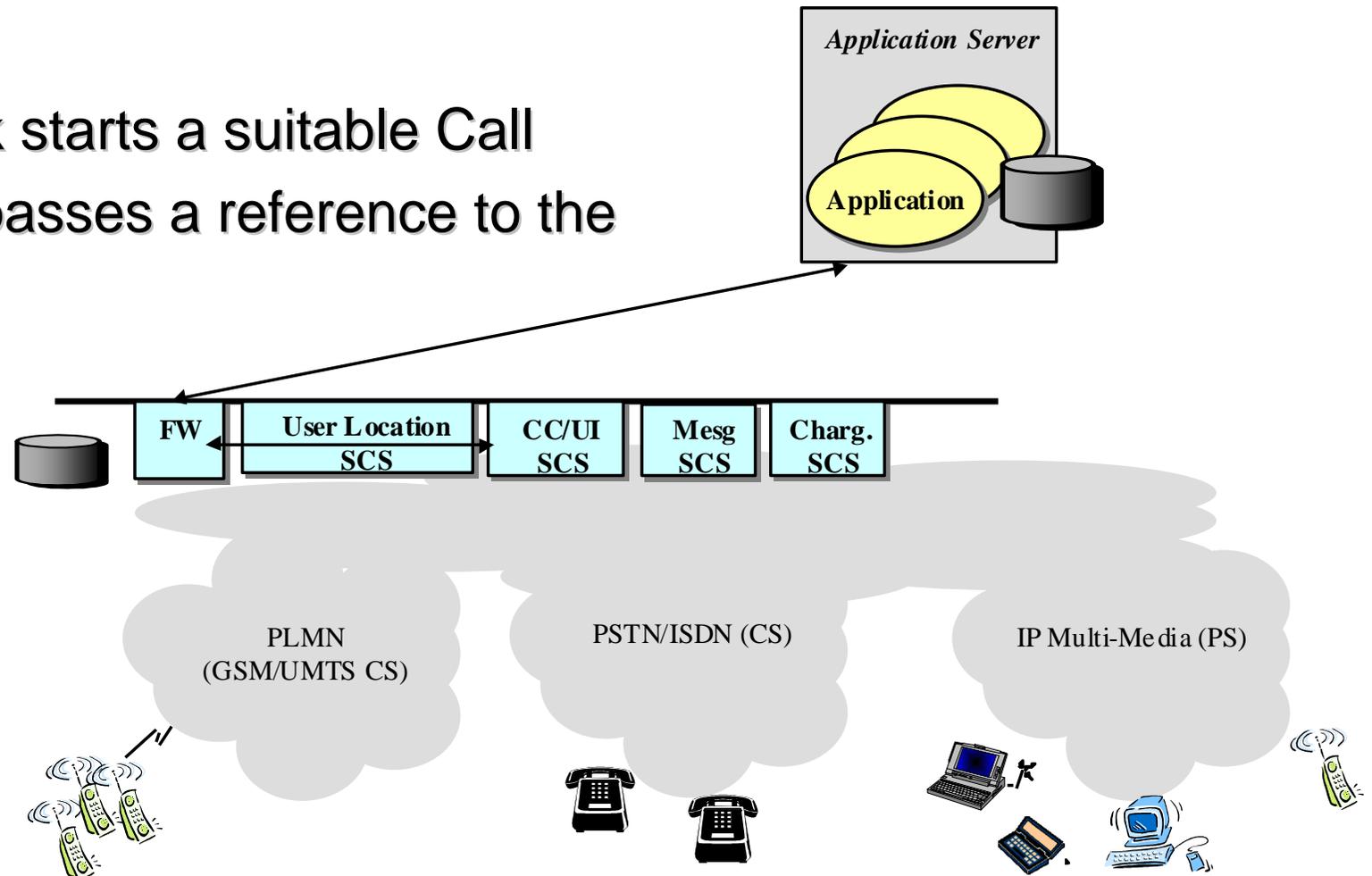- traffic
- weather,
- stocks,
- etc

via voice.

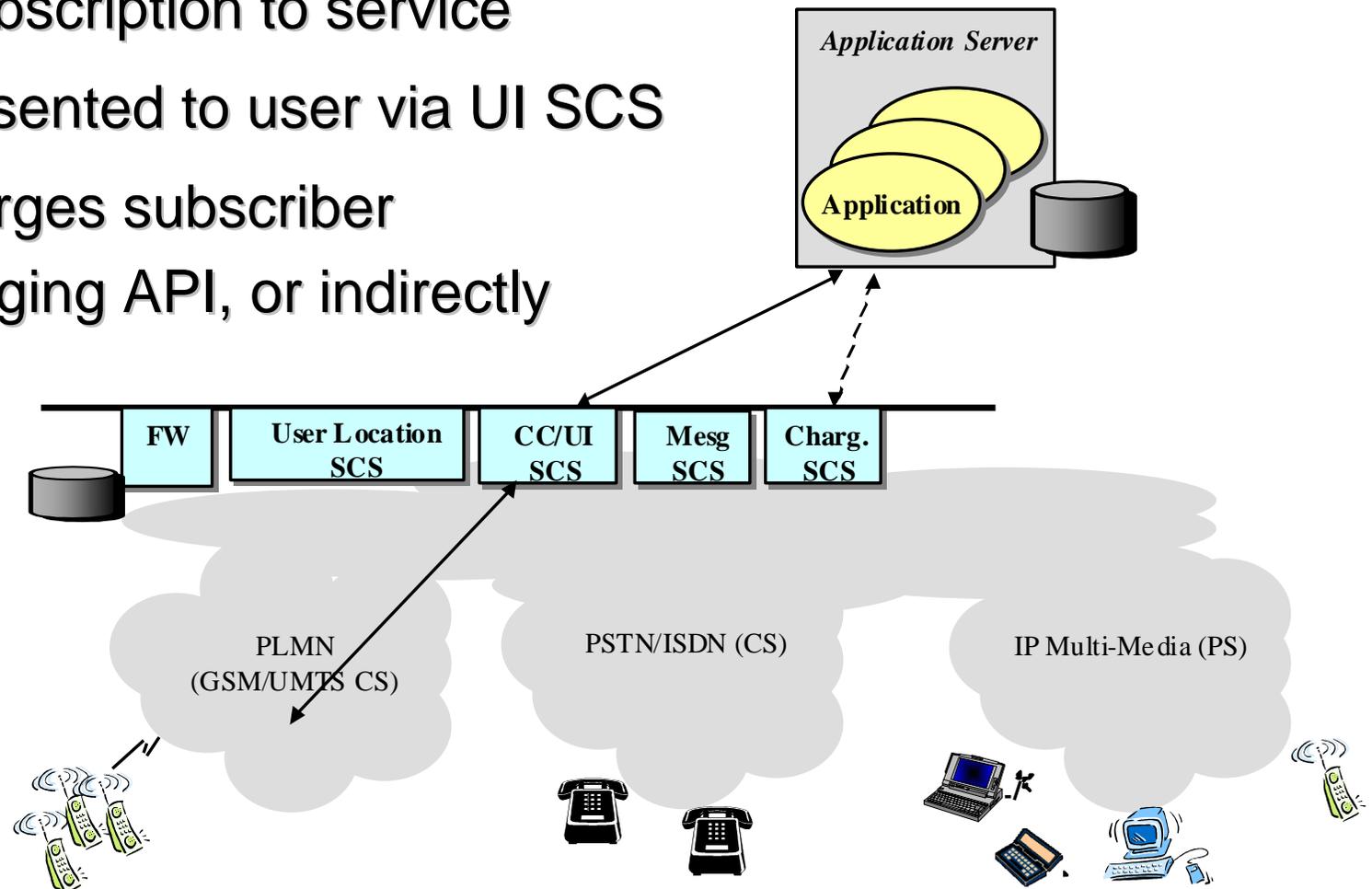# Information Application : interaction flow before traffic

- The Application registers to the Framework

- The Framework starts a suitable Call Manager, and passes a reference to the application

Application Server

Application

FW	User Location SCS	CC/UI SCS	Mesg SCS	Charg. SCS

PLMN (GSM/UMTS CS)

PSTN/ISDN (CS)

IP Multi-Media (PS)

Information Application : interaction flow during traffic

- User calls service number

- SCS checks subscription to service

- Information presented to user via UI SCS

- Application charges subscriber (either via Charging API, or indirectly via CC API)
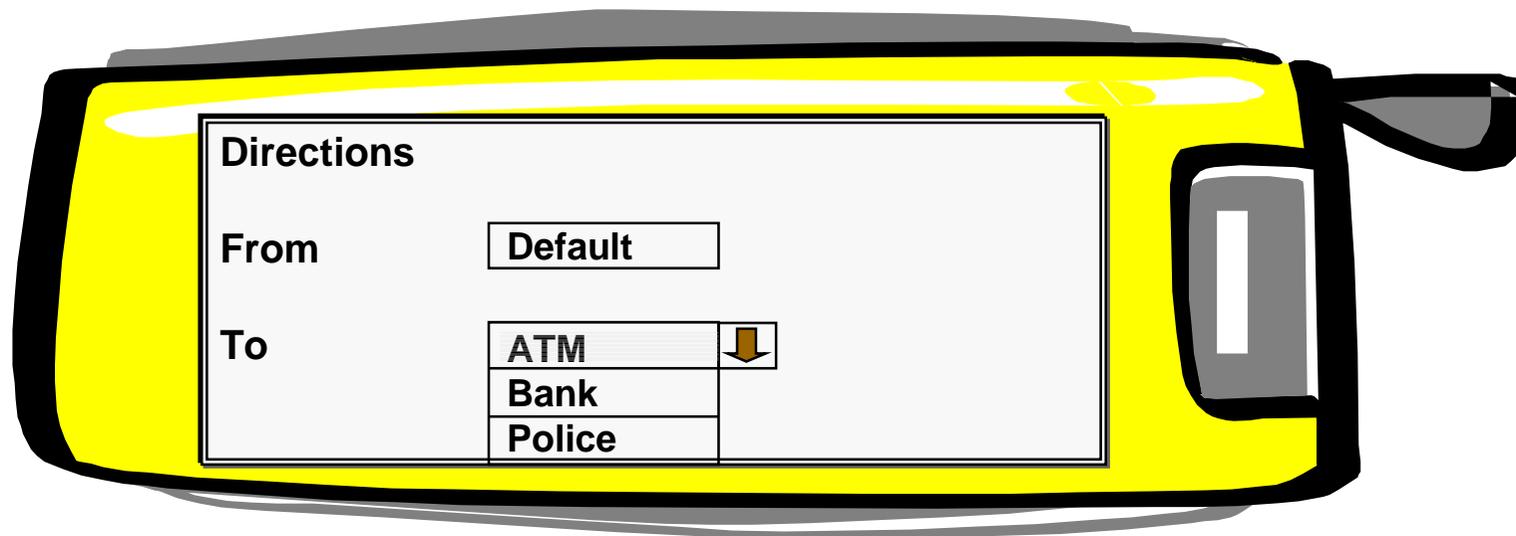
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Application

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IP Multi-Media (PS)

Location Service

This is an example of combination of enterprise data with network capabilities

Bank services

Location services

Leisure

News

Location Service

The idea is that the user is able to find out the nearest ATM machine

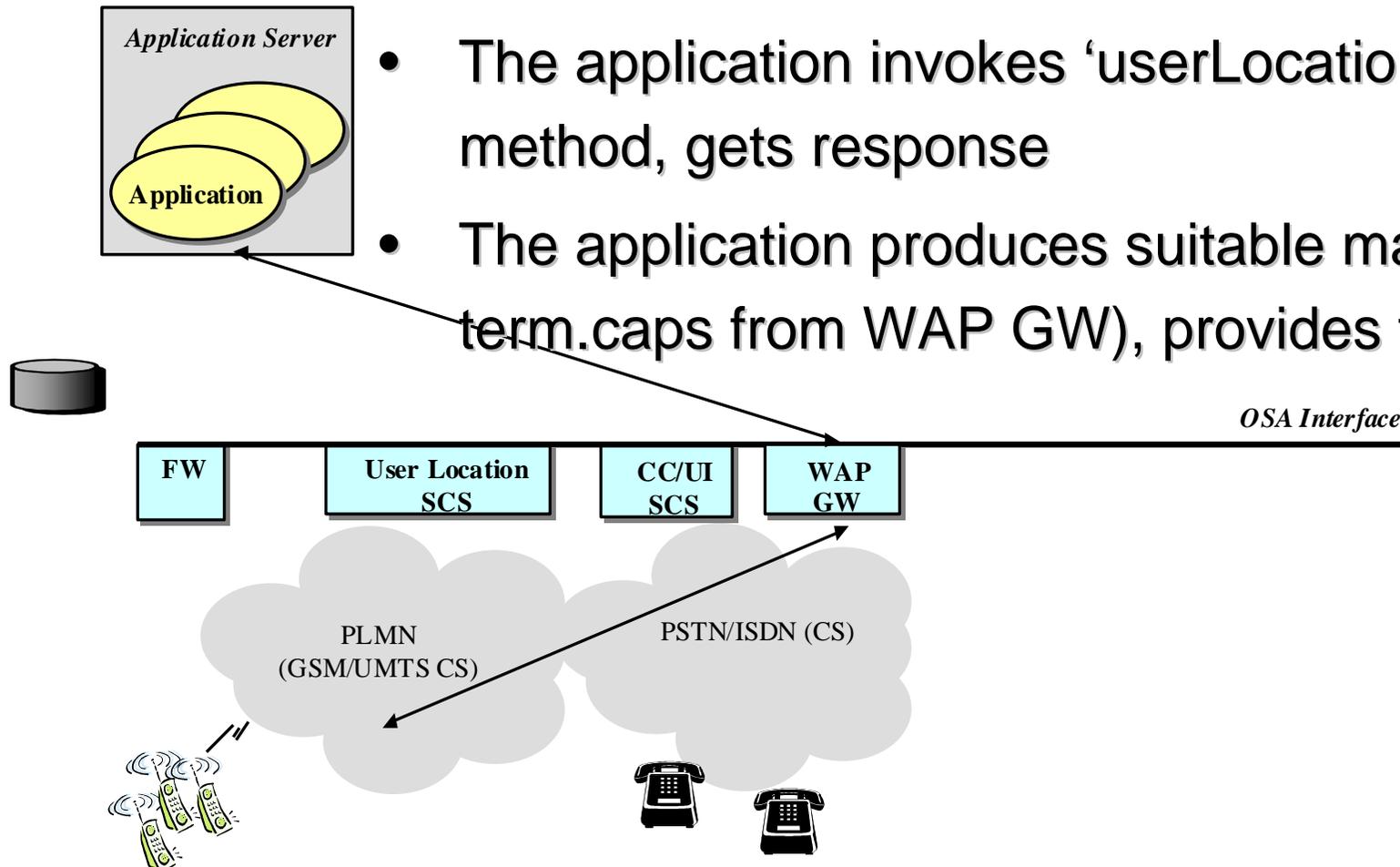| Directions	
From	Default
To	ATM ⬇
	Bank
	Police
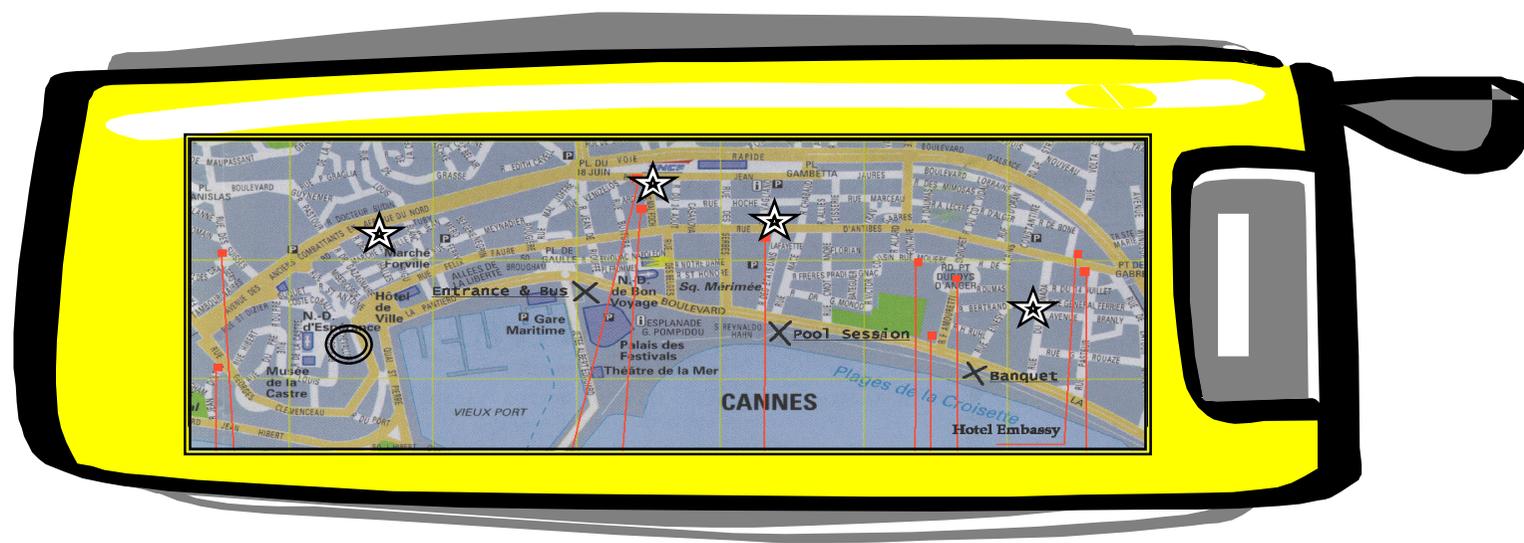
Location service

# Location service: interaction flow during traffic

- The terminal interacts via WAP with application, selects ATM location option

- The application invokes 'userLocationRequest' method, gets response

- The application produces suitable map (including term.caps from WAP GW), provides this to terminal

Application Server

Application

OSA Interface

| FW | User Location SCS | CC/UI SCS | WAP GW |

PLMN
(GSM/UMTS CS)
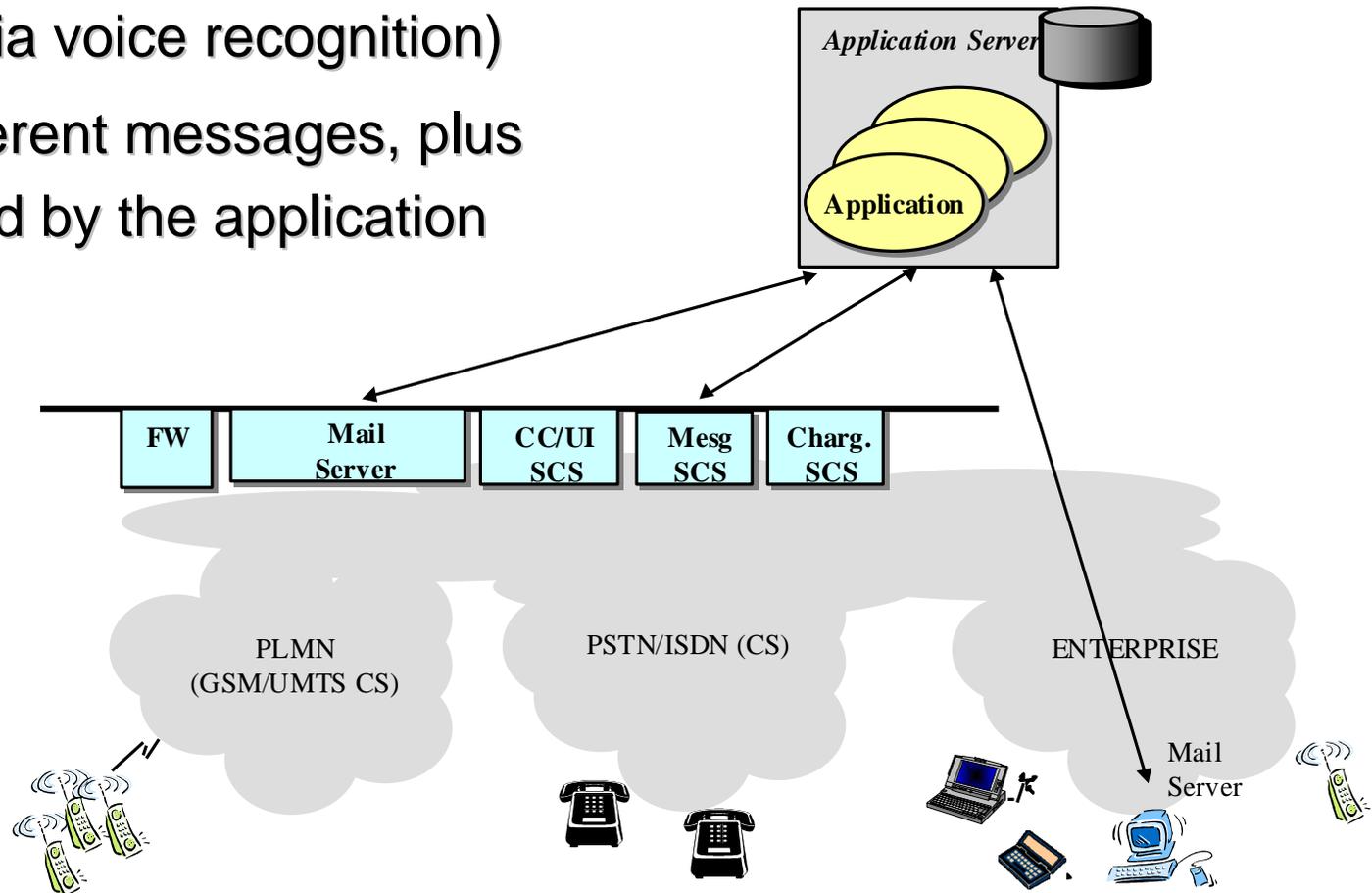
PSTN/ISDN (CS)

Unified messaging application

The application allows user to access all his messages. This is an example of combination of information in different business domains
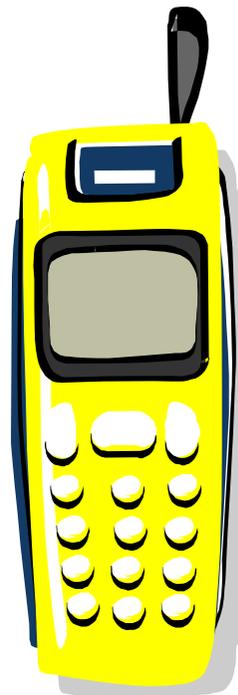
Unified messaging application: interaction flow

- The user sets messaging preferences (private and corporate combined if desired) via Web/WAP (or via voice recognition)

- Notifications of different messages, plus actions, are handled by the application

Application Server

Application

| **FW** | **Mail Server** | **CC/UI SCS** | **Mesg SCS** | **Charg. SCS** |

PLMN (GSM/UMTS CS)

PSTN/ISDN (CS)

ENTERPRISE

Mail Server

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Bodies Involved In Parlay/OSA Standardisation

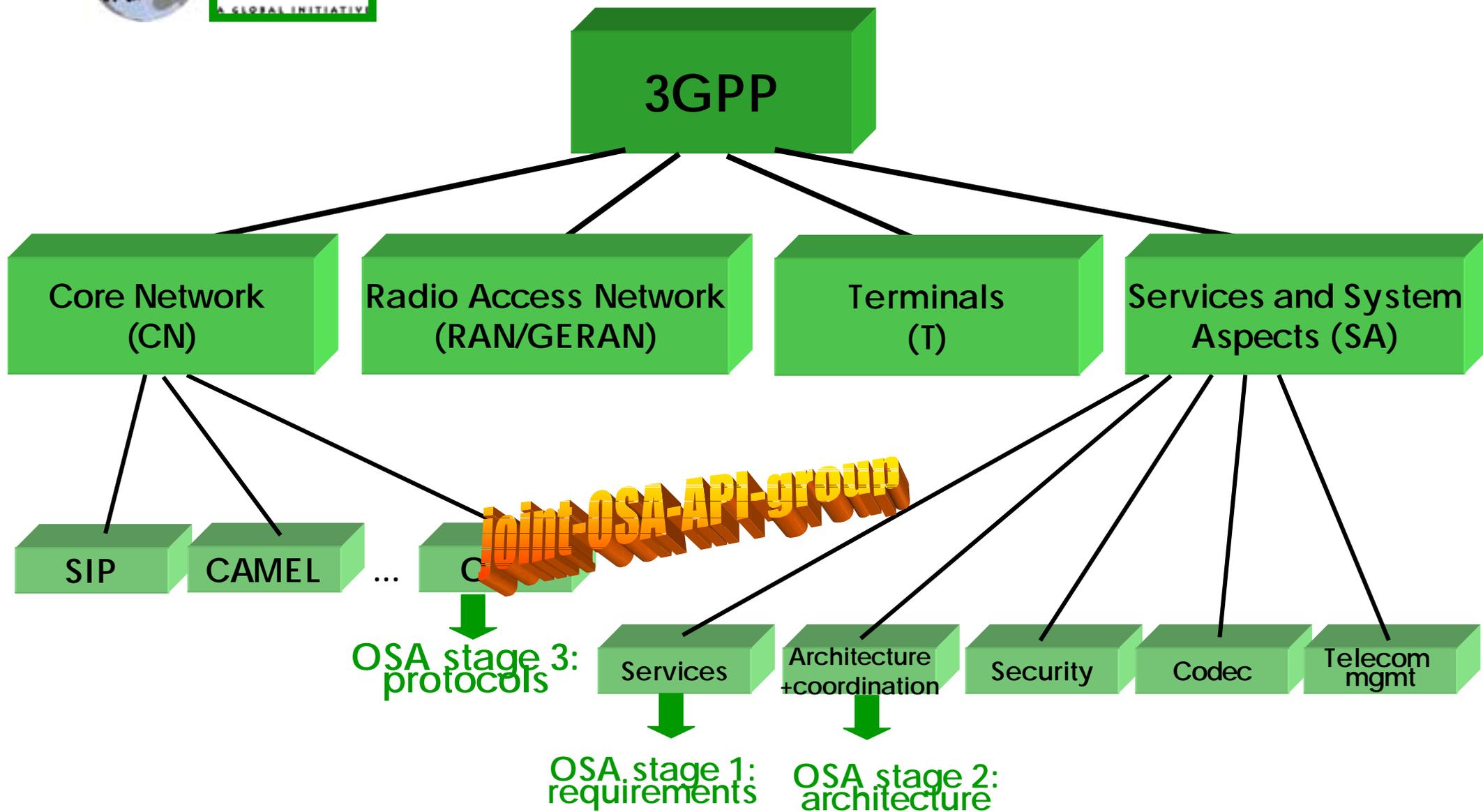**OSA specification and standardisation is a joint effort by the following bodies:**

- 3GPP CN5
- ETSI SPAN12
- ITU-T SG11 (only ref. document)
- The Parlay Group

The objective is to have a single API for the whole developer community

OSA (Parlay) In ETSI

- In mid 2K, ETSI SPAN (*Services and Protocols for Advanced Networks*) was re-organized

- The group ETSI SPAN12, *Application interfaces for service providers and network operators*, was created

- An activity in ETSI SPAN14, called *Service Provider Access Requirements (SPAR)*, was also created

- ETSI SPAN12, aware of the identical scope of the work in 3GPP CN5, agreed to work jointly and make all meetings joint meetings

- Today ETSI SPAN12 has an OSA Project, part of the Joint API Group and working also on OSA/Parlay Compliance

OSA/Parlay In ITU-T

- ITU-T SG11 has defined a Question 4 called API/Object interface and architecture for signaling, "covering the interface between network control and application layers"

- ITU-T has decided to write a reference document for this activity, and delegate the contents to other bodies

- This way ITU-T will adopt OSA specifications by ETSI (+3GPP +Parlay)

- ITU-T SG11 draft document is called TD 1/11-25, and it is expected to be approved at next SG11 meeting (18/2-1/3/02)

Parlay (OSA) In The Parlay Group

- The Parlay Group (www.parlay.org) started in March 98, and today is an open, multi-vendor forum with around 50 members from the IT and Telecom business

- The Parlay Group was aims to create open, technology independent APIs which enable developing applications across multiple networks (=OSA!); and to accelerate the adoption of these APIs and promotes their use and standardisation.

- Technical work in the Parlay Group is done in Work Groups; the Parlay WGs have joined the 3GPP+ETSI OSA (Parlay) joint group to develop together a single API

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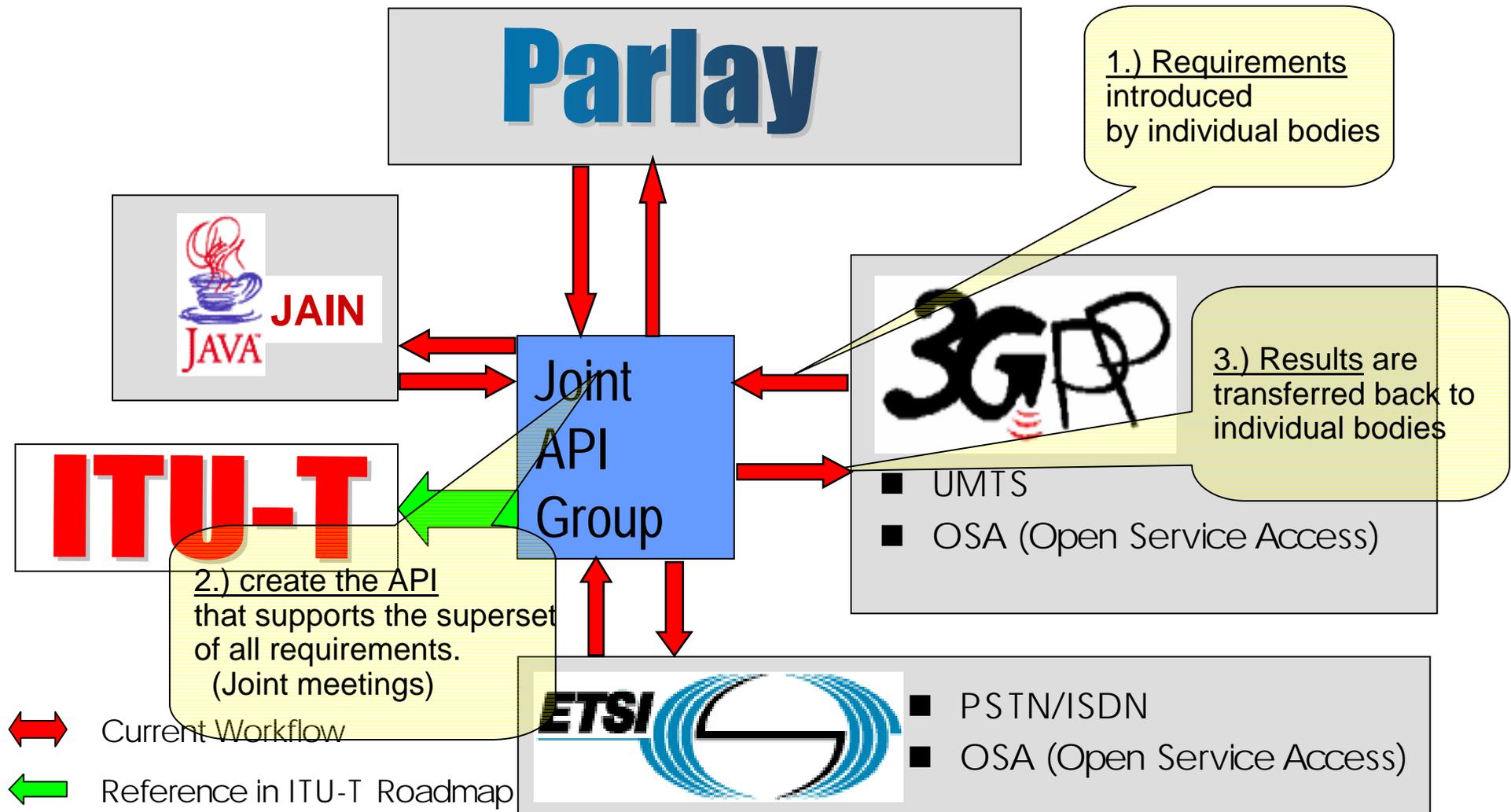
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Today's Parlay/OSA Joint Activities

- Today 3GPP, ETSI and Parlay have joined forces to specify a single API for the whole developer community

- Requirements coming from the three participating bodies are taken into account:

  - 3GPP requirements from SA1 and SA2
  - ETSI requirements from SPAN14 SPAR
  - Parlay requirements from the Parlay Group

- All meetings are joint meetings

- The joint work is (UML) based on a common model, http://docbox.etsi.org/tech-org/span/open/span12/UML/ Then each body generates its own document format

API's for Open Service Access; ONE API for ONE developer community

Parlay

JAIN JAVA

ITU-T

3GPP
- UMTS
- OSA (Open Service Access)

ETSI
- PSTN/ISDN
- OSA (Open Service Access)

Joint API Group

1.) Requirements introduced by individual bodies

2.) create the API that supports the superset of all requirements. (Joint meetings)

3.) Results are transferred back to individual bodies

→ Current Workflow

→ Reference in ITU-T Roadmap
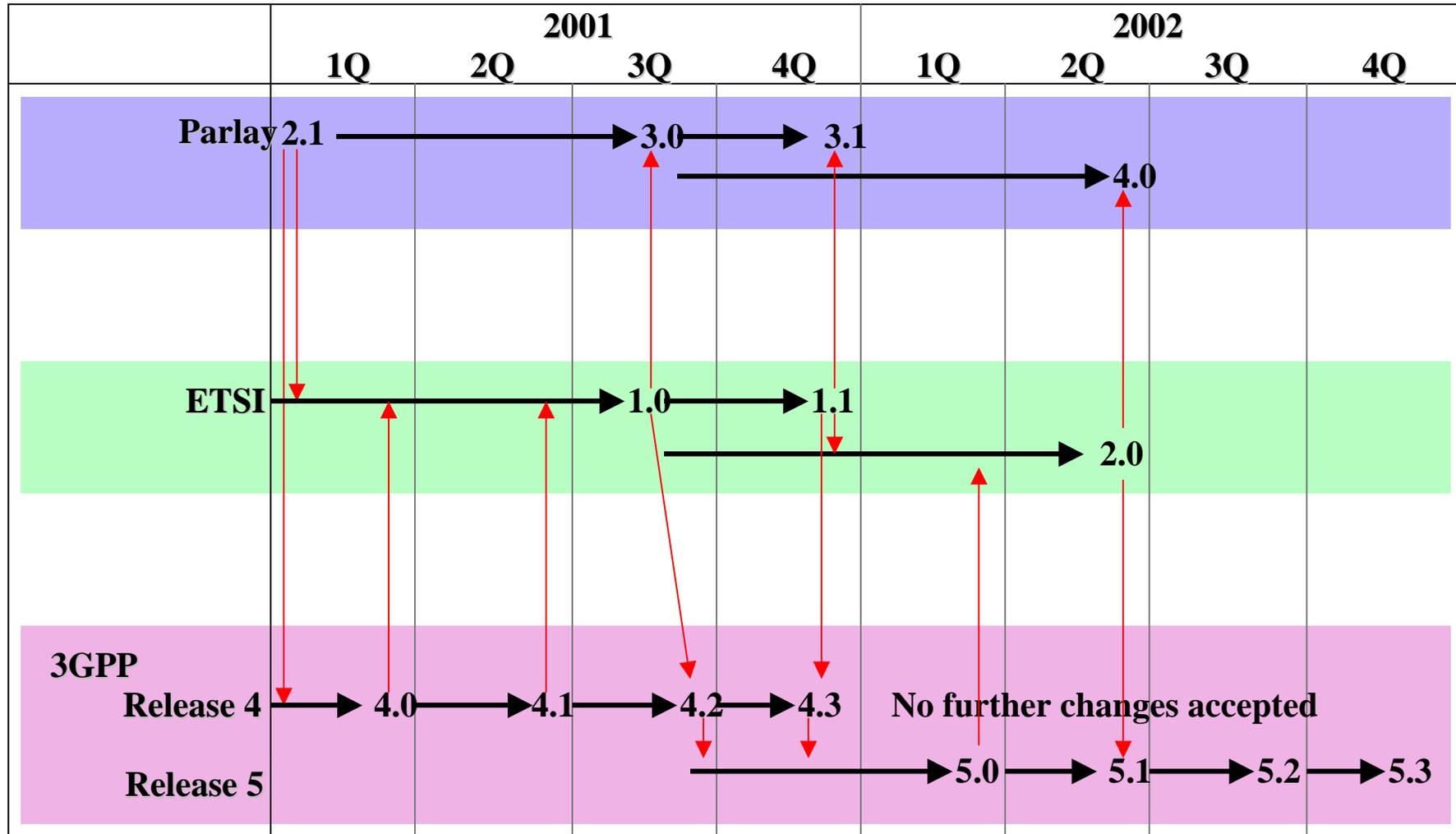
Alignment and backwards compatibility

- The current last versions of the three bodies are **fully aligned**

$$\text{3GPP Rel4} \equiv \text{ETSI Ver1} \equiv \text{Parlay 3}$$

- **None of them is backwards compatible** with any of its previous releases/versions, due to changes based on feedback from implementers

- From now on **backwards compatibility is a must**

3GPP Parlay/OSA Rel4 Document Structure (1/2)

The Parlay/OSA API is contained in two sets of documents:

- **The API specification** in terms of interfaces and their parameters (UML description and IDL specification), sequence diagrams and state models

- **The Mapping specification of the Parlay/OSA API and network protocols** : a possible, informative mapping from the API to various network protocols (i.e. MAP, CAP,..)

Parlay/OSA Document Structure (2/2)

The specification is in turn contained in the following documents:

- 3GPP : TS 29.198 /12 parts (API) + TR 29.998 (Mapping)

http://www.3gpp.org/ftp/Specs/2001-12/Rel4/29_Series

- ETSI : ES 201 915 (API) + TR 101 917 (Mapping)

http://docbox.etsi.org/tech-org/span/Open/Span12/osa.html

- Parlay

http://www.parlay.org/specs/index.asp

Choose your favorite: all are aligned!

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Ongoing Work for Parlay/OSA

Based on requirements from all the bodies in the joint activity, Parlay/OSA will be enhanced with:

03/02:
- MM Call Control evolution
- Presence Service
- Policy Management

07/02:
- Retrieval of Network Capabilities
- Information Services
- User Profile Management
- Journalling

... plus enhancements in the existing SCFs

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Summary Of The Talk

- The Open Service Access API is an open, standardised interface for applications to use the capabilities of a network without owning it or knowing its technology

- It consists of a Framework, in charge of access control and service discovery; and some Service Capability Features, which map to network capabilities

- It is specified and standardised in the Joint API Group, with participation of 3GPP, ETSI and the Parlay Group: a single API for the whole developer community

- Parlay/OSA is available, fully aligned between 3GPP OSA Rel4, Parlay 3 and ETSI ver1

Contacts

Any of the authors of this presentation can be contacted for more information:

- **Chelo Abarca** (Alcatel),   Chelo.Abarca@alcatel.fr
ETSI SPAN OSA Project Leader

- **Andy Bennett** (Lucent),   AndyBennett@lucent.com
Parlay Framework WG Chair

- **Ard-Jan Moerdijk** (Ericsson),   Ard.Jan.Moerdijk@eln.ericsson.se
3GPP CN5 Chair

- **Musa Unmehopa** (Lucent),   Unmehopa@lucent.com
3GPP CN5 Vice Chair