



Assessment of the cost of providing wholesale voice call termination services on fixed networks in the EU/EEA countries – SMART 2018/0014

Overview of the public consultation phase

May 2019

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Introduction

- ▶ The European Commission (hereinafter, 'EC') has commissioned Axon Partners Group Consulting (hereinafter, 'Axon Consulting') to provide consulting services in relation to the "*Assessment of the cost of providing wholesale voice call termination services on fixed networks in the EU/EEA countries – SMART 2018/0014*" (the 'Project').
- ▶ The objective of the Project is to develop a model to assess the cost of providing wholesale voice call termination services on fixed networks in the EU/EEA countries, in the context of the implementation of the Euro Rate as defined in the EECC*.
- ▶ This document summarises the work done by Axon Consulting for the public consultation and provides an overview of the main aspects of the model developed.
- ▶ The document is structured in 4 sections, as follows:
 - Section 1: Project status
 - Section 2: Model's methodology
 - Section 3: Available input scenarios
 - Section 4: Consultation process

Note (*): European Electronic Communications Code

Contents

1. Project status

2. Model's methodology

3. Available input scenarios

4. Consultation process

The consultation process aims at validating the cost model with the industry and is part of Objective 3 of the Project

Main objectives of the project



Objective 1:
Determine the characteristics of the BULRIC model



Objective 2:
Build, populate and calibrate the BULRIC model

CURRENT PHASE



Objective 3:
Validate the cost model and its outputs with NRAs and BEREC



Objective 4:
Provide technical assistance on the cost model during the Commission's proposals

Key tasks involved

- ▶ Suggest main methodological approaches to be adopted in the development of the BULRIC model
- ▶ Workshop to consult methodology with stakeholders*

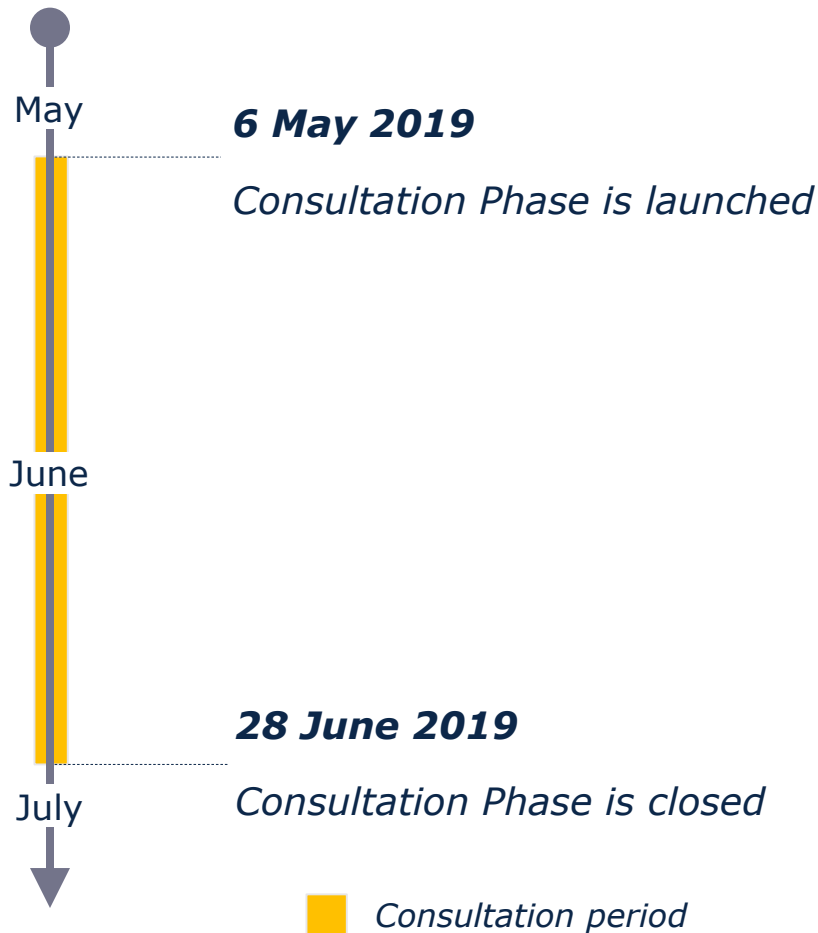
- ▶ Prepare information requests and collect data
- ▶ Build the cost model
- ▶ Populate and calibrate the model to deliver outputs

- ▶ **Consultation process on the model**
- ▶ Model finalisation and Workshop to present results
- ▶ Publication of final report

- ▶ Provide assistance to the EC in using the model and its outputs
- ▶ Answer questions/requests from the European Parliament and the Council

*A video version of the workshop is available at:
<https://webcast.ec.europa.eu/fixed-termination-rates-workshop-23-10-2018>

The draft version of the cost model has been shared with NRAs for submission to relevant stakeholders for public consultation



- ▶ A draft version of cost model has been developed based on the methodology defined after considering industry’s feedback to Workshop 1*.
- ▶ Inputs included in the cost model are derived from the information received from stakeholders through the data gathering process**.
- ▶ Stakeholders have 8 weeks (from 6 May until 28 June) to provide their views on the model and the accompanying materials.
- ▶ As part of this process, stakeholders are expected to provide comments on:
 - **Costing methodology** adopted;
 - **Inputs** introduced in the model;
 - **Outcomes** of the model.

* Stakeholders were given from 23 October 2018 until 15 November 2018 to provide feedback.

** Running from 4 December 2018 until 1 February 2019.

The cost model has been shared with NRAs together with the supporting documentation

As a result of the work performed to develop the draft cost model, Axon Consulting has shared the following deliverables with NRAs:

- ▶ **Main Consultation Document:** This document provides an introduction to the consultation and gives general indications on the consultation process.
- ▶ **Annex 1 – Draft Cost Model:** Cost model for fixed networks in Microsoft Excel format. This document includes the calculations, inputs and outputs of the model developed by the EC/Axon team.
- ▶ **Annex 2 - User manual:** This document is an introduction to the cost model, describing the worksheets it contains and providing guidance on how to run it.
- ▶ **Annex 3 – Descriptive manual:** This technical document provides transparency on the way the model works and describes the main algorithms implemented.
- ▶ **Annex 4 – Methodological approach document:** This detailed document describes the methodology adopted to develop the model.
- ▶ **Annex 5 – Template for the provision of comments:** This Excel file is to be used by stakeholders to provide comments to the questions raised by the EC/Axon team.



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As presented in Workshop 1, the key methodological aspects were defined in line with the EC's Rec. on MTR/FTR and the EECC

Methodological Aspect	Approach adopted in line with EC's Rec. and EECC
Cost Standard	▶ Pure LRIC (Long Run Incremental Costs)
Dimensioning approach	▶ Bottom-up
Operator Type	▶ Efficient operator
Assets valuation method	▶ Current Cost Accounting (CCA)
Depreciation method	▶ Economic Depreciation
Core technologies adopted	▶ NGN Core (packet switched)
Costs to be considered	▶ Traffic-related costs ▶ Directly related wholesale commercial costs

The approach adopted for other methodological aspects was set based on the feedback received from the industry to Workshop 1

- ▶ The Annex III of the EECC establishes that *“only those traffic related costs which would be avoided in the absence of a wholesale voice termination service being provided shall be allocated to the relevant termination increment”*.
- ▶ Based on the industry’s feedback received after Workshop 1, cost elements which are not avoidable when removing the voice termination service have not been included in the model. Only the following cost elements are considered in the model:
 - **Core network elements.** These are the most relevant network elements in the calculation of the voice termination pure LRIC. Consistent with the EECC requirement, *“the technology choice of the modelled networks shall be forward looking, based on an IP core network”*, the model is based on an IMS architecture, which was defined based on the feedback received from stakeholders.
 - **Active transmission and switching elements.** These network elements are mostly driven by the demand of non-voice services (broadband, TV, etc.) and their relevance is typically negligible in the pure LRIC cost of the voice termination service. Based on the preference shown by the industry when providing feedback to Workshop 1, the model considers the associated costs by means of a mark-up calculated based on information provided by NRAs (based on their cost models).
 - **Wholesale costs:** Wholesale costs have been considered, based on regression analysis of the information provided by operators.

Note: Further details about the methodological approaches adopted are included in the Annex 4 – Methodological approach document.

Methodology adopted for the core equipment unit costs (1/3)

- ▶ When providing feedback to Workshop 1, the industry showed preference for the use of price catalogues rather than Cost-Volume Relationships (CVRs).
- ▶ During the data gathering phase, operators provided significant amount of cost equipment information to build the catalogues (pairs of price-capacity for a number of configurations)*.
- ▶ A thorough assessment of the cost incrementality of the core platforms has been performed based on the information received from stakeholders.
- ▶ In light of the information available, EC and Axon have identified two alternatives in the draft cost model to treat core equipment unit costs (for which we expect to receive stakeholders' feedback and opinion):
 - ❖ **Option 1.** Use of catalogues of modular equipment.
 - ❖ **Option 2.** Use of continuous functions.

* Information about CVRs was also requested as alternative. However not enough references were provided to be able to analyse such approach.

Note: Further details about the methodological approaches adopted are included in the Annex 4 – Methodological approach document.

Methodology adopted for the core equipment unit costs (2/3)

OPTION 1. Discrete Price Catalogues

- ▶ The equipment employed in telecommunications networks is discrete. This means that operators buy configurations with certain capacity, not exactly matching their traffic requirements.
- ▶ Option 1 consists of reflecting this behaviour by defining cost-capacity pairs (discrete points) based on the information received from stakeholders. When the demand for the voice termination service is removed, the model may select a lower capacity configuration and calculate the savings.

Illustrative example of a price catalogue

Equipment	Capacity	Cost ('000 EUR)
Core equipment Cat. 1	40,000	250
Core equipment Cat. 2	100,000	600
Core equipment Cat. 3	200,000	850
Core equipment Cat. 4	300,000	1,000

Pros	Cons
+ More representative of the reality in the short-term	<ul style="list-style-type: none"> - Based on the level of information received, price catalogues are not extensive (limited data points are available for each core equipment) - Step modularity leads to high variability of Pure LRIC FTRs in some cases

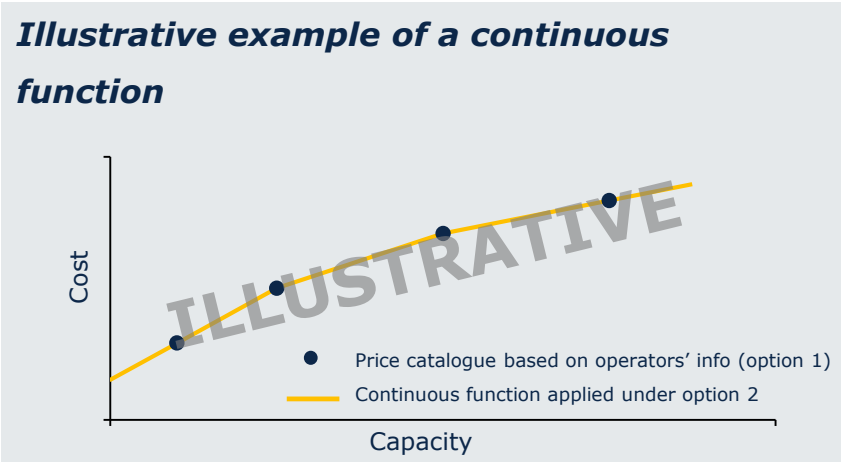
Note: Further details about the methodological approaches adopted are included in the Annex 4 – Methodological approach document.

Methodology adopted for the core equipment unit costs (3/3)

OPTION 2: Continuous functions

- ▶ Given the limited number of data points available for Option 1, this situation leads to relevant incremental costs when the capacity for a certain core equipment is close to one of the discrete points, while incremental costs can be zero if the increment is not large enough to require a change of equipment.
- ▶ To avoid this, Option 2 considers continuity between the price-capacity data points, which consists of connecting each point with the next one by means of a straight line.
- ▶ This approach is more aligned with a Forward Looking Long-Run perspective.

Illustrative example of a continuous function



Pros	Cons
<ul style="list-style-type: none"> + Produces more stable results + More representative of the reality in the medium and long term (under a forward-looking perspective) 	<ul style="list-style-type: none"> - Considers configurations other than those provided by stakeholders.

Note: Further details about the methodological approaches adopted are included in the Annex 4 – Methodological approach document.

Methodology adopted for the size of the reference operator

- ▶ Based on industry's feedback received to the methodology presented in Workshop 1, it was decided to develop a model with a modifiable market share for the reference operator.
- ▶ In order to assess the impact of different market share assumptions, the following options have been considered in the model:
 - ❖ Market share of the **incumbent operator** in each EU/EEA country
 - ❖ Fixed market share by value of **25%** for all EU/EEA countries
 - ❖ Fixed market share by value of **50%** for all EU/EEA countries
- ▶ We expect to receive stakeholders' feedback about their preferred approach for the size of the reference operator.

Note: Further details about the methodological approaches adopted are included in the Annex 4 – Methodological approach document.

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Several scenarios have been included in the draft cost model subject to consultation

Scenario	Options	Description
Core equipment unit costs	(Discrete) Price catalogues	A set of discrete configurations/capacities is available. If the capacity required falls between two configurations, the higher one must be purchased.
	Continuous functions	A continuous function of price/capacity is used, based on price catalogues used in previous option.
Reference operator	25% Market Share	The model has been designed with a modifiable parameter for the selection of market share of the reference operator.
	50% Market Share	
	Incumbent Market Share	
Demand forecasts	Base Case	Based on historic growth rate.
	Conservative	Based on historic growth rate -5 percentual points.
	Aggressive	Based on historic growth rate +5 percentual points.

Note: Further details about the definition of the scenarios are provided in the Annex 4 – Methodological approach document.

Stakeholders can assess the results under different scenarios by using the cover sheet

Alternative scenarios defined in the model



Assessment of the cost of providing wholesale voice call termination services on fixed networks in the EU/EEA countries
 SMART 2018/0014

Quick controls		<input type="button" value="RUN"/> <input type="button" value="CONTENTS"/> <input type="button" value="MAP"/> <input type="button" value="General check"/> <input type="button" value="OK"/>
Execution mode	Selected country <i>execution.mode</i>	
Selected Country	Hungary <i>selected.country</i>	
Core Platforms Dimensioning scenario	Based on Catalogue <i>dimensioning.scenario</i>	
Market Share scenario	Market share of an hypothetical operator <i>market.share.scenario</i>	
Market Share input (only applicable if Market Share scenario "Market share of an hypothetical operator" is selected)	50% <i>input.market.share</i>	
Demand Forecast scenario	Base Case <i>selected.demand.scenario</i>	
Result overview		
Selected year	2022	

- ▶ The COVER sheet of the model allows stakeholders to produce results under different scenarios.
- ▶ Detailed indications on how to run the model under these different scenarios are provided in the Annex 2 - User manual.

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The consultation process

- ▶ **All comments will have to be submitted by NRAs to the EC/Axon team by 28 June 2019.**
- ▶ Stakeholders should focus their comments on the specific questions raised by the EC/Axon team.
- ▶ Comments should be as precise and brief as possible, while making sure they are properly justified.
- ▶ Questions from operators should be addressed to their respective NRAs (not to the EC or Axon).
- ▶ The EC/Axon team will endeavour to provide answers to critical questions received from NRAs via email before 29 May 2019.
- ▶ While all comments received will be assessed and studied by the EC/Axon team, the assessment of comments and answers to be done by EC/Axon team will focus only on comments that are i) significant for the results of the model and ii) have been thoroughly justified.
- ▶ Each NRA has to provide only one filled-in template with all comments from stakeholders in its country.

Note: Further details about the consultation process are included in the Main Consultation Document.



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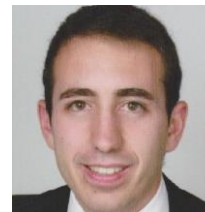
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