



Review of mobile donor conveyance charges

Non-Confidential

Statement and Direction

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Section 1

Executive Summary

- 1.1 Number portability enables subscribers, if they wish, to retain their telephone number when they switch between communications providers. The telephone number is “ported” from one communications provider to another. When the subscriber subsequently receives an incoming call, it is first routed to the network that originally held the number being called. The call is then identified as a call to a ported number and “onward routed” to the network to which the number has been ported.
- 1.2 The donor conveyance charge (“DCC”) is a wholesale charge that is levied between mobile communications providers (“MCPs”) for the onward routing of a call to a ported mobile number. General Condition 18¹ sets out the principles that communications providers must comply with in setting porting charges (including when setting a DCC).
- 1.3 On 14 October 2013, we commenced a review into whether we should set a maximum DCC on an *ex ante*, mobile industry-wide basis and if so at what level. We have undertaken this review as an alternative means of resolving disputes brought by Hutchinson 3G UK Limited (“H3G”) against each of EE Limited (“EE”) and Telefónica UK Limited (“Telefónica”) about the level of the DCC charged between them. In this case, we considered it would be preferable for us to assess the appropriate level of DCCs on a mobile industry-wide basis, rather than in determinations of two bilateral disputes which would only formally bind the parties to those disputes.
- 1.4 On 6 December 2013, we published a consultation document outlining our proposal to set a maximum DCC across the mobile industry until 31 March 2016. We asked for any responses by 14 January 2014. We received responses from British Telecommunications plc (“BT”), EE, H3G, Telefónica and Vodafone Limited (“Vodafone”). We have taken account of these responses in reaching our final decision.
- 1.5 It has been six years since Ofcom last determined a rate for the DCC in 2007. We believe that it is likely that the costs of donor conveyance have fallen over this time as technology has improved, network equipment has become cheaper and call volumes have grown. However, we are aware that a number of MCPs are still applying DCCs in accordance with the rate set by Ofcom in 2007 and bilateral negotiations to re-set DCCs have proven unsuccessful in some instances. Therefore, we consider it unlikely that DCCs would remain at a suitable rate across the mobile industry going forward, without Ofcom’s involvement. We also have a duty under Article 30(2) of the Universal Service Directive to ensure that charges between operators relating to the provision of number portability are cost-oriented. In light of these considerations, we remain of the view that it is appropriate and consistent with our duties for us to set a maximum DCC across the mobile industry on a forward-looking basis.
- 1.6 In determining the DCC, we have estimated total service long run incremental costs plus a mark-up for network and non-network common costs. We have used the same

¹ Ofcom, *Consolidated version of General Conditions as at 26 December 2013 (including annotations)*,

http://stakeholders.ofcom.org.uk/binaries/telecoms/ga/GENERAL_CONDITIONS_AS_AT_26_DECEMBER_2013.pdf.

model that we used to set the DCC in 2007, but have updated this in line with the latest version of Ofcom’s 2011 mobile call termination (“MCT”) model and our most up-to-date understanding of the costs of donor conveyance. We have continued to apply the 50:50 split of costs established in 1999 and followed in 2007 and we have also adjusted the results, using a factor of 67%, to account for the DCC being charged for on-net originated calls to ported numbers.

- 1.7 We have determined maximum DCCs for the present year and following two years, as set out in Table 1.1 below:

Table 1.1: DCCs to be applied to all donor conveyance calls (nominal ppm²)

	2013/14	2014/15	2015/16
DCC (50% of cost, with on-net adjustment)	0.028	0.028	0.027

Source: 2014 DCC Model.³

- 1.8 We have decided to set these maximum DCCs by way of a direction issued under General Condition 18. The direction is set out in Annex 2 to this document.
- 1.9 As discussed in the consultation, we have also commenced a separate policy project, which has a broader scope than this review and will consider how General Condition 18 should be applied in setting porting charges. Depending on the outcome of that policy project, it may be necessary for us to revisit the conclusions we have reached in this review.

² Pence per minute.

³ The results presented in our December 2013 DCC Review consultation document were produced by a model which we referred to as the 2013 DCC model (see paragraphs 4.40 to 4.60 of the DCC Review consultation document). The results in Table 1.1 have been produced by a revised version of the 2013 DCC model (referred to as the “2014 DCC model”) which is published alongside this statement.

Section 2

Introduction & Background

- 2.1 Mobile number portability (“MNP”) is a facility that enables mobile subscribers, who so request, to retain their mobile numbers when they change from one MCP to another. MCPs have been required to provide MNP since 1 January 1999.⁴

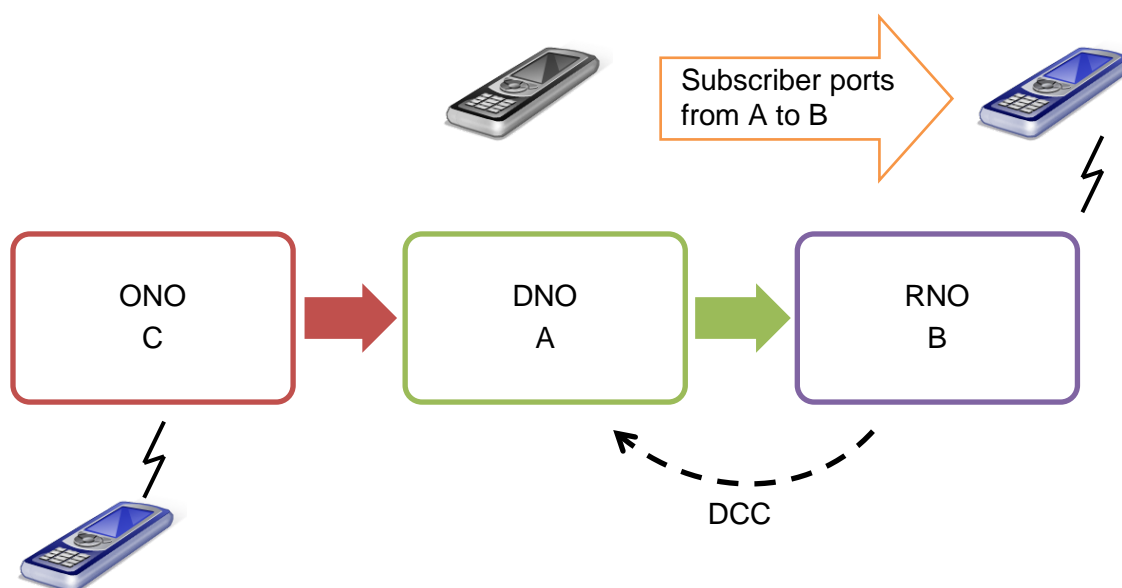
Onward routing

- 2.2 The current technical solution for routing calls to ported mobile telephone numbers is commonly referred to as the onward routing technical solution. In essence⁵, under the onward routing technical solution, an originating network operator (“ONO”) is not required to distinguish between calls to ported and non-porting mobile numbers. When a subscriber makes a voice call (from either a fixed or mobile network) to a ported mobile telephone number, the ONO analyses the dialled digits to identify the number range holder and the call is first routed to the network that originally held the number being called, the donor network operator (“DNO”).
- 2.3 The DNO must then identify whether the number that is called has been ported and, if so, onward route the call to the appropriate recipient network operator (“RNO”) for termination or further treatment.
- 2.4 Onward routing for mobile voice calls is illustrated in Figure 2.1 below. The steps involved in this process are illustrated in further detail in Annex 1.

⁴ See http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/numbering/mobport.htm and http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/numbering/noport.htm.

⁵ This simple overview of how onward routing works assumes that the ONO, DNO and RNO are different network operators. Further examples are illustrated in Annex 1.

Figure 2.1: Onward routing for calls to ported mobile numbers



Source: Ofcom.

Donor conveyance charge (DCC)

- 2.5 The onward routing of a ported mobile call by the DNO to the RNO is known as “donor conveyance”. The charge payable by the RNO to the DNO for this onward routing is called the DCC. It relates to the costs incurred by the DNO in conveying a mobile call to a number built on the DNO’s network but which has been exported to an RNO.
- 2.6 Calls to ported mobile numbers that originate with a RNO can be connected without routing via the DNO where the RNO has installed a “call trap” facility. This facility allows the RNO to “trap” calls that it originates to numbers that have been ported into its network. A call trap facility removes the requirement for a call to be routed (sometimes described as “tromboned”) to the DNO and then back to the RNO in circumstances where the call originates on the RNO’s network. Calls that are effectively trapped do not attract a DCC. We also understand that MCPs have in practice applied a DCC to calls where the ONO is also the DNO (“on-net originated calls”). Illustrations of tromboned and on-net originated calls to ported numbers are provided in Annex 1.

Regulatory and factual background

The 1999 Determinations

- 2.7 In December 1998, Ofcom received requests from One2One and Orange to resolve disputes between each of them and Vodafone and BTCellnet, respectively, regarding the DCC payable between them. In November 1999, Ofcom made a determination in the case of each separate request (“the 1999 Determination”).⁶ The determination took into account the four operators’ submissions on their views of the most appropriate method of calculating the DCC. Ofcom also took account of the six

⁶ See http://www.ofcom.org.uk/static/archive/oftel/ind_info/numbering/mnpdetre.pdf.

principles of cost recovery adopted by the Monopolies and Mergers Commission (“MMC”) in its 1995 report on number portability in the fixed network.⁷

- 2.8 Oftel based its estimate of the costs of donor conveyance on information provided by Vodafone, which at that time was deemed to be a “reasonably efficient operator” and because Oftel had “*the most detailed and reliable cost data in relation to Vodafone’s network*”. It estimated the cost of donor conveyance to be 1.6 pence per minute (ppm).
- 2.9 Oftel decided that donor conveyance costs should be split equally between the DNO and RNO. In doing so it noted that there was an imbalance between the mobile networks, with some being net donors and others net recipients of ported numbers. This meant that the principle of effective competition could be compromised if the DCC were payable entirely by either the DNO or the RNO. Oftel also noted that the approach of dividing the costs between DNO and RNO was desirable in that it retained an incentive for DNOs to ensure that conveyance costs were minimised. This resulted in a DCC of 0.8ppm payable by the RNO to the DNO.
- 2.10 The 1999 Determination was expressly applied for a period of 1 January 1999 until 31 March 2000.

Introduction of GC18

- 2.11 The Communications Act 2003 (“the Act”) and the general conditions of entitlement (the “General Conditions”) entered into force in July 2003. General Condition 18 (“GC18”) obliges a communications provider (“CP”) to provide number portability⁸ to its subscribers, and to provide portability⁹ to other CPs for that purpose.
- 2.12 Paragraph 5 of GC18 (“GC18.5”) obliges CPs to comply with certain principles when levying a charge for the provision of portability. As a charge payable by the RNO to the DNO for the routing of a ported call, the DCC amounts to a charge for the provision of portability within the meaning of GC18.5.

The 2007 Determinations

- 2.13 On 3 April 2007, H3G submitted disputes to Ofcom about the DCCs charged to it by each of T-Mobile (UK) Ltd (“T-Mobile”), Telefónica (then trading as O2) and Orange Personal Communications Services Ltd (“Orange”). As part of its assessment of the disputes, Ofcom engaged Analysys Mason to provide an estimate of the costs of donor conveyance that would be incurred by an average efficient operator. Analysys

⁷ In 1995, Oftel was unable to agree a licence modification related to number portability with BT and therefore referred the matter to the MMC. The MMC issued its report in November 1995 entitled ‘Telephone Number Portability’: see

http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/numbering/mmc95.htm for an explanatory statement by Oftel. The full text of the MMC report is available from HMSO.

⁸ Number portability is defined in GC18 as a facility whereby subscribers who so request can retain their telephone number on a public communications network, independently of the person providing the service at the network termination point of the subscriber provided that such retention of a telephone number is in accordance with the National Telephone Numbering Plan.

⁹ Portability is defined in GC18 as any facility which may be provided by a CP to another CP enabling any subscriber who requests number portability to continue to be provided with any public electronic communications service by reference to the same telephone number irrespective of the identity of the person providing such a service.

Mason estimated the costs using data from the cost model constructed for the 2007 mobile call termination (“MCT”) market review.¹⁰

- 2.14 Analysys Mason estimated that an average efficient operator would incur donor conveyance costs of 0.2ppm in 2007. On 17 August 2007, Ofcom determined the disputes by directing that the DCC payable between the parties should be 0.1ppm (“the 2007 Determinations”). This was based on the donor conveyance cost estimate of 0.2ppm being split equally between the DNO and RNO to derive the DCC.¹¹

Industry wide DCC

- 2.15 On 8 February 2008, Ofcom wrote to all mobile network operators (“MNOs”), which at this time was H3G, T-Mobile, Vodafone, Orange and Telefónica (O2), noting that, in making the 2007 Determinations, it had assessed the costs of donor conveyance that would be incurred by an average efficient operator and, consequently, the results were applicable on an industry-wide basis.¹² Ofcom therefore expected all MNOs to ensure that their DCCs were cost-oriented, in accordance with GC18, which required them to be set at 0.2ppm, to be split equally between DNO and RNO.
- 2.16 On 7 March 2008, in light of responses to the 8 February letter, Ofcom wrote to all MNOs advising that compliance with GC18.5 required them to be charging a DCC of 0.1ppm as from 8 February 2008. The letter requested the MNOs to confirm, by 12 March 2008, that their DCC was set at 0.1ppm. All of the MNOs provided this confirmation to Ofcom.

H3G’s 2013 dispute submission and alternative means

- 2.17 On 20 September 2013, we received a request from H3G to resolve disputes under section 185 of the Act between H3G and each of EE and Telefónica. H3G subsequently revised the scope of its dispute submission on 9 and 11 October 2013.
- 2.18 The dispute submission (as revised) advised us that the current DCCs were set at [3<] and requested that we determine a new DCC payable going forward under each agreement.
- 2.19 After consideration of the parties’ submissions we agreed with H3G’s assertion that the parties were in dispute. However, we considered it would be preferable for us to assess the appropriate level of DCCs on a mobile industry-wide basis. In particular, we have a duty under Article 30(2) of the Universal Service Directive (“USD”)¹³ to ensure that pricing between operators related to the provision of number portability is

¹⁰ Donor conveyance and MCT are wholesale services which involve the use of a number of common mobile network assets.

¹¹ *Determinations to resolve disputes between Hutchison 3G and each of O2, Orange and T-Mobile concerning donor conveyance charges*, 17 August 2007, see:

http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_952/deter.pdf.

¹² T-Mobile had appealed the 2007 Determinations to the Competition Appeal Tribunal in October 2007. However, T-Mobile did not challenge Ofcom’s assessment of the costs of donor conveyance (0.2ppm), nor Ofcom’s decision that this cost estimate should be split equally between the DNO and RNO to produce a cost oriented DCC of 0.1ppm. In light of the fact that Ofcom decided to consider enforcement of GC18.5 on an industry wide basis, T-Mobile subsequently applied, and was granted permission by the CAT, to withdraw its appeal and the dispute determinations were therefore not overturned. *T-Mobile (UK) Limited v Office of Communications (Donor Conveyance Charge)* (Case 1093/3/3/07), see: <http://www.catribunal.org.uk/237-655/1093-3-3-07-T-Mobile-UK-Limited.html>.

¹³ Directive 2002/22/EC as amended by Directive 2009/136/EC.

cost oriented. We therefore considered, in this particular case, that the outcome of our assessment (if we were to determine a new rate) should be applied across the mobile industry with effect from a common date, rather than being set in determinations of two bilateral disputes which only formally bind the parties to those disputes. We considered that a review of DCCs on a mobile industry-wide basis would constitute appropriate alternative means for resolving the disputes, consistent with the requirements of section 186(3) of the Act.

2.20 Therefore, on 14 October 2013, we decided not to handle the disputes, as we considered them suitable for resolution via alternative means, and we commenced this review.

Scope of the review

2.21 The scope of the review is therefore to determine whether:¹⁴

2.21.1 it would be appropriate for us to set a maximum DCC on an *ex ante*, mobile industry-wide basis; and

2.21.2 if so, at what level.

2.22 As we used this review as alternative means to resolve the disputes between H3G and each of Telefónica and EE, we sought to complete it in the same four month time frame as would have applied to the dispute process.¹⁵

Information requests and consultation

2.23 In the course of this review we requested information on donor conveyance traffic volumes, incurred costs and technical network information from each of EE, H3G, Telefónica and Vodafone, using our information gathering powers under section 135 of the Act (“s135 information requests”). We received responses from all parties, although for some questions limited information was provided.

2.24 On 6 December 2013, we published a consultation document outlining our provisional conclusions. We asked for any responses by 14 January 2014. We received responses from BT, EE, H3G, Telefónica, and Vodafone. Non-confidential responses are available on our website.¹⁶

Structure of the document

2.25 The remainder of this consultation document is structured as follows:

- in Section 3 we address whether we should set a maximum DCC;
- in Section 4 we address the appropriate level of the DCC;

¹⁴ The scope is published in the Competition Bulletin at:

http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/open-cases/all-open-cases/cw_01113/.

¹⁵ We may only use alternative means to resolve a dispute if we consider that a prompt and satisfactory resolution of the dispute by those alternative means is likely (section 186(3)(c) of the Act). Any party to the dispute may refer it back to Ofcom if the alternative means should fail to resolve the dispute within a four month period (section 186(6) of the Act).

¹⁶ <http://stakeholders.ofcom.org.uk/consultations/review-mobile-donor-conveyance-charges/?showResponses=true>

- in Section 5 we set out our final conclusions;
- Annex 1 illustrates how calls to ported mobile numbers are routed;
- Annex 2 contains a notification of the Direction that we are setting in relation to DCCs.

2.26 Issues raised in response to the consultation and our views on those issues are addressed at the relevant points within sections 3 to 5.

Section 3

Should Ofcom set a maximum DCC?

Legal framework

- 3.1 In our consultation document, we set out the legal framework applicable to DCCs.¹⁷
- 3.2 Specifically, and as noted above, Article 30(2) USD imposes a duty on Ofcom to ensure that pricing between operators and/or service providers related to the provision of number portability is cost-oriented.
- 3.3 GC18.5 implements Article 30(2) USD. It provides that any charges for the provision of portability shall be reasonable and cost oriented, and that charges must be based on the incremental costs of providing portability unless, either, the DNO and RNO have agreed another basis for the charges or Ofcom has directed that another basis for charges should be used.
- 3.4 In 2006, the European Court of Justice (“ECJ”) held that, subject to the requirement for cost orientation, Article 30(2) USD confers a discretion on national regulatory authorities (“NRAs”) to define the methodology which appears to them to be the most suitable to make portability fully effective, in a manner which ensures that consumers are not dissuaded from making use of that facility. In principle, therefore, NRAs may adopt a national measure that lays down the specific method to be used in calculating costs under Article 30(2) USD and which fixes maximum *ex ante* prices in respect of all MCPs on the basis of an abstract model of costs.¹⁸

Proposal to set a maximum DCC

Summary of our proposal in the consultation

- 3.5 In our consultation document, we proposed to set a maximum DCC across the mobile industry on a forward-looking basis. We considered that this would be appropriate for the following reasons:¹⁹
- 3.5.1 It is around six years since the DCC was last set by Ofcom. We expected the costs of donor conveyance to have fallen over time as technology improves and becomes cheaper and fixed and common costs are spread across growing call volumes. Although we therefore expected a cost-oriented DCC to also be falling over time, we noted that a number of MCPs were still applying DCCs in accordance with the rate set in 2007.
- 3.5.2 Bilateral negotiations to revise the DCC had failed between some parties and disputes had been referred to us, such that we considered it unlikely that DCCs would remain at a suitable rate across the mobile industry going forward, without Ofcom’s involvement.

¹⁷ DCC Review consultation document, paragraphs 3.1 to 3.3.

¹⁸ Case C438/04 *Mobistar v IBPT* (“the Mobistar case”), paragraphs 32 to 37. Although the case specifically concerned set-up costs incurred by mobile operators in implementing requests for number portability, we consider that the ECJ’s comments apply equally to any costs recovered through wholesale charges for portability.

¹⁹ DCC Review consultation document, paragraphs 3.4 to 3.7.

- 3.5.3 We have a duty under Article 30(2) USD to ensure that pricing related to the provision of number portability is cost-oriented.
- 3.6 We asked stakeholders whether they agreed it would be appropriate for Ofcom to set a maximum DCC across the mobile industry on a forward-looking basis and, if not, to explain why they disagreed.

Consultation responses on the proposal to set a maximum DCC

- 3.7 BT, EE, H3G and Telefónica agreed that Ofcom should determine a maximum DCC across the mobile industry on a forward looking basis.²⁰
- 3.8 Vodafone stated that it had no objection in principle to our proposed approach [3<]. It noted our view that it was unlikely that DCCs would remain at a suitable rate across industry without our involvement [3<]. Vodafone agreed that any new maximum DCC should be set on a forward-looking basis.²¹
- 3.9 Although EE agreed in principle with our proposed approach, it considered that we should not have prioritised this review over our broader policy review on porting charges (see paragraph 1.9) or our consideration of possible enforcement action in relation to DCCs charged by the MNOs between 2003 and 2008. EE recommended that our final statement in relation to this review should be without prejudice to our consideration of the DCC during this historic period and subject to the findings of our broader policy review.²²

Ofcom's response and final decision

- 3.10 We welcome the fact that stakeholders were supportive of our proposed approach. [3<] and we remain of the view that regulatory intervention is warranted in order to ensure that DCCs are cost oriented.
- 3.11 With respect to EE's comments about prioritisation, we explained in the consultation document that this review was prompted by the reference of two disputes to us in relation to DCCs. We were obliged to accept those disputes for resolution, unless we considered there to be alternative means for resolving them in a prompt and satisfactory manner. We explained that we had commenced this review as alternative means for resolving those disputes and that, having regard to the statutory provisions regarding alternative means, we intended to complete the review within the same four month timeframe as would have applied to a dispute process.²³ The timing of this review was therefore not a matter for our discretion.
- 3.12 With respect to EE's other comments, we made clear in the consultation document that the outcome of the broader policy review into porting charges may require us to revisit the conclusions we reach in this review (and therefore, to modify or withdraw the direction we have now decided to set in this review).²⁴ We note EE's position that its response to this consultation is without prejudice to its position on the appropriate DCC during the period from 2003 to 2008.

²⁰ BT's response, page 1, EE's response, pages 5 and 14, H3G's response, page 2 and Telefónica's response, question 1.

²¹ Vodafone's response, pages 2 and 4.

²² EE's response, pages 5 and 14.

²³ DCC Review consultation document, paragraphs 2.17 to 2.22 and section 186 of the Act.

²⁴ DCC Review consultation document, paragraph 4.87.

- 3.13 Having considered these comments from stakeholders, we remain of the view that it is appropriate and consistent with our duties for us to set a maximum DCC across the mobile industry on a forward-looking basis.

Regulatory instrument

Summary of our proposal in the consultation

- 3.14 In the consultation document, we proposed to issue a direction under GC18.5(a)(ii) setting the basis on which DCCs should be calculated and the resultant maximum DCC that may be charged. We explained that we considered this to be within the scope of GC18.5(a)(ii), when that provision is construed in accordance with EU law.²⁵
- 3.15 We also considered that a direction under GC18.5 was an appropriate measure to use in these particular circumstances as it would ensure that our proposals were subject to the statutory safeguards set out in sections 49 to 49C of the Act.²⁶

Consultation responses on the regulatory instrument

- 3.16 We did not pose a specific question on this in the consultation document. However, Vodafone noted that there are inconsistencies of approach between fixed and mobile portability, which they do not believe are objectively justified. [X]²⁷

Ofcom's response and final decision

- 3.17 We have decided to proceed with our proposal to issue a direction under GC18.5(a)(ii) setting the basis on which DCCs should be calculated and the resultant maximum DCC that may be charged.
- 3.18 We note Vodafone's comments in relation to consistency between the treatment of DCCs and APCCs. This review is being undertaken as alternative means for resolving disputes regarding the DCC and consideration of APCCs is necessarily outside of its scope. We have not yet consulted on our proposals for APCCs (which will form part of our broader policy project in relation to porting charges). We have informed stakeholders that our intention is to provide guidance, but that we will consider other approaches if it becomes evident that guidance will not meet our aim of providing greater regulatory certainty on how to set porting charges. We will also consider DCCs as part of that broader policy project (and, as noted in the consultation document, the direction set at the conclusion of this review may therefore be subject to modification or withdrawal as a result of that project²⁸). To the extent that the issue arises, we will consider the reasons for, and implications of, any difference in regulatory treatment between DCCs and APCCs as part of that broader policy review and will be consulting on our proposals in due course.
- 3.19 We therefore remain of the view that it is appropriate to issue a direction under GC18.5(a)(ii) setting the basis on which DCCs should be calculated and the resultant maximum DCC that may be charged.

²⁵ DCC Review consultation document, paragraphs 3.8 to 3.9.

²⁶ In particular, a requirement for consultation and requirements that the giving of the direction is proportionate, not unduly discriminatory and transparent in relation to what it is intended to achieve. See DCC Review consultation document, paragraph 3.10.

²⁷ Vodafone's response, page 2.

²⁸ DCC Review consultation document, paragraph 4.87.

Section 4

Ofcom's analysis of the level of the DCC

Introduction

- 4.1 In our consultation document we set out our provisional view that it would be appropriate for us to set a maximum DCC on an *ex ante*, mobile industry-wide basis. In considering the appropriate level of that DCC we took account of:
- the appropriate cost standard and modelling approach to use;
 - the relevant types of costs to be taken into account;
 - the appropriate level of donor conveyance costs;
 - estimates of incurred unit costs requested from Vodafone, H3G, EE and Telefónica;
 - the selection of an efficient cost level;
 - appropriate cost recovery to derive the DCC;
 - the application of the DCC to on-net originated traffic; and
 - the appropriate forward-looking period over which to set DCCs.
- 4.2 The analysis and reasoning that we explained in our consultation document on each of these points is summarised in the following sub-sections, along with the responses we received to our consultation questions, our views on these and our final decision on each issue.

The appropriate cost standard and modelling approach

Summary of our analysis and proposals in the consultation

Appropriate cost standard

- 4.3 In the consultation document, we proposed to estimate the costs of donor conveyance using the same cost standard that we used in making the 2007 Determinations on DCCs, namely long run incremental costs measured over a total service increment and including a mark-up for network common costs (for simplicity we refer to this as the “2007 cost standard” below).²⁹
- 4.4 We noted that H3G, in its dispute submission, had proposed setting DCCs on the basis of “Pure LRIC” (henceforth referred to as “LRIC”), based on its interpretation of GC18.5.³⁰ We considered this point in the consultation document but did not find that GC18 in itself requires the use of LRIC. In this regard we noted that the reference in GC18.5 to “incremental costs” has been in place since the introduction of the General

²⁹ DCC Review consultation document, paragraphs 4.4 to 4.16.

³⁰ H3G's dispute submission, page 3 of Appendix A7, and Appendices A3 and B4.

Conditions in 2003,³¹ and that this reference pre-dates the use of LRIC as the relevant cost standard for mobile termination rates (“MTRs”).³² Indeed, we noted that the 2007 Determinations using the 2007 cost standard were made with this reference in place.

- 4.5 Despite this view we considered the question of the appropriate cost standard to be a relevant one, and examined it further. We explained our view that the use of a LRIC cost standard would constitute a change in policy in how we derive cost-based DCCs. We found that it would be inappropriate to consider and address this question by looking at mobile porting conveyance costs and charges in isolation, noting that the question of how to derive cost-based charges is relevant to any charges for portability pursuant to GC18 (including, for example, fixed porting conveyance charges) and therefore any such change in policy may have broader implications. In this regard, we observed that a number of stakeholders raised the question of the appropriate cost standard to be used to derive cost-based geographic APCCs in the context of the recent Narrowband Market Review.³³ Similar to H3G’s position as regards using LRIC for the DCC, some CPs considered that LRIC should be the basis for setting geographic APCCs.
- 4.6 We explained that, in our view, in order to give full and proper consideration to the appropriate cost standard to be used in setting porting charges generally, we should (amongst other things) give careful consideration to the cost standards we have used elsewhere such as the regulation of call termination markets and interconnection.
- 4.7 Further, in considering any policy change regarding how reasonable cost-based porting charges should be set on a forward-looking basis, the question of the appropriate cost standard should, in our view, be considered within a wider assessment of all the factors which form the basis for setting porting charges including, for example, the efficient costs incurred in porting conveyance over networks and who should bear these costs.
- 4.8 In light of the above, we provisionally concluded in the consultation that it would not be appropriate to carry out an assessment of the relevant cost standard to use in setting DCCs within this review. We noted that this review is limited in its scope, and also limited in the time available for its conclusion given that it is being used as alternative means for the resolution of regulatory disputes. Reconsidering the most appropriate cost standard for DCCs would require analysis of the alternative options and an impact assessment, which could not practically be delivered within the four month timescale of this review.

³¹ See

http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/cond_final0703.pdf. Prior to this, similar language had been used since 1999 in the relevant condition of the mobile operators’ licences issued under the Telecommunications Act 1984.

³² LRIC was introduced in telecoms regulation by the EC’s 2009 Recommendation on the regulatory treatment of fixed termination rates (FTRs) and mobile termination rates (MTRs). In that context it involves treating terminating traffic as the relevant increment of traffic over which to measure costs, and marked a departure from the “LRIC+” cost standard which had been used to set termination rates up to that point.

³³ In the final statement of the Narrowband Market Review, published on 26 September 2013, we stated that “*We recognise that further guidance on the interpretation of GC18 has been requested by a number of stakeholders and that this would provide greater certainty for CPs. Therefore, following the completion of the Narrowband Market Review we will commence a project to consider how GC18 should be applied in setting porting conveyance charges.*” Available at: http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/statement/Final_Statement.pdf.

- 4.9 As a result, for the purposes of this review of DCCs we considered it appropriate to maintain the cost standard used in the 2007 Determinations and we therefore did not examine the substantive issues involved in determining the appropriate cost standard any further.
- 4.10 However, we noted that we are currently undertaking a separate policy project, which has a broader scope than this review, and has the aim of providing greater regulatory certainty for industry on how to set compliant porting charges under GC18, reducing the need to resort to costly disputes. In that policy project we intend to address the question of the appropriate cost standard for DCCs and the broader policy questions outlined above. We considered that the question of the relevant cost standard to use in setting DCCs would be more appropriately addressed within that policy project for the following reasons:³⁴
- 4.10.1 Breadth of consultation: The policy project is better suited to seek views from a wide range of stakeholders, including those which may be indirectly affected by the issue (such as consumers and MVNOs), rather than only for stakeholders with a direct interest in this review.
- 4.10.2 Breadth of the issues considered: whereas this review is focussed on answering a specific question, the policy project is better placed to consider the implications and impacts of any change for the industry as a whole. The scope of the policy project encompasses costs and charges for porting all types of numbers (fixed geographic, fixed non-geographic and mobile numbers), whereas this review is limited to DCCs. The policy project is also better suited to consider the wider issues involved in setting all types of porting charges, including who should bear the costs, in the context of the wider regulatory framework for other charges, such as fixed and mobile termination rates.
- 4.10.3 Range of options considered: it is possible for the policy project to consider a wider range of regulatory options, which it would not be feasible to consider as part of this review. For example, the policy project could consider the implications and impacts of different cost standards as well as different approaches to the identification of the efficient technology and cost recovery.
- 4.11 Addressing the choice of cost standard and the broader policy questions within the wider policy project will also have the following consequences:
- 4.11.1 Length of time to reach a decision: The longer period of time leading to the final decision in the policy project (which we will nevertheless seek to conclude on an expeditious basis) means that the nature and level of detail of the analysis, including a robust impact assessment, would not be limited by the four month period of the present review.
- 4.11.2 Length of consultation: The longer consultation period in the policy project (up to 10 weeks depending on the potential impact of our proposals) allows a more inclusive exercise than the consultation period of the present review.
- 4.12 In light of the above, we explained in the consultation document that we considered it appropriate to use the 2007 cost standard for the purposes of this review. We noted

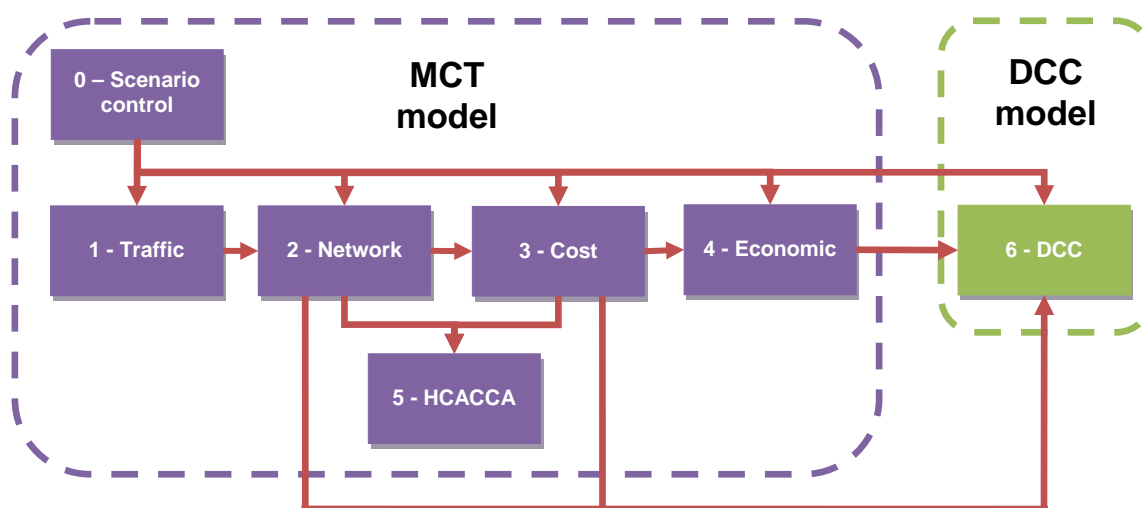
³⁴ DCC Review consultation document, paragraphs 4.14 to 4.16.

that we would be assessing the choice of cost standard again in the near future and that if, following that assessment, we decided that it would be appropriate to apply a different cost standard to set DCCs, we would also consider whether it would be necessary to revisit the conclusions we reached in this review.

Modelling approach

- 4.13 As noted in Section 2 and explained further in our consultation document, Analysys Mason built a model to estimate the costs of donor conveyance for the 2007 Determinations (the “2007 DCC model”). This was constructed as an additional module to Ofcom’s then recently published model used in the 2007 MCT review, which was also built by Analysys Mason.^{35 36}
- 4.14 The structures and interaction between the 2007 MCT model and the 2007 DCC model are shown in Figure 4.1 below. It shows that the 2007 DCC model draws inputs from the MCT model in the form of:
- 4.14.1 summary information on the selected scenario from the “Scenario control” module of the MCT model;
 - 4.14.2 conversion factors, routing factors and network element outputs from the “Network” module of the MCT model;
 - 4.14.3 inflation data from the “Cost” module of the MCT model; and
 - 4.14.4 network equipment unit costs (in £ per unit) from the “Economic” module of the MCT model.

Figure 4.1: The MCT and DCC models



Source: Ofcom. Note that the labels in the boxes refer to the names of the Excel workbooks.

- 4.15 This ensured that the 2007 Determinations were based on efficient unit costs consistent with those used for MCT.³⁷ Analysys Mason explained the 2007 DCC

³⁵ Available from http://www.ofcom.org.uk/static/LRIC_files/.

³⁶ DCC Review consultation document, paragraphs 4.17 to 4.22.

³⁷ See paragraph 4.11 of the 2007 Determinations.

model in an accompanying report (the “Analysys Mason 2007 DCC Report”) which we published alongside the consultation.³⁸

- 4.16 We explained in the consultation document that we considered it appropriate to use the 2007 DCC model as the basis for calculating the efficient costs of donor conveyance.³⁹ However, before using the 2007 DCC model to calculate the current costs of donor conveyance, we found it necessary to update the inputs to the 2007 DCC model in order to reflect the most up-to-date understanding of the costs of mobile service provision.
- 4.17 Since 2007 Ofcom has conducted a further MCT market review and issued an updated version of the MCT model in 2011. The 2011 MCT model was further updated in 2012 following the Competition Appeal Tribunal’s judgment on the appeals against our 2011 MCT Statement.⁴⁰ We explained that this version of the MCT model is the most comprehensive and detailed source currently available on which to base DCC modelling, and we used it as the basis for our estimates of the costs of donor conveyance.
- 4.18 In doing so we were mindful that the 2011 MCT model was built to examine the costs of MCT, which involves a much broader set of network assets than donor conveyance. In 2007 Analysys Mason identified a number of modifications that were necessary to estimate donor conveyance costs. This principally involved deriving routing factors for the donor conveyance service from those already in the MCT model. We noted that the estimates presented in the consultation document should be considered against a background of broader assumptions used in the MCT review,⁴¹ and presented sensitivities in relation to demand levels.
- 4.19 Our second consultation question asked *“Do you agree with our analysis of the appropriate cost standard and modelling approach? If not, please explain why you disagree.”*

Consultation responses on the cost standard and modelling approach

- 4.20 We received responses to this question from BT, EE, H3G, Telefónica and Vodafone.

Cost standard

- 4.21 Respondents generally agreed with our proposal to use the 2007 cost standard for the purposes of this review. BT and Vodafone agreed with our proposal and Telefónica thought it *“reasonable”*.⁴²

³⁸ See http://stakeholders.ofcom.org.uk/binaries/consultations/review-mobile-donor-conveyance-charges/annexes/Analysys_report.pdf.

³⁹ In particular, we considered this would ensure consistency with the model used for the 2007 Determinations. Whilst it would be possible to make adjustments directly into the updated 2011 MCT model to calculate “LRIC+” results (indeed, H3G reports results calculated in this way in its correspondence with Telefónica - Appendix A7 to H3G’s dispute submission), we considered it unnecessary to create a new modelling approach when the 2007 DCC model already provided the functionality that we required for this review.

⁴⁰ MCT Model Release version 4, available at: <http://www.ofcom.org.uk/static/wmvct-model/model-2011.html>.

⁴¹ For the avoidance of doubt we again also note that none of the modifications used in the 2007 DCC model would have affected the cost benchmarks used in the 2011 MCT review.

⁴² Vodafone’s response, page 4, BT response’s, page 1 and Telefónica’s response, page 1.

- 4.22 However H3G submitted that the cost standard specified in GC18 should be used, which it interpreted as LRIC (consistent with its dispute submission, see paragraph 4.4 above). H3G stated that it “*agrees that Ofcom needs to address the question of the appropriate cost standard for consumers and competition as part of its separate policy project*”.⁴³ However it did not agree with us that employing a LRIC approach would constitute a change in policy, arguing that the 2007 Determinations failed to expressly adopt a LRIC+ cost standard, and that our preliminary 2010 views on historic DCCs were more consistent with a LRIC approach.
- 4.23 As a result H3G considered that “*the current review should adopt the cost standard specified in GC 18*”, and that in its view “*the wording of GC 18... clearly suggests the adoption of pure LRIC*”.⁴⁴
- 4.24 EE agreed with the use of the 2007 cost standard, but argued that administration costs should also be included. EE argued that the reasons Ofcom excluded administration costs in 2007 no longer apply. It explained:⁴⁵

“Ofcom’s reasons for excluding administration costs in 2007 were: (i) the MCT model calculated the termination rate by allocating administration costs across services which did not include donor conveyance (suggesting that to also recover some administration costs from donor conveyance would have implied that the then termination rate would be slightly too high); and (ii) the estimated mark-up for administration costs of 0.01ppm was considered so small relative to the then level of donor conveyance costs as not to warrant a special mark-up.

“... EE notes that as termination rates are now set in line with pure LRIC (i.e. excluding any contribution to administration costs), Ofcom’s first reason no longer applies. Further, the inclusion of administration costs in the order of 0.01ppm would increase Ofcom’s proposed new DCC level by around 13% so that Ofcom’s de minimis argument also no longer holds.”

Modelling approach

- 4.25 BT, EE and Telefónica agreed with our proposal to base our calculations on the 2007 DCC model with inputs updated in line with the 2011 MCT model (as updated following the Competition Appeal Tribunal’s judgment in 2012).⁴⁶
- 4.26 H3G however questioned the use of an onward routing cost based model for setting the DCC, arguing that “*the most up to date industry solution for mobile number portability is a direct routing system using a national central database*”.⁴⁷ H3G explained its belief that the next best option would be to set the DCC based on the alternative of direct routing using databases local to each operator.

Ofcom’s response and final decision

Cost standard

- 4.27 As we explained in the consultation document, the question of the appropriate cost standard to use in setting DCCs was not explicitly discussed in either the 1999 or

⁴³ H3G’s response, page 2.

⁴⁴ H3G’s response, pages 2 and 4.

⁴⁵ EE’s response, page 7.

⁴⁶ BT’s response, page 1, EE’s response, page 6 and Telefónica’s response, page 1.

⁴⁷ H3G’s response, page 4.

2007 Determinations. However, our 2007 Determinations set DCCs using asset unit costs calculated as intermediate outputs of the 2007 MCT model. The 2007 MCT model used a “LRIC+” cost standard, meaning long run incremental costs measured over a total service increment and including mark-ups for both network and non-network common costs. In calculating DCCs we chose not to include non-network common costs (administration), so the cost standard used in the 2007 Determinations was effectively total service long run incremental cost plus a mark-up for network common costs.⁴⁸

- 4.28 We do not agree with H3G’s argument that “*the wording of GC 18... clearly suggests the adoption of pure LRIC*” for the reasons set out in the consultation document (as summarised at paragraphs 4.3 to 4.12 above). In particular we note that GC18 requires charges to be “*based on the incremental costs of providing Portability*” and does not require the exclusion of any mark-up for common costs.
- 4.29 As a result we maintain that the use of a LRIC cost standard is not required by GC18, and note that, as explained in paragraph 4.4, it has not in the past been interpreted as requiring the use of LRIC. We also maintain that, for the reasons set out in paragraphs 4.5 to 4.12, this issue would more appropriately be addressed as part of the ongoing policy project.
- 4.30 Turning to EE’s argument for the inclusion of administration costs, we agree that the two reasons we provided in the 2007 Determinations for the exclusion of administration costs are no longer valid, given that (a) the MCT policy no longer permits the recovery of administration costs in MTRs; and (b) the relative size of administration costs compared to the new DCC has increased to a level which we agree is no longer de minimis. Consistent with the reasoning in paragraph 4.28 above we consider that GC18 does not require the exclusion of administration costs, and we have therefore decided to include an allowance for administration costs in our estimate of the efficient costs of donor conveyance.
- 4.31 In relation to the level of this allowance we have examined EE’s proposal to adopt the ppm allowance considered (and rejected) in the 2007 Determinations, which was 0.01 ppm. This figure was calculated on the basis of information in the 2007 MCT model, and in common with the rest of our modelling approach we consider it more appropriate to use an updated estimate of administration costs from the 2011 MCT model.
- 4.32 The 2011 MCT model contains the percentage mark-ups for administration costs per unit of output shown in Table 4.1 below.

Table 4.1: Administration cost mark-ups in 2011 MCT model

	2013/14	2014/15	2015/16
Administration cost mark-up	11.26%	10.77%	10.75%

Source: 2011 MCT Model, ‘Economic’ workbook, ‘Service costing’ worksheet.

- 4.33 In our view these administration cost mark-ups are a suitable proxy for an administration cost mark-up on donor conveyance traffic. We note that the major MCPs were not able to provide us with estimates of their incurred costs of donor conveyance (see paragraph 4.61 of the DCC Review consultation document). As a

⁴⁸ See paragraphs 4.28 and 4.29 of the 2007 Determinations.

result we include allowances for administration costs in our estimates of the efficient costs of donor conveyance at the levels shown in Table 4.1.

- 4.34 We consider that the calculation of the efficient costs of donor conveyance on the basis of total service long run incremental cost plus a mark-up for network common costs and a mark-up for non-network common costs (administration) satisfies the relevant legal tests and is consistent with our statutory duties. As in the consultation document, we note that we will be assessing the choice of cost standard again in the near future and that if, following that assessment, we decide that it would be appropriate to apply a different cost standard to set DCCs, we would also consider whether it would be necessary to modify or withdraw the direction that we have decided to set in this review.

Modelling approach

- 4.35 As explained above there was general agreement on the modelling approach to use in calculating the efficient costs of donor conveyance. As regards H3G's comment about the calculation of costs on the basis of a direct routing solution we note that its own model of the costs of donor conveyance did not adopt such an approach and it is inviting us to set charges based on the costs of a set of arrangements that are not in place (i.e. direct routing), instead of the actual onward routing arrangements. We do not consider that this would be appropriate.
- 4.36 In light of these considerations we remain of the view that we should base our calculations on the 2007 DCC model with inputs updated using the 2011 MCT model.

The relevant types of costs to be taken into account

Summary of our analysis and proposals in the consultation

- 4.37 In our consultation document we proposed to take into account the same categories of cost as were taken into account in the 2007 Determinations, with the exception of HLR look-up costs which we considered were Additional Conveyance Costs ("ACCs") and hence not recoverable under GC18.5.⁴⁹
- 4.38 We explained that when a call to a mobile number is originated from a third-party network (fixed or mobile) it is routed to the MCP which holds the relevant mobile number range to which the called number belongs. This will be received by the range holder MCP at a Gateway Mobile Switching Centre (G-MSC) which, as the name suggests, acts as the "entrance" onto the MCP's network.⁵⁰
- 4.39 Normally, the first job of the G-MSC is to determine the current location of the called mobile phone in order to connect the call which it does by consulting the Home Location Register (HLR) – a central database that contains details of each mobile phone subscriber on the network – and which returns routing information for the visited Mobile Switching Centre (MSC) where the called mobile phone is currently located. This allows the G-MSC to route the call to the appropriate visited MSC to complete the call connection.
- 4.40 However, where the called mobile number has been ported to a different MCP (the recipient), the G-MSC uses a feature called Signalling Relay Functionality (SRF) to first carry out a look-up against a database of the donor MCP's ported out mobile

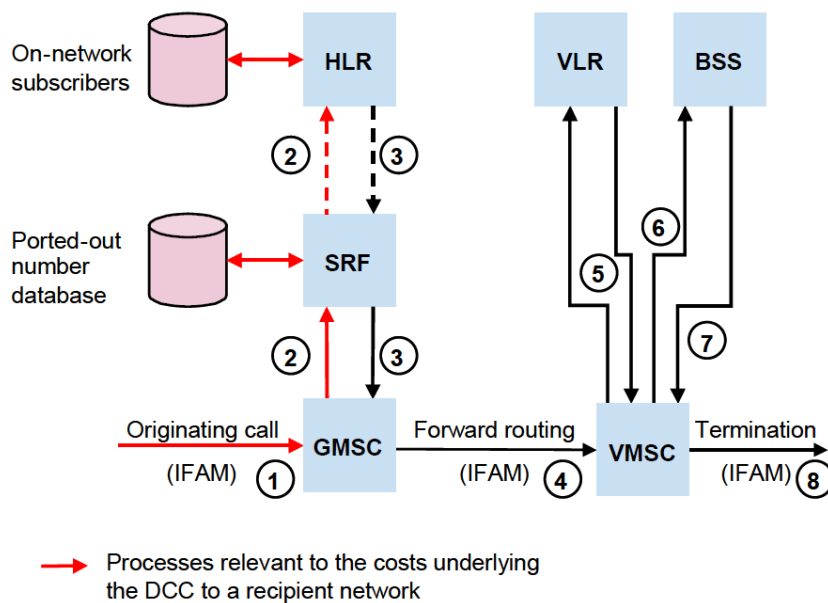
⁴⁹ DCC Review consultation document, paragraphs 4.23 to 4.39

⁵⁰ DCC Review consultation document, paragraphs 4.24 to 4.30

phone numbers and identify the recipient MCP. For voice calls to ported mobile numbers, the SRF query generates an enquiry result in the form of a porting prefix or routing number to enable the DNO to onward route the call to the appropriate RNO for subsequent treatment.⁵¹ A full service description for Mobile Number Portability is published by NICC Standards Limited (reference NICC ND 1208 v1.5.1 2010-09).⁵²

- 4.41 In support of the 2007 Determinations, the Analysys Mason 2007 DCC Report provided an explanation of the eight steps necessary to set up a mobile call according to the European Telecommunications Standards Institute (ETSI) GSM standards. This is reproduced in Figure 4.2 below, which highlights that “only steps (1) and (2) incur cost for the donor network in handling donor conveyed calls”.⁵³

Figure 4.2: Processes required to set up a call in a network according to the ETSI GSM standards



Source: Exhibit 3.1 of the Analysys Mason 2007 DCC Report.

- 4.42 On the basis of this analysis we proposed to take into account the following types of costs:

- 4.42.1 MSC costs (2G processor/3G server and gateway, associated software);
- 4.42.2 MSC ports (interconnect facing only);
- 4.42.3 MSC interconnect interface;
- 4.42.4 Other MSC-related costs (support plant, sites); and
- 4.42.5 Network Management System (“NMS”).

⁵¹ In the consultation document, we stated that this porting prefix or routing number was usually generated as a result of routing enquiries relayed between the DNO and RNO. However, we have now amended this description, in response of a comment from H3G, to reflect the fact that the prefix or routing number is generated by the SRF query.

⁵² See <http://www.niccstandards.org.uk/files/current/NICC%20ND1208%20v1.5.1.pdf?type=pdf>.

⁵³ See page 9 of the Analysys 2007 DCC Report.

“HLR look-up costs”

- 4.43 In relation to “HLR look-up costs” Analysys Mason explained in the context of the 2007 Determinations that the provision of donor conveyance involves “MNP infrastructure” in the form of a look-up in a database in order to establish whether the number has been ported out and therefore requires the donor conveyance service.
- 4.44 This process has costs associated with it, and Analysys Mason explained that although such costs were not explicitly modelled in the 2007 MCT model, “*given that MNP infrastructure is closely related to the HLR – in some instances, integral to it – then we assume that within the cost model, MNP infrastructure costs are captured within the HLR cost element*”. It “*estimated that the cost of the SRF (Signalling Relay Function) and ported-out database is small compared to the cost of the HLR*”, and allowed 10% of the exogenous per-minute cost of the HLR to be included in DCCs.⁵⁴ We had therefore included the costs of “HLR look-up” within the DCC that we set in the 2007 Determinations.
- 4.45 However, we revisited this approach in our consultation document. We explained that GC18.11(a) defines ACCs as “*any costs incurred by the [DNO] associated with resources used in: (i) effecting the switch processing required to set up each ported call; and (ii) providing the switch and transmission capacity for any part of the duration of each ported call, additional to the costs of conveyance of non-porting calls from the [DNO’s] network to the [RNO’s] network*”. GC18.5(b) explicitly prohibits the DNO from charging for these costs.⁵⁵
- 4.46 We considered that the costs of the “HLR look-up” (i.e. the SRF look-up of a database and set up for routing to a RNO) are costs associated with resources used in effecting the switch processing required to set up the ported call which are additional to the costs of conveyance of non-porting calls. As such, we considered that they fell within the definition of ACCs set out in GC18 and were therefore not recoverable.
- 4.47 We therefore provisionally concluded that costs incurred when performing a look-up in a ported numbers database should not be included in the calculation of the costs of donor conveyance for the purposes of setting DCCs.

Transit/transmission costs

- 4.48 In the consultation document, we explained our view that BT transit was not an efficiently incurred cost of donor conveyance, and hence excluded it from our cost calculations. We noted that this was consistent with the approach taken in the 2007 Determinations. Additionally we proposed that since direct interconnection arrangements are separately negotiated on a commercial basis it was not necessary to include any allowance for this when estimating the costs of donor conveyance for the purposes of setting DCCs.⁵⁶

⁵⁴ See page 14 of the Analysys Mason 2007 DCC Report.

⁵⁵ DCC Review consultation document, paragraphs 4.31 to 4.36.

⁵⁶ DCC Review consultation document, paragraphs 4.37 to 4.38

- 4.49 In doing so we noted that donor conveyance traffic forms only a small fraction of total interconnection traffic, and hence would not be an important consideration in negotiating direct interconnection agreements.⁵⁷
- 4.50 Question three of our consultation asked: *“Do you agree with our analysis of the relevant types of cost to take into account? If not, please explain why you disagree”*.

Consultation responses on the relevant types of cost to be taken into account

- 4.51 We received responses from EE, H3G and Vodafone to this question, with no comments from BT or Telefónica.

“HLR look-up costs”

- 4.52 H3G agreed with our analysis of the relevant costs, supporting our view that the “HLR look-up costs” are ACCs and hence should be excluded from estimates of the costs of donor conveyance for the purposes of setting DCCs.⁵⁸
- 4.53 EE and Vodafone set out their understandings of the history of ACCs, which they said was to address a concern regarding additional routing (referred to as “tromboning” or “call looping”) of calls to ported geographic numbers within BT’s two-tier network, and argued that “HLR look-up costs” should not be excluded from our calculation of donor conveyance costs:
- 4.53.1 EE argued that that *“compliance with the USD can only be achieved if the exclusions for Additional Conveyance Costs referred to in General Condition 18.5(b) are interpreted so as to only preclude recovery of Additional Conveyance Costs which are not reasonably incurred by an efficient DNO in providing portability as per General Condition 18.5(d)”*. As a result it argued that *“HLR look-up costs should be recoverable under the DCC”*.⁵⁹
- 4.53.2 Vodafone argued that it is not clear that SRF costs are additional to the costs of conveyance of non-ported calls, and explained that for *“an inbound call, an SRF query needs to be performed irrespective of whether the number turns out to be ported. Similarly, if the comparator is with an off-net call to a mobile number which turns out not to be ported, an MNO [X] which employs call trap will perform a look-up in any event in order to establish that the B number belonging to another MNO’s number range is not, in fact, ported in. This look up is performed in order to prevent call tromboning of ported numbers via the donor network.”*⁶⁰

Transit/transmission costs

- 4.54 H3G agreed with us that BT transit costs should also be excluded on the basis that they are no longer efficiently incurred. It also noted that *“Ofcom is correct to point out... that in practice donor conveyance traffic is not an important consideration for*

⁵⁷ We calculated that, based on information received from the MCPs in response to our s135 information requests and information in the 2011 MCT model, total market donor conveyance traffic represents only around 7% of the total market interconnection traffic (2G and 3G incoming and outgoing voice calls) in 2013. We also noted that this result had remained relatively stable over time.

⁵⁸ H3G’s response, page 5.

⁵⁹ EE’s response, page 9.

⁶⁰ Vodafone’s response, page 5.

*operators when negotiating direct interconnection arrangements.*⁶¹ Vodafone also agreed with our exclusion of BT transit costs.⁶²

- 4.55 EE did not comment on the exclusion of BT transit costs but argued that “*while it is the case that operators have largely established direct interconnection arrangements... donor networks will nonetheless incur transmission costs in conveying the call to recipient networks*”.⁶³ It quoted Ofcom estimates of transmission costs made for a 2010 cost-benefit analysis⁶⁴ and argued that this cost is incremental to donor conveyance and as such should be recovered through DCCs. EE also stated that the exclusion of these costs would breach the USD requirement that charges be cost oriented.

Ofcom’s response and final decision

“HLR look-up costs”

- 4.56 As noted above we took the provisional view in the consultation that, although “HLR look-up costs” are relevant to the provision of donor conveyance, such costs are ACCs as defined in GC18.11(a) and should therefore be excluded from the calculation of the costs of donor conveyance for the purposes of setting DCCs. In light of the differing views of respondents on this issue we have carefully reconsidered the question as to whether “HLR look-up costs” should be included in setting DCCs.
- 4.57 We note and broadly agree with the references made by EE and Vodafone to the original reasons why ACCs were deemed to be non-recoverable from porting conveyance charges. However we also note that Oftel specifically looked at the recovery of what we have termed here as “HLR look-up costs” in 1997 when it imposed conditions on mobile operators to provide for the implementation of MNP.⁶⁵ Oftel took the view that such costs were ACCs and, consistent with this view, such costs were subsequently excluded from the 1999 DCC Determination.
- 4.58 However, Vodafone argued that it is not clear whether “HLR look-up costs” are, in fact, “*additional to the costs of conveyance of non-ported numbers*” because an SRF query needs to be performed irrespective of whether the mobile number turns out to be ported or not.⁶⁶
- 4.59 We have reconsidered this point in light of Vodafone’s comment. On reflection, we agree that, when comparing the costs of conveyance for a ported call with those for a non-ported call from the DNO’s network to the RNO’s network, a query is not “additional” where call trap⁶⁷ has been implemented.
- 4.60 Where call trap is deployed, the SRF query is undertaken on all outgoing calls irrespective of who the dialled mobile number belongs to. This means that even where the dialled number belongs to another MCP a query is performed to check

⁶¹ H3G’s response, page 5.

⁶² Vodafone’s response, page 4.

⁶³ EE’s response, page 10.

⁶⁴ EE’s response, page 11. The estimates EE refers to can be found at

http://stakeholders.ofcom.org.uk/binaries/consultations/gc18_routing/statement/statement.pdf paragraphs 4.8 to 4.10.

⁶⁵ See http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/numbering/mobport.htm, chapter 3 and http://www.ofcom.org.uk/static/archive/oftel/ind_info/numbering/mnppetretre.pdf.

⁶⁶ Vodafone’s response, page 5.

⁶⁷ See paragraph 2.6 for an explanation of call trap, and the diagrams in Annex 1.

whether the dialled number has been ported-in. We therefore consider that the costs incurred in performing a “HLR look-up” on ported calls are not “additional” to the conveyance costs of non-ported calls for the purposes of GC18 in circumstances where call trap has been deployed.

- 4.61 By contrast, in the absence of call trap, non-ported calls from the DNO to the RNO are routed without an SRF query, i.e. by identifying the recipient number range holder of the dialled mobile number. The SRF query is only performed for calls to the DNO’s own numbers and where the particular dialled number is identified as having been ported-out (as a result of the SRF query), a porting prefix is added to route the call to the appropriate RNO. Where call trap is not deployed, we therefore remain of the view that the costs of the HLR look up are “additional” within the meaning of GC18.
- 4.62 However, in this review, we are seeking to set a maximum DCC based on a forward looking assessment of the efficient costs of donor conveyance. Noting that most MCPs have now chosen to deploy call trap,⁶⁸ we consider it reasonable to take account of the fact that an “HLR look-up” is performed on all outgoing calls and hence that such costs are not ACCs as defined in GC18.11(a). As a result we have revised our position from that set out in the consultation document and have now decided to include “HLR look-up costs” in our estimate of the costs of providing donor conveyance.⁶⁹
- 4.63 Given this decision, we do not consider it necessary to respond in detail to EE’s arguments regarding the interpretation of GC18. However, we recognise that GC18 must be interpreted in accordance with Article 30(2) USD.

Transit/transmission costs

- 4.64 As explained above, we proposed in the consultation that transit and transmission costs should not be included in our estimates of the efficient costs of donor conveyance for the purpose of setting DCCs.
- 4.65 We proposed to exclude BT transit costs on the grounds that MCPs were largely directly interconnected and that such costs were no longer efficiently incurred. No respondent disagreed with this and therefore we have decided to exclude transit costs from our estimates of efficient donor conveyance costs.
- 4.66 Turning to transmission costs, EE argued that DNOs would still incur costs in the form of transmission links conveying ported traffic to RNOs. By way of example, EE cited our assessment in 2010 of transmission costs in relation to our analysis of whether direct routing should replace onward routing (see footnote 64).
- 4.67 We note that the analysis EE refers to was a cost-benefit analysis in which we sought to compare the costs (over a ten year forward looking time horizon) of implementing a direct routing system for MNP with the avoided costs of no longer onward routing

⁶⁸ We are aware of the status of call trap deployment amongst the MCPs but cannot disclose this for confidentiality reasons. We note that in 1997, when Oftel set out its position on ACCs in respect of the provision of MNP (see paragraph 4.57 and footnote 65), call trap was not a relevant consideration. The decision to deploy call trap was a later consideration for individual MCPs as traffic to ported mobile numbers increased.

⁶⁹ This reasoning suggests that greater efficiency (in the form of call trap deployment) leads us to set higher DCCs, which may appear counterintuitive. However we note that call trap deployment also provides benefits in the form of preventing the inefficient “tromboning” of traffic (see paragraph 2.6 and Annex 1). As a result a proportion of traffic no longer gives rise to donor conveyance costs or attracts a DCC.

calls to ported numbers via the DNO. In that assessment it was therefore relevant to take into account all avoided costs including that, rather than ported traffic requiring two interconnection links (one between the ONO and DNO and another between the DNO and RNO) to deliver the traffic under an onward routing arrangement, only one such link between the ONO and RNO would be required for direct routing.

- 4.68 However, in this review we are considering the level of the charge that it is appropriate for a DNO to recover from a RNO for onward routing ported calls, based on the efficient costs incurred by the DNO in doing so. We recognise that a DNO might incur transmission costs in onward routing ported calls, but consider that it is not appropriate for these costs to be recovered through the DCC as the costs of interconnection links are already settled commercially between the DNO and RNO under separate arrangements outside of the DCC. We maintain our position that it is therefore not necessary to include any allowance for this cost in DCCs.
- 4.69 For these reasons, we remain of the view that it is not appropriate to include transmission link costs in our calculation of donor conveyance costs for the purposes of setting a maximum DCC.

Conclusion on relevant types of costs

- 4.70 In light of the above we consider that, in setting a maximum DCC, we should take into account the same categories of cost as were taken into account in the 2007 Determinations. These are the types of costs listed in paragraph 4.42, with the addition of HLR look-up costs.

The appropriate level of donor conveyance costs

Summary of our analysis and proposals in the consultation

- 4.71 In our consultation document we proposed to base our modelling of the costs of donor conveyance on the 2007 DCC model, with a number of updates and changes as described in that document.⁷⁰ We published a revised and updated version of the 2007 DCC model alongside the consultation (the “2013 DCC model”).⁷¹ The changes relative to the 2007 DCC model were to update it to reflect:
- 4.71.1 inputs from the 2011 MCT model;
 - 4.71.2 a revised assumption about MSC processor load; and
 - 4.71.3 actual inflation for the years between 2008/09 and the present and forecast inflation to 2015/16.
- 4.72 These adjustments were explained in the consultation document and are summarised in turn below.

2011 MCT model

- 4.73 As noted in paragraph 4.13 above, the 2007 DCC model was constructed by Analysys Mason and appended to the 2007 MCT model as an additional module. The first step in updating the model for the consultation was therefore to use the

⁷⁰ DCC Review consultation document, paragraphs 4.40 to 4.60

⁷¹ See <http://www.ofcom.org.uk/static/consultations/7992Review-mobile-donor-conveyance-charges/condocDCCmodel.zip>.

latest release of the 2011 MCT model (see paragraph 4.18) as the source of input data.^{72 73}

- 4.74 In doing so we took account of changes that had been made to the 2011 MCT model compared to the 2007 version. Specifically, in the 2011 MCT model we assumed a migration of traffic from “2G monolithic MSCs” to “combined 2G/3G MSCs/MGWs, such that as of 2011/12 no traffic was assumed to use ‘2G monolithic MSCs’”.⁷⁴
- 4.75 Since MSC costs are a key component of the costs of donor conveyance, and the 2007 DCC model drew on the costs of the “2G monolithic MSCs” from the 2007 MCT model in estimating the 2G/3G cost of donor conveyance, the change explained above meant that it was no longer possible or necessary to calculate 2G and 3G costs of donor conveyance separately. Instead we calculated a single 2G/3G cost based on the costs of combined 2G/3G MSCs/MGWs.⁷⁵

MSC processor load

- 4.76 In the consultation document, we explained that in the 2007 DCC model Analysys Mason assumed that “a donor-conveyed call uses the MSC 25% compared to an average incoming call”. It therefore applied a 25% adjustment to the routing factors used to estimate donor conveyance costs.⁷⁶
- 4.77 We noted that, in its modelling underlying the DCCs proposed in its dispute submission, H3G had assumed that the MSC processor load imposed by a donor conveyance call was 20 milliseconds (ms) per busy hour call attempt (BHCA).
- 4.78 We noted that this assumption of 20 ms per BHCA matched that in the 2007 and 2011 MCT models for an outgoing call, and compared to assumptions for incoming calls of 50 milliseconds per BHCA in those models. We also noted that the Vodafone calculation underpinning Ofcom’s 1999 Determination (see paragraph 2.8) assumed that donor conveyance was akin to an outgoing call.⁷⁷
- 4.79 We also explained that, in our s135 information requests, we asked Vodafone, EE and Telefónica for any evidence that might support or contradict H3G’s assumption that calls to ported numbers currently involve an MSC processor load of 20 ms per BHCA. However, none of them were able to provide any evidence on this point.
- 4.80 In the absence of further evidence we considered it reasonable to assume that the MSC processor load for donor conveyance calls was more akin to that for an outgoing call than an incoming call, and therefore that a MSC processor load of 20 ms per BHCA was a more appropriate assumption to use when calculating the DCC than 50 ms per BHCA. The assumption that a donor conveyance call is akin to an

⁷² Note that in order to produce DCC estimates using the 2007 cost standard it is necessary for the 2011 MCT model to be calculating live LRIC+ results. The 2013 DCC model includes checks to ensure that this is the case.

⁷³ DCC Review consultation document, paragraphs 4.43 to 4.45

⁷⁴ See paragraph A6.165 of the 2011 MCT Statement. In the 2011 MCT model 80% of 2G traffic was assumed to be processed by 2G monolithic MSCs in 2007/08, falling to 0% in 2011/12.

⁷⁵ We noted that a further minor change to the 2011 MCT model was the labelling of site costs. Site costs are now under the asset heading ‘Buildings (switch building preparation) - allocated to voice services’ and ‘Site lease - allocated to voice services’.

⁷⁶ See p 15 and Exhibit 4.3 of the Analysys 2007 DCC Report, specifically adjustments ‘A’ and ‘F’.

⁷⁷ This is because a donor conveyance call, like an outgoing call, must simply be routed to a point of interconnection. In contrast an incoming call must be routed to wherever the relevant handset is in the network.

outgoing call corresponded to 40% of the MSC processor load associated with an incoming call⁷⁸ rather than the Analysys Mason assumption of 25%.

- 4.81 We therefore applied an adjustment of 40% to the routing factors in the 2013 DCC model in each case in which Analysys Mason assumed 25% in 2007.⁷⁹

Inflation

- 4.82 The 2007 DCC model drew historic and forecast inflation data from the 2007 MCT model, which used the RPI measure of inflation. In updating the 2007 DCC model for the consultation we used inflation data from the 2011 MCT model, which also uses RPI inflation and includes actual data for the years up to and including 2009/10 and forecasts thereafter.⁸⁰
- 4.83 Reflecting the passage of time since the publication of the 2011 MCT model we included inflation figures for the years 2009/10 to 2012/13 based on ONS data.⁸¹ For the years 2013/14 to 2015/16 we used an estimate of 3% based on the most recent independent figures published by HM Treasury.⁸²
- 4.84 We recognised in the consultation document that in more recent charge controls we have considered the use of the CPI inflation index⁸³ and proposed to make it the default inflation index for the LLU/WLR and future charge controls. However, in order to ensure consistency with the estimate of the weighted average cost of capital (“WACC”) and the equipment unit price trends in the 2011 MCT model we propose to maintain the use of the RPI inflation in the specific circumstances of this review.

Modelling results

- 4.85 Having implemented the changes described above, our consultation presented estimates of unit costs of donor conveyance in 2013/14 for an average efficient 2G/3G operator.⁸⁴ The result was a cost of donor conveyance of 0.078ppm (2013/14 prices).⁸⁵
- 4.86 We performed sensitivity analysis around this base case estimate and found that the results were relatively insensitive to changes in demand assumptions and testing for economies of scale and scope in the provision of the donor conveyance service. We

⁷⁸ Relative to an incoming call, a donor conveyance calls has an MSC processor load of 20 ms per BHCA / 50 ms per BHCA = 40%.

⁷⁹ DCC Review consultation document, paragraphs 4.46 to 4.51.

⁸⁰ DCC Review consultation document, paragraphs 4.52 to 4.54.

⁸¹ Using the RPI measure of inflation (the ONS “CHAW” series), consistent with that used in the 2011 MCT model. This is available from <http://www.ons.gov.uk/ons/datasets-and-tables/data-selector.html?cdid=CHAW&dataset=mm23&table-id=2.1>.

⁸² See HMT, *Comparison of independent forecasts*, Nov 2013, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/260252/201311_ForecastComparison.pdf. RPI was forecast at 3.0% for 2013/14 and we noted that the medium term forecast of RPI inflation remained stable around 3% to 2016. We therefore retained a value of 3.0% for inflation for the years 2014/15 and 2015/16.

⁸³ See paragraphs 3.155 to 3.191 of *Fixed access market reviews: Approach to setting LLU and WLR charge controls*, July 2013, available at: http://stakeholders.ofcom.org.uk/binaries/consultations/llu-wlr-cc-13/summary/LLU_WLR_CC_2014.pdf.

⁸⁴ These results were calculated using the calibrated base case (“scenario 95”) of the 2011 MCT model following the Competition Appeal Tribunal’s judgment in the appeals (see paragraph 4.17). This is the scenario used to set MTRs under the 2011 MCT model.

⁸⁵ DCC Review consultation document, paragraphs 4.55 to 4.60.

noted that the results were however sensitive to the MSC processor load assumption.

- 4.87 Question four of our consultation asked: *Do you agree with our analysis of the appropriate level of donor conveyance costs (in particular the assumption about MSC processor load)? If not, please explain why you disagree.*

Consultation responses on the appropriate level of donor conveyance costs

- 4.88 EE and H3G both responded in relation to the MSC processor load assumption:

- 4.88.1 EE stated that it “*supports using estimates that ported traffic utilises (at least) 40% of the MSC processor load for an inbound call as a relevant minimum benchmark for recovering relevant efficient MSC processor costs*”⁸⁶.
- 4.88.2 H3G explained its view that the 40% MSC processor load assumption cannot be applied to all MSC assets, and is too high in the case of switch site costs. This is because “*switch site costs are also significantly driven by the need to house non-remote RAN [Radio Access Network] equipment, which is not utilised by donor conveyance calls*”. It argued that, based on analysis of the 2011 MCT model in relation to the period 2013/14 to 2015/16, “*the 40% assumption for switch site resource should be reduced to 40% x 64%*”⁸⁷.

- 4.89 We did not receive any comments on inflation or other inputs from the 2011 MCT model.

Ofcom’s response and final decision

- 4.90 As noted above, while EE supported our use of the 40% MSC processor load assumption, H3G questioned its application to switch site costs. We have examined H3G’s proposal and have concluded that it is a reasonable modification to make to the model.
- 4.91 We agree with H3G’s observation that the switch sites modelled in the 2011 MCT model house a variety of equipment, including some non-remote RAN equipment. As such a fraction of the costs of switch sites is not related to the provision of donor conveyance services and cost causality requires that this fraction of switch site costs should not be allocated to donor conveyance services.
- 4.92 We have examined the floorspace allocations of switch site costs between different types of services in the 2011 MCT model and corroborated H3G’s estimate that only 64% of MSC switch site costs allocated to voice are driven by MSCs and media gateways (MGWs) and therefore relevant to donor conveyance. However, since this figure displays slight variation over time (as shown in Table 4.2 below) we have decided to use the annual figures in our calculations.

⁸⁶ EE’s response, page 11.

⁸⁷ H3G’s response, page 6. It explained that, based on information in the 2011 MCT model on floorspace usage, “*only 64% of the switch site resource allocated to voice is driven by MSCs and MGWs*”. This figure has been calculated as an average over the period 2013/14 to 2015/16.

Table 4.2: Switch sites voice costs driven by MSCs and MGWs in 2011 MCT model

	2013/14	2014/15	2015/16
% of switch site floorspace	62.6%	64.6%	66.1%

Source: 2011 MCT Model, 'Network' module, 'Network design – other' worksheet.

- 4.93 When estimating switch site costs in our model we have therefore applied an MSC processor load assumption of 40%, and then further scaled down these costs in accordance with the figures in Table 4.2 above.
- 4.94 Based on the considerations explained above our revised estimates of the unit costs of donor conveyance in 2013/14 for an average efficient 2G/3G operator are shown in Table 4.3 below. These results have been produced by a revised version of the 2013 DCC model (the “2014 DCC model”) which is published alongside this statement.⁸⁸

Table 4.3: Calculation of the costs of donor conveyance in 2013/14 (ppm)

	Combined 2G/3G cost
MSC cost (real 2008/9 prices)	0.053
Switch site, building and lease (real 2008/9 prices)	0.007
“HLR look-up”	0.002
Administration cost	0.007
Total cost per minute (real 2008/9 prices)	0.069
Cost of donor conveyance (nominal prices)	0.084

Source: 2014 DCC model.

- 4.95 As in the consultation document, we have tested the sensitivity of this result to changes in a number of key assumptions. The results of this analysis are shown in Table 4.4 and discussed further below. Note that Table 4.4 presents the individual effects of each of the tests relative to the base case (which is shown in the first row).

⁸⁸ See <http://stakeholders.ofcom.org.uk/consultations/review-mobile-donor-conveyance-charges/>

Table 4.4: Sensitivity analysis on costs of donor conveyance in 2013/14 (nominal ppm)

	Combined 2G/3G cost
Base case (as in Table 4.3 above)	0.084
Low voice demand assumption	0.086
High voice demand assumption	0.081
Test for economies of scale/scope	0.083

Source: Table 4.3 above and 2013 DCC model.

- 4.96 The second and third rows of Table 4.4 show that the results remain relatively insensitive to the use of the low and high voice traffic demand scenarios specified in the 2011 MCT model.⁸⁹
- 4.97 As we explained in the consultation our modelling approach means that the unit cost of donor conveyance appropriately benefits from the economies of scale and scope of all traffic in the 2011 MCT model. However the 2011 MCT model does not include donor conveyance traffic. In light of this we have tested whether including donor conveyance traffic affects the unit cost results.⁹⁰ The result of this is shown in the fourth row of Table 4.4 and has the effect of reducing the base case result by 0.0003 ppm, or 0.4%.
- 4.98 Given this and the need for speculation as to forecast levels of donor conveyance traffic required to include it in the 2011 MCT model (which requires traffic forecasts to Q4 2020/21) we do not consider that it is proportionate or necessary to include this traffic when estimating the appropriate level of donor conveyance costs.

The selection of an efficient cost level

Summary of our analysis and proposals in the consultation

- 4.99 In our s135 information requests we asked EE, H3G, Telefónica and Vodafone to provide us with their current estimates of the incurred costs of donor conveyance. We explained in the consultation document that, in response to this request, none of these MCPs were able to provide us with estimates of incurred costs.⁹¹
- 4.100 In the consultation document we explained that in selecting a level for the donor conveyance costs of an average efficient 2G/3G operator we had borne in mind our estimate of the efficient costs of donor conveyance (this was 0.078ppm in the

⁸⁹ The low and high voice usage scenarios are “scenario 97” and “scenario 98” respectively from the 2011 MCT model, as shown in Figure A6.5 and described in paragraph A6.46 of the 2011 MCT Statement. We also tested “scenario 107” and “scenario 108”, which represent low and high demand scenarios for voice and non voice traffic. We found the results of the model to also be relatively insensitive to the use of these scenarios.

⁹⁰ To implement this addition of donor conveyance traffic to the 2011 MCT model we need to have a forecast of DCC traffic (for an average operator) up to Q4 2020/2021. For simplicity this test has been performed in a separate version of the DCC model rather than the one published alongside this statement.

⁹¹ DCC Review consultation document, paragraph 4.61.

consultation document), our sensitivity analysis and the responses to our s135 requests.⁹²

4.101 However, in the absence of information from the major MCPs on the incurred costs of donor conveyance we had to rely exclusively on our own estimates. We concluded that our estimate of 0.078ppm was a reasonable estimate of the costs of providing donor conveyance in 2013/14.

4.102 Question five of our consultation asked: *Do you agree with our analysis of an efficient cost level? If not, please explain why you disagree.*

Consultation responses on the selection of an efficient cost level

4.103 We received responses to this question from EE, H3G, Telefónica and Vodafone, with no comment from BT.

4.104 Telefónica explained its view that “Ofcom’s approach seems reasonable in the circumstances”⁹³, and Vodafone acknowledged “the lack of reliable data to underpin Ofcom’s own estimates”.⁹⁴

4.105 H3G explained its views that the efficient cost level was overstated for the following reasons:

- it should be adjusted to “account for a further reduction for on-net origination”;
- it should take account of its proposed adjustment to switch site resource usage (see paragraph 4.88.2 above); and
- its comments on the relevant cost standard should also be taken into account (see paragraph 4.23 above).⁹⁵

4.106 EE explained its view that the efficient cost level was understated, and that allowances should be made to account for the inclusion of:

- administration costs (see paragraph 4.24);
- “HLR look-up costs” (see paragraph 4.53.1); and
- transmission costs (see paragraph 4.55).⁹⁶

Ofcom’s response and final decision

4.107 For the reasons explained above, our estimate of the efficient costs of donor conveyance has been modified since the consultation to include an allowance for administration costs (see paragraphs 4.27 to 4.36) and “HLR look-up costs” (see paragraphs 4.56 to 4.63) and to modify the allocation of switch site costs to donor conveyance (see paragraphs 4.90 to 4.93).

⁹² DCC Review consultation document, paragraphs 4.62 to 4.66.

⁹³ Telefónica’s response, page 1.

⁹⁴ Vodafone’s response, page 5.

⁹⁵ H3G’s response, page 7.

⁹⁶ EE’s response, pages 7 to 11.

- 4.108 With respect to the remainder of the points raised by EE and Vodafone, we do not consider that any adjustment is required with respect to transmission costs (see paragraph 4.64 to 4.69) and we consider below whether it is appropriate to make an adjustment to take account of on-net originated traffic.
- 4.109 In light of these modifications our revised estimate of the efficient costs of providing donor conveyance is 0.084 ppm in 2013/14 (nominal prices), as shown in Table 4.3 above.

Appropriate cost recovery to derive the DCC

Summary of our analysis and proposals in the consultation

- 4.110 In relation to the split of costs between the DNO and RNO, the 1999 Determination set out our six principles of cost recovery⁹⁷ and explained that, based on the principles of cost causation, distribution of benefits and cost minimisation, the costs of donor conveyance should be recovered from mobile network customers rather than fixed network customers. The 2007 Determinations reiterated this position and we maintained this view in the consultation document.
- 4.111 We explained that in both 1999 and 2007 Oftel/Ofcom also considered how the costs of donor conveyance should be borne between the mobile networks. Oftel decided in 1999 that donor conveyance costs should be split equally between the DNO and RNO. In doing so it noted that there was an imbalance between the mobile networks, with some being net donors and others net recipients of ported numbers. This meant that the principle of effective competition could be compromised if the DCC were payable entirely by either the DNO or the RNO. Oftel also noted that the approach of dividing the costs between DNO and RNO was desirable in that it retained an incentive for DNOs to ensure that conveyance costs were minimised.
- 4.112 This position was maintained in a 2001 Oftel Statement resolving a dispute,⁹⁸ and in 2007 we continued to consider that the reasoning from 1999 remained valid, noting the continued imbalance of ported traffic between the mobile networks, with some acting as net donors and some as net recipients. We therefore continued to split the costs of donor conveyance equally between the DNO and RNO in the 2007 Determinations.
- 4.113 In the consultation document, we explained that the information received in response to our s135 information requests confirmed that these imbalances in flows of ported traffic remain. We therefore considered whether, as part of the present review, it would be appropriate to address the question of what split of the costs of donor conveyance between the DNO and RNO should be used to calculate the DCC.
- 4.114 However, for the same reasons as explained in paragraphs 4.5 to 4.11 above in the context of the appropriate cost standard, we considered that it would not be appropriate to address this issue as part of the present review. We also noted that

⁹⁷ Namely: cost causation, cost minimisation, distribution of benefits, effective competition, reciprocity and symmetry, and practicability. These principles were developed by Oftel in the context of number portability, endorsed by the MMC (see Telephone Number Portability: A Report on a reference under s13 of the Telecommunications Act 1984 (MMC, 1995): http://www.competition-commission.org.uk/rep_pub/reports/1995/374telephone.htm#full) and have subsequently been used by Ofcom in analysing various pricing issues.

⁹⁸ Orange/BT Interconnection disputes: freephone origination and mobile number portability, 21 September 2001: <http://www.ofcom.org.uk/static/archive/oftel/publications/mobile/oran0901.pdf>.

the split of costs between DNO and RNO represented an important difference between the methodologies used to derive APCCs and DCCs⁹⁹, and that this question would be more appropriately addressed within the broader policy project which we recently commenced (see paragraph 1.9).

4.115 We therefore proposed to continue to apply the 50:50 split of costs established in 1999 and followed in 2007. However, we noted that we would be undertaking an assessment of the appropriate split of costs to derive DCCs in the near future as part of the ongoing policy project.¹⁰⁰

Consultation responses on appropriate cost recovery to derive DCCs

4.116 We did not ask a specific question on this issue in the consultation document. However, EE [redacted] commented on our approach, [redacted] arguing that the RNO should bear 100% of the costs of donor conveyance.

4.117 EE set out its reasons for believing that the DNO should bear none of the costs of providing donor conveyance with reference to the six principles of cost recovery.¹⁰¹

4.118 [redacted]¹⁰²

Ofcom's response and final decision

4.119 As explained in paragraphs 4.113 to 4.115 above we considered this issue in the consultation and found that it would not be appropriate to address it as part of the present review. Rather we considered that this question would be more appropriately addressed within the broader policy project and set out our detailed reasons for this view, which were the same as those in paragraphs 4.5 to 4.11 above in the context of the appropriate cost standard.

4.120 Although some respondents engaged with the substantive issue of how the costs should be split between DNO and RNO (as explained above), none challenged the reasons we put forward for not considering it in this review in favour of considering it as part of the wider policy review. We therefore note these comments on the substantive issue, but remain of the view that any change in policy on this matter should be considered in the broader policy project.

4.121 We therefore maintain our position that it is appropriate to continue to apply the 50:50 split of costs established in 1999 and followed in 2007 for the purposes of this review. However, we will take EE's [redacted] substantive comments into account when considering this issue in the broader policy project.

⁹⁹ As already noted, in the 1999 and 2007 DCC Determinations the costs of onward routing were split equally between the DNO and RNO. When calculating APCCs the costs of onward routing are borne wholly by the RNO, see paragraphs S.3 and S.4 of: <http://www.ofcom.org.uk/static/archive/oftel/publications/pricing/2002/nupo0502.pdf>. The principles set out in these paragraphs remain in place today.

¹⁰⁰ DCC Review consultation document, paragraphs 4.65 to 4.70.

¹⁰¹ EE's response, pages 11 to 13.

¹⁰² Vodafone's response, page 7.

Application of the DCC to on-net originated traffic

Summary of our analysis and proposals in the consultation

- 4.122 In the consultation document, we noted that H3G had “scaled” its estimates of DCCs in its dispute submission to take account of non-chargeable calls. H3G explained that such scaling was necessary *“to account for the fact [that] whereas the DCC is only chargeable on off-net originated calls, in practice it is charged on both off-net originated and on-net originated donor conveyance calls”*. We noted that H3G’s adjustment reflected the approach used when calculating APCCs.¹⁰³
- 4.123 We also noted that we had sought information from H3G, EE, Telefónica and Vodafone, in our s135 information requests, on the volumes of different types of donor conveyance traffic in order to estimate the proportion of total donor conveyance traffic which is on-net originated for an average efficient operator. In response to this:¹⁰⁴
- 4.123.1 H3G was not able to provide the requested information within the time available, and instead used a “proxy percentage split” [redacted].
- 4.123.2 EE was able to provide some information in its response [redacted].
- 4.123.3 Telefónica said that it was *“not able to separate the data”*.
- 4.123.4 Vodafone provided the information requested, which showed that [redacted].
- 4.124 We considered that on-net originated calls to ported numbers were calls from the ONO to the RNO for which the ONO recovers its costs of call origination (and the regulated MTR which it has to pay to the RNO) through its retail charges, i.e. like any “normal” call. Our provisional view was therefore that a DCC should not be charged on on-net originated traffic and that, consequently, no adjustment of the type proposed by H3G was required.
- 4.125 Despite this, we noted that some MCPs remained unable to distinguish on-net originated donor conveyance traffic from total donor conveyance traffic (as evidenced by the responses to our s135 requests), although the reasons for this were not clear to us. We therefore went on to consider what adjustment would be appropriate if one were to be made.
- 4.126 We noted an earlier estimate¹⁰⁵ and that the information provided by MCPs was incomplete and some varied materially over time. We explained that a weighted average (using the most recent evidence on donor conveyance traffic volumes as weights) of the values explained in paragraph 4.123 produced an estimate of 33% of total donor conveyance traffic being on-net originated. We cross-checked this value using data from Ofcom’s most recently published Telecoms Market Data Tables,

¹⁰³ See the DCC Review consultation document, paragraphs 4.71 to 4.76 and H3G’s dispute submission, Annexes A and B.

¹⁰⁴ DCC Review consultation document, paragraph 4.72.

¹⁰⁵ In the modelling underlying our 2010 Statement on routing calls to ported telephone numbers, we assumed that the proportion of onward routed minutes for which the same MCP was both the originator and the range holder was 17%. See paragraph 4.28 of the April 2010 Statement, *Routing calls to ported telephone numbers*, available at http://stakeholders.ofcom.org.uk/binaries/consultations/gc18_routing/statement/statement.pdf.

which showed a value of 34% for the share of total market on-net mobile calls (both ported and non-ported).¹⁰⁶

- 4.127 Based on this we considered it reasonable to assume that 30% of total donor conveyance traffic was on-net originated, and consequently that if we were to make an adjustment for on-net traffic, then an adjustment of 70% should be applied to the DCC results.¹⁰⁷
- 4.128 Question six of our consultation asked: *Do you agree with our view that a DCC should not be charged on on-net originated traffic? Are there material obstacles to levying DCCs on only off-net originated calls to ported numbers? If so, what are those obstacles and what would be necessary (including the scale of likely costs) in overcoming them?*
- 4.129 Question seven of our consultation asked: *If an adjustment were to be made to the DCC to account for the fact that it is charged in practice on on-net originated traffic, do you agree with our proposed value for the adjustment factor of 70%? If not, please explain why you disagree.*

Consultation responses on the application of the DCC to on-net originated traffic

- 4.130 We received responses to these questions from BT, EE, H3G, Telefónica and Vodafone.
- 4.131 With respect to whether a DCC should be charged on on-net originated traffic, BT, H3G [redacted] agreed with us that in principle DCCs should not be charged on this traffic, but noted the possibility of material obstacles in implementing this. H3G stated that:

[redacted]¹⁰⁸

- 4.132 Telefónica stated that: [redacted]¹⁰⁹

- 4.133 Vodafone also considered [redacted] that “an adjustment of the kind applied to APCCs would be more appropriate”.¹¹⁰ Vodafone explained that:

“.....[redacted] According to Ofcom’s discussion at 4.72 it appears that most MNOs say they are not able to identify this traffic precisely (if at all). [redacted].

Beyond that, it seems to us that there are also practical issues of principle that suggest it would not be appropriate or proportionate to isolate on-net originated traffic to ported numbers at source. In particular, only the originating network can know which traffic is originated on-net so the recipient would have to take on trust that this traffic has been excluded for DCC purposes i.e. it won’t be able to reconcile DCC eligible vs DCC non-eligible minutes independently of the donor/originating network.

¹⁰⁶ See <http://stakeholders.ofcom.org.uk/binaries/research/cmr/telecoms/Q1-2013.pdf>. Q1 2013 on-net mobile calls represent 9.73 billion minutes, compared to a total (excluding international, calls when roaming and “other”) of 28.99 billion minutes.

¹⁰⁷ Since $1 - 0.3 = 0.7$. DCC Review consultation document, paragraphs 4.79 to 4.84.

¹⁰⁸ H3G’s response, page 7.

¹⁰⁹ Telefónica’s response, page 1.

¹¹⁰ Vodafone’s response, page 6.

*In contrast, a standard adjustment avoids this issue (and is more consistent with the approach applied to the fixed APCC).*¹¹¹

4.134 EE also noted that:

“[<].¹¹²

4.135 EE was the only respondent to disagree with the application of an adjustment to the DCC as a proxy for excluding on-net originated donor conveyance traffic from the charges. It stated that not allowing DCCs to be applied to on-net originated traffic would amount to a “change in policy” and “should only be considered as part of Ofcom’s wider porting policy review”.¹¹³ It concluded on this point that “the lowest risk of regulatory failure is created by allowing 100% of the DCC to be recovered from all off-net and on-net originated traffic”.¹¹⁴

4.136 With respect to the scale of any adjustment, BT had no data available to comment on our proposed value.¹¹⁵ Telefónica agreed that our proposal of a 70% adjustment was reasonable, as did Vodafone [<].¹¹⁶

4.137 H3G stated that, since the weighted average of the on-net originated donor conveyance volumes received from operators was 33%, the adjustment factor should be 67% instead of the 70% we proposed.¹¹⁷

Ofcom’s response and final decision

4.138 Having considered the consultation responses we remain of the view that the DCC should not in principle be applied to on-net originated traffic. However, given that respondents have pointed to material obstacles (or the likelihood of material obstacles) to separately identifying on-net originated traffic, our view is that it would not be reasonable or proportionate to require MCPs to do so. As a result our calculations of maximum DCCs include an adjustment to account for the fact that a DCC will be charged for on-net originated traffic. We note that this is similar to the approach taken to calculate APCCs.

4.139 We do not agree with EE’s point that such an adjustment would amount to a change of policy and as such should only be considered as part of the policy project (see paragraph 4.134). The issue of on-net originated traffic was not discussed in our 2007 Determinations, nor was it expressly raised by stakeholders at that time. Now that this issue has arisen we consider it appropriate to make an adjustment (of the kind applied for APCCs) in light of the practical issues discussed above. As a result we have decided to implement an on-net adjustment to the maximum DCCs set as a result of this review. As we have never had a policy that the DCC should be charged for on-net originated calls to ported numbers, we do not consider this to be a change in policy.

4.140 We also disagree with EE’s argument that the application of DCCs to on-net originated traffic would minimise the risk of regulatory failure. In our view the rejection of the available evidence in favour of an option which is known to be incorrect would

¹¹¹ Vodafone’s response, page 6.

¹¹² EE’s response, page 13.

¹¹³ EE’s response, pages 13 and 14.

¹¹⁴ EE’s response, page 14.

¹¹⁵ BT’s response, page 3.

¹¹⁶ Telefónica’s response, page 1 and Vodafone’s response, page 6.

¹¹⁷ H3G’s response, page 7 and 8.

increase the risk of regulatory failure. We also note that no other respondents objected to the view that a DCC should not be chargeable on on-net originated traffic.

4.141 Turning to the level of the adjustment, there was broad agreement with our proposal of 70%, but we recognise H3G’s point that the adjustment should not be rounded up from the 67% that was produced by using the weighted average of the figures provided by the major MCPs. We also note that an adjustment of 67% would be more consistent with the result of our cross-check (which would imply an adjustment of 66%), and consequently use an adjustment of 67% in our calculations below.

Table 4.5: Derivation of DCC in 2013/14 to be applied to all donor conveyance calls (ppm, 2013/14 prices)

	2G/3G results
Cost of donor conveyance	0.084
DCC (at 50% of cost)	0.042
DCC (with on-net adjustment of 67%)	0.028

Source: 2014 DCC model and Ofcom calculation.

4.142 We have decided to set a maximum DCC of 0.028 ppm for the year 2013/14. As explained in Section 3 we propose to set this as a maximum DCC, which would allow MCPs to charge a DCC below this level if they so wish.

4.143 In particular, and given the low level of the proposed DCC, we note the possibility that certain pairs of MCPs might wish to agree to waive the payment of DCCs between them in certain circumstances. These may arise, for example, where porting traffic between them is similar, and/or where the transaction costs involved in recovering DCCs may be such that it is preferable for them not to make any charge. We consider that such agreements are consistent with the relevant porting regulations which seek to ensure that any porting charges that are levied are cost-oriented.

Summary of changes since the consultation

4.144 As explained in the preceding sub-sections we have made a number of changes to our estimate of the DCC since the consultation document. These changes and their impacts on the 2013/14 estimated DCC are summarised below and shown in Figure 4.3 below. We start from a DCC of 0.027 ppm. This is the figure that we proposed in the consultation if we were minded to make an adjustment (70%) for on-net originated traffic.¹¹⁸ From this figure, we make the following changes on a cumulative basis:

4.144.1 the first step adds administration costs to the DCC estimate, as explained in paragraph 4.33, and results in an increase in DCCs of 0.003 ppm compared to the consultation estimate;

4.144.2 the second step is to add ‘HLR look-up’ costs, as explained in paragraph 4.62 above, and the impact of this change is to increase the DCC by 0.001 ppm compared to the result of the previous step;

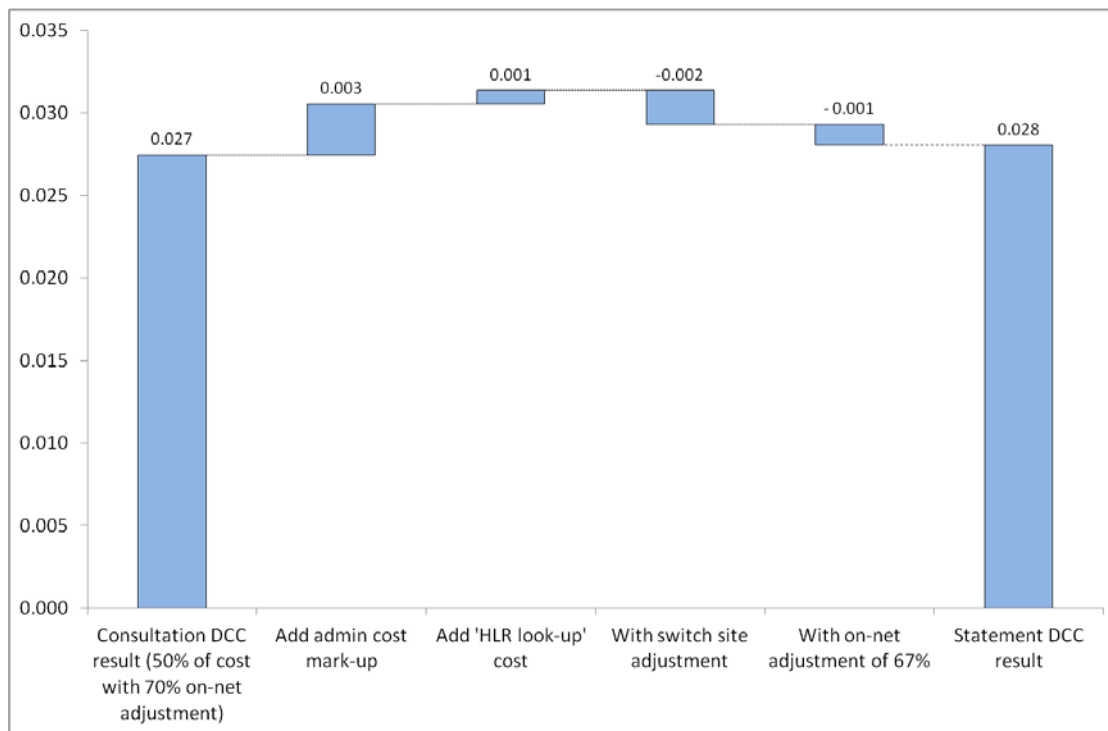
¹¹⁸ It is necessary to start from the on-net adjusted DCC that we set out in the consultation in order to show the impact of the change to the on-net adjustment factor (from 70% to 67%).

4.144.3 the third step adjusts the routing factor applied to switch sites, as explained in paragraph 4.91 above, and the impact of this change is to reduce DCCs by 0.002 ppm relative to the result of the previous step; and

4.144.4 the final step changes the on-net adjustment factor from 70% to 67%, as explained in paragraph 4.141 above, and reduces DCCs by 0.001 ppm relative to the result of the previous step.

4.145 The overall net impact of these changes is to increase our estimate of the (on-net adjusted) DCC from 0.027 ppm to 0.028 ppm, as shown in Figure 4.3 below.

Figure 4.3: Changes to the 2013/14 DCC since the consultation (ppm)



Source: 2014 DCC model.

The appropriate forward-looking period over which to set DCCs

Summary our analysis and proposals in the consultation

4.146 In our consultation document we proposed to set a maximum DCC until 31 March 2016. We considered that it would be consistent with our obligations under Article 30(2) USD to set a DCC beyond the end of the current modelling year (2013/14) as it would ensure the DCC remains cost orientated going forward. We considered that it would also be consistent with our duties under section 3(3) of the Act as it would provide regulatory consistency and certainty. We considered that setting the DCC for the current year and the following two years would be a sufficient time period to allow for certainty (we noted that this was similar to the three-year period over which we would set a charge control) but would not pre-empt developments too far into the future.¹¹⁹

¹¹⁹ DCC Review consultation document, paragraph 4.84.

- 4.147 We recognised that the outcome of the broader policy review of porting charges might require us to revisit the conclusions reached in this review (and, therefore, to modify or withdraw the direction we were proposing to set). However, we did not wish to pre-empt the outcome of that project and therefore considered that the timeframe for which we set the maximum DCC in this review should be informed by the considerations set out above. We anticipated that the policy project would be complete well before 31 March 2016 and, in the event that the outcome of that project did not affect the level of the DCC proposed in this review, we said that we would consider the appropriate approach to DCCs at the relevant time.¹²⁰
- 4.148 We therefore set out proposed DCCs for 2013/14, 2014/15 and 2015/16 using actual inflation and recent forecasts to calculate the nominal results for future years.¹²¹
- 4.149 Question eight of our consultation asked: *Do you agree with the period over which we are proposing to set a DCC? If not, please explain why you disagree.*

Consultation responses on the forward-looking period over which to set DCCs

- 4.150 We received responses to this question from BT, EE, H3G, Telefónica and Vodafone.
- 4.151 BT, Telefónica and H3G agreed with our proposal, although H3G expressed concern about how DCCs should be set in the period after 31 March 2016 and raised the possibility that commercial negotiations could fail again at that stage. H3G considered that Ofcom should review and determine the DCC on a regular basis or, at least, regularly monitor the DCC to ensure compliance with GC18 in the period after 31 March 2016.¹²²
- 4.152 Vodafone agreed that it would not be appropriate to fix a maximum DCC for much more than two years ahead. However, given the proximity to the end of the 2013/14 year, it considered that we should delay the entry into force of the new maximum DCC until the beginning of the 2014/15 year (i.e. from 1 April 2014). [§<]¹²³ Vodafone also queried whether it would be appropriate to use the 2011 MCT model to update model costs for periods extending beyond the end of the present MCT charge control.¹²⁴
- 4.153 EE stated that we should set a maximum DCC only until 31 March 2015, which it considered would equate to the period required for the broader policy project and our current MCT review to be completed. EE stated that setting a DCC for a fixed three year period would prevent flexibility in adjusting the DCC in response to the outcome of these two other reviews. Conversely, if we were to change the maximum DCC within this three year timeframe, then EE stated that this would increase uncertainty, as it would be unclear what impact the policy review and MCT review would have during this period.¹²⁵

¹²⁰ DCC Review consultation document, paragraphs 4.85 to 4.88.

¹²¹ We noted that updating the DCC on an annual basis would be disproportionate and hence proposed nominal results using inflation forecast at the level included in the 2011 MCT model (and consistent with its WACC).

¹²² BT's response, page 3, Telefónica's response to question 8 and H3G's response, page 8.

¹²³ Vodafone's response, pages 6 to 7.

¹²⁴ Vodafone's response, page 6.

¹²⁵ EE's response, pages 3 to 5.

Ofcom's response and final decision

- 4.154 We note that the majority of respondents agreed with our proposal. With respect to the commencement date, we remain of the view that it is appropriate to set the new maximum DCC with effect from the date of this final statement. As noted above, we have a duty to ensure that the DCC remains cost-oriented. In light of this duty, we would only defer implementation of the new maximum rate if there were good countervailing reasons to do so. [3<] If an MCP is unable to immediately reset its DCC at the new maximum level for administrative reasons, then it can retrospectively adjust its charges to ensure compliance (i.e. refund any MCP that it has overcharged in the interim period).
- 4.155 Contrary to EE's suggestion, we are not setting a maximum DCC for a fixed three year period. The period from the date of this final statement until 31 March 2016 is slightly over two years. Furthermore, we stated in the consultation document that the outcome of the broader policy review might require us to revisit the conclusions reached in this review and, therefore, to modify or withdraw our proposed direction accordingly. The direction we are making therefore does not prevent us from adjusting the maximum DCC in response to the outcome of that review.
- 4.156 EE and Vodafone have both commented that the outcome of the current MCT review may also affect the direction we are making. Although we did not directly address the MCT review when discussing this issue in the consultation document, the same reasoning applies. It would be open to us to modify or withdraw the direction, if necessary, following the release of the next (2015) MCT model.
- 4.157 EE stated that if we intend to revisit the maximum DCC prior to the expiry of the direction this would increase uncertainty as it would be unclear what impact the policy review and MCT review would have during this period. We do not agree with this. The outcomes of those two reviews are inherently uncertain as we have not yet taken a decision (or even consulted on our proposals) for either of them. However, we consider that setting a maximum rate until 31 March 2016, subject to the proviso that we would revisit this, if we consider it necessary, following the outcome of those two reviews, provides as much certainty as possible to industry at this time. We also consider that this provides more certainty to industry than EE's proposal of setting a maximum DCC for a period of just over one year. We also note that, although it is desirable to provide regulatory certainty, wherever possible, this is not our only consideration. As noted above, we have a duty to ensure that the DCC remains cost oriented. We consider it consistent with that duty to set a maximum DCC until 31 March 2016.
- 4.158 With respect to H3G's comment about the period after 31 March 2016, if the outcome of the policy project and the MCT review do not affect the level of the maximum DCC set in this review, then we will consider the appropriate approach to DCCs at the relevant time. A MCP may also refer a dispute to us if it considers that the DCC charged to it after 31 March 2016 does not comply with GC18. Indeed, it was a dispute referral by H3G that prompted this review.
- 4.159 We therefore remain of the view that it would be appropriate and consistent with our duties to set a maximum DCC from the date of this final statement until 31 March 2016. We anticipate that MCPs might continue to negotiate DCCs during that period. In particular, we are setting only a maximum rate and MCPs might therefore wish to consider applying a lower rate or waiving the DCC altogether (e.g. if the volumes of ported traffic exchanged between them are symmetrical, or are sufficiently small that

the cost of invoicing and settlement is disproportionate to the level of payments received). Our direction does not preclude this.

- 4.160 Notwithstanding the expiry of the direction (either at the end of 2015/16 or prior to this if it is withdrawn as a result of the policy project or the MCT review), the cost orientation provisions of GC18 will continue to apply to setting porting charges and MCPs should ensure that they are compliant with these obligations.

Section 5

Conclusions

Maximum DCCs on which we consulted

Summary of proposals

5.1 In our consultation document, we proposed to set a maximum DCC across the mobile industry from the date on which we issued a final decision concluding this review until 31 March 2016. During this period, we proposed that the DCCs charged between MCPs should be no higher than the ppm charges listed in the first row of Table 5.1 below. We proposed that these DCCs should be applied only to off-net originated traffic, as we were proposing not to apply an adjustment to account for on-net originated traffic.¹²⁶ We also explained that, if we were to alter the position on which we consulted and decide to make an adjustment for on-net originated donor conveyance traffic, then the figures set out in the second row of Table 5.1 would apply.

Table 5.1: Consultation proposal forward-looking DCC (ppm, nominal prices)

	2013/14	2014/15	2015/16
DCC (50% of cost)	0.039	0.039	0.038
DCC (50% of cost, with on-net adjustment)	0.027	0.027	0.027

Source: 2013 DCC model.

5.2 We proposed to set the maximum DCCs set out in the first row by way of a direction issued under GC18.5(a)(ii), which would cease to have effect on 31 March 2016. We explained how our proposed direction was consistent with our statutory duties and the applicable legal tests and included a draft of the proposed direction in Annex 5 of the consultation document.¹²⁷

5.3 Question nine of our consultation asked: *Do you have any comments on the wording of the proposed direction in Annex 5 or our view that it satisfies the legal tests?*

Consultation responses

5.4 We received comments in response to this question from H3G, Vodafone and EE.

5.5 Both H3G and Vodafone stated that we should modify the direction such that it applies to both on-net and off-net originated calls and make a scaling adjustment to the level of the DCC to compensate for this. H3G agreed with the alternative drafting we had proposed in the consultation document for achieving this.¹²⁸

5.6 With respect to the period for which the direction would remain in force, Vodafone considered that the direction should only take effect on 1 April 2014, given the likely

¹²⁶ DCC Review consultation document, paragraphs 5.1 and 5.3.

¹²⁷ See paragraphs 5.2 to 5.6 of the consultation document.

¹²⁸ H3G's response, pages 8 to 9 and Vodafone's response, page 7.

proximity of this final statement to the end of the 2013/14 financial year.¹²⁹ Conversely, EE did not comment on the date of commencement but considered that the direction should be modified so that it ceases to have effect on 31 March 2015.¹³⁰

5.7 [redacted]¹³¹

Ofcom's response

5.8 As discussed at paragraphs 4.138 to 4.143 above, we accept that it would be disproportionate to oblige MCPs to differentiate between on-net and off-net originated traffic for the purposes of charging a DCC. We have decided instead to apply a 67% adjustment to the level of the maximum DCC that will apply to all traffic. We have therefore modified the direction to reflect this approach (these modifications reflect the alternative drafting approach we set out in the consultation document).

5.9 We have responded to EE's and Vodafone's comments regarding the period for which maximum DCCs should be set at paragraphs 4.154 to 4.160. We have responded [redacted] regarding the appropriate split of costs at paragraph 4.119 to 4.121. In light of those responses, we do not consider that any further modifications are required to the direction.

Final decision

5.10 We have decided to set a maximum DCC across the mobile industry with effect from today's date until 31 March 2016. During this period, DCCs charged between MCPs should be no higher than the ppm charges listed in Table 5.2 below.

Table 5.2: Forward-looking DCC to be applied to all donor conveyance calls

	2013/14	2014/15	2015/16
DCC	0.028	0.028	0.027

Source: 2014 DCC model.

5.11 We are setting these maximum DCCs by way of a direction issued under GC18.5(a)(ii). The direction is set out in Annex 2.

5.12 The charging years in the 2011 MCT model (and therefore also in the 2014 DCC model) run from 1 April to 31 March. The direction therefore applies the maximum DCC for 2013/14 from today's date until 31 March 2014. The subsequent maximum DCCs run from 1 April to 31 March the following year. The direction will cease to have effect on 31 March 2016, in line with the end of the last modelling year for which we are setting a DCC. The direction reflects our approach of applying an adjustment to account for on-net originated traffic (see paragraph 5.8 above). The maximum DCCs that are set by way of paragraph 1 of the direction therefore apply both to on-net and off-net originated traffic.

5.13 As set out in Section 3, we have a duty under Article 30(2) USD to ensure that pricing between operators/service providers related to the provision of number portability is cost-oriented. We may also set a maximum DCC on an *ex ante*, industry-wide basis

¹²⁹ Vodafone's response, page 7.

¹³⁰ EE's response, page 15.

¹³¹ Vodafone's response, page 7.

using an average efficient cost model, and consider that a direction under GC18.5(a)(ii) is an appropriate means of doing so.

- 5.14 We consider that the direction set out in Annex 2 satisfies section 49(2) of the Act as it is:
- 5.14.1 not unduly discriminatory, in that it would apply to all CPs that levy a charge for the onward conveyance of a call to a ported mobile number;
 - 5.14.2 proportionate to what it is intended to achieve, in that the direction ensures that charges for mobile portability remain cost-oriented. In particular, we refrained from regulatory intervention for a period of time before making this direction in order to allow MCPs to enter into bilateral commercial negotiations with regard to revised DCC(s); and
 - 5.14.3 transparent in what it is intended to achieve, in that the direction is explained in this consultation document and set out in full in Annex 2.
- 5.15 We also consider that the direction is consistent with our principal duty under section 3 of the Act, and the Community requirements set out in section 4 of the Act. Ensuring that DCCs are capped at a cost oriented level serves to promote effective competition, and through this furthers the interests of consumers. We have also had regard, as required by section 3(3) of the Act, to the principle that regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed, and to other principles of best regulatory practice. In particular, we have sought to ensure that our modelling approach is consistent (insofar as possible) with that used in the 2007 Determinations and we have sought to provide a degree of consistency and regulatory certainty going forward by setting the DCC until March 2016.

Annex 1

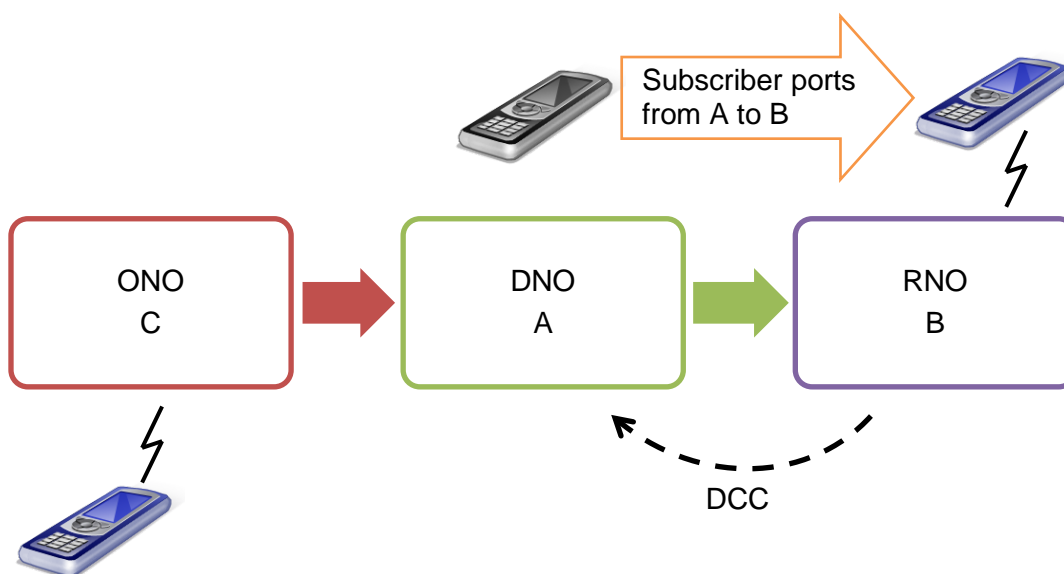
Onward routing of calls to ported mobile numbers illustrated

A1.1 Onward routing of calls to ported mobile numbers (“regular” donor conveyance traffic) works as follows:

- a) A subscriber ports from the DNO (A) to the RNO (B);
- b) A customer of a third network, the ONO (C), calls the customer who has ported;
- c) The ONO (C) routes the call to the DNO (A) which checks its ported number database and in turn **onward routes** it to the RNO (B);
- d) The RNO (B) pays the DNO (A) the DCC.

A1.2 This is shown in Figure A1.1 below.

Figure A1.1: Onward routing



Source: Ofcom.

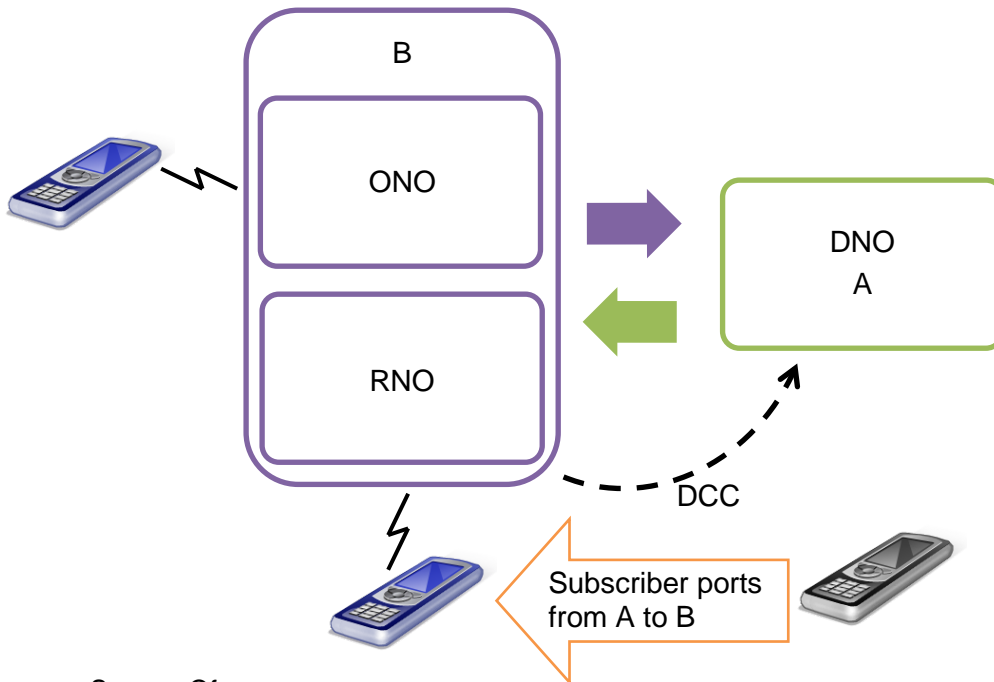
Tromboned traffic

A1.3 Onward routing of calls to ported mobile numbers which “trombone” works as follows:

- a) A subscriber ports from the DNO (A) to the RNO (B);
- b) A customer of B calls the customer who has ported, so B is the ONO as well as the RNO;
- c) The ONO (B), routes the call to the DNO (A), which checks its ported number database and in turn **onward routes** it to the RNO (also B);
- d) The RNO (B) pays the DNO (A) the DCC.

A1.4 This is shown in Figure A1.2 below.

Figure A1.2: Tromboned traffic



Source: Ofcom.

A1.5 This traffic is prevented from “tromboning” if the ONO has implemented a “call trap” system.

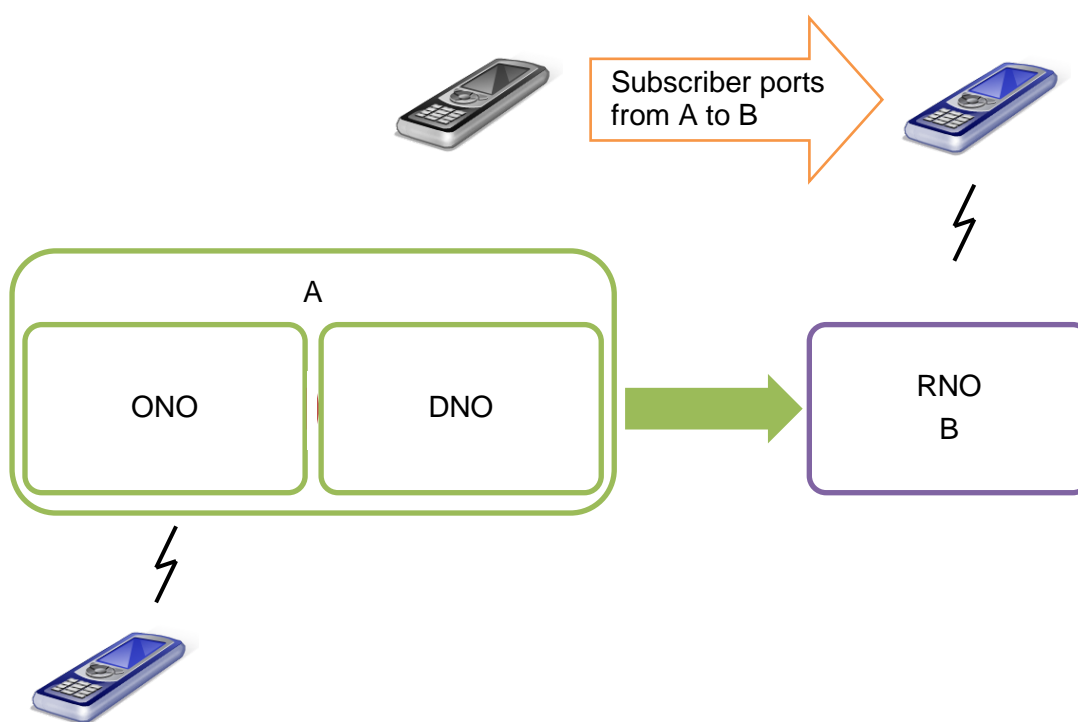
On-net calls to ported numbers

A1.6 “On-net originated” calls to ported mobile numbers works as follows:

- a) A subscriber ports from the DNO (A) to the RNO (B);
- b) A customer of A calls the customer who has ported, so A is the ONO as well as the DNO;
- c) The ONO/DNO (A) checks its ported number database and **directly routes** the call to the RNO (B);

A1.7 This is shown in Figure A1.3 below.

Figure A1.3: On-net calls to ported numbers



Source: Ofcom.

Annex 2

Notification of a Direction for the purposes of a condition set under section 45 of the Communications Act 2003

Direction under paragraph 18.5(a)(ii) of General Condition 18 in relation to charges for Mobile Portability

WHEREAS

- A. On 6 December 2013, Ofcom published a notification (the “First Notification”) of its proposal to give a direction for the purposes of paragraph 18.5(a)(ii) of General Condition 18, in accordance with section 49A(3) of the Act.
- B. Ofcom stated in the First Notification that they considered the proposal was not of EU significance pursuant to section 150A(2) of the Act.
- C. In the First Notification and the accompanying consultation document, Ofcom invited representations about the proposals therein by 14 January 2014.
- D. By virtue of section 49A(6) and (7), Ofcom may give effect to the proposal set out in the First Notification, with any modifications that appear to them to be appropriate, only if –
 - (i) they have considered every representation about the proposal made to them during the period specified in the First Notification; and
 - (ii) they have had regard to every international obligation of the United Kingdom (if any) which has been notified to Ofcom for this purpose by the Secretary of State.
- E. Ofcom received five responses to the First Notification and have considered every representation made to them in respect of the proposed direction.
- F. The Secretary of State did not notify to Ofcom any international obligation of the United Kingdom for the purpose of section 49A(6) of the Act.

THEREFORE

- 1. Ofcom are giving a direction for the purposes of paragraph 18.5(a)(ii) of General Condition 18.
- 2. The direction is attached to this Notification and shall enter into force on the date of this Notification.
- 3. Ofcom’s reasons for giving the direction, and the effect of the direction, are set out in the explanatory statement accompanying this Notification.
- 4. Ofcom are satisfied that the direction complies with the requirements of sections 49 to 49C of the Act, insofar as they are applicable.

5. In giving this direction, Ofcom have considered and acted in accordance with their general duties under section 3 of the Act and the six Community requirements set out in section 4 of the Act.
6. A copy of this Notification and the accompanying explanatory statement have been sent to the Secretary of State in accordance with section 49C(1) of the Act.
7. In this Notification:
 - (a) “the Act” means the Communications Act 2003;
 - (b) “General Condition 18” means the General Condition 18 of the general conditions set under section 45 of the Act by the Director General of Telecommunications on 22 July 2003, as amended from time to time;
 - (c) “Mobile Portability” shall have the meaning ascribed to that term in General Condition 18;
 - (d) “Ofcom” means the Office of Communications.
8. Words or expressions shall have the meaning assigned to them in this Notification, and otherwise any word or expression shall have the same meaning as it has in the Act.
9. For the purposes of interpreting this Notification: (a) headings and titles shall be disregarded; and (b) the Interpretation Act 1978 shall apply as if this Notification were an Act of Parliament.

M. Gibbs

Marina Gibbs
Competition Policy Director

14 February 2014

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002.

Direction under paragraph 18.5(a)(ii) of General Condition 18 relating to charges for Mobile Portability

WHEREAS:

- A. Paragraph 18.5(a) of General Condition 18 provides that, subject always to the requirement of reasonableness, any charges for the provision of Portability shall be cost-oriented and shall be based on the incremental costs of providing Portability unless the Donor Provider and the Recipient Provider have agreed another basis for the charges, or Ofcom has directed that another basis for charges should be used.
- B. The Donor Conveyance Charge is a charge for the provision of Portability.

THEREFORE, PURSUANT TO PARAGRAPH 18.5(a)(ii) of GENERAL CONDITION 18, OFCOM DIRECTS THAT:

- 1. The Donor Conveyance Charge shall be based on the 2014 DCC Model such that it shall not exceed:
 - a. for any Call made during the period beginning on the date on which this direction enters into force and ending on 31 March 2014, 0.028 pence per minute;
 - b. for any Call made during the period beginning on 1 April 2014 and ending on 31 March 2015, 0.028 pence per minute;
 - c. for any Call made during the period beginning on 1 April 2015 and ending on 31 March 2016, 0.027 pence per minute.
- 2. This Direction shall cease to have effect on 31 March 2016.
- 3. In this Direction:
 - a. "2014 DCC Model" means the cost model described in the statement entitled 'Review of Mobile Donor Conveyance Charges' and published by Ofcom on 14 February 2014;
 - b. "Act" means the Communications Act 2003;
 - c. "Call" means a voice call that originates on a public electronic communications network (whether fixed or mobile) and is terminated to a Mobile Number that:
 - i. is within a number range that has been allocated to the Donor Provider; and
 - ii. has been ported to the Recipient Provider;
 - d. "Donor Conveyance Charge" means the amount charged by the Donor Provider to the Recipient Provider for the conveyance of a Call from the Donor Provider's network to the Recipient Provider's network;
 - e. "General Condition 18" means General Condition 18 of the general conditions of entitlement set under section 45 of the Act by the Director General of Telecommunications on 22 July 2003, as amended from time to time;
 - f. "Ofcom" means the Office of Communications;

- g. “pence per minute” means the sum in pence charged for a minute of a Call.
- 4. Any word or expression not defined in paragraph 3 shall have the same meaning as it has:
 - a. in General Condition 18;
 - b. if it has no meaning ascribed as mentioned in paragraph 4a, in the Act.
- 5. The Interpretation Act 1978 shall apply as if this Direction were an Act of Parliament.