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DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INNOVATION  
COMMITTEE ON DIGITAL ECONOMY POLICY

## Working Party on Communication Infrastructures and Services Policy

### REVISED OECD TELECOMMUNICATION PRICE BASKETS

*The OECD periodically updates the telecommunication price baskets. This document contains the changes to the methodology agreed by WP-CISP at its meeting in November 2017. Please note that the CDEP agreed to the declassification of this document at its November 2017 meeting.*

*This document is available on the OECD Broadband portal ([www.oecd.org/sti/broadband/broadband-statistics](http://www.oecd.org/sti/broadband/broadband-statistics))*

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## THE METHODOLOGIES FOR THE OECD BASKETS (2017)

### Introduction

1. The OECD has developed a set of methodologies for comparing retail prices of telecommunication services for the purpose of assessing the price levels experienced by consumers in member countries.

2. The methodologies are based on a “basket” approach where a consumption pattern is described for different types of users, and the prices of corresponding services from each provider covered are used to calculate the resulting cost for each type of user. These baskets are referred to as the “OECD Telecommunication Price Baskets” or for brevity here the “OECD Baskets”.

3. The baskets are reviewed and revised periodically as consumption patterns change. Previous revisions of the baskets took place in 2000, 2002 (Mobile Voice), 2005, 2009, 2012 (Fixed Broadband), 2014 (Mobile Broadband) and, in 2017, in collaboration between the OECD and Teligen/Strategy Analytics Ltd.

4. The baskets are originally based on actual traffic data and consumption data, and comments received from OECD countries. The OECD Secretariat, together with Teligen, presented a set of proposed basket and methodology changes at WP-CISP meetings in November 2016, May 2017 and November 2017 based on feedback received from end users of the basket results, and incorporated comments received on these presentations from operators and regulators.

5. The following basket definitions were adopted at the November 2017 meeting of the WP-CISP:

- Fixed Voice
- Mobile Voice and Data
- Fixed Broadband
- Mobile Broadband Data only
- Leased Lines

These definitions will be called the “2017 OECD Baskets”.

## GENERAL BASKET RULES

6. The OECD baskets are defined separately for each service type. A number of general “rules” apply to all baskets:

- The number of operators covered in each country is defined by each service basket.
- Services shall reflect the offers in the main city of the country, unless otherwise specified.
- The range of published tariff packages presented on the operator website shall be covered, allowing the lowest cost offer to be calculated for each operator and basket.
- The tariff elements included shall allow calculation of basic end user cost as close to real costs as possible, based on the basket definitions for each service.
- Discounts shall be incorporated in the calculations of prices for each basket. Typical discounts to include are:
  - Promotional discounts on monthly rental and/or connection charges. Promotional offers shall be available for at least one month, and valid at the time of data collection.
  - Off-peak discounts on calls and messages.
  - Selective discounts to specific, selected phone numbers.
  - Usage allowances in the form of included traffic, or included usage value.
- Only tariffs presented as currently available to a new customer shall be considered.
- Combinations of basic tariff packages and add-on packages are allowed (e.g. for additional data on mobile voice tariffs).
- Devices (handset, modem, tablet etc.) shall not be included unless specified in the service basket rules.
- Only residential tariffs shall be included in published basket results, unless otherwise specified in the service basket rules. Business prices may however still be collected for the tariff database.
- Results shall reflect the prices applied to regular monthly payment for the service. Direct debit payment prices may be used. Discounts for long-term payments shall not be included.
- The value of call, message and data allowances included in the tariff package will be deducted from the usage element of the basket, up to the value of actual usage.

- Call costs are calculated using the duration of  $D + (\text{Unit}(\text{seconds}) - 1)/2$ , based on basket call duration  $D$  converted to seconds and average per second charges. Unit is the billing unit in seconds. See Annex for further information.
- For each service a range of baskets are defined. It is not the intention that all of these baskets shall be used for analysis of any particular market, as some of the basket may describe usage that is clearly not relevant for that market. Please use care in applying or reporting results that are based on baskets that are inappropriate for a particular market.

## FIXED VOICE BASKETS

### General basket rules, Fixed Voice

7. The Fixed Voice basket shall cover fixed telephony services based on landline or wireless connection.

Operators	Only an incumbent operator in each country is covered
Service specification	Service types to be included are: <ul style="list-style-type: none"> <li>• Fixed line telephony service</li> <li>• Fixed location Voice over IP (VoIP) service</li> <li>• Fixed location LTE service.</li> </ul>
Depreciation	Service lifetime is 5 years. Nonrecurring charges are distributed over 5 years, except where the installation is a tradable asset (Japan) where the charge is distributed over 20 years. Promotional discounts are distributed over 5 years.
Type of offer	Tariffs shall describe a new installation of a single line telephone service, for a new customer.
Number of baskets	There are 4 residential and 2 business baskets
Usage price information	Voice calls to: <ul style="list-style-type: none"> <li>• Local fixed lines</li> <li>• National fixed lines</li> <li>• Mobile networks, weighted by market share</li> </ul>
Allowances	Allowances are deducted in the following order: Selective discounts, minute allowance, value allowance.
Results presentation	Results are presented in USD / PPP per month, excluding VAT for business baskets and including VAT for residential baskets. Nominal exchange rates can be used.

**Table 1. Residential and business Fixed Voice baskets**

Type of basket	Basket
Residential	20 calls basket
Residential	60 calls basket
Residential	140 calls basket
Residential	420 calls basket
Business	100 calls business basket, single user
Business	260 calls business basket, single user

**Additional notes, Fixed Voice:**

- National call charges to fixed networks are based on a local / national split. While this is adequate for most prices, some operators may split their prices into local / regional / national. In such cases only the prices for local and national areas will be considered.
- The proportion of calls to the local calling area will be adjusted for local calling area radius as described in the Annex.
- When call charges to mobile networks differ by destination network, the weighted average per minute charge for calls to all national mobile networks shall be used, weighted by subscriber numbers.
- The Fixed Voice basket parameters have not changed in this (2017) revision.
- International calls are no longer included in the baskets. This is a change made in the 2017 revision.

**Fixed Voice basket parameters****Table 2. Overall basket volumes and destination distribution**

Calls per month	Total calls	Call distribution		
		Fixed to fixed Local	Fixed to fixed National	Fixed to mobile
20 calls basket	20	61%	20%	19%
60 calls basket	60	60%	15%	25%
140 calls basket	140	58%	15%	27%
420 calls basket	420	73%	17%	10%
100 calls business basket	100	48%	19%	33%
260 calls business basket	260	43%	23%	34%

**Table 3. Time of day distribution: Fixed to fixed**

	Fixed to Fixed		
	Day	Evening	Weekend
20 calls basket	53%	25%	22%
60 calls basket	60%	22%	18%
140 calls basket	52%	26%	22%
420 calls basket	52%	26%	22%
100 calls business basket	69%	17%	14%
260 calls business basket	75%	15%	10%

**Table 4. Time of day distribution: Fixed to mobile**

	Fixed to Mobile		
	Day	Evening	Weekend
20 calls basket	45%	28%	27%
60 calls basket	57%	22%	21%
140 calls basket	46%	27%	27%
420 calls basket	46%	27%	27%
100 calls business basket	69%	18%	13%
260 calls business basket	77%	14%	9%

*Fixed Voice call durations***Table 5. Fixed Voice call durations: Fixed to fixed local, minutes per call**

	Fixed to fixed local		
	Day	Evening	Weekend
20 calls basket	2.6	4.0	2.6
60 calls basket	2.6	3.8	2.9
140 calls basket	3.1	4.8	3.7
420 calls basket	3.6	5.4	5.4
100 calls business basket	1.9	2.3	2.1
260 calls business basket	2.0	2.8	3.1

**Table 6. Fixed Voice call durations: Fixed to fixed national, minutes per call**

	Fixed to fixed national		
	Day	Evening	Weekend
20 calls basket	4.0	6.3	5.4
60 calls basket	4.1	6.4	6.4
140 calls basket	4.7	7.6	7.1
420 calls basket	5.3	8.1	8.1
100 calls business basket	2.3	3.3	3.3
260 calls business basket	2.4	2.7	3.4

**Table 7. Fixed Voice call durations: Fixed to mobile, minutes per call**

	Fixed to mobile		
	Day	Evening	Weekend
20 calls basket	1.5	2.1	1.3
60 calls basket	1.9	2.4	1.9
140 calls basket	1.7	2.3	2.1
420 calls basket	1.8	2.3	2.3
100 calls business basket	1.6	1.9	1.5
260 calls business basket	1.7	2.2	1.9

## MOBILE VOICE AND DATA BASKETS

### *General basket rules, Mobile Voice and Data*

8. The Mobile Voice and Data basket shall cover mobile voice, message and data services based on 3G and 4G mobile networks.

Operators	<p>At least the two largest network operators are covered for each country, based on subscriber numbers. The operators covered should have at least 50% of the market share between them.</p> <p>Discount brands offered by the covered network operators can be included when clearly linked from the discount brand's website to the network operator's website and brand. The discount brand is covered under the parent company.</p>
Service specification	<p>Offers shall include 3G and 4G mobile phone services, covering Post-paid, Pre-paid and SIM only tariffs.</p> <p>Handsets are not included.</p>
Depreciation	<p>Service lifetime is 3 years. Nonrecurring charges and promotional discounts are distributed over 3 years.</p>
Type of offer	<p>Tariffs shall describe a new connection of a single mobile phone service, for a new customer.</p>
Number of baskets	<p>There are 12 baskets split into 3 groups:</p> <ul style="list-style-type: none"> <li>• No data use (2 baskets)</li> <li>• Low data and message use (5 baskets)</li> <li>• High data and message use (5 baskets)</li> </ul> <p>Each group includes different levels of voice calls, messages (SMS) and data use (GB). The fifth level in each group covers unlimited voice and SMS.</p>
Usage price information	<p>Voice calls to:</p> <ul style="list-style-type: none"> <li>• Local fixed lines</li> <li>• National fixed lines</li> <li>• On-net mobile network</li> <li>• Off-net mobile networks, weighted by market share</li> <li>• Voicemail retrieval</li> </ul> <p>SMS messages</p> <ul style="list-style-type: none"> <li>• On-net message</li> <li>• Off-net messages</li> </ul> <p>Mobile data used on handset</p>
Allowances	<p>Voice and message allowances are deducted in the following order: Selective discounts, most restricted minute allowance, least restricted minute allowance, message allowance, value allowance. Specific volume discounts will be deducted from the total cost at the end.</p>

	Add-on packages for SMS and data can be included.
Results presentation	Results are presented in USD / PPP per month, including VAT. Nominal exchange rates can be used.

**Table 8. Mobile Voice and Data baskets**

Basket	Voice calls	SMS	Data (GB)
30 calls, no data	30	10	0
100 calls, no data	100	20	0
30 calls, 0.1 GB	30	20	0.1
100 calls, 0.5 GB	100	40	0.5
300 calls, 1 GB	300	80	1
900 calls, 2 GB	900	160	2
Unlimited voice, 5 GB	Unlimited	Unlimited	5
30 calls, 0.5 GB	30	10	0.5
100 calls, 2 GB	100	20	2
300 calls, 5 GB	300	40	5
900 calls, 10 GB	900	80	10
Unlimited voice, 20 GB	Unlimited	Unlimited	20

Note: This is a new set of baskets in 2017, based on previous baskets]

### *Mobile Voice basket parameters*

**Table 9. Mobile: Overall destination and time distribution**

	Voice call distribution				Voice call day/week distribution		
	M2F	On-net	Off-net	Voicemail	Day	Evening	Weekend
30 calls basket	15%	55%	28%	2%	46%	27%	27%
100 calls basket	15%	55%	28%	2%	46%	27%	27%
300 calls basket	15%	55%	28%	2%	46%	27%	27%
900 calls basket	15%	55%	28%	2%	46%	27%	27%

**Table 10. Mobile voice call duration**

	Call duration (minutes / call)			
	M2F	On-net	Off-net	Voicemail
30 calls basket	2.0	1.6	1.7	0.9
100 calls basket	2.1	1.9	1.8	1.0
300 calls basket	2.0	2.0	1.8	1.0
900 calls basket	1.9	2.1	1.9	1.1

**Table 11. SMS distribution**

	Destination		Time of day	
	On-net	Off-net	Peak	Off-peak
30 calls basket	53%	47%	66%	34%
100 calls basket	53%	47%	66%	34%
300 calls basket	53%	47%	66%	34%
900 calls basket	53%	47%	66%	34%

***Additional notes, Mobile Voice:***

- **No distinction of 3G and 4G results**

Basket results will normally not distinguish between 3G and 4G offers.

- **Voice usage is defined in calls**

As several tariff elements are calculated based on the number of calls rather than minutes it is more relevant to commence the voice basket calculation with the number of calls, hence the definition of calls rather than minutes.

For reference, the four voice baskets cover the following number of minutes (total across all calls):

<b>Calls</b>	<b>Minutes</b>
30	50
100	188
300	577
900	1795

## FIXED BROADBAND BASKETS

### *General basket rules, Fixed Broadband*

9. The Fixed Broadband basket shall cover fixed location broadband services based on landline or wireless connection. Minimum speed of broadband is 256 kb/s.

Operators	<p>The top three providers in each country shall be covered, ranked by market share. The combined market share shall be at least 70%.</p> <p>The geographical coverage of the providers is not considered, and in countries with wide geographical spread (e.g. United States) providers in different main city areas may be included. The 70% rule does however apply to the country as a whole.</p> <p>Discount brands offered by the covered network operators can be included when clearly linked from the discount brand's website to the network operator's website and brand. The discount brand is covered under the parent company.</p>
Service specification	<p>Fixed broadband services for residential users, provided over:</p> <ul style="list-style-type: none"> <li>• ADSL</li> <li>• Cable and fibre networks</li> <li>• Wimax</li> <li>• Fixed location LTE</li> </ul>
Depreciation	<p>Service lifetime is 3 years. Nonrecurring charges and promotional discounts are distributed over 3 years.</p>
Type of offer	<p>Tariffs shall describe a new installation of fixed broadband service, for a new customer.</p>
Number of baskets	<p>There are 15 baskets, over 5 speed tiers, and 3 groups of usage:</p> <ul style="list-style-type: none"> <li>• Low data volume</li> <li>• Medium data volume *</li> <li>• High data volume</li> </ul> <p>The five speed tiers are defined by their minimum speed. Offers with a speed equal to or above the minimum may be considered for the basket results.</p> <p>* As most fixed broadband services offer unlimited data usage only the Medium usage volume will be included in published OECD results.</p>
Usage price information	<p>Overage data usage applied after any allowance is exhausted, per MB.</p>
Allowances	<p>Where an allowance or fair use limit is exceeded and the service is stopped or speed reduced until the end of the billing period, the package will not be included in the basket results.</p>
Other fees	<p>Where the provider, on their website, clearly identifies the existence of and need to pay an additional Access Fee to the network operator ("Incumbent Access Fee"), such fee shall also be included in the basket calculations.</p>

Results presentation	Results are presented in USD / PPP per month, including VAT. Nominal exchange rates can be used. Business offers shall not be included in OECD results.
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**Table 12. Fixed broadband baskets**

Minimum Download Speed (Mb/s)	Low alternative data volume (GB/month)	Medium data volume (GB/month)	High alternative data volume (GB/month)
0.256	5	15	45
10	10	30	90
25	20	60	180
100	40	120	360
1000	100	300	900

Note: This is a new set of baskets in 2017, based on previous baskets

***Additional notes, Fixed Broadband:***

*Minimum download speed*

10. The fixed broadband baskets are defined by “Minimum Download Speed”. This means that the basket results can include any offer with a download speed higher than the minimum. The “Data volume” applies to the basket regardless of offered speed.

11. Speeds are based on published speed.

*Upload speed*

12. While the baskets are defined by the download speed only, the information about the corresponding upload speed of each offer shall be included/presented in basket results.

## MOBILE BROADBAND DATA ONLY BASKETS

### *General basket rules, Mobile Broadband Data Only*

13. The Mobile Broadband Data Only basket shall cover mobile data-only broadband services based on 3G and 4G mobile networks

Operators	The top three mobile network providers in each country shall be covered, ranked by market share. The combined market share shall be at least 70%.  Discount brands offered by the covered network operators can be included when clearly linked from the discount brand's website to the network operator's website and brand. The discount brand is covered under the parent company.
Service specification	Offers shall include data only 3G and 4G mobile broadband services for residential users, covering Post-paid, Pre-paid and SIM Only tariffs. Devices are not included.
Depreciation	Service lifetime is 3 years. Nonrecurring charges and promotional discounts are distributed over 3 years.
Type of offer	Tariffs shall describe a new connection to mobile broadband service, for a new customer.
Number of baskets	There are 7 baskets, over 7 levels of usage.  Speed is not a parameter used in the mobile broadband baskets.  Device is not included as a factor in the mobile broadband baskets.
Usage price information	Overage data usage applied after any allowance is exhausted, per MB.
Allowances	Where an allowance or fair use limit is exceeded and the service is stopped or speed reduced until the end of the billing period, the package will not be included in the basket results.
Results presentation	Results are presented in USD / PPP per month, including VAT. Nominal exchange rates can be used.  Business offers shall not be included in OECD results.

**Table 12. Mobile broadband Data Only baskets**

	Usage volume (GB / month)
0.5 GB basket	0.5
1 GB basket	1
2 GB basket	2
5 GB basket	5
10 GB basket	10
20 GB basket	20
50 GB basket	50

Note: This is a new set of baskets in 2017, based on previous baskets

***Additional notes, Mobile Broadband Data Only:***

*Services based on “Days of use” or “Validity period”*

14. The mobile broadband baskets are based on usage distributed across all days in a month, i.e. a 30 day period.

15. Mobile broadband offers that are defined with a price for a shorter usage period, e.g. 1 day or 10 days, can be included by multiplying the price per period with the number of periods in a 30 day month. Multiplication factor  $P = 30 \text{ days} / (\text{Validity days})$ .

E.g. a 10 day offer will have  $P = 30 \text{ days} / 10 \text{ days} = 3$ .

*Short period baskets*

16. As an addition to the baskets above the following baskets can be used for analysis of the effect of short validity offers, i.e. offer with validity  $\leq 30$  days.

**Table 13. Short validity mobile broadband baskets**

	Usage volume (GB / month)	Days of use per month
0.5 GB basket	0.5	15
1 GB basket	1	15

Note: This is a new set of baskets in 2017, based on previous baskets

17. When using these baskets the monthly cost of offers with validity different from the defined number of days of use shall be adjusted by a pro-rata factor related to the number of days. E.g. a regular monthly offer will be multiplied by the factor  $P = 15 \text{ days} / 30 \text{ days} = 0.5$ , and a 10 day offer will have the multiplication factor of  $P = 15 \text{ days} / 10 \text{ days} = 1.5$ .

*Offers with “Validity period” > 30 days*

18. As tariffs with long term prepayment of services are excluded in general (see General basket rules), tariffs with validity longer than 30 days will not be included. However, such tariffs may be included with a validity truncated at 30 days, i.e. without pro-rata adjustment to the price.

## LEASED LINE BASKETS

### General basket rules

19. The Leased Line basket shall cover permanent leased line services based on end-to-end transparent connections.

Operators	Only an incumbent operator in each country is covered
Service specification	End-to-end transparent leased line service. Virtual end-to-end circuits can be included in cases where traditional leased circuits do not exist anymore. xDSL services, however, fall outside the scope of the basket.
Depreciation	Non-recurring charges (installation) are excluded from the basket. Only monthly rental charges are included.
Type of offer	Tariffs shall describe a new installation of an end-to-end leased line, for a new customer. At least one end shall be inside the major city of the country.
Number of baskets	There are 2 baskets, for 2 Mb/s and 34 Mb/s.
Usage price information	No usage is relevant. Volume discounts are not considered.
Results presentation	Results are presented in USD per month, excluding VAT.

**Table 14. Distribution weights by distance (km) for leased lines baskets**

	2 km	20 km	50 km	100 km	200 km	500 km
2 Mbit/s	50%	18%	6%	8%	10%	8%
34 Mbit/s	42%	18%	15%	9%	8%	8%

### *Additional notes, Leased Lines:*

20. Circuits above 2 km shall include two 2 km local tail circuits within the defined distance. This means that, for example, a 50 km circuit will have 2 local tail circuits of 2 km, and a main circuit of 46 km. Some operators include the local tail circuits in the total price and some do not.

21. Circuits are assumed to be within or out of the major city in the country. This means that the 2 km circuit is a local circuit within the major city, and the rest of the distances will have one end in the major city, and the other end outside.

22. Where the distance exceeds the possible distance for a country, the highest available price is used for that distance. This means that even when a circuit length would go beyond the borders of a country, this circuit is included in the basket, using the price of the longest possible circuit.

23. Leased line capacities vary slightly among countries. For example, a T1 line in the United States has a capacity of 1.5 Mbit/s while an E1 line in Europe has a capacity of 2 Mbit/s. In order to compare the two services, the price of the T1 line is adjusted upward proportionately to match bit rates. In this case, the price of

$$T1 (1.5 \text{ Mbit/s}) = P^{(T1)}$$

$$E1 (2.0 \text{ Mbit/s}) = P^{(E1)}$$

$$T1 (\text{adjusted to } 2.0 \text{ Mbit/s}) = P^{(T1 \text{ adjusted})} = P^{(T1)} * [2/1.5] = P^{(T1)} * 1.33$$

24. For 34 Mbit/s circuits there is a situation where sometimes a 45 Mbit/s is used as a proxy when the 34 Mbit/s service is not offered. In these cases the price of the 45 Mbit/s is adjusted down to reflect the implied per-Mbit/s price of 34 Mbit/s. As an example:

$$T3 (45 \text{ Mbit/s}) = P^{(T3)}$$

$$E3 (34 \text{ Mbit/s}) = P^{(E3)}$$

$$T3 (\text{adjusted to } 34 \text{ Mbit/s}) = P^{(T3 \text{ adjusted})} = P^{(T3)} * [34/45] = P^{(T3)} * 0.756$$

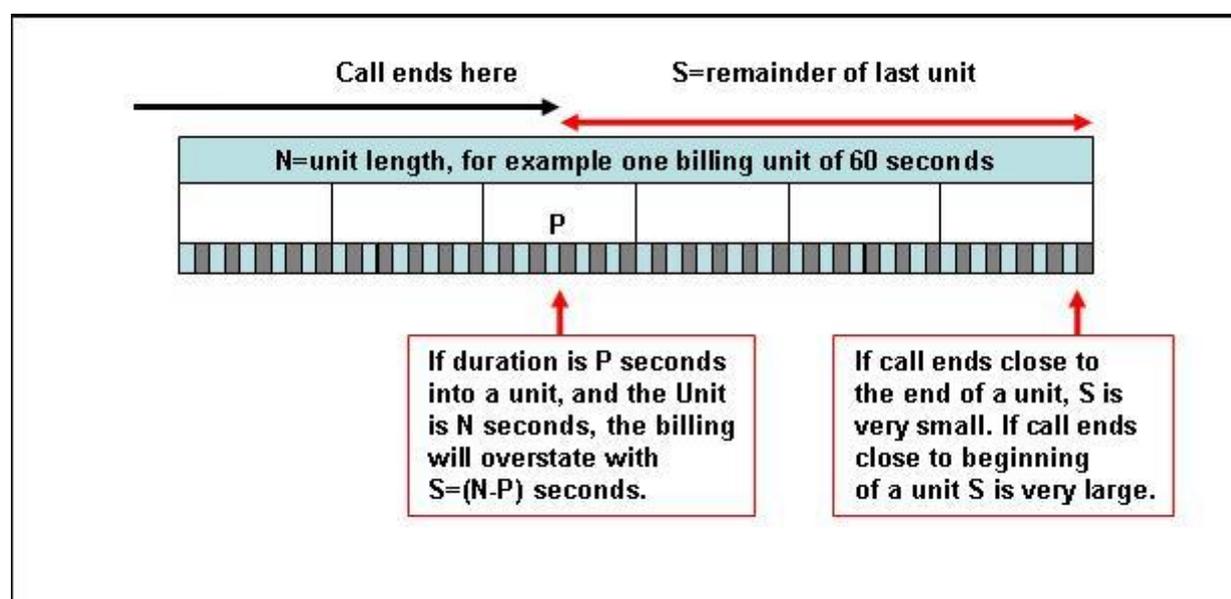
25. The Leased Line baskets are kept for this 2017 revision of the OECD baskets, but due to the uncertainty of the data availability and quality going forward it was agreed to review their existence at the end of 2018, and potentially remove them then.

## TO OECD BASKET DEFINITIONS

### Voice call calculations

26. This method was agreed and implemented at the 2009 revision of the OECD baskets.
27. The system used for capturing differences in billing systems essentially calculates the price of a call based on a duration which is the sum of the actual number of seconds stipulated by the basket and an additional adjustment reflecting the average “overbilling” of calls corresponding to the billing system. Figure A1 below shows how the amount of overbilling varies for each call.

**Figure 1. Methodology for calculating call costs on different time-based billing systems**



28. A call can have any duration, defined as  $A$  (seconds), and it ends  $P$  seconds into the last unit. When the billing unit duration is  $N$  (seconds) the actual billing will overstate the average duration with

$$S=0, 1, 2, 3, \dots, N-1 \text{ seconds,}$$

depending on the value of  $A$ . If we assume that there is an even likelihood of any of these durations (which is a simplification), the average overstated duration will be  $S=(N-1)/2$ . By adding this to the average duration before calculating the cost of the call, the effect of both the billing unit and the call distribution will be taken into account. The call calculation will then always be calculated as if the billing is based on average per minute charge, calculated to the fractions of a second before an adjustment for the billing systems is made.

Per minute billing	=	29.5 second adjustment
Per 20 second billing	=	9.5 second adjustment
Per second billing	=	0 second adjustment

29. Given an example with a 75 second call, the “adjusted” call duration will be calculated as follows under different billing systems:

**Table 15. Calculating call durations for a 75 second call based on the average overbilling for different billing units**

60 second billing:	$75 + (60-1)/2 = 75 + 29.5 = 104.5$ seconds
20 second billing:	$75 + (20-1)/2 = 75 + 9.5 = 84.5$ seconds
Per second billing:	$75 + (1-1)/2 = 75 + 0 = 75$ seconds

30. With this “adjusted” call duration the cost per call is calculated on the basis of the charge per second in all cases.

31. If the “adjusted” call duration is shorter than the billing unit the full price of one billing unit will be considered as the cost of the call. Any call set up charge will be added to the cost per call.

### *Selective discounts*

32. This method was agreed and implemented at the 2009 revision of the OECD baskets.

33. Selective discount plans allow users to typically specify 1, 2, 3 or up to 10 or more numbers (depending on the plan) to which calls and/or messages will be free or discounted. The basket definitions generically refer to these plans as “selective discounts” although they are also known under brand names like “Friends and Family”, “Bestmates”, “Preferred numbers”, “Calling circle” etc.

34. In order to calculate the effect of such discounts it is necessary to know the amount of traffic (e.g. minutes) that will attract the discount. Such information is generally not available, and an alternative, theoretical approach has been agreed. This method has been tested by operators and found adequate to represent the effect of the typical discounts.

35. It is also worth noting that there will normally be an overall traffic increase with the introduction of selected discounts. Most of this increase will go to the nominated numbers, and will only have a limited effect on the end user cost as such calls are free or heavily discounted. In the basket calculations this increase is not considered.

36. The handling of the selective discount is based on the following elements and assumptions:

The total number of minutes for all calls in the basket is V

The discount applies to N nominated numbers

The discount D (%) applies to each of these calls

(D=100% is a free call)

The proportion of minutes A (%) receiving the discount is calculated based on the formula below, using V and N as input data. The proportion A is adjusted according to the discount D

$(A_2 = A \times D)$

Mapping information will indicate which call types are affected by the discount.

The remaining proportion  $A_2$  is used to calculate the number of minutes to be deducted from the basket minutes according to the call type mapping.

Cost of remaining minutes is calculated as usual.

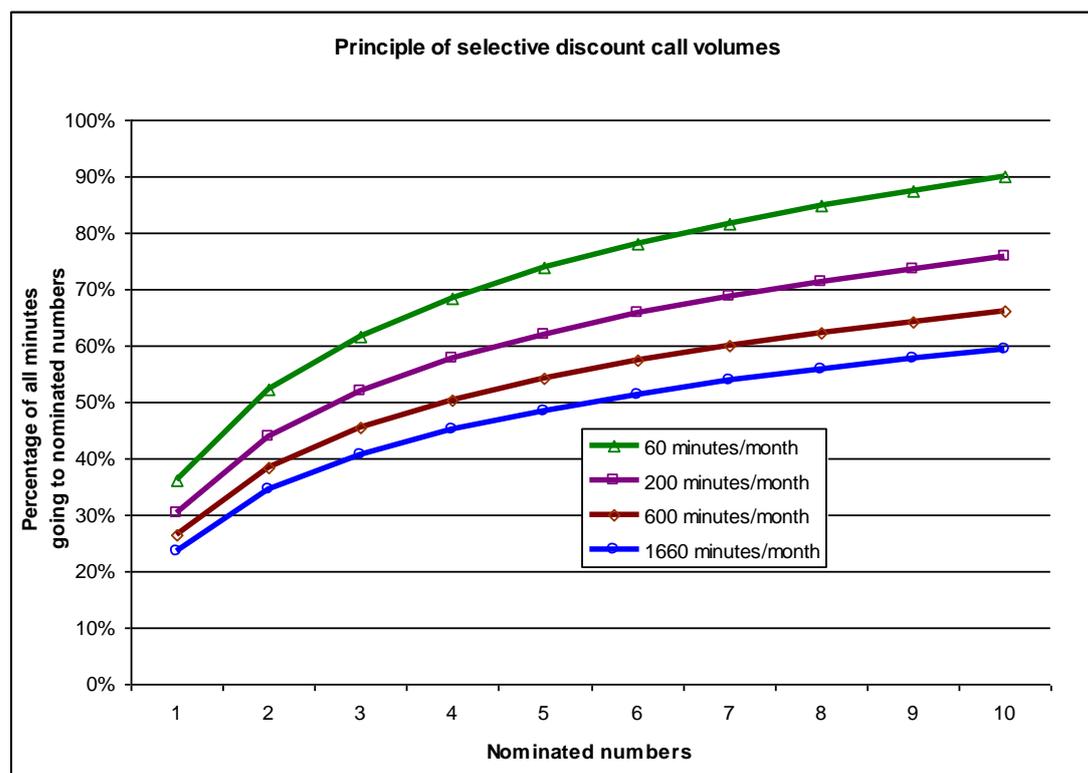
Where discounted SMS is offered as part of the discount they will be deducted using the same value  $A$  from the formula below, and the relevant discount applicable to the SMS.

37. The critical element is the calculation of  $A$ . This proportion is based on  $N$  (number of nominated numbers) and  $V$  (total minutes in basket), and an empirically developed function can be used to calculate the proportions as shown on the graph below. The function is:

$$A_{(\%)} = \text{Log}(10 \times N^{1.5}) / \text{Log}(10 \times V)$$

38. This function provides a proportion that resembles the amount of calls going to nominated numbers in the data received from operators.

**Figure 2. Selective call discount volumes**



39. The selective discount will be taken before any minute, message and value allowances included in the package. The amount of minutes that will be deducted because of the selective discount is calculated as:

$$V_{(2)} = V_{(1)} \times (\text{Log}(10 \times N^{1.5}) / \text{Log}(10 \times V)) \times D$$

where  $V_{(1)}$  is the total number of minutes defined by the basket, and  $V_{(2)}$  is the number of minutes going to the nominated numbers

$V_{(2)}$  is then distributed to the specific call types according to the selective discount mapping. Each call type will have between zero and  $V_{(2)}$  minutes to be deducted. The remaining minutes for each call type is used for the following distribution of allowances and calculation of call costs.

### *Local calling areas for the PSTN baskets*

40. This method was agreed and implemented at the 2009 revision of the OECD baskets.
41. Previous versions of the baskets provided 14 discrete distances for national fixed line calls. This enabled both a distance distribution and a method for incorporating the size of local calling areas. The baskets now use only local and national areas to describe the national destinations for fixed line calls, due to considerable simplifications in the pricing of such calls in recent years.
42. In order to allow for differences in the size of local calling areas the following adjustment of the local and national call proportions will be used, based on the closest size of local calling area:

**Table 16. Local and national call proportions**

Average local call radius	Local adjustment	National adjustment
10 km	-8.9%	+8.9%
15 km	-4.2%	+4.2%
20 km	-1.4%	+1.4%
25 km	0.0%	0.0%
30 km	3.2%	-3.2%
50 km	6.4%	-6.4%
100 km	9.6%	-9.6%

43. In addition the percentages above must be adjusted with the proportion of fixed line calls in each basket, as given in Table A3 below.

**Table 17. Basket adjustment**

	Basket adjustment
20 calls basket	81%
60 calls basket	75%
140 calls basket	73%
420 calls basket	90%
100 calls business basket	67%
260 calls business basket	66%

*An example:* The 60 calls basket will have the following adjustment factors:

**Table 18. Example – 60 call basket**

Average Local call area radius	Local adjustment	National adjustment
10 km	-6.7%	6.7%

15 km	-3.2%	3.2%
20 km	-1.1%	1.1%
25 km	0.0%	0.0%
30 km	2.4%	-2.4%
50 km	4.8%	-4.8%
100 km	7.2%	-7.2%

44. If the operator, for example, uses an average local calling radius of 15 km, the fixed-to-fixed local proportion will be  $60\% - 3.2\% = 56.8\%$ , and the fixed-to-fixed national portion will be  $15\% + 3.2\% = 18.2\%$ .