



Review of mobile donor conveyance charges for the period 2015 to 2018

Statement

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About this document

Number portability enables consumers to keep their telephone numbers when switching between communications providers. This document concerns the level of wholesale porting charges that mobile communications providers charge each other in order to recover certain costs associated with the provision of mobile number portability.

General Condition 18 (GC18) places obligations on communications providers to provide number portability. These include, among other things, the requirement that wholesale porting charges are cost-oriented and based on the incremental costs of providing portability.

In September 2014 we published guidance on how communications providers should set charges to meet these obligations. In the light of this guidance we also consulted on the appropriate maximum level of certain porting charges between mobile communications providers. This document sets out our decision on the maximum level of those charges.

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Section 1

Summary

- 1.1 Number portability enables telephony subscribers, if they wish, to retain their telephone number when they switch between communications providers (CPs). If they do so, the telephone number is said to be “ported” from one CP to another. When the subscriber subsequently receives an incoming call, it is usually routed first to the CP that originally held the number being called. The call is then identified as a call to a ported number and “onward routed” to the CP to whom 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 18 (GC18)¹ sets out the principles that CPs must comply with in setting porting charges (including when setting a DCC).
- 1.3 On 14 February 2014 we gave a direction setting the maximum level of the DCC until 31 March 2016 (2014 DCC Direction).² This direction was based on a Long Run Incremental Cost including a mark-up for common costs (LRIC+) cost standard, using the costs of a benchmark average efficient mobile CP using 2G/3G technology and where the recovery of costs is split 50:50 between the donor provider and the recipient provider.
- 1.4 On 29 September 2014 we published a statement providing guidance to CPs on the setting of wholesale porting charges in compliance with GC18.³ In the light of our guidance, which moved to a Long Run Incremental Cost (LRIC) cost standard and recipient provider pays charging model, we also consulted on the model used to estimate the incremental costs of donor conveyance (LRIC of DC model).
- 1.5 The September 2014 document consulted on a new direction setting a maximum DCC, consistent with guidance on GC18 and the outputs of the LRIC of DC model, for all MCPs until 31 March 2018 (September 2014 consultation).
- 1.6 Hutchison 3G UK Limited (Three) and Vodafone Limited (Vodafone) responded to the September 2014 consultation.
- 1.7 In this statement we explain how we have taken account of those stakeholder responses and updated the LRIC of DC model in the light of the latest information on ported call volumes. We have decided that it is appropriate to revise the level of the maximum DCC, and Table 1 below sets out the maximum permissible DCCs for the period from 1 May 2015 to 31 March 2018.

¹ Ofcom, *Consolidated version of General Conditions as at 26 February 2015 (including annotations)*, available at <http://stakeholders.ofcom.org.uk/telecoms/ga-scheme/general-conditions/>.

² Ofcom, *Review of mobile donor conveyance charges*, 14 February 2014, Annex 2, available at <http://stakeholders.ofcom.org.uk/binaries/consultations/review-mobile-donor-conveyance-charges/statement/statement.pdf>.

³ Ofcom, *Porting charges under General Condition 18: Guidance on the setting of porting charges in compliance with GC18 and consultation on a new mobile donor conveyance charges Direction*, published 29 September 2014, available at: <http://stakeholders.ofcom.org.uk/consultations/gc18-sep14/>.

Table 1: Maximum DCCs that may be applied when charged for donor conveyance calls (nominal ppm)

	2015/16	2016/17	2017/18
DCC	0.023	0.023	0.022

Source: Ofcom 2015 LRIC of DC model. See section 3 for details on the calculation.

- 1.8 We are therefore withdrawing the 2014 DCC Direction and giving a new direction setting the maximum DCCs from 1 May 2015 until 31 March 2018. The new direction is set out in Annex 1 of this statement. Our modelling of the DCC is explained in Section 3 and the 2015 LRIC of DC model is published along with this statement on our website.
- 1.9 We have also decided to link the timing of future reviews of DCCs to that of our periodic reviews of mobile call termination (MCT).

Section 2

Background and legal framework

Introduction

- 2.1 Mobile number portability (MNP) is a facility that enables mobile subscribers, if they so wish, 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
- 2.2 When the subscriber that has ported their mobile number subsequently receives an incoming call, it is usually routed first to the network that originally held the number being called (the donor provider). 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 (the recipient provider). The DCC is levied by the donor for the onward-routing of the call to the recipient.
- 2.3 Further explanation of how number portability operates can be found in our September 2014 statement which provided guidance to industry on setting porting charges compliant with GC18 (September 2014 Porting Charges Guidance).⁵

Legal framework

- 2.4 In our September 2014 Porting Charges Guidance we set out, in detail, the legal framework and Ofcom’s general duties applicable to DCCs.⁶
- 2.5 Specifically, Article 30(2) of the Universal Service Directive of the EC (USD)⁷ imposes a duty on Ofcom to ensure that pricing between CPs and/or service providers related to the provision of number portability is cost-oriented.
- 2.6 GC18.5 implements Article 30(2) of the 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 donor provider and recipient provider have agreed another basis for the charges or Ofcom has directed that another basis for charges should be used.
- 2.7 In 2006 the European Court of Justice (ECJ) held that, subject to the requirement for cost-orientation, Article 30(2) of the 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

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 See Section 2 of *Porting Charges under General Condition 18 – Guidance on the setting of porting charges in compliance with GC18 and consultation on a new mobile donor conveyance charges Direction*, available at http://stakeholders.ofcom.org.uk/binaries/consultations/gc18-sep14/summary/Statement_on_Porting_Charges_under_GC18.pdf.

⁶ September 2014 Porting Charges Guidance, paragraphs 3.1 to 3.12.

⁷ Directive 2002/22/EC as amended by Directive 2009/136/EC.

calculating costs under Article 30(2) of the USD and which fixes maximum *ex ante* prices in respect of all MCPs on the basis of an abstract model of costs.⁸

2014 DCC Review⁹

- 2.8 On 14 October 2013 we began a review into whether we should set a maximum DCC on an *ex ante*, mobile industry-wide basis and, if so, at what level (2014 DCC Review). We undertook this review as an alternative means of resolving disputes brought by Three against each of EE Limited (EE) and Telefónica UK Limited (Telefónica) about the level of the DCC charged between them.
- 2.9 On 14 February 2014 we published a statement concluding that it was appropriate to set a new maximum DCC at the time to reflect our updated view on costs (2014 DCC Review statement).¹⁰ We noted that we had commenced a wider policy review to determine how, on a forward-looking basis, GC18 should be interpreted in relation to the setting of porting charges, but that prior to the conclusion of the policy review, we would set a new maximum DCC based on the pre-existing modelling approach. As such, the maximum DCC was calculated by use of a cost standard of Long Run Incremental Cost including a mark-up for common costs (LRIC+). Our donor conveyance modelling used the costs of a benchmark average efficient MCP using 2G/3G technology and where the recovery of costs was split 50:50 between the donor provider and the recipient provider. Therefore, the 2014 DCC Direction directed that the maximum DCC be set at 0.028ppm in 2013/14 and 2014/15, and at 0.027ppm in 2015/16. We also explained that, depending on the outcome of the wider policy project, we may need to revisit this direction.

Porting Charges Guidance

- 2.10 During 2012 and 2013 we conducted the 2013 Narrowband Market Review (2013 NBMR)¹¹ which reviewed the markets for fixed narrowband telephony services. In concluding the 2013 NBMR we decided to change the basis on which charges for terminating calls to geographic numbers on fixed networks (fixed termination rates (FTRs)) are calculated, from a LRIC+ to a LRIC basis.
- 2.11 Some CPs considered that this reduction in FTRs should cause us to review our approach to porting charges for calls to ported geographic numbers, termed average porting conveyance charges (APCCs) – because the updated FTR would be below APCCs charged at the time. We recognised stakeholders' requests for guidance on the level of geographic APCCs in the 2013 NBMR, and said that we would give further consideration to how GC18 should be interpreted and applied in setting porting conveyance charges.¹²

⁸ Case C438/04 *Mobistar v IBPT* (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 number portability.

⁹ Further background on the 2014 DCC review and decisions preceding it can be found in the September 2014 Porting Charges Guidance, paragraphs 2.21 to 2.47.

¹⁰ Ofcom, *Review of mobile donor conveyance charges*, 14 February 2014, available at <http://stakeholders.ofcom.org.uk/binaries/consultations/review-mobile-donor-conveyance-charges/statement/statement.pdf>.

¹¹ Ofcom, *Review of the fixed narrowband services markets – Statement*, 26 September 2013, available at <http://stakeholders.ofcom.org.uk/consultations/nmr-13/>.

¹² Section 9 of the September 2014 Porting Charges Guidance.

- 2.12 When we began our policy review of porting charges in October 2013 we decided to include porting charges for mobile numbers within the scope of this review. This enabled us to address wider policy issues not considered in the 2014 DCC Review.
- 2.13 On 29 September 2014, following consultation, we published our Porting Charges Guidance statement setting out our guidance on GC18-compliant porting charges. Our guidance was that:
- 2.13.1 all porting charges¹³ should be calculated using LRIC;
 - 2.13.2 for the mobile sector, consistent with our current approach, the DCC should be set with reference to a benchmark average efficient operator;
 - 2.13.3 for the fixed sector, both Time Division Multiplex (TDM) networks (based on depreciated asset values) and Next Generation Networks (NGNs) could be an efficient choice, and that it would be reasonable for fixed CPs to charge for porting conveyance based on the costs of the technology of their own network (whether that be TDM or NGN); and
 - 2.13.4 donor providers could charge recipient providers up to 100% of the incremental costs of conveyance and non-conveyance porting activities not otherwise precluded by GC18.
- 2.14 This guidance is relevant for any charges for the provision of portability, including conveyance and non-conveyance porting charges, levied by fixed and mobile CPs
- 2.15 In the light of the move to a LRIC cost standard and a recipient provider pays charging rule, we considered it appropriate to revise the cost model used to estimate the DCC. The September 2014 Porting Charges Guidance included a consultation on withdrawing the 2014 DCC Direction and replacing it with a new direction which would take account of the guidance and include the most up-to-date information on mobile network costs from the 2014 MCT model¹⁴ to estimate the LRIC of donor conveyance.
- 2.16 We received responses to the September 2014 consultation from Three and Vodafone.¹⁵ We consider the issues raised and set out our response and decision in Section 3.

Impact assessment

- 2.17 The analysis presented in our consultation of 24 March 2014 on porting charges (March 2014 consultation)¹⁶ and our September 2014 Porting Charges Guidance represented an impact assessment, as defined in section 7 of the Communications Act 2003 (the Act).

¹³ That is, all charges covered by GC18 (e.g. APCCs, DCCs and non-conveyance charges).

¹⁴ The MCT model is a cost model developed by Ofcom in order to estimate the costs incurred by an efficient MCP in providing MCT. The 2014 MCT model was published as part of our consultation on the 2015 MCT Review on 4 June 2014 and is available at <http://stakeholders.ofcom.org.uk/consultations/mobile-call-termination-14/>.

¹⁵ These responses are available at <http://stakeholders.ofcom.org.uk/consultations/gc18-sep14/?showResponses=true>.

¹⁶ Ofcom, *Porting charges under General Condition 18*, published 24 March 2014, available at <http://stakeholders.ofcom.org.uk/consultations/gc18-porting-charges-guidance/>.

- 2.18 We have considered the responses received both to the March 2014 consultation on porting charges and to our September 2014 consultation on a new DCC direction (which accompanied the porting charges guidance) in reaching our final conclusions in this document.

Equality Impact Assessment (EIA)

- 2.19 We are also required by the Act to assess the impact of our functions, policies, projects and practices on particular groups such as those identified by age, race, religion, disability, maternity, gender and sexual orientation. EIAs also assist us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers.
- 2.20 We do not consider that the impact of the decision to withdraw the 2014 DCC Direction and replace it with the new direction set out at Annex 1 will be to the detriment of any such group within society. In particular, we do not consider that our direction will have a differential impact on consumers in different parts of the UK or consumers with low incomes. This is because the direction will primarily affect wholesale payments between CPs. Therefore, we do not consider it necessary to carry out a full Equality Impact Assessment.

Section 3

Analysis of consultation responses and our final decision

3.1 In this section, we summarise our proposals in the September 2014 consultation, stakeholders' responses to these proposals and our analysis and final decision. We begin by setting out our methodology for calculating the level of the maximum permissible DCC. We then present the results from the updated LRIC of DC model and set out the form in which the DCC cap is being set. After that, we set out our approach to future reviews of DCCs and respond to some other comments from stakeholders.

Methodology for calculating maximum DCCs

Proposals in September 2014 consultation

- 3.2 In the September 2014 consultation we set out our proposals for a new direction which would set a maximum DCC across the mobile industry on a forward-looking basis and withdraw the 2014 DCC Direction. The proposed maximum DCCs were calculated using the 2014 LRIC of DC model which implements the decisions in Sections 4, 5 and 6 of the September 2014 Porting Charges Guidance as follows:
- 3.2.1 Using a LRIC cost standard rather than the LRIC+ cost standard used in the 2014 DCC Direction;
 - 3.2.2 Basing our calculations on the 2014 MCT model, noting that this would be superseded by the 2015 MCT model in March 2015; and
 - 3.2.3 Using a recipient provider pays charging rule, such that a donor provider is permitted to recover 100% of its conveyance costs from the recipient provider, rather than the 50:50 donor:recipient provider charging rule used in the 2014 DCC Direction.
- 3.3 We explained in that consultation that the 2014 MCT model does not model donor conveyance. In order to calculate the LRIC of donor conveyance using that model, we built an additional module which modelled donor conveyance as a service. It was also necessary for us to adjust the 2014 MCT model so that the relevant increment over which to measure costs corresponds to donor conveyance volumes.
- 3.4 We explained that we had data on donor conveyance minutes at the industry level for the period between 1999/2000 to 2014/15 collected under our formal information gathering powers.¹⁷ For the period following 2014/15 we forecast total annual industry donor conveyance minutes by extrapolating the historic trend in the ratio of donor conveyance minutes to total mobile call termination minutes and applying this to termination minutes projected in the 2014 MCT model. We modelled a base case

¹⁷ These volumes comprised two series of data, collected at different points in time under our formal powers. The first set featured annual figures covering the period from 1999/2000 to 2007/8 and was supplemented using quarterly data for the period Q1 2008 to Q3 2013.

forecast along with low and high scenarios, and we found that the calculated DCCs were relatively insensitive to variation in the traffic forecasts.¹⁸

- 3.5 In addition it was necessary for us to revisit a number of more specific modelling issues, which had already been considered as part of the 2014 DCC Review, specifically: routing factors, the utilisation of Mobile Switching Centres (MSCs) by donor conveyance traffic, administration costs, Home Location Register (HLR) look-up costs and transmission costs. Our proposals on these topics are described below.¹⁹
- 3.6 In order to model the network equipment required for onward routing, it was necessary for us to specify routing factors.²⁰ We added routing factors for donor conveyance traffic based on the modifications we made as part of the 2014 DCC Review.²¹ Since the 2014 DCC Direction was based on a 2G/3G operator, it was necessary for us to extend our assumptions to include the 4G network by adding 4G routing factors for donor conveyance.
- 3.7 The extent to which donor conveyance traffic uses MSCs was examined in detail as part of the 2014 DCC Review. In the September 2014 consultation we took the same approach to MSC processor load as in the 2014 DCC Review.²² This reflects our assumption (following advice from Analysys Mason in 2007) that a ported call uses the MSC less than an average incoming call. We have therefore assumed an MSC processor load of 20 milliseconds per busy hour call attempt, which is 40% of that of an incoming call assumed in the MCT models, but the same as that for an outgoing call in the MCT models.²³
- 3.8 In relation to administration costs, we did not consider that these form part of the LRIC of donor conveyance (measured as avoided costs and taken as the final traffic increment). Therefore, under a LRIC cost standard, we proposed that these costs should be excluded. The exclusion of administration costs from the LRIC of donor conveyance is consistent with the approach to calculating the LRIC of MCT in the 2015 MCT model (although we note that these costs had been included in setting the level of the caps in the 2014 DCC Direction for the purposes of calculating the LRIC+ of donor conveyance).
- 3.9 We also considered “HLR look-up costs” in detail in the September 2014 consultation, revisiting our reasoning from the 2014 DCC Review and proposed to exclude these costs from our modelling.²⁴ We found that:
- 3.9.1 The HLR itself is not incremental to donor conveyance. Based on evidence from MCPs its costs appear to be subscriber-driven and hence the off-net

¹⁸ The maximum impact on the LRIC of donor conveyance was 0.002 ppm.

¹⁹ A glossary has also been provided in the module “6 – LRIC of DC” of the LRIC of DC model, covering assets relevant to the estimation of the cost of donor conveyance.

²⁰ Routing factors describe the use that each network service makes of each network asset and allows mapping between the two. They are used to dimension the network and also to convert network element unit costs to service unit costs.

²¹ As explained in paragraph 4.18 of the 2014 DCC Review statement.

²² An MSC is a switch which forms part of the core of a mobile network. The MSC processor load measures the processing burden related to different types of call, in busy hour milliseconds.

²³ Paragraphs 4.76 to 4.81 in the 2014 DCC Review statement explain in more detail the reasoning behind adjusting the MSC processor load.

²⁴ The HLR, or Home Location Register, is a central database that contains details of each mobile phone subscriber on the network. The “HLR look-up” is a query of that database used to set up the call routing to the recipient provider.

donor conveyance traffic increment would not cause additional HLR costs to be incurred. This treatment is similar to that of “HLR update costs” in the 2011 and 2015 MCT models.²⁵

- 3.9.2 Additional Signalling Relay Functionality (SRF)²⁶ functionality is not incremental either. This is because SRF functionality is required for all outgoing calls and would be used in relation to both on-net and off-net donor conveyance traffic, where call trap is deployed.²⁷ Noting that most MCPs had deployed call trap we argued that call trap deployment should be assumed in a forward-looking assessment of the efficient costs of donor conveyance.
- 3.9.3 We are not aware of per call look-up costs that would be incremental to the off-net donor conveyance traffic increment.
- 3.10 We excluded transmission costs, as we did in setting the level of the caps in the 2014 DCC Direction.²⁸ We recognised that a donor provider might incur transmission costs in onward routing ported calls, but considered that it was not appropriate for these costs to be recovered through the DCC as the cost of interconnection links are already recovered between the donor provider and the recipient provider under separate commercial arrangements.

Stakeholders’ responses

- 3.11 In response to our September 2014 consultation, Three said it had no comments on our derivation of the level of maximum DCCs and welcomed our proposal to move to a LRIC cost standard.²⁹
- 3.12 Vodafone remarked on the fact that the 2014 LRIC of DC model was based on the 2014 MCT model, and that it, along with other stakeholders, had responded to our June 2014 consultation on our 2015 MCT Review (including the 2014 MCT model). It explained that it expected that these comments would be addressed in the 2015 MCT model, on which the final LRIC of DC model would be based. It explained that it thought that this approach “makes sense”, as long as any final direction on DCCs is based on the final version of the MCT model.³⁰
- 3.13 Vodafone also noted the similarity between the results of the 2014 DCC Review and the September 2014 consultation and explained that while it “may have reservations with some of the detail of the DCC calculation, [Vodafone] are in practice broadly indifferent to this prospective change and see little real value in exploring the detail of the calculation”.³¹

²⁵ 2011 MCT Review statement paragraph A9.82 and 2015 MCT Review statement annex 11.

²⁶ SRF is the functionality within mobile networks which enables calls to ported mobile numbers to be identified and onward routed to the appropriate recipient provider using a porting prefix. It is closely related and, in some instances, integral to the HLR.

²⁷ A call trap facility allows the recipient provider to ‘trap’ calls that it originates to numbers that have been ported into its network. Call trap removes the requirement for a call to be routed (sometimes described as “tromboned”) to the donor provider and then back to the recipient provider in circumstances where the call originates on the recipient’s network.

²⁸ See paragraphs 4.64 to 4.69 of the 2014 DCC Review statement.

²⁹ Three response, page 3

³⁰ Vodafone response, page 3

³¹ Vodafone response, page 3.

- 3.14 Nevertheless, Vodafone commented that it did not consider the forecast increase in donor conveyance volumes was reasonable. It noted that it had “suggested in 2008 that it was likely that the volume of ported traffic in relative and absolute terms would start plateauing, after the first few years of number portability”, and that the evidence “suggests that this view has been proved correct”. As a result it argued that a forecast that donor conveyance traffic “will suddenly start rising in the future and will keep rising in perpetuity is a little strange”, and that it might be more reasonable to adopt the “low” forecast.

Ofcom’s analysis of stakeholders’ responses and conclusions

- 3.15 We agree with Vodafone’s comments about the need to base any direction on the level of the DCC on the final version of the MCT model; we have updated our model (the 2015 LRIC of DC model, which is published alongside this statement), to be based on the 2015 MCT model. The 2015 MCT Review statement explains how stakeholder responses were taken into account in the production of the 2015 MCT model.
- 3.16 Other than ensuring the 2015 LRIC of DC model is based on the latest MCT model, the overall modelling approach in the 2015 LRIC of DC model is unchanged from the 2014 LRIC of DC model.³²
- 3.17 We observed in the September 2014 consultation that we proposed to extend the historical time series of donor conveyance traffic volumes based on the latest evidence provided by MCPs in response to formal information requests, and we have updated our forecast of future volumes as explained below.
- 3.18 In the light of Vodafone’s concerns about whether donor conveyance traffic should be expected to “plateau” we have reviewed the previous arguments that it referred to, along with other evidence.
- 3.19 An important driver of calls to ported numbers is the quantity of ported numbers. In our April 2010 statement on the routing of calls to ported numbers, we explained that the quantity of ported numbers is in principle determined by the following factors:³³
- 3.19.1 The existing stock of ported numbers;
 - 3.19.2 Minus customers who abandon their ported number;
 - 3.19.3 Minus customers who unport³⁴ their number;
 - 3.19.4 Plus new ports, and
 - 3.19.5 Noting that customers who re-port³⁵ have no effect on the quantity of ported numbers.

³² We have made one change to the 2015 MCT model in order to use it to calculate the LRIC of donor conveyance, which is to disable the “cell breathing” feature. Cell breathing refers to the fact that 3G network cell radii vary inversely with traffic loading, meaning that as traffic levels increase the effective cell radius falls, and vice versa. This feature was disabled in the 2014 MCT model but included in the 2015 MCT model. Since donor conveyance traffic does not touch the radio network this phenomenon has no bearing on the DCC cost results.

³³ Ofcom, *Routing calls to ported telephone numbers*, published 1 April 2010, available at http://stakeholders.ofcom.org.uk/binaries/consultations/gc18_routing/statement/statement.pdf.

³⁴ Meaning those customers who, having previously ported, decide to port back to the original range holder.

- 3.20 At the time of our April 2010 statement on the routing of calls to ported numbers we expected that the rate of growth in ported numbers would slow over time. This is because as the number of people who have ported increases, so too does the pool available to abandon or un-port. In addition, the number of new ports was expected to decline over time. As a result, in principle, we might expect growth in the quantity of ported numbers to slow over time.
- 3.21 However, it is possible for growth in the quantity of ported numbers to slow but for the volume of calls to those ported numbers to continue to increase if volumes of calls to mobiles are increasing. This was the case in the direct routing cost-benefit-analysis set out in the April 2010 statement,³⁶ and the latest forecasts from the 2015 MCT model also show increasing mobile termination volumes.³⁷ Consequently, in our base case, we would not expect forecast donor conveyance volumes to cease growing in the explicitly forecast period.
- 3.22 We have also examined the historical evidence on donor conveyance volumes. Vodafone argued that the evidence presented in the September 2014 consultation suggested that donor conveyance traffic volumes had grown little since 2008. However, we find that there are alternative explanations for the apparent lack of growth, which are unlikely to persist into the future:
- 3.22.1 We understand that the small reduction in donor conveyance traffic volumes in 2012 coincides with the introduction of call trap by [X] [X],³⁸ and note that in the two following years donor conveyance traffic volumes grew at a compound annual growth rate of 14%. This growth is consistent with our understanding of the strong growth in the number of ports over the last few years.
- 3.22.2 As Vodafone noted,³⁹ [X] [X] implemented call trap in November 2014. While a transitory reduction in donor conveyance traffic volumes might be expected to follow this, and there is some evidence of this in the data, we understand that this means that all of the MCPs have now implemented call trap. Consequently we would not expect reductions in donor conveyance volumes as a result of further call trap implementation in future.
- 3.22.3 The drop in ported call volumes between 2007 and 2008 may be due in part to a small discontinuity between the two time series of ported call volumes collected under our formal evidence gathering powers at different points in time. The earlier time series, collected in 2010, ends at a slightly higher point than the start of the second time series, collected in 2013. However, bearing in mind the lack of sensitivity of the model results of changes in the traffic volumes (as we explain further in the sensitivity analysis below) we did not consider it necessary or proportionate to probe this further.
- 3.23 As a result we do not consider it reasonable for our base case forecasts of donor conveyance traffic to suggest that this traffic will not grow during the explicit forecast

³⁵ Meaning those customers who have ported more than once, but not back to the original range holder.

³⁶ See Section 4 of the April 2010 statement.

³⁷ This is apparent from the base case assumptions in the "TrafficForecast" worksheet in the "Traffic" module of the 2015 MCT model.

³⁸ Based on responses from Three and Vodafone to Ofcom's formal information requests of 24 October 2013.

³⁹ Vodafone's response to Ofcom's formal information request of 15 January 2015.

period. However, we have moderated the growth rate such that it reduces gradually over time, reflecting the uncertainty inherent in such a long term forecast. We have made corresponding adjustments to the high and low scenarios, maintaining their symmetry around the base case.

3.24 In reviewing the donor conveyance volumes used in the 2015 LRIC of DC model we have also modified the use of the historical data in two respects:

3.24.1 The use of the 2015 MCT model requires us to have volume data on a quarterly basis, but the approach to interpolating the quarterly figures from the annual totals based on evidence for the period from 1999/2000 to 2007/8 had the effect of modestly overstating the true figures in our September 2014 consultation. Where quarterly figures were available from Q1 2008 onwards, we used these directly rather than interpolating them from annual totals and also modified the forecast to work on a quarterly basis.

3.24.2 We have adjusted the industry donor conveyance volumes from Q2 2010 to account for the fact that, following the creation of EE, traffic between Orange and T-Mobile should no longer be considered as onward routed.⁴⁰

3.25 Our revised treatment of the historical data and our approach to forecasting can be summarised as follows:

3.25.1 For the years 1999/2000 to 2007/8 we have data on annual donor conveyance volumes at the industry level and have therefore estimated the associated quarterly figures. We do this by deriving and applying the constant quarterly growth rate within each financial year, necessary to produce the correct annual total given the starting value in the last quarter of the prior year. This methodology cannot be applied in 1999/2000, which was the first year in which the donor conveyance service was provided, because there are no prior traffic volumes. For this reason, we extrapolate back the series to zero on a linear basis. This can be seen in Figure 1 below.

3.25.2 The resulting quarterly figures have then been appended to the time series of industry level quarterly data we have for the period Q1 2008/9 to Q3 2014/15. As noted above, we exclude donor conveyance volumes between Orange and T-Mobile from Q2 2010 onwards.

3.25.3 From this time series of data at the industry level, quarterly volumes for our modelled operator are derived by applying a market share⁴¹ and an “on-net calls adjustment” to exclude on-net originated calls from the traffic volumes. This adjustment recognises that the DCC should not be applied to on-net originated traffic to ported numbers (i.e. when the originating CP is also the donor provider) but, for practical reasons, is billed on all calls to ported numbers.⁴²

⁴⁰ Completion of the T-Mobile-Orange merger was announced on 1 April 2010. See <http://ee.co.uk/our-company/newsroom/2010/04/01/deutsche-telekom-and-france-telecom-announce-completion-of-uk-me>.

⁴¹ The 2015 MCT model market share assumption varies over time between 25% and 23%. In 2014/15 the market share is 24% and trends to 25% by 2021/22.

⁴² The magnitude of the adjustment is unchanged from that in our September 2014 consultation. We treat 17.5% of all ported calls as on-net in the years 1999/2000 to 2008/9, based on information in our

- 3.25.4 This historical time series then serves as the basis for our forecasts, which are produced using the same approach as in the September 2014 consultation.⁴³ This now incorporates an adjustment factor which is set to 0.995 in the base case, which has the effect of dampening the growth in the volume of donor conveyance traffic over time.⁴⁴
- 3.25.5 Having derived historical and forecast donor conveyance volumes for our modelled operator, we split this traffic between 2G, 3G and 4G technologies using the split of incoming calls from the 2015 MCT model.
- 3.26 The resulting donor conveyance traffic volumes are presented in Figure 1 below, which shows high and low scenarios in addition to our base case.⁴⁵ Consistent with our approach in the September 2014 consultation, we have tested the sensitivity of the LRIC of DC model to variation in the forecast traffic volumes.

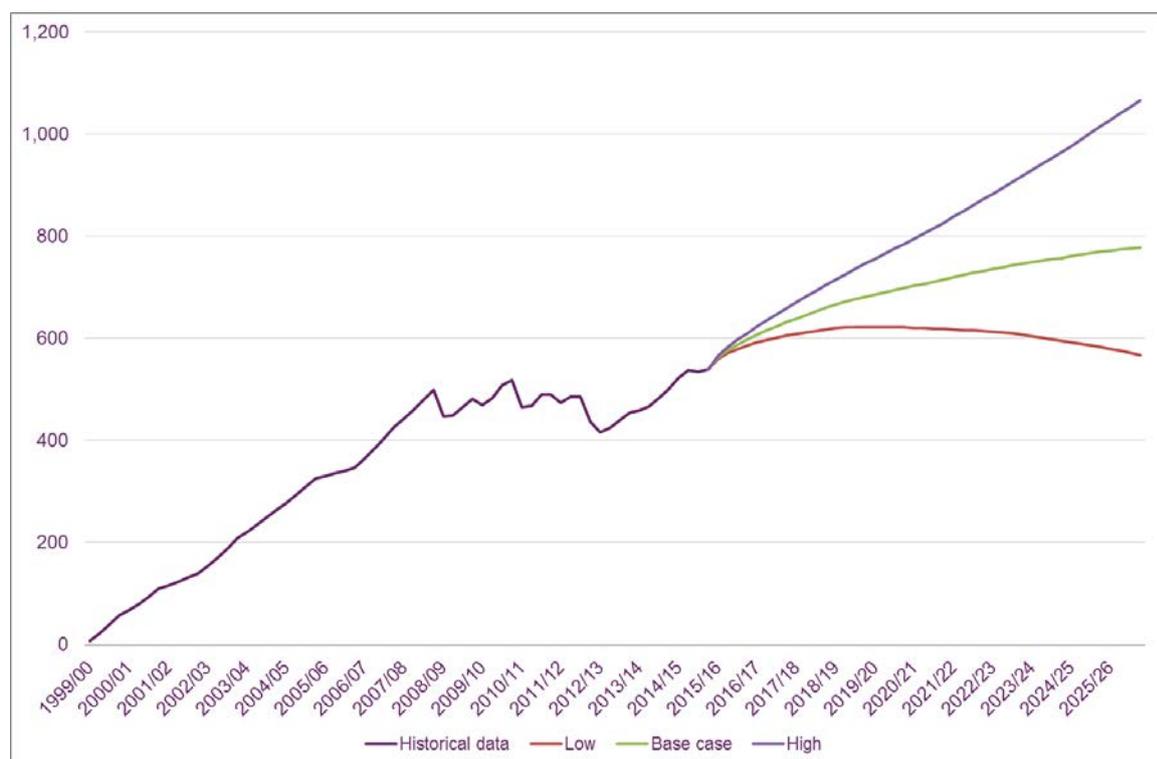
April 2010 statement on the routing of calls to ported numbers. We then trend this up to 33% by 2013/14 (as used in the 2014 LRIC of DC model), and assume it to be constant at this level thereafter.

⁴³ Specifically, we first calculated the geometric mean rate of growth of donor conveyance minutes as a proportion of call termination minutes for the historical data. This proportion is then forecast forward assuming that the geometric mean rate of growth in the ratio of donor conveyance to termination volumes evolves as a moving average process, and applied to the projected call termination volumes from the MCT model (albeit now the termination volumes projected in the 2015 MCT model).

⁴⁴ The base case in the September 2014 consultation involved no dampening factor in the base case projection.

⁴⁵ The high and low scenarios are generated by modifying the adjustment explained in paragraph 3.25.4 above. In the high traffic case it takes a value of 1, and in the low traffic case it takes a value of 0.990, calculated so as to produce a percentage reduction (from the base case) in the adjustment factor symmetric with the increase in that factor applied in the high scenario.

Figure 1: 2015 LRIC of DC model donor conveyance volumes for the modelled operator (million minutes per quarter)



Source: Ofcom 2015 LRIC of DC model.

Results

Costs of donor conveyance and DCCs

- 3.27 To convert the cost of donor conveyance derived using the methodology explained above into a DCC it is necessary to consider the issue of on-net calls further. On-net originated donor conveyance calls are excluded from the volumes that are used to project the costs to be recovered (as explained above), but as a matter of industry practice are included in the volumes for which the DCC is charged. In other words, MCPs levy a DCC over all mobile ported traffic and not just the off-net originated share which involves a porting conveyance service.
- 3.28 The adjustment we have applied reflects our analysis from the 2014 DCC Review. In the 2014 DCC Review we found that MCPs were unable to distinguish between on-net originated donor conveyance traffic and off-net originated donor conveyance traffic. As a result MCPs apply the DCC to total donor conveyance traffic, even though only costs incurred in providing donor conveyance for off-net originated calls should be recovered via the DCC. Therefore, we have again applied an adjustment to revise the DCC downward to reflect that, in principle, the costs of on-net ported calls should not be recovered.⁴⁶
- 3.29 Table 2 below shows both the cost of donor conveyance and the DCC resulting from the application of the on-net adjustment.

⁴⁶ The level of adjustment has been set to 33% of calls to ported numbers being on-net from 2013/14 onwards. To apply the adjustment we have multiplied our cost of donor conveyance by (1–33%).

Table 2: Blended LRIC of donor conveyance (nominal ppm)

	2015/16	2016/17	2017/18
LRIC	0.034	0.034	0.033
With on-net adjustment	0.023	0.023	0.022

Source: Ofcom 2015 LRIC of DC model.

3.30 These results are slightly lower than those in our September 2014 consultation, as shown in Table 3 below.

Table 3: Maximum DCCs (nominal ppm)

	2015/16	2016/17	2017/18
Proposal	0.024	0.024	0.023
Final value	0.023	0.023	0.022

Source: Porting Charges Guidance and Ofcom 2015 LRIC of DC model.

Volumes sensitivity analysis

3.31 In order to assess the impact of varying the donor conveyance traffic forecasts we have included a sensitivity test on the volumes. We use the high and low forecasts shown in Figure 1.

3.32 The results of the volume forecast sensitivity tests are shown in Table 4 below alongside the blended DCC for the medium scenario, which we have used as our base case. As expected, our sensitivity analysis shows higher donor conveyance volumes lead to a slightly lower nominal DCC and lower donor conveyance volumes lead to a slightly higher nominal DCC.

Table 4: Blended DCC volumes sensitivity analysis (nominal ppm)

	2015/16	2016/17	2017/18
High	0.021	0.021	0.021
Medium (Base case)	0.023	0.023	0.022
Low	0.024	0.024	0.024

Source: Ofcom 2015 LRIC of DC model.

Forward-looking DCC

Proposals in September 2014 consultation

3.33 In the September 2014 consultation we proposed to set the DCC in nominal prices, as we had done in the 2014 DCC Direction. We explained that this would be different to our typical approach to charge controls, which involves the cap on charges being indexed to outturn inflation (albeit with a lag).⁴⁷ We specifically sought stakeholders' views on this.

⁴⁷ For example, see the charge ceiling for MTRs from 1 April 2014 to 31 March 2015 at <http://stakeholders.ofcom.org.uk/consultations/mtr/charge-ceiling-14>.

Stakeholders' responses

- 3.34 Three said that it supported our proposal to set a maximum DCC in nominal terms. It argued that the low level of the DCC meant that it would be inefficient to set the DCC in real terms and publish updates each year, requiring annual updates to contracts and billing systems, unless the CPI assumptions were "materially incorrect".⁴⁸
- 3.35 Vodafone also supported setting the DCC in nominal terms. While noting theoretical concerns around using a model that functions in real terms to set rates on a nominal basis, it "entirely agree[d] from a practical point of view that there is a benefit from setting several years' maximum DCC rates on nominal terms in a single step... when this is done for a relatively limited and defined period." It identified benefits from avoiding the administrative burden of resetting rates on an annual basis, as well as creating certainty around the level of the DCC.⁴⁹

Ofcom's analysis of responses and conclusions

- 3.36 Having considered stakeholder responses, we have decided to set the maximum DCC in nominal terms. We use forecast CPI inflation from the 2015 MCT model, which has been updated to use the latest medium-term forecasts published by HM Treasury.⁵⁰ This is consistent with our proposals in the September 2014 consultation.

Period covered by the new DCC direction and future reviews

Proposals in September 2014 consultation

- 3.37 In our September 2014 consultation we proposed to set maximum DCCs until 2017/18 and to publish our final statement and direction at, or shortly after, the time we publish our final statement on the 2015 MCT Review. We explained that this would allow us to take into account stakeholder responses to the 2014 MCT consultation and, in particular, comments on the 2014 MCT model (as well as comments on the 2014 LRIC of DC model).
- 3.38 In addition we proposed linking any future DCC reviews to our periodic reviews of MCT, explaining that we would expect to review the maximum DCC every three years, in line with the current framework.

Stakeholders' responses

- 3.39 Three responded to the Porting Charges Guidance explaining that it welcomed the proposal to review the DCC on a regular basis. It explained that in its view this commitment would help to ensure future DCC compliance.⁵¹
- 3.40 Vodafone also agreed with the proposal to link the timing of future DCC rate revision processes with future MTR reviews, noting that this seemed "eminently reasonable, given the materiality of the likely maximum DCC rate".⁵²

⁴⁸ Three response, page 3.

⁴⁹ Vodafone response, page 4.

⁵⁰ See <https://www.gov.uk/government/statistics/forecasts-for-the-uk-economy-february-2015>.

⁵¹ Three response, page 3.

⁵² Vodafone response, page 4.

Ofcom's analysis of responses and conclusions

- 3.41 Having considered stakeholders' responses to our September 2014 consultation we have decided to link the timing of future reviews of DCCs to that of our periodic MCT reviews, which we anticipate being every three years. Therefore, we are setting a maximum DCC for the years 2015/16, 2016/17 and 2017/18 by means of a new direction. We anticipate conducting a further review of DCCs at the time of the next MCT review.

Other issues

Stakeholders' other comments

- 3.42 While Three said it welcomed our proposals, Vodafone noted that it was "broadly indifferent" to our proposed revision of the level of the maximum DCC given the declining materiality of DCC revenues. However, Vodafone noted its "regret" that we had decided to treat fixed and mobile porting charges differently, by not setting a quantified ceiling for the former (i.e. APCCs).

Ofcom's analysis of stakeholders' responses and conclusions

- 3.43 Our rationale for treating fixed and mobile porting charges differently was explained in our September 2014 Porting Charges Guidance. In summary, fixed CPs have historically negotiated and agreed APCCs, and these have not led to disputes. Therefore, we do not consider that it is necessary to intervene to set the specific level of APCCs to ensure compliance with GC18. By contrast, among MCPs we have seen a number of disputes over DCCs in the past. As a result, we consider it appropriate to set the maximum level of the DCC through a direction rather than rely on dispute resolution which is binding only on parties to a particular dispute.

Conclusion

- 3.44 For the reasons set out above, we have decided that the maximum DCCs that may be levied by donor providers on recipient providers to recover the conveyance costs associated with calls to ported numbers should be at the levels shown in Table 5 below. The direction implementing these caps is set out in Annex 1 and we are also withdrawing the 2014 DCC Direction.

Table 5: Maximum DCCs applicable for all donor conveyance calls (ppm, nominal prices)

	2015/16	2016/17	2017/18
Maximum DCC (LRIC, recipient provider pays)	0.023	0.023	0.022

Source: Ofcom 2015 LRIC of DC model.

- 3.45 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 and consider that a direction under GC18.5(a)(ii) is an appropriate means of doing so.
- 3.46 We consider that the new direction and the withdrawal of the 2014 DCC Direction satisfies section 49(2) of the Act as it is:

- 3.46.1 Objectively justifiable, in that it provides that pricing between MCPs related to the provision of number portability is cost-oriented as required under the legal framework for number portability;
 - 3.46.2 Not unduly discriminatory, in that it applies to all MCPs that levy a charge for the onward conveyance of a call to a ported mobile number;
 - 3.46.3 Proportionate to what it is intended to achieve, in that the direction ensures that charges for mobile portability remain cost-oriented in line with our policy decisions as set out in the September 2014 Porting Charges Guidance on how MCPs should set reasonable and cost oriented charges for the provision of portability pursuant to GC18. Moreover, prior to our decision to give the 2014 DCC Direction, we refrained from regulatory intervention for a period of time in order to allow MCPs to enter into bilateral commercial negotiations with regard to revised DCC(s). But, as has been the case previously,⁵³ we were subsequently called upon to resolve disputes between certain MCPs over the level of the DCC; and
 - 3.46.4 Transparent in what it is intended to achieve, in that the direction is explained in this document and set out in full at Annex 1.
- 3.47 We also consider that the direction (and the withdrawal of the 2014 DCC 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. We have sought to ensure a modelling approach that yields DCCs consistent with the September 2014 Porting Charges Guidance. Where modelling assumptions from previous reviews have remained appropriate we have retained these, and our modelling approach reflects stakeholder responses to our September 2014 consultation and information received since then. We have also sought to ensure our modelling approach is consistent (where appropriate) with that used in the 2014 DCC Review and have sought to provide a degree of consistency and regulatory certainty going forward by proposing that the new DCC be set at the time of, or shortly after, our decisions in relation to MCT and for it to be reviewed thereafter alongside our MCT market review (ordinarily every three years).

⁵³ As explained in Section 2.

Annex 1

Notification of the withdrawal of and the giving of a new direction for the purposes of a condition set under section 45 of the Communications Act 2003

Withdrawal of the 2014 DCC Direction and the giving of a new direction under paragraph 18.5(a)(ii) of General Condition 18 in relation to charges for Mobile Portability

WHEREAS

1. On 29 September 2014 Ofcom published a notification (the “First Notification”) of its proposals for withdrawing the 2014 DCC Direction and the giving of a new direction for the purposes of paragraph 18.5(a)(ii) of General Condition 18, in accordance with section 49A(3) of the Act.
2. Ofcom stated in the First Notification that they considered the proposal was not of EU significance pursuant to section 150A(2) of the Act.
3. In the First Notification and the accompanying consultation document, Ofcom invited representations about the proposals therein by 10 November 2014.
4. 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.
5. Ofcom received two responses to the First Notification and have considered every representation made to them in respect of the proposals in the First Notification.
6. 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 is withdrawing the 2014 DCC Direction and giving a direction for the purposes of paragraph 18.5(a)(ii) of General Condition 18.
2. The 2014 DCC Direction shall be withdrawn and cease to have effect on 30 April 2015.
3. The direction attached to this notification shall enter into force on 1 May 2015.

4. Ofcom's reasons for withdrawing the 2014 DCC Direction and for giving the direction attached to this notification are set out in the explanatory statement accompanying this notification.
5. Ofcom are satisfied that the direction complies with the requirements of sections 49 to 49C of the Act, insofar as they are applicable.
6. 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.
7. A copy of this notification and the accompanying explanatory statement are being sent to the Secretary of State in accordance with section 49C(1) of the Act.
8. In this Notification:
 - (a) "the 2014 DCC Direction" means the direction under paragraph 18.5(a)(ii) of General Condition 18 in relation to charges for Mobile Portability given by Ofcom on 14 February 2014;
 - (b) "the Act" means the Communications Act 2003;
 - (c) "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;
 - (d) "Mobile Portability" shall have the meaning ascribed to that term in General Condition 18;
 - (e) "Ofcom" means the Office of Communications.
9. 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.
10. 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

17 March 2015

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 not exceed:
 - a. for any Call made during the period beginning on 1 May 2015 and ending on 31 March 2016, 0.023 pence per minute;
 - b. for any Call made during the period beginning on 1 April 2016 and ending on 31 March 2017, 0.023 pence per minute
 - c. for any Call made during the period beginning on 1 April 2017 and ending on 31 March 2018, 0.022 pence per minute;
- 2. This direction shall cease to have effect on 31 March 2018.
- 3. In this direction:
 - a. "Act" means the Communications Act 2003;
 - b. "Call" means a voice call that originates on a public electronic communications network (whether fixed or mobile) other than the mobile network of the Donor Provider 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;
 - c. "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;
 - d. "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;
 - e. "Ofcom" means the Office of Communications;
 - f. "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.