

# Instructions for Use of the Public LRIC Models

## **Model Documentation**

The structure, inputs, assumptions and output of the LRIC models are described in the Draft Manual for LRIC Models for the Fixed and Mobile Telecommunications Networks for ECTEL Member States. The manual also outlines the principles used for calculating the cost of capital (WACC), the principle for allocating common costs and the method of depreciation.

## **Public Versions of the Models**

A fixed and mobile LRIC model was developed for each of the ECTEL Member states. The LRIC models are hybrid models which consist of demand and network data for an efficient provider operating in an ECTEL Member State. The hybrid models also contain sensitive cost data and therefore generic models were prepared for public review. The generic models have the same structure and functionality as the Member State specific models but sensitive data has been replaced by generic or representative data.

## **Fixed Models**

Two generic versions of the fixed models were developed and are submitted for public comment. One version assumes one Core NGN Site and one Main Exchange Site and is representative of the fixed network in Dominica, St Kitts and Nevis and St Vincent and the Grenadines. The other assumes two Core NGN Sites and two Main Exchange Sites and is representative of the fixed network in Grenada and St Lucia.

In the generic fixed LRIC Model a number of the input values are representative of the data used in the specific LRIC models. For each input worksheet identified below, there is an indication of which values are standard across the Member States and which are generic or representative and therefore not specific to any Member State.

## **Technical Assumptions**

All the values in the Technical Assumptions worksheet are identical across the ECTEL Member States, with the exception of the number of Core NGN Sites and main Exchange sites. The generic model with one NGN and one Main Exchange Site is applicable to Dominica, St. Kitts and Nevis and St. Vincent and the Grenadines while the generic model with two NGN Sites and two Main Exchange Sites is applicable to Grenada and St. Lucia.

**Cost Assumptions** - All values in the cost assumptions sheet are representative data except the General Assumptions.

**Demand Assumptions** - All the values are standard across the ECTEL Member States except the Static Volumes which are representative data.

**Asset Lives** - The asset lives assumptions are standard. The values in the generic models are identical to the values in the models specific to each Member State

**Expense Factors, Expense Factor Adjusted and Consol Exp Factor** - All data in these worksheets are representative.

Routing Factors - The values in model 1 - Gener fixed LRIC 16-June-08 reflect the routing factors used in the models for Dominica, St Kitts and Nevis and St Vincent and the Grenadines. The values in 2 - Gener fixed LRIC 16-June-08 reflect the routing factors used in the models for St Lucia and Grenada.

List of Services and List of Network Elements - All information is actual and standard across Member States.

### Mobile Model

One generic version of the mobile models was developed and is submitted for public comment. In the generic mobile LRIC Model (Gen Mob LRIC 16-June-08) a number of the input values are representative of the data used in the specific LRIC models. For each input worksheet identified below, there is an indication of which values are standard across the Member States which are generic or representative and therefore not specific to any Member State.

Cost Assumptions – all values except exchange rates, Planning Factor Capex and Leased Line Tariff for 3yr Contract are generic.

Demand Assumptions – All values except Regional voice subscribers and Voice Usage and Data Usage parameters are generic

Technical Assumptions – All data except Capacity planning max load factor, GRPS Design Factors and Network Increments are generic. The actual technical assumptions for Radio and Switching, Traffic distribution and Cell sectorisation per area, used in the specific models are presented in table one below.

**Table 1: Technical Assumptions for Mobile LRIC models**

Parameter	DOM	GND	SKN	SLU	SVG	Units
Radio and Switching						
Available GSM 850 spectrum	10	11	55.92	55	133	MHz
Available GSM 1900 spectrum	10	15	94.6	95	95	MHz
Re-use factor GSM 850	6	6	7	1	6	
Re-use factor GSM 1900	6	6	7	1	6	
GSM Carrier bandwidth	200	200	200	200	200	KHz
Timeslots per carrier GSM	8	8	8	8	8	unit
Radio Path GoS	2.0%	2.0%	2.0%	2.0%	2.0%	
Number of Cell Sites - Dense	12	8	13	22	14.0	
Number of Cell Sites - Medium	4	17	1	16	7.0	
Number of Cell Sites - Rural	19	8	11	6	8.0	
Actual Number Sites	35	33	25	44	29	
Traffic distribution						
Dense	56.79%	61.50%	50.00%	60.00%	50.00%	%
Medium	11.49%	27.50%	0.00%	30.00%	24.00%	%

Rural	31.72%	11.00%	50.00%	10.00%	26.00%	%
Cell sectorisation per area						
Dense	0%	0%	0%	7%	0%	% omni
Medium	0%	0%	0%	11%	0%	% omni
Rural	0%	0%	0%	0%	0%	% omni

Expense Factors, Expense Factor Adjusted and Consol Exp Factor - All data is representative.

Routing Factors Input – All data except data related to inbound roaming and SMS is standard across member states.

Service and Erlang B – All information is actual and standard across Member States

Installing and Running the Models  
The LRIC models are presented in MS Excel 2003 workbooks as follows:

- 1-Gener fixed LRIC 16-June-08.xls – the generic fixed model applicable to Dominica, St Kitts Nevis and St Vincent and the Grenadines;
- 2-Gener fixed LRIC 16-June-08.xls – the generic fixed model applicable to Grenada and St Lucia; and
- Gen Mob LRIC 16-June-08 .xls – the generic mobile model.

The models can be saved in a local directory and opened as independent files. There are no external links and the use of macros has been minimized.

The user is free to make changes to the input data. After making any changes select the Menu button on the spreadsheet, then from the pop-up screen select Static Allocations, then select Run BU Model. The results can be seen by looking at the Fixed Service Cost sheet for the fixed models or the Mobile Service Cost sheets for the mobile models.