ANACOM: update of the LRIC

model for fixed termination

Data request for fixed operators – PART I – Qualitative questions

25 September 2017

Ref: [2010987-383]

Contents

1 Introduction

1.1 Purpose of this document

This document describes the qualitative data requested from the fixed operators in Portugal in the context of the update of the BULRIC model for fixed termination, previously developed and updated by Analysys Mason on behalf of ANACOM. The previous model was published in 2014 with data up to 2012.

The data collected during this phase will be used to populate, calibrate and reconcile the model to take into account national specificities and real-life constraints where appropriate, in keeping with ANACOM's modelling principles.

1.2 Process and timeline

The data requested should be provided in the timeframe indicated by ANACOM.

All data, information and queries on the data request must be addressed to Analysys Mason at the following addresses:

Figure 1: Analysys Mason's contacts

	Contact 1	Contact 2
Name	Gilles Monniaux	Pedro Braz Caria
Email	gilles.monniaux@analysysmason.com	pedro.braz.caria@analysysmason.com
phone	+44 7795 262 731	+34 670 637 653

	Contact 3
Name	Joan Obradors
Email	joan.obradors@analysysmason.com
phone	+34 610 734 386

ANACOM would expect to circulate responses to clarifications to the other operators, where this would improve the accuracy of data collection. Industry parties should therefore indicate if a query regarding the data request contains confidential information which should be removed from a circulated response.

1.3 Historical, current and forecast data

If possible, please provide data that relates to the calendar year 2017 (even if 2017 data is an estimate), indicating if year average rather than year-end data is provided. Please indicate the currency of any cost information provided (EUR or other). If possible, please provide cost data in nominal terms (i.e. money of

that day) rather than transformed into any particular year real terms (e.g. 2017 real). Where data is requested 'over time' or 'in each year', please provide data for 2012–2017, unless specified otherwise.

If forecasts for parameters or costs are readily available, please provide these for any forecast years that are available, noting the source of the forecast (e.g. budget, long-range plan).

1.4 Treatment of confidential information

Data provided will be of importance for the set-up of the model, to ensure that our bottom-up calculations are generating reasonable asset volumes and costs. However, there may be certain data-points that could be used in the actual model itself *as inputs*. We recognise that the model must take into account confidentiality considerations in this respect.

The objective of the model is to be transparent and shareable for all industry parties. We expect that some data (more likely to be for calibration) will not be released in public models. However certain data-points, which could be beneficial to the model, could be processed to remove commercial sensitivities, through the following approaches:

- aggregating the data across either groups of areas or the whole of the country
- using averaged input values (taking into account values from multiple operators).

In order to further ensure the confidential treatment of the data received a Non-Disclosure Agreement (hereafter "NDA") has been signed by Analysys Mason Limited.

1.5 Auditability

Operators should keep records of intermediate working used to provide the data, and a record of officers responsible for each block of data, in order to allow follow-up and validation by ANACOM.

2 Network data

The LRIC model of fixed core networks currently dimensions a modern forward-looking fixed core network applicable to Portugal. As part of the update, Analysys Mason intends to determine any recent network developments that may be relevant.

2.1 Network dimensioning rules

Analysys Mason needs to update the dimensioning of the modern core network that is applicable to Portugal. In order to aid this process, an understanding of how these networks are currently being deployed would be useful.

Q01 Please indicate **how the following areas of your core network have evolved since 2013**:

- **overall architecture of the network** (corresponding to questions Q21-22 in the 2013 data request)
- **modern voice switching platform** (corresponding to questions Q23-32 in the 2013 data request)
- **VoIP platform** (see below)
- **interconnect arrangements** (see below)
- **data platforms** (corresponding to questions Q42-54 in the 2013 data request)
- **network facilities** (corresponding to questions Q55-56 in the 2013 data request)
- **transmission** (corresponding to questions Q57-65 in the 2013 data request)
- **IPTV and CDN** (corresponding to questions Q71-72 in the 2013 data request)
- **other network elements (NMS, Billing systems)** (corresponding to questions Q66-70 in the 2013 data request)

VoIP platform (corresponding to questions Q33-35 in the 2013 data request)

Q02 What is the network platform used to carry VoIP traffic? Please describe the VoIP platforms deployed in your network, including their capacity, utilisation, and location.

Q03 Please describe how your VoIP platform interconnects with

      a. the Internet backbone
      b. other telephony operators (IP-to-IP calls)
      c. other telephony operators (IP-to-TDM calls, via SS7 gateway)
      d. own PSTN/ ISDN network.

Q04 Please describe how your VoIP systems are licensed. Are these systems licensed on a per unit capacity basis (e.g. unit cost per BHCA supported for the call-servers) or, alternatively, does the license of the VoIP systems allows to support up to a fixed number of units (e.g. call attempts)?

Q05 Can you describe your migrations plans from TDM to IP?

Interconnection arrangements (corresponding to questions Q36-41 in the 2013 data request)

An understanding of the way in which wholesale, mobile and international traffic is carried and interconnected on the core network is important for the model.

Q06 Can you indicate whether your circuit-switched interconnection architecture has changed since 2013:

  a. number, locations and capacities of the circuit-switched points of interconnect (PoIs) for fixed carriers, mobile and international

  b. Is outgoing traffic to other carrier's networks interconnected at the nearest PoI (i.e. near-end handover)? Does this differ for traffic to mobile networks and international destinations?

  c. Is incoming traffic from other carriers received at a PoI that is not necessarily the nearest one to the customer? If so, what percentage of incoming traffic is required to be switched across the transit network?

  d. Is wholesale carrier traffic interconnected in the same way as retail traffic? Is wholesale and retail traffic to a carrier handed over using the same or different ports?

Q07 Can you detail the locations and capacities of any VoIP-to-circuit-switch PoI?

Q08 If you use IP PoI and TDM PoI, what type of traffic do each type of PoI use (e.g. national or international)?, also, what is the proportion of interconnection traffic over IP?

2.2 Upcoming deployments

The above sections have focused on dimensioning a modern network deployment in Portugal. In addition, we seek guidance on how modern networks will develop in the near future. If significant changes are identified that are additional to the above, then further questions may need to be issued.

Q09 Please provide an overview of your potential future network deployments within the next five years that could have an impact on the performance or cost levels of termination services. This could include:

  a. underlying access technology(ies)
  b. underlying core technology(ies)
  c. network hierarchy
  d. assets to be deployed at the network nodes
  e. nodes to be deployed, including capacities and locations (if known)
  f. principles employed in the reuse of existing network
  g. planned network roll-out over time.