

# **Termination Rates Benchmark Snapshot (as of January 2013)**

## **Integrated Report on Mobile Termination Rates, Fixed Termination Rates & SMS Termination Rates**

**June 2013**

**Table of contents**

1. Introduction .....	2
2. Charts .....	3
3. MTR.....	9
4. SMS TR .....	14
5. FTR (Incumbent's effective weighted interconnection rate per minute and level) .....	16
6. ANNEX .....	18

## 1. Introduction

The present document is the 2nd Integrated Report on Termination Rates in Europe, providing an overview of Mobile Termination Rates (MTR), Fixed Termination Rates (FTR) and SMS Termination Rates (SMS TR) per country based upon the results of a request for information sent to all NRAs referring to data as of 1st January 2013.

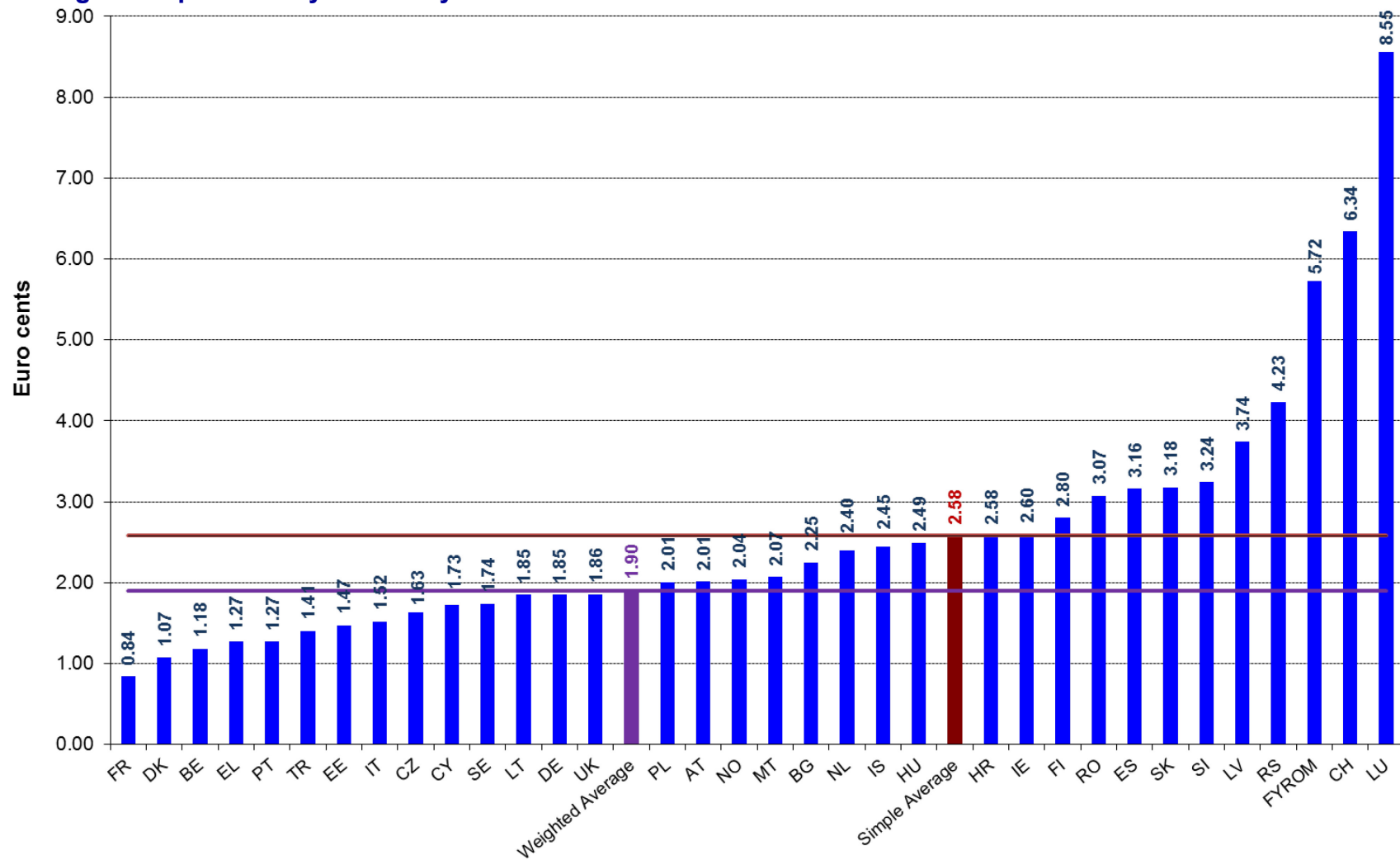
The aim of this report is thus to offer a picture of the rates for interconnection and termination rates in mobile, fixed and SMS in Europe.

Regarding the monitoring of MTR, BEREC continues the work started by ERG in 2004 with a twice yearly overview report. Regarding the monitoring of SMS TR and FTR, BEREC started its own data collection in 2011 with the aim of facilitating this benchmarking comparison to NRAs.

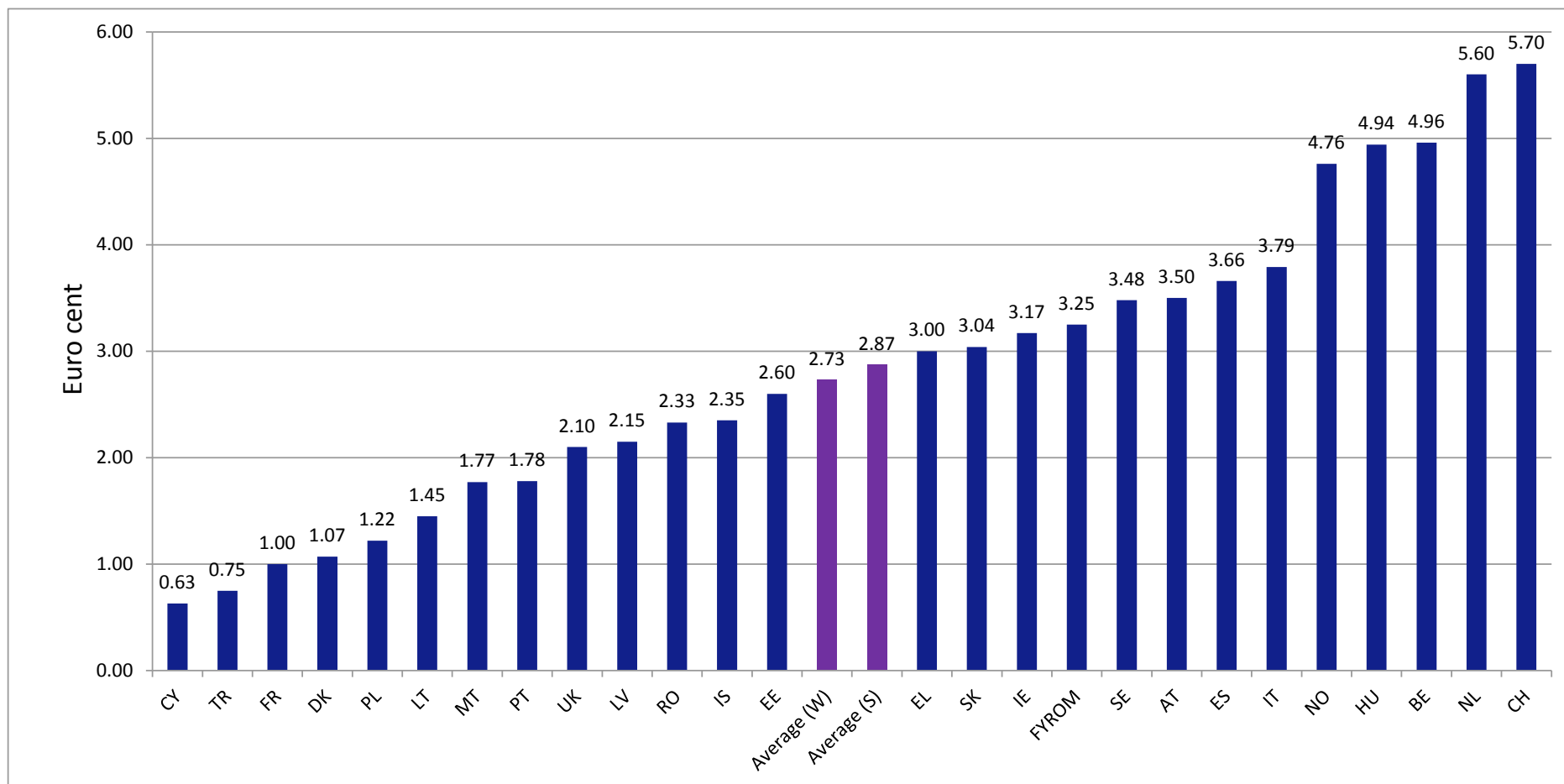
As of January 2013, this is the situation of Termination Rates in Europe:

- With regard to MTR, the simple average for EU stands at 2.5793 € cents per minute, whereas EU weighted average is estimated in 1.8979 € cents per minute.
- Regarding domestic SMS TR, the EU simple average is placed in 2.87 € cents per SMS, whereas the weighted average is reported to be 2.73 € cents per SMS.
- Lastly, concerning Fixed Termination Rates (FTR), they were analysed taking into account the three main levels of fixed interconnection layers and two types of interconnection (time and capacity). EU average for Layer 1 was reported to be 0.50€ cents per minute. Regarding layer 2 and 3, EU average stands at 0.60€ cents per minute and 0.82€ cents per minute, respectively.

**2. Charts:**  
**Average MTR per country – January 2013**



## SMS TR per country – January 2013



### **FTR: Effective weighted per minute interconnection rate-Incumbent's fixed network (Layer 1, Layer 2, Layer 3)**

In this section the effective average per minute price of each layer of interconnection service provided by each incumbent is presented, together with the simple average for Europe (horizontal line).

For those countries that only regulate interconnection with the TBI model, the average price is used. Note that this average (per minute) price is the weighted average between the peak and off- peak rates, where the weights used are based on the distribution of traffic between both time periods.

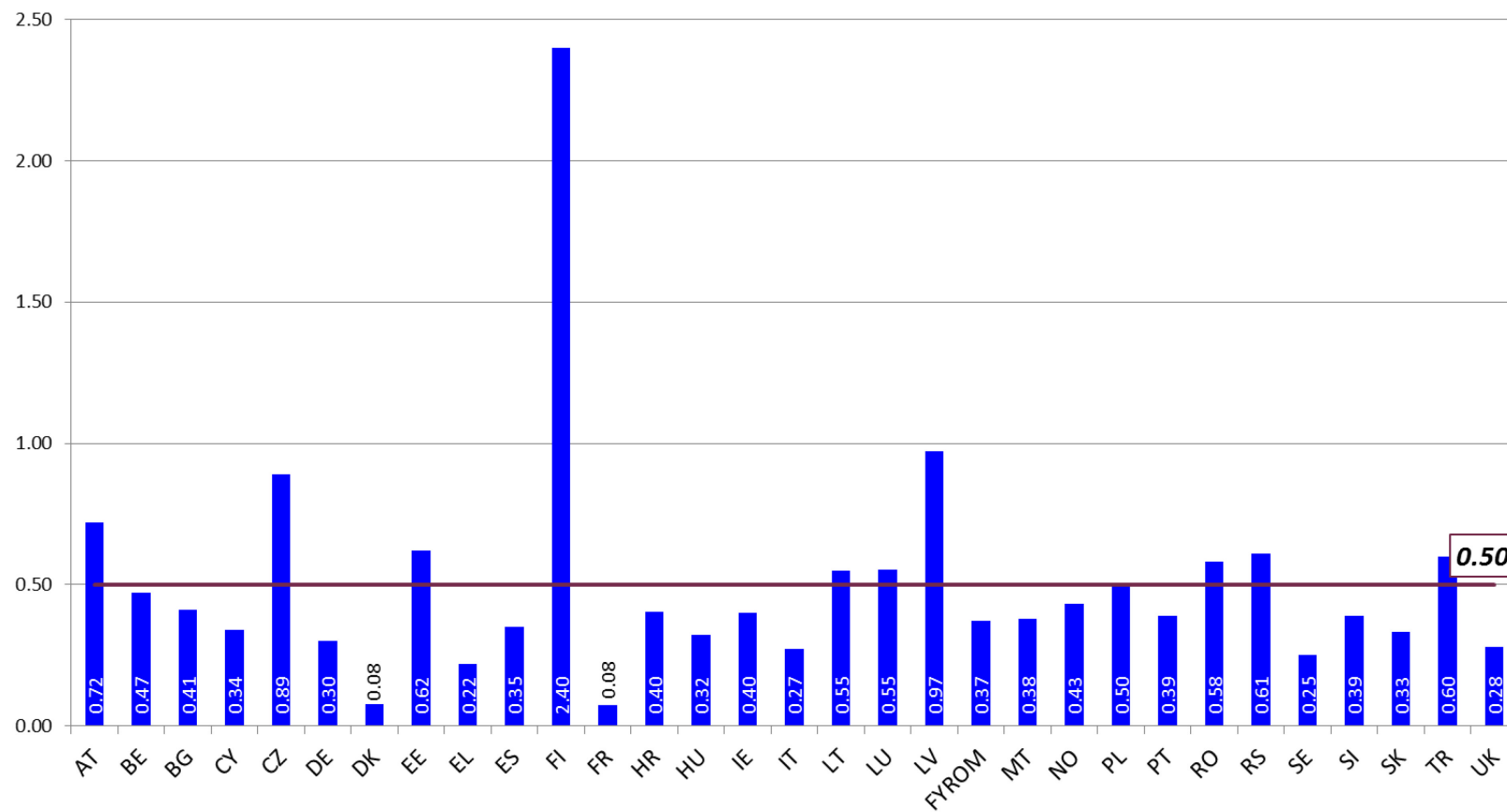
For those countries that have both the TBI and the CBI regimes given the different tariff outlays, a weighted average between the CBI and the TBI regime is provided.

In the next three graphs the effective weighted per minute interconnection rate for the incumbents is depicted for each country. Note that these are regulated rates and have been constructed as a weighted average, taking the different components into account:

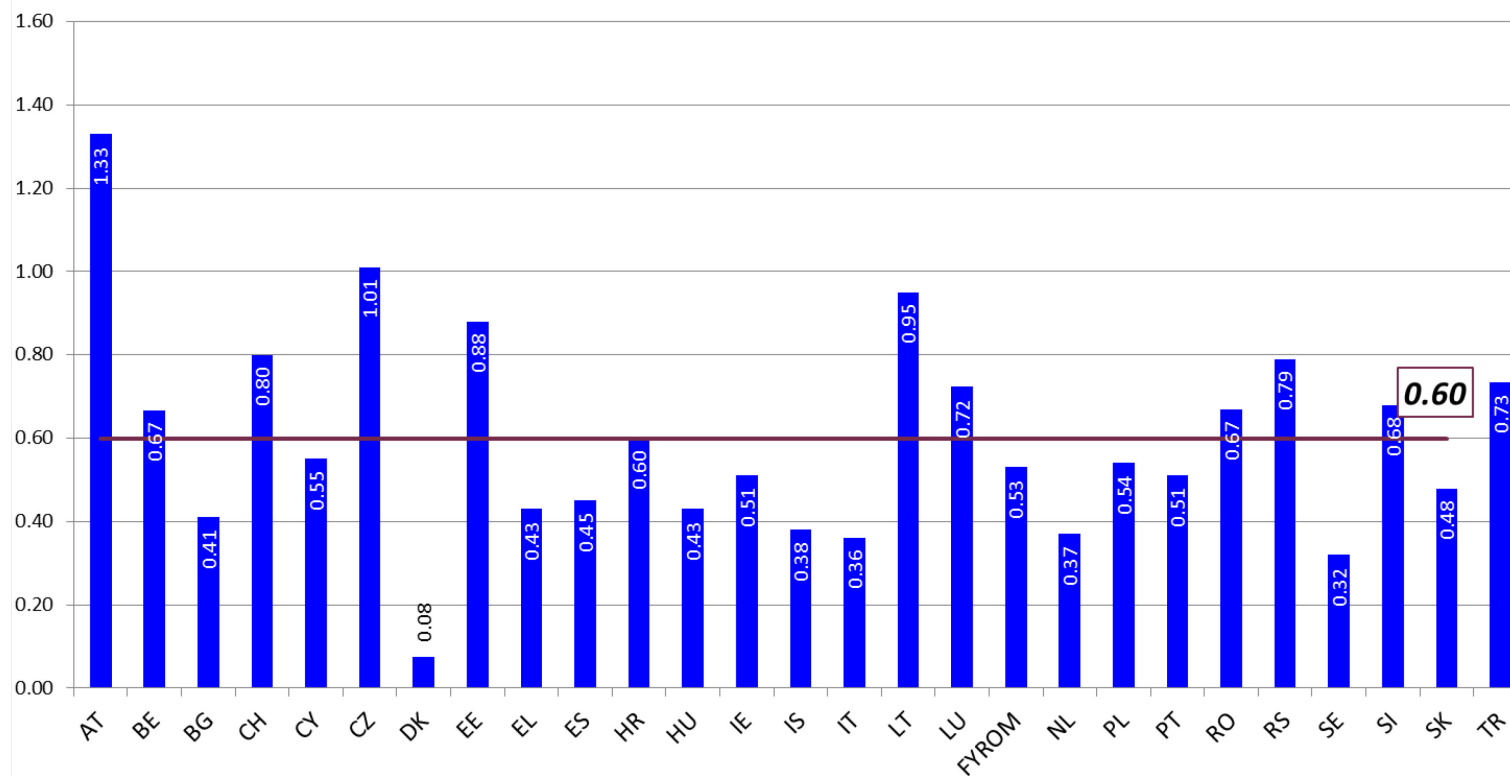
- (1) Peak / off- peak rates for interconnection rates based on time (per minute charges)
- (2) Set- up charge, distributed over a 3 minutes /average duration) call, for the time based interconnection model
- (3) Capacity based (CBI) and time based (TBI) interconnection charges, where the per circuit price has been translated into an average per minute price taking into account the price of the 2 Mbps circuit, on the one side, and the effective volume of minutes used by an average 2 Mbps circuit over the year.

For each of these components, the weights used are based on the proportion of traffic at the wholesale level that applies to one or the other mode of interconnection (peak/ off- peak, capacity vs time based).

Effective weighted per minute interconnection rate - Layer 1  
Incumbent's fixed network  
(€ cent)

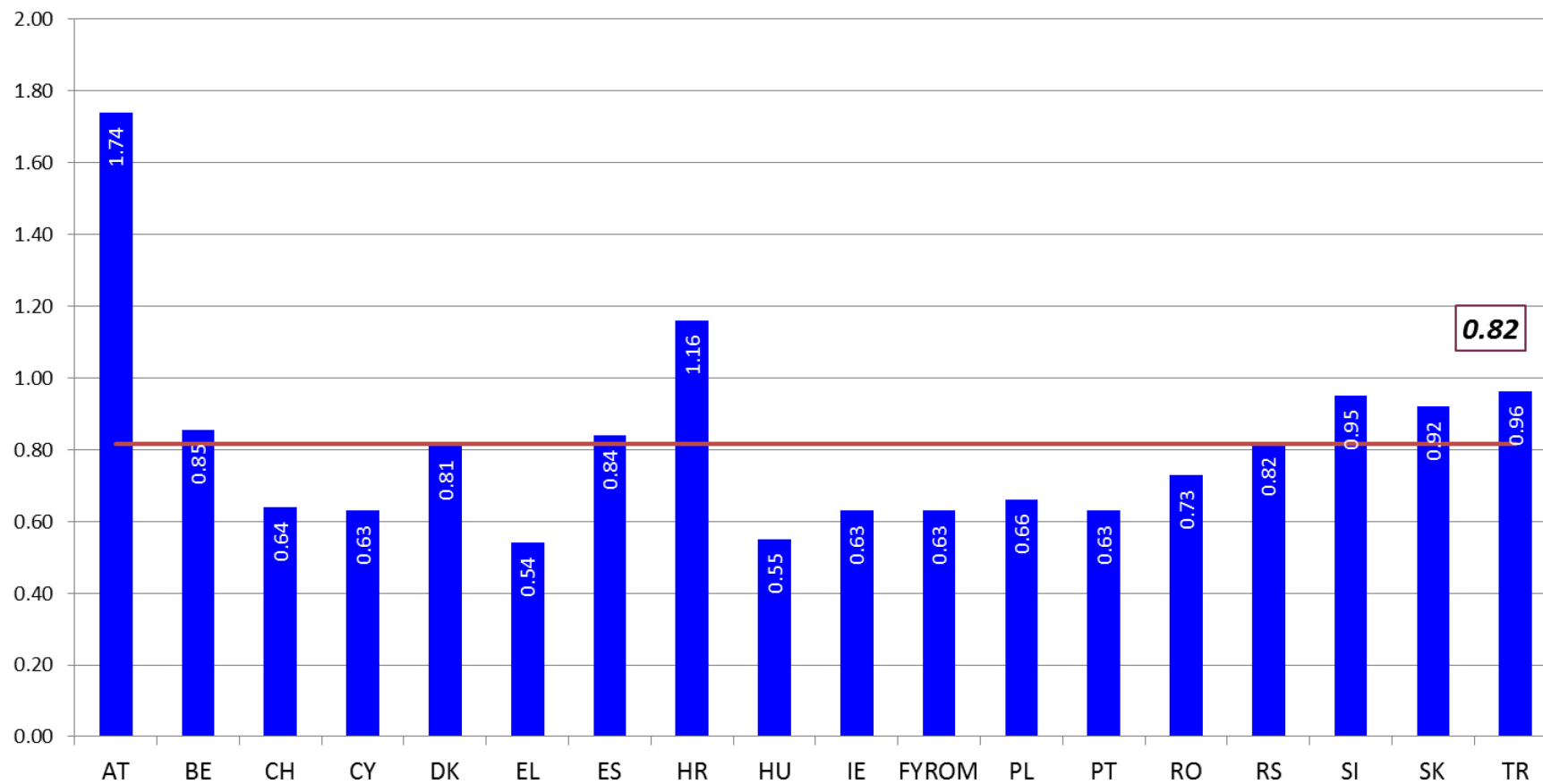


Effective weighted per minute interconnection rate - Layer 2  
Incumbent's fixed network  
(€ cent)





Effective weighted per minute interconnection rate - Layer 3  
Incumbent's fixed network  
(€ cent)



### 3. MTR

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#### Assumptions

The assumptions used in the benchmark exercise are the following:

- Most countries do not differentiate between MTR for fixed-to-mobile and mobile-to-mobile. For countries that differentiate, fixed-to-mobile charges have been used.
- In order to obtain a homogenous comparison, a three-minute average call duration has been assumed; set-up charges are accounted for by the standard formula.
- Operators with a market share below 1,5% have been excluded from the MTR average calculation.
- Only nominal tariffs are represented in the report, defining them as “The price (in euro/minute) set out by the regulator that represents the maximum price per minute which operators may charge each other (without any adjustment for purchasing power parity or real effects –inflation).”
- For those countries that have not set an average tariff and, additionally, apply distinct rates -one for the peak period, and another one for off-peak period-, a total average tariff per operator has been calculated with the distribution of peak and off-peak traffic.
- Average MTR per country have been obtained by weighting the average MTR of each operator by its market share, measured in terms of subscribers. Two European averages have been calculated: a simple average and a weighted average, the latter weighting each country’s average with the share of the country’s subscribers (total subscribers per country / total European subscribers). In the case of the European weighted average, only the countries that reported the number of subscribers are taken into account.
- The MTR charges are those applicable on 1st January 2013, though assumptions to calculate average charges (for example number of subscribers) may not be as of 1st July 2013.
- For non-Euro countries, the average exchange rate for the second quarter of the year, Q4 2012<sup>1</sup> was used for the calculation of MTR. A list of the exchange rates used is reported in the Annex

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<sup>1</sup> European Central Bank website:

<http://sdw.ecb.europa.eu/browseSelection.do?DATASET=0&sf1=4&FREQ=Q&sf3=4&CURRENCY=&node=2018794>

## Average MTR per country as of January 2013

Country	Average MTR per country (€cent)		
	Peak	Off-peak	Total
AT	2.0100	2.0100	2.0100
BE	1.1800	1.1800	1.1800
BG	2.3519	1.9940	2.2523
CH	6.3409	6.3409	6.3409
CY	1.7293	1.7293	1.7293
CZ	1.6291	1.6291	1.6291
DE	1.8500	1.8500	1.8500
DK	1.0725	1.0725	1.0725
EE	1.4700	1.4700	1.4700
EL	1.2690	1.2690	1.2690
ES	3.1739	3.1739	3.1739
FI	2.8000	2.8000	2.8000
FR	0.8394	0.8394	0.8394
HR	2.5804	2.5804	2.5804
HU	2.4925	2.4925	2.4925
IE	3.3532	1.8474	2.6003
IS	2.4492	2.4492	2.4492
IT	1.5206	1.5206	1.5206
LT	2.0244	1.0137	1.8489
LU	9.1750	7.9300	8.5525
LV	3.7377	3.7377	3.7377
FYROM	5.7244	5.7244	5.7244
MT	2.0700	2.0700	2.0700
NL	2.4000	2.4000	2.4000
NO	2.0413	2.0413	2.0413
PL	2.0086	2.0086	2.0086
PT	1.2700	1.2700	1.2700
RO	3.0700	3.0700	3.0700
RS	4.2298	4.2298	4.2298
SE	1.7395	1.7395	1.7395
SI	3.2400	3.2400	3.2400
SK	3.1800	3.1800	3.1800
TR	1.4052	1.4052	1.4052
UK	1.8578	1.8578	1.8578
<b>Average (S)</b>	<b>2.7056</b>	<b>2.5808</b>	<b>2.5775</b>
<b>Average (W)<sup>2</sup></b>	<b>1.9006</b>	<b>1.8881</b>	<b>1.8978</b>

<sup>2</sup> The Weighted Average does not take into account countries not providing the total number of subscribers.

## Average MTR per operator as of January 2013

Country	Operator	Average effective prices (€cent)			Subscribers	Country total subscribers	Market Share %
		Peak	Off-peak	Total			
AT	A1Telekom Austria	2.0100	2.0100	<b>2.0100</b>	6,140,299	13,381,703	<b>45.89%</b>
	T-Mobile	2.0100	2.0100	<b>2.0100</b>	4,143,657		<b>30.97%</b>
	H3G (including Orange <sup>3</sup> )	2.0100	2.0100	<b>2.0100</b>	3,097,747		<b>23.15%</b>
BE <sup>4</sup>	Belgacom	1.1800	1.1800	<b>1.1800</b>	5,129,000	12,879,098	<b>39.82%</b>
	Mobistar	1.1800	1.1800	<b>1.1800</b>	4,839,698		<b>37.58%</b>
	KPN Group Belgium	1.1800	1.1800	<b>1.1800</b>	2,910,400		<b>22.60%</b>
BG <sup>5</sup>	Mobiltel	2.3519	1.9940	2.2557	<i>confidential</i>	10,780,732	<b>43.26%</b>
	Cosmo Bulgaria Mobile	2.3519	1.9940	2.2494	<i>confidential</i>		<b>36.37%</b>
	BTC	2.3519	1.9940	2.2503	<i>confidential</i>		<b>20.37%</b>
CH	Swisscom	5.7947	5.7947	<b>5.7947</b>	6,150,874	9,873,488	<b>62.30%</b>
	Sunrise	7.2434	7.2434	<b>7.2434</b>	2,141,460		<b>21.69%</b>
	Orange	7.2434	7.2434	<b>7.2434</b>	1,581,154		<b>16.01%</b>
CY	MTN Cyprus LTd	1.7090	1.7090	<b>1.7090</b>	312,782	1,123,570	<b>27.84%</b>
	Cyta	1.7090	1.7090	<b>1.7090</b>	789,527		<b>70.27%</b>
	PRIMETEL PLC	2.7840	2.7840	<b>2.7840</b>	21,261		<b>1.89%</b>
CZ	T-Mobile	1.6291	1.6291	<b>1.6291</b>	<i>confidential</i>	<i>confidential</i>	<b>39.24%</b>
	Telefónica	1.6291	1.6291	<b>1.6291</b>	<i>confidential</i>		<b>36.98%</b>
	Vodafone	1.6291	1.6291	<b>1.6291</b>	<i>confidential</i>		<b>23.65%</b>
	MobilKom	1.6291	1.6291	<b>1.6291</b>	<i>confidential</i>		<b>0.12%</b>
DE	T-Mobile	1.8500	1.8500	<b>1.8500</b>	36,568,000	113,158,000	<b>32.32%</b>
	Vodafone	1.8500	1.8500	<b>1.8500</b>	33,890,000		<b>29.95%</b>
	E-plus	1.8500	1.8500	<b>1.8500</b>	23,400,000		<b>20.68%</b>
	O2Telefónica	1.8500	1.8500	<b>1.8500</b>	19,300,000		<b>17.06%</b>
DK	TDC	1.0725	1.0725	<b>1.0725</b>	3,112,178	7,053,684	<b>44.12%</b>
	Telia	1.0725	1.0725	<b>1.0725</b>	1,281,620		<b>18.17%</b>
	Telenor	1.0725	1.0725	<b>1.0725</b>	1,812,337		<b>25.69%</b>
	Hi3G	1.0725	1.0725	<b>1.0725</b>	438,619		<b>6.22%</b>
EE	EMT	1.4700	1.4700	<b>1.4700</b>	867,754	2,070,547	<b>41.91%</b>
	Elisa	1.4700	1.4700	<b>1.4700</b>	638,965		<b>30.86%</b>
	Tele2	1.4700	1.4700	<b>1.4700</b>	563,828		<b>27.23%</b>
EL	Cosmote	1.2690	1.2690	<b>1.2690</b>	<i>confidential</i>	<i>confidential</i>	<i>confidential</i>
	Vodafone	1.2690	1.2690	<b>1.2690</b>	<i>confidential</i>		<i>confidential</i>
	Wind	1.2690	1.2690	<b>1.2690</b>	<i>confidential</i>		<i>confidential</i>
ES	TME	3.1600	3.1600	<b>3.1600</b>	18,439,125	50,662,531	<b>36.40%</b>
	Vodafone	3.1600	3.1600	<b>3.1600</b>	13,162,284		<b>25.98%</b>
	Orange	3.1600	3.1600	<b>3.1600</b>	10,974,239		<b>21.66%</b>
	Xfera	3.3600	3.3600	<b>3.3600</b>	3,249,636		<b>6.41%</b>

<sup>3</sup> AT: The take over of Orange by H3G was cleared by the European Commission in Decemabr 2012.

<sup>4</sup> BE: subscribers including M2M

<sup>5</sup> BG: Number of mobile voice subscribers (excl. data SIMs) as of 31.12.2012

FI	DNA	2.8000	2.8000	<b>2.8000</b>	n.a.	n.a.	n.a.
	Elisa	2.8000	2.8000	<b>2.8000</b>	n.a.		n.a.
	TeliaSonera	2.8000	2.8000	<b>2.8000</b>	n.a.		n.a.
	ÅMT	2.8000	2.8000	<b>2.8000</b>	n.a.		n.a.
FR <sup>6</sup>	Orange	0.8000	0.8000	<b>0.8000</b>	<i>confidential</i>	70,469,000	-
	SFR	0.8000	0.8000	<b>0.8000</b>	<i>confidential</i>		-
	Bouygues Telecom	0.8000	0.8000	<b>0.8000</b>	<i>confidential</i>		-
	Free Mobile	1.1000	1.1000	<b>1.1000</b>	<i>confidential</i>		-
	Omea Telecom	1.1000	1.1000	<b>1.1000</b>	<i>confidential</i>		-
	Lyca Mobile	1.1000	1.1000	<b>1.1000</b>	<i>confidential</i>		-
HR <sup>7</sup>	HT	2.5804	2.5804	<b>2.5804</b>	2,442,882	5,262,986	46.42%
	VIPnet	2.5804	2.5804	<b>2.5804</b>	2,054,650		39.04%
	Tele2	2.5804	2.5804	<b>2.5804</b>	765,454		14.54%
HU	T-Mobile	2.4925	2.4925	<b>2.4925</b>	5,319,588	11,579,425	45.94%
	Telenor	2.4925	2.4925	<b>2.4925</b>	3,620,886		31.27%
	Vodafone	2.4925	2.4925	<b>2.4925</b>	2,638,951		22.79%
IE <sup>8</sup>	Vodafone	2.6000	2.6000	<b>2.6000</b>	n.a.	n.a.	44.6%
	O2	3.6500	1.4400	<b>2.6000</b>	n.a.		27.2%
	Meteor	4.2500	1.0000	<b>2.6000</b>	n.a.		18.0%
	Hutchinson 3G	4.4000	1.0000	<b>2.6000</b>	n.a.		9.0%
	Tesco Mobile	3.3200	2.1800	<b>2.6000</b>	n.a.		1%
IS	Siminn	2.4492	2.4492	<b>2.4492</b>	132,458	344,520	38.45%
	Vodafone	2.4492	2.4492	<b>2.4492</b>	99,202		28.79%
	Nova	2.4492	2.4492	<b>2.4492</b>	95,411		27.69%
	Tal	2.4492	2.4492	<b>2.4492</b>	16,737		4.86%
IT	Telecom Italia S.p.A.	1.5000	1.5000	<b>1.5000</b>	32,159,435	92,724,045	34.80%
	Vodafone Omnitel	1.5000	1.5000	<b>1.5000</b>	29,385,630		31.73%
	Wind S.p.A.	1.5000	1.5000	<b>1.5000</b>	21,649,552		23.17%
	H3G S.p.A.	1.7000	1.7000	<b>1.7000</b>	9,529,428		10.29%
LT	Bitė Lietuva	2.0244	1.0137	<b>1.7580</b>	1,033,056	4,898,291	21.09%
	Tele2	2.0244	1.0137	<b>1.9665</b>	1,948,744		39.78%
	Omnitel	2.0244	1.0137	<b>1.7782</b>	1,916,491		39.13%
LU	EPT	8.8000	7.6000	<b>8.2000</b>	n.a.	n.a.	52.00%
	Tango	8.8000	7.6000	<b>8.2000</b>	n.a.		33.00%
	Orange	11.3000	9.8000	<b>10.5500</b>	n.a.		15.00%
LV <sup>9</sup>	LMT	3.7340	3.7340	<b>3.7340</b>	1,776,533	3,630,150	48.94%
	Tele2	3.7340	3.7340	<b>3.7340</b>	1,094,052		30.14%
	Bite Latvija	3.7340	3.7340	<b>3.7340</b>	757,014		20.85%
	Telecom Baltija	8.9042	8.9042	<b>8.9042</b>	2,551		0.07%
FYROM	T Mobile Macedonia	4.8780	4.8780	<b>4.8780</b>	1,071,864	2,235,460	47.95%
	ONE TS	6.5041	6.5041	<b>6.5041</b>	532,315		23.81%

<sup>6</sup> FR: total number of subscribers include subscribers in mainland France, not including overseas collectivities.

<sup>7</sup> HR: subscribers as of Q3 2012

<sup>8</sup> IE: Irish mobile operators set week-end MTR as follow: Vodafone at 2.600; O2 at 1.300; Meteor at 1.000; Hutchinson 3G at 0.500; Tesco Mobile (MVNO) at 1.810 (€cent per minute).

<sup>9</sup> LV: Figures given as subscribers correspond to granted numbers

	VIP Macedonia	6.5041	6.5041	<b>6.5041</b>	631,281		<b>28.24%</b>
MT	Go Mobile	2.0700	2.0700	<b>2.0700</b>	194,120	551,736	<b>35.18%</b>
	Vodafone	2.0700	2.0700	<b>2.0700</b>	280,561		<b>50.85%</b>
	Melita Mobile	2.0700	2.0700	<b>2.0700</b>	65,331		<b>11.84%</b>
NL	KPN	2.4000	2.4000	<b>2.4000</b>	8,400,000	21,000,000	<b>40.00%</b>
	Vodafone	2.4000	2.4000	<b>2.4000</b>	5,250,000		<b>25.00%</b>
	T-Mobile	2.4000	2.4000	<b>2.4000</b>	4,200,000		<b>20.00%</b>
	all MVNO/SP	2.4000	2.4000	<b>2.4000</b>	3,150,000		<b>15.00%</b>
NO <sup>10</sup>	Telenor	2.0413	2.0413	<b>2.0413</b>	2,881,879	5,731,780	<b>50.28%</b>
	NetCom	2.0413	2.0413	<b>2.0413</b>	1,435,903		<b>25.05%</b>
	Network Norway	2.0413	2.0413	<b>2.0413</b>	628,792		<b>10.97%</b>
	Tele2	2.0413	2.0413	<b>2.0413</b>	462,774		<b>8.07%</b>
PL	P4	2.0086	2.0086	<b>2.0086</b>	<i>confidential</i>	<i>confidential</i>	<b>14.25%</b>
	PTC	2.0086	2.0086	<b>2.0086</b>	<i>confidential</i>		<b>28.23%</b>
	Polkomtel	2.0086	2.0086	<b>2.0086</b>	<i>confidential</i>		<b>27.85%</b>
	PTK Centertel	2.0086	2.0086	<b>2.0086</b>	<i>confidential</i>		<b>29.34%</b>
PT	TMN	1.2700	1.2700	<b>1.2700</b>	7,485,148	16,827,901	<b>44.48%</b>
	VODAFONE	1.2700	1.2700	<b>1.2700</b>	6,551,205		<b>38.93%</b>
	OPTIMUS	1.2700	1.2700	<b>1.2700</b>	2,486,854		<b>14.78%</b>
RO	Vodafone	3.0700	3.0700	<b>3.0700</b>	6,789,037	22,843,457	<b>29.72%</b>
	Orange	3.0700	3.0700	<b>3.0700</b>	9,795,796		<b>42.88%</b>
	Cosmote	3.0700	3.0700	<b>3.0700</b>	5,024,924		<b>22.00%</b>
	RCS & RDS	3.0700	3.0700	<b>3.0700</b>	1,159,854		<b>5.08%</b>
RS	MTS (Telekom Srbija)	4.2298	4.2298	<b>4.2298</b>	N/A	N/A	<b>N/A</b>
	Telenor	4.2298	4.2298	<b>4.2298</b>	N/A		<b>N/A</b>
	Vip mobile	4.2298	4.2298	<b>4.2298</b>	N/A		<b>N/A</b>
SE	TeliaSonera	1.7395	1.7395	<b>1.7395</b>	4,660,000	11,247,000	<b>41.43%</b>
	Tele2	1.7395	1.7395	<b>1.7395</b>	3,723,000		<b>33.10%</b>
	Telenor	1.7395	1.7395	<b>1.7395</b>	1,835,000		<b>16.32%</b>
	Hi3G	1.7395	1.7395	<b>1.7395</b>	1,029,000		<b>9.15%</b>
SI	Telekom Slovenije	3.2400	3.2400	<b>3.2400</b>	<i>confidential</i>	2,245,666	<b>56.79%</b>
	Si.mobil	3.2400	3.2400	<b>3.2400</b>	<i>confidential</i>		<b>29.51%</b>
	Tušmobil	3.2400	3.2400	<b>3.2400</b>	<i>confidential</i>		<b>11.26%</b>
	T-2	3.2400	3.2400	<b>3.2400</b>	<i>confidential</i>		<b>2.44%</b>
SK	Orange	3.1800	3.1800	<b>3.1800</b>	n.a.	n.a	<b>46.80%</b>
	Slovak Telecom	3.1800	3.1800	<b>3.1800</b>	n.a.		<b>30.98%</b>
	Telefónica	3.1800	3.1800	<b>3.1800</b>	n.a.		<b>22.22%</b>
TR <sup>11</sup>	Turkcell	1.3450	1.3450	<b>1.3450</b>	35,150,000	67,170,000	<b>52.33%</b>
	Vodafone	1.3879	1.3879	<b>1.3879</b>	18,810,000		<b>28.00%</b>
	Avea	1.5899	1.5899	<b>1.5899</b>	13,210,000		<b>19.67%</b>
UK <sup>12</sup>	Vodafone	1.8578	1.8578	<b>1.8578</b>	<i>confidential</i>	<i>confidential</i>	<i>confidential</i>
	O2	1.8578	1.8578	<b>1.8578</b>	<i>confidential</i>		<i>confidential</i>
	EE	1.8578	1.8578	<b>1.8578</b>	<i>confidential</i>		<i>confidential</i>
	H3G	1.8578	1.8578	<b>1.8578</b>	<i>confidential</i>		<i>confidential</i>

<sup>10</sup> NO: subscribers as of 30.06.2012

<sup>11</sup> TR: subscribers as of Q3 2012

<sup>12</sup> UK: MTR figures are the UK average. Individual MTR figure for each MNO is confidential.

## 4. SMS TR

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### Assumptions

- Most countries do not differentiate between peak time, off-peak time and weekend hours. According to the responses received, there is no exception in Europe.
- SMS TR are applicable to each domestic *off net* SMS that is well delivered, so there is no assumption regarding set-up charges or average call durations. Slovenia and Latvia are the only countries that apply a "Bill & Keep" system for SMS. The scope of the benchmark is confined to national termination prices.
- International SMS TRs in most European countries are also based on bilateral negotiations among operators which generally result in higher level than the domestic rates that are reflected in this report.
- In some countries, different rates depending on the total number of SMS sent are applied. For those countries, the rates corresponding to the biggest volumes (i.e. lowest rates) are selected to make European comparisons.
- Average SMS TR per country are obtained through pondering the domestic SMS tariff of each operator by its market share, measured in terms of subscribers.
- Two European averages based on the answers received are calculated, as it is also done for voice MTR benchmark: a simple average and a weighted average, pondering each country's average with the share of the country's subscribers ( $\text{Total subscribers per country} / \text{Total European subscribers}$ ). In the case of the European weighted average, only the countries that reported the number of subscribers are taken into account.
- In the case of Switzerland, SMS TR are not wholesale interconnection prices but rather the result of an SMS-Interworking agreement among operators. P2P-SMS-Traffic is assumed symmetric. Therefore, there is a kind of 'Bill & Keep' system established between Swiss MNOs.
- Regarding the number of subscribers, it must be taken into account that different methods to evaluate it are used among European countries (especially in the case of pre-paid consumers).

### SMS TR per country as of January 2013 (€)

Country	SMS TR per country
AT	0.0350
BE	0.0496
BG	Confidential
CH	0.0570
CY	0.0063
CZ	Confidential
DE	N/A
DK	0.0107
EE	0.0260
EL	0.0300
ES	0.0366
FI	Confidential
FR	0.0100
HR	Confidential
HU	0.0494
IE	0.0317
IS	0.0235
IT	0.0379
LT	0.0145
LU	N/A
LV	0.0215
FYROM	0.0325
MT	0.0177
NL	0.0560
NO	0.0476
PL	0.0122
PT	0.0178
RO	0.0233
SE	0.0348
SI	Bill & Keep for SMS
SK	0.0304
TR	0.0075
UK	0.0210
<b>Average (S)</b>	<b>0.0287</b>
<b>Average (W)</b>	<b>0.0273</b>



## 5. FTR (Incumbent's effective weighted interconnection rate per minute and level) in € cent

Country	Operator	Layer	peak	Off-peak	FTR Average per minute
<b>AT</b>	A1 Telekom Austria	Layer 1	0.8200	0.4800	<b>0.7200</b>
		Layer 2	1.5800	0.7300	<b>1.3300</b>
		Layer 3	2.1600	0.7700	<b>1.7400</b>
<b>BE</b>	Belgacom	Layer 1	0.6187	0.3247	<b>0.4717</b>
		Layer 2	0.8747	0.4583	<b>0.6665</b>
		Layer 3	1.1213	0.5883	<b>0.8548</b>
<b>BG</b>	Bulgarian Telecommunication Company	Layer 1	0.4346	0.3579	<b>0.4117</b>
		Layer 2	0.4346	0.3579	<b>0.4117</b>
<b>CH<sup>13</sup></b>	Swisscom	Layer 2	1.0365	0.5436	<b>0.8045</b>
		Layer 3	0.7996	0.4360	<b>0.6465</b>
<b>CY<sup>14</sup></b>	CYTA	Layer 1(l)			<b>0.3400</b>
		Layer 1(r)			<b>0.5500</b>
		Layer 2			<b>0.6300</b>
<b>CZ</b>	Telefónica Cz. Republic, a.s.	Layer 1	1.1920	0.5960	<b>0.8940</b>
		Layer 2	1.3510	0.6755	<b>1.0132</b>
<b>DK</b>	TDC	Layer 1	0.0804	0.0536	<b>0.0761</b>
		Layer 2	0.0804	0.0536	<b>0.0761</b>
		Layer 3	0.8594	0.5430	<b>0.8087</b>
<b>DE</b>	Telekom Deutschland GmbH	Layer 1	0.3600	0.2500	<b>0.3000</b>
<b>EE</b>	Elion	Layer 1	0.7333	0.4733	<b>0.6200</b>
		Layer 2	1.0400	0.6600	<b>0.8800</b>
<b>EL<sup>15</sup></b>	OTE	Layer 1	0.2400	0.2100	<b>0.2190</b>
		Layer 2	0.4500	0.4100	<b>0.4310</b>
		Layer 3	0.5600	0.4800	<b>0.5370</b>
<b>ES<sup>16</sup></b>	TELEFÓNICA	Layer 1			<b>0.3500</b>
		Layer 2			<b>0.4500</b>
		Layer 3			<b>0.8400</b>
<b>FI</b>	Elisa Oyj	N/A	N/A	N/A	<b>2.4000</b>
<b>FR<sup>17</sup></b>	France Télécom	Layer 1	0.0510	0.0317	<b>0.0800</b>

<sup>13</sup> It exists a "clause of reciprocity": tariffs of other operators have to be same as the ones of incumbent

<sup>14</sup> CYTA uses layer 1 interconnection for local and regional coverage and layer 2 for national coverage. Alternative operators use layer 2 interconnection.

<sup>15</sup> In Greece there is a third time interval (the respective prices are: for 'Layer 1' 0.1600; for 'Layer 2' 0.3500; for 'Layer 3' 0.4500)"

<sup>16</sup> Time based and Capacity based interconnection have been taken into account for Spain.

<sup>17</sup> The 0.08 €cent/min average FTR is the price cap set by ARCEP: the incumbent is free to define its own tariff structure, providing its overall average revenue does not exceed this cap. In addition to the time-based components, France Telecom's tariff structure includes a capacity based component, which needs to be accounted for in the calculation of the average revenue per minute. This capacity-based component is priced at a unit price of 1000 euros per E1 per year (while the average E1 load is 2.85 million minutes per year).

<b>HR</b>	HT	Layer 1	0.4896	0.2448	<b>0.4028</b>
		Layer 2	0.7278	0.3639	<b>0.5988</b>
		Layer 3	1.4159	0.7080	<b>1.1649</b>
<b>HU</b>	Magyar Telekom	Layer 1	0.3954	0.2330	<b>0.3210</b>
		Layer 2	0.5296	0.3107	<b>0.4290</b>
		Layer 3	0.6743	0.3954	<b>0.5460</b>
<b>IE</b>	Eircom	Layer 1	0.4700	0.2600	<b>0.4000</b>
		Layer 2	0.6057	0.1405	<b>0.5100</b>
		Layer 3	0.7496	0.1487	<b>0.6300</b>
<b>IS</b>	Siminn	Layer 2	0.3857	0.3857	<b>0.3857</b>
<b>IT</b>	Telecom Italia S.p.A	Layer 1	0.2720	0.2720	<b>0.2720</b>
		Layer 2	0.3610	0.3610	<b>0.3610</b>
<b>LV</b>	Lattelecom	Layer 1	0.9700	0.9700	<b>0.9700</b>
<b>LT</b>	TEO LT, AB	Layer 1	0.7269	0.2462	<b>0.5474</b>
		Layer 2	1.3004	0.4026	<b>0.9500</b>
<b>LU</b>	EPT	Layer 1	0.7333	0.3733	<b>0.5533</b>
		Layer 2	0.9633	0.4833	<b>0.7233</b>
<b>FYROM</b>	Makedonski Telekom AD	Layer 1	0.5528	0.1951	<b>0.3740</b>
		Layer 2	0.7317	0.3252	<b>0.5285</b>
		Layer 3	0.8943	0.3740	<b>0.6341</b>
<b>MT</b>	GO plc	Layer 1			<b>0.3803</b>
<b>NL</b>	KPN	Layer 2	0.3700	0.3700	<b>0.3700</b>
<b>NO</b>	Telenor	Layer 1	0.4355	0.4355	<b>0.4355</b>
<b>PL</b>	TP SA	Layer 1	0.6639	0.4100	<b>0.4961</b>
<b>PT<sup>18</sup></b>	PTC	Layer 1			<b>0.3921</b>
		Layer 2			<b>0.5081</b>
		Layer 3			<b>0.6321</b>
<b>RO</b>	Romtelecom	Layer 1	N/A	N/A	<b>0.5800</b>
		Layer 2	N/A	N/A	<b>0.6700</b>
		Layer 3	N/A	N/A	<b>0.7300</b>
<b>RS</b>	Telekom Srbija	Layer 3	0.8200	0.8200	<b>0.8200</b>
<b>SE</b>	TeliaSonera	Layer 1	0.2493	0.2493	<b>0.2493</b>
		Layer 2	0.3166	0.3166	<b>0.3166</b>
<b>SI</b>	Telekom Slovenije	Layer 1	0.3900	0.3900	<b>0.3900</b>
		Layer 2	0.6800	0.6800	<b>0.6800</b>
		Layer 3	0.9500	0.9500	<b>0.9500</b>
<b>SK<sup>19</sup></b>	Slovak Telekom	Layer 1	0.5000	0,1500	<b>0.3316</b>
		Layer 2	0.7200	0,2200	<b>0.4794</b>
		Layer 3	1.5100	0,2900	<b>0.9229</b>
<b>UK<sup>20</sup></b>	BT	Layer 1			<b>0.2799</b>
			0.3592	0.1610	
<b>TR</b>	Türk Telekom	Layer 1	0.5973	0.5973	<b>0.5973</b>
		Layer 2	0.7348	0.7348	<b>0.7348</b>
		Layer 3	0.9625	0.9625	<b>0.9625</b>

<sup>18</sup> Time and Capacity based interconnection have been taken into account for Portugal.

<sup>19</sup> SK has peak; off-peak and for three operators also an intermediate price.

<sup>20</sup> UK has 3 time periods - Day, evening and weekend. Table above shows day and evening. Weekend tariff is lower than the evening tariff (0.10 pence per minute).

## 6. ANNEXES

### I. COUNTRY ABBREVIATIONS

<b>AT</b>	Austria
<b>BE</b>	Belgium
<b>BG</b>	Bulgaria
<b>CH</b>	Switzerland
<b>CY</b>	Cyprus
<b>CZ</b>	Czech Republic
<b>DK</b>	Denmark
<b>DE</b>	Germany
<b>EE</b>	Estonia
<b>EL</b>	Greece
<b>ES</b>	Spain
<b>FI</b>	Finland
<b>FR</b>	France
<b>HR</b>	Croatia
<b>HU</b>	Hungary
<b>IE</b>	Ireland
<b>IS</b>	Iceland
<b>IT</b>	Italy
<b>LT</b>	Lithuania
<b>LV</b>	Latvia
<b>LU</b>	Luxembourg
<b>FYROM</b>	Former Yugoslav Republic of Macedonia
<b>NL</b>	Netherlands
<b>NO</b>	Norway
<b>PL</b>	Poland
<b>PT</b>	Portugal
<b>RO</b>	Romania
<b>RS</b>	Serbia
<b>SE</b>	Sweden
<b>SI</b>	Slovenia
<b>SK</b>	Slovakia
<b>TR</b>	Turkey
<b>UK</b>	United Kingdom

### II. EXCHANGE RATES<sup>21</sup>

COUNTRY	1 EURO
<b>BG</b>	1.96
<b>CH</b>	1.21
<b>CZ</b>	25.17
<b>DK</b>	7.46
<b>HR</b>	7.56
<b>HU</b>	283.25
<b>IS</b>	163.32
<b>LT</b>	3.45
<b>LV</b>	0.70
<b>FYROM</b>	61.50
<b>NO</b>	7.35
<b>PL</b>	4.11
<b>RO</b>	4.53
<b>RS</b>	113.48
<b>SE</b>	8.62
<b>TR</b>	2.33
<b>UK</b>	0.81

<sup>21</sup> European Central Bank website:

<http://sdw.ecb.europa.eu/browseSelection.do?DATASET=0&FREQ=Q&CURRENCY=&node=2018794>