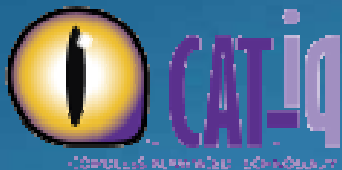


“Overcoming the challenges of integrating CAT-iq into the home gateway”



Developers Conference

Alain Orsot
Orange Devices



HGI
CONNECTING HOMES, ENABLING SERVICES

Agenda

- **Introducing the HGI & communication services**
- Interoperability is the key for gateway introduction
- Integrating DECT within the Home Gateway
- Improving communication services further

Who is the HGI?

Service providers

Home Gateway & Digital home Industry



Connecting the home & enabling the services

Enabling small business



HGI : driving the evolution of home gateway

DSL Modem



- ✓ ADSL/ethernet bridge

3play capable Home Gateway

HGI Release 1 + 2
2006 - 2008



- ✓ xDSL integration
- ✓ Wifi
- ✓ QoS
- ✓ Management
- ✓ IPTV support
- ✓ FXS port + **DECT base option...**

Next Generation Home Gateway

HGI Release 3
2010

- ✓ Downloadable applications
- ✓ Higher speeds & feeds
- ✓ **Energy Efficiency**
- ✓ Full routing
- ✓ **CAT-iq 2.0 base or USB support**
- ✓ Enhanced diagnostics
- ✓ Increased media flows
- ✓ Storage
- ✓ **IMS gateway as an option**

HGI : a vision of communication services

- **Release 1 : Voice : a key value for triple play**
 - Analog is still there => analog port
- **Release 2 : Bring a new voice service experience now**
 - New services (HD, multi call, multi line)
 - Keeping the values of DECT (range, cost-effective, digital)
 - ⇒ **CATiq 2.0** is the right level of interface
- **Release 3 : Looking at a new communication experience**
 - Adding multimedia services to CATiq (CAT iq 2.1 & beyond)
 - Looking at IP capable devices (tablet...)



HGI : Delivering the Vision

2008 : HGI Residential Profile – Release 2

Published

- White papers : IMS home gateway
- **CAT-iq 2.0 business requirements**
 - Agreed with DECT forum and coordinated with ETSI DECT

Internal to HGI

- White paper on voice services vision
- **Preparing CAT-iq 2.1 proposed feature set**
- Consideration of future services and profile requirements

See www.homegatewayinitiative.org

Agenda

- Introducing the HGI & communication services
- **Interoperability is the key for gateway introduction**
 - **Make the interface right taking the service providers requirements into account**
- Integrating DECT within the Home Gateway
- Improving communication services further

Interoperability is key

- **Gateway & phone provider can be different**
 - CAT-iq 1.0 has limited value for operators
 - **CAT-iq 2.0 is the right level of interface**
 - Has the benefit of HD voice & DECT technology
 - Supports mandatory services
 - CAT-iq 2.x will provide the extra features for interoperability for additional services
- Certification program is essential



Providing service provider input to DECT industry



Provide requirements on HG
Provide business requirements on voice services

Liaison with HGI

Gateway profiling &
Definition of operator
requirements as input to
market requirements



Marketing WG :

Setting up and managing
certification program
Managing Regulatory issues
related to CAT-iq use



Definition of market
requirements as input to
technical specification

Liaison with ETSI

Technical WG

- Responsible for technical standardization



Issues the
standard

- Responsible for creation of test specifications

Issues CAT-iQ certification



HGI contributing to CAT iq 2.0 definition

HGI BRINGING SERVICES INPUT TO DECT COMMUNITY

CAT IQ 2.0 is now CARRIER GRADE

- Mandate **Line Identification & Caller Identification** on HS side.
- Mandate **Multiple Lines** on HS side (all handsets should be compatible)
- Mandate **multiple calls** on BS side (all systems should support it).
- In List Access feature (access to lists/logs from handset into base)
- Mandate Call Forwarding feature on both HS + BS
- Mandate **Easy Pairing** on BS side

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Challenges of integrating Voice inside a HG

- Hardware optimisation
- Call control management
- Energy management
- Other features of interest

Reducing cost of the Home Gateway

- HGI is setting the requirements for the next generation of Home Gateway
 - Functional requirements for DECT subsystem
 - Considerations for intergration of DECT
 - complexity reduction
 - QoS integration
 - energy management
- HGI requirements and test program provide a reference to system and subsystem vendors
 - consolidations of common requirements among the operators establish key requirements and drive volume

Unifying the call management experience

Several interfaces :

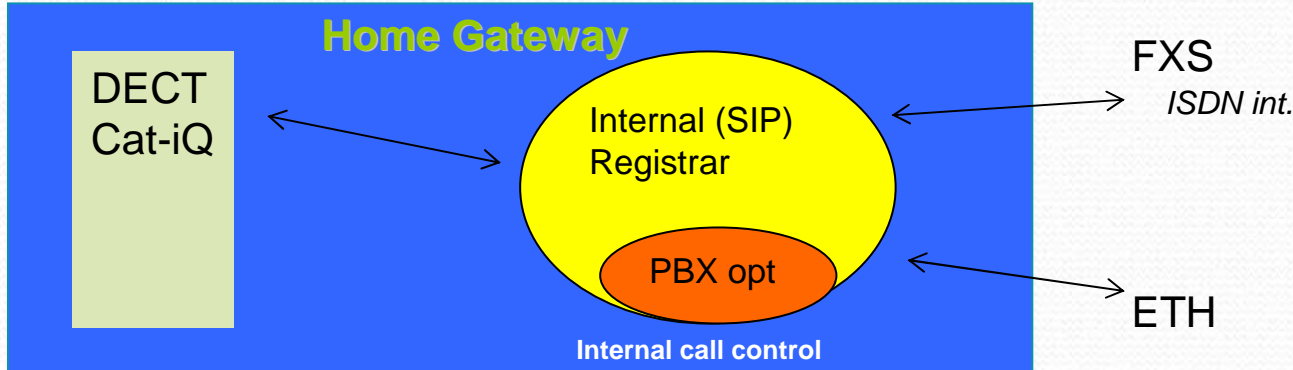
- In-home (DECT CAT iq + FXS) + Outside interface (FXO, VoIP, 3G)

For a seamless voice experience for the customer the System should have only one call control logic.

DECT CAT-iq handset(s)



Call control (DECT specific)



Call control supported features:

- Message waiting indication MWI
- Call transfer
- Call hold
- Call retrieve
- 3pty conference

Call control (PSTN specific)



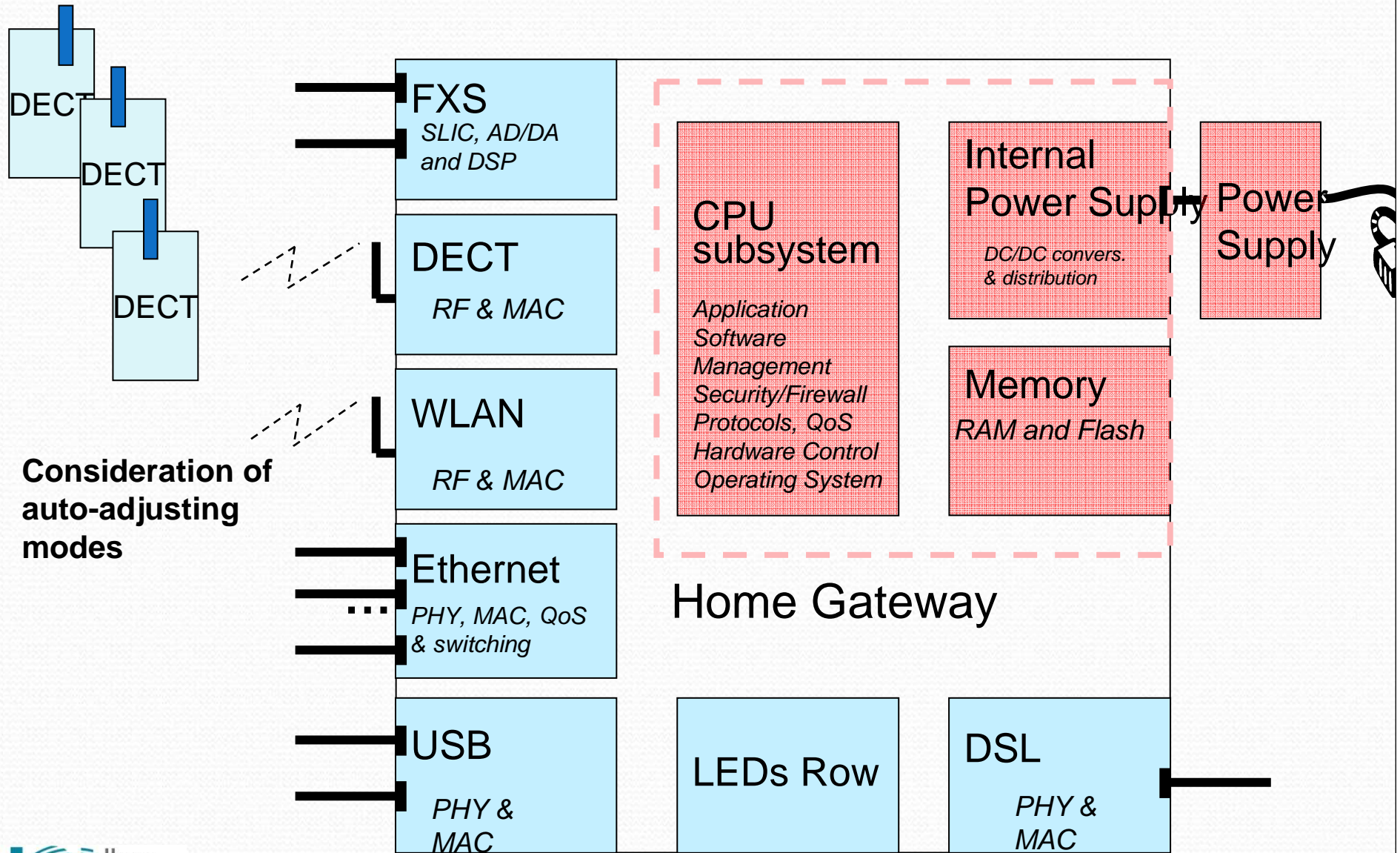
FXO (PSTN)
ISDN ext.



Call control (SIP specific)

External SIP registrar

Optimising DECT energy consumption



Other features

- Address book
- Push Buttons :
 - Need a button mode for pairing (can be same as wifi)
 - Need a button mode for handset paging
- CODEC requirements :
 - How to work with HD mobile voice

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- Integrating DECT within the Home Gateway
- **Improving communication services further**
 - Preparing CAT iq 2.1
 - Developing new services for DECT handsets

Extending CATiq

- Discussion items
 - Handling local Phonebook in Handset
 - **Diagnostics** features requirements
 - Standardization of tones
 - Support for **multimedia services** (RCS/MMTel)
 - Use case and support for 'presence' information
 - Use case and support of SMS

RCS stands for Rich Communication Suite

Ref:

http://gsmworld.com/our-work/mobile_lifestyle/rcs/index.htm

HGI – preparing CAT 2.1 for future services

Agreed

- OM1 – **Multiple lines** – M for Handset, remain O for Base
- OM2 – **3-party conference call**, Mandate for HS & BS
- OM3 – **Intrusion call**, Mandate for HS & BS, with On/Off setting
- OM4 – **CLIR** – Mandate for HS & BS with On/Off setting
- DF 1 – Phonebook in Handset & sync across handsets, O for HS, M for BS
- DF2 – **Answer Machine control**, M for HS, O for BS (Note to ensure handset will hide the menus when not available on the base)
- DF4 – **Enhanced Security**, M for HS & BS
- OM5 – No emissions mode (optional)
- DF3 – Handset Capability Enquiry
- DF5 – ‘Green’ Power Saving Aspects
- HG1 – SMS
- HG2 – Diagnostics features
- HG7 – Uniform tones across operators (optional)

Sources of requirements

OM : option of CATiq 2.0

DF: Dect Forum

HG : HGI

Preparing the future : Bringing more rich communication services

IP Phones and PCs
•Voice
•Video
•Data
•

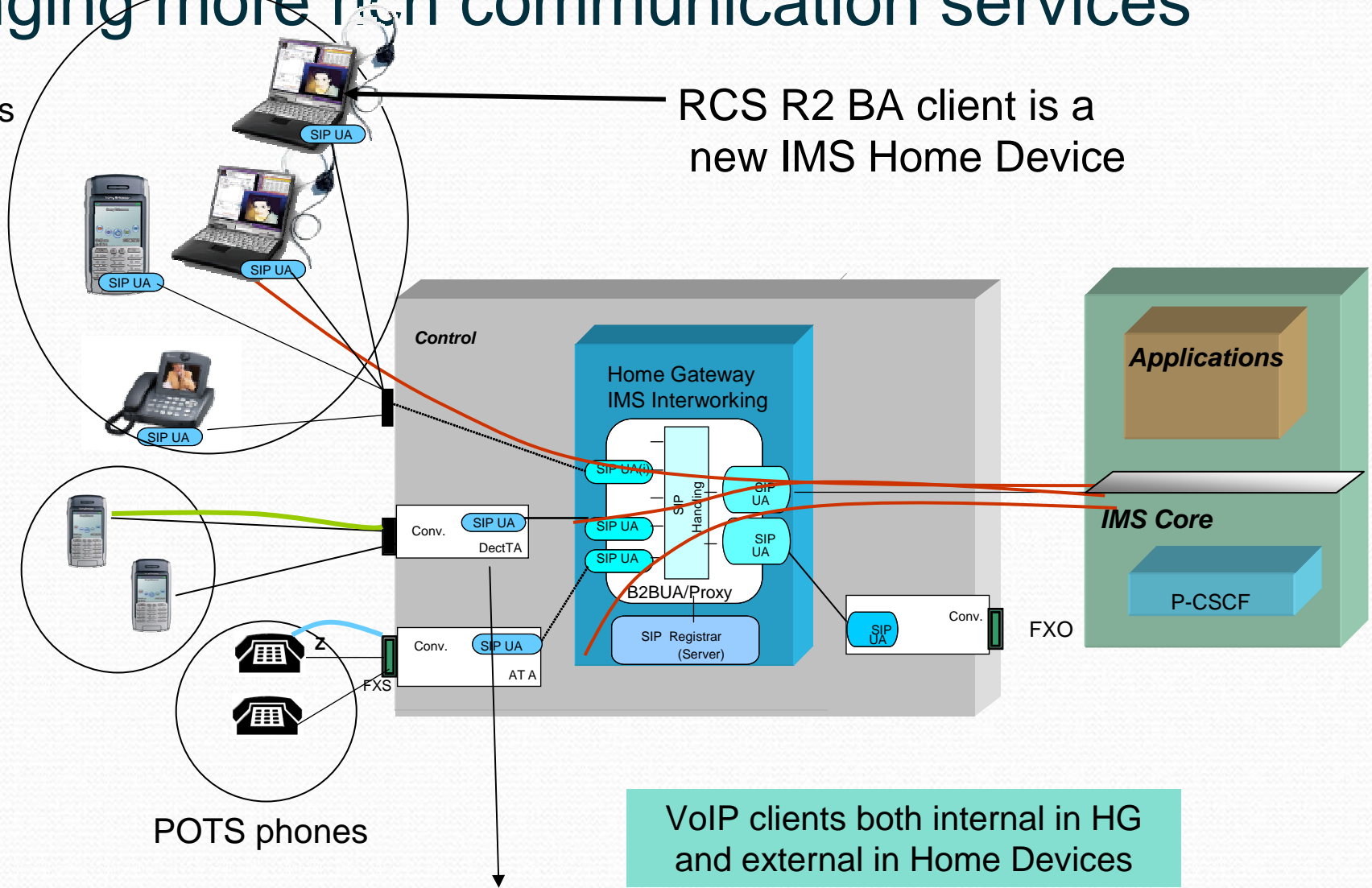
RCS R2 BA client is a new IMS Home Device

CAT-iq Phones
•Voice

POTS phones

VoIP clients both internal in HG and external in Home Devices

RCS client within the home gateway ?
SIP to DECT mapping



Wrap-up

- HGI is working to integrate DECT-CAT-iq as part of next generation home services
 - Interoperability is key
- HGI is helping the industry overcoming the challenges of integrating CAT iq within home gateway
- Collaboration between service providers and vendors is key

HGI - more information

- See more at :

<http://www.homegateway.org>

- Contact :

Duncan Bees CTO,CBO

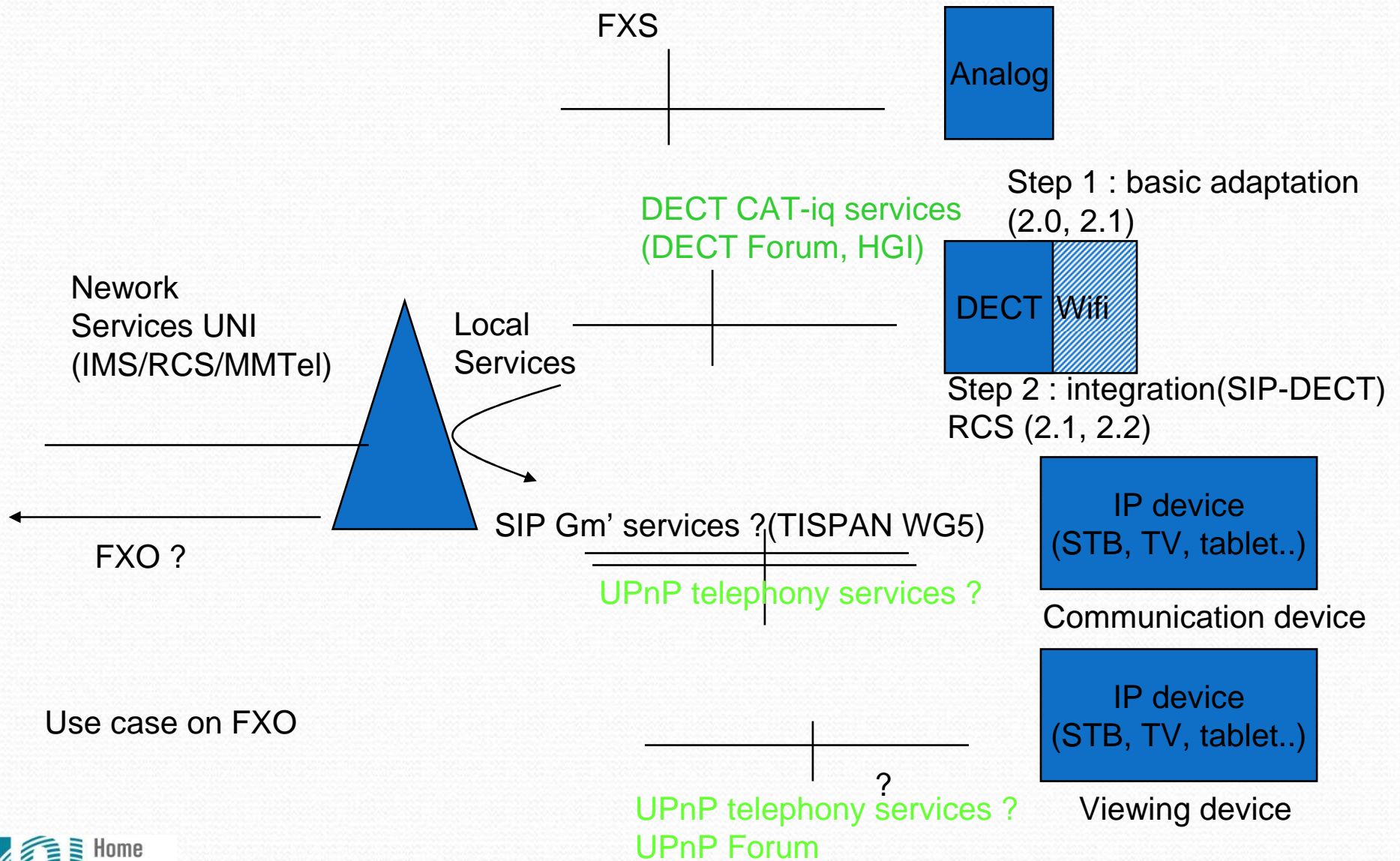
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Appendix

Voice @ home : Communication services interfaces



Summary of DECT modes

Emission

-----Energy-----

Modes	Auto-adjusting (M)	Manual (M)	Base eco (M)	Nemo (Opt)
Scenario	Any	Small apartment	Single handset on base (physically connected)	User do not want any radiations
Benefits	Optimizing handset battery life	Optimize base & radiation	Optimize base & radiation	Zero emission
Base energy	Not changed	Reduce by 5-10%	Reduce by 10-20%	Increase base consumption
Handset energy	Reduced by 10-15%	Not changed	Not changed	Increase handset consumption
Notes	Handset total consumption with cradle ?	User intervention required	Automatic Not compatible with multiple handset	User intervention required Increase consumptions Delay call set-up, call alert (>1sec)