An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

Access Products and Services
Key Performance Indicator (KPI) Metrics

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Chapter 1

1 Executive Summary

Introduction

1.1 This Decision is concerned with Eircom's obligation to monitor and report on its performance in respect of regulated access products and services by reference to a number of Key Performance Indicators, ('**KPIs**'). This Decision concludes the consultation process initiated in ComReg Consultation Document 21/33, ComReg having taken into consideration comments received from ALTO, BT Ireland Limited ('**BT**'), Eircom Limited ('**Eircom**'); National Broadband Ireland ('**NBI**') and Sky Ireland Limited ('**Sky**').

1.2 ComReg has also taken utmost account of the comments received from the European Commission on **20** May 2022 following notification of the proposed Decision on **22** April 2022 further to Article 32 of the European Electronic Communications Code ('**EECC**').

Regulated access products subject to performance monitoring

KPI Metrics Decision to be extended to NGA; LLU KPI withdrawn subject to a sunset period

1.3 In terms of the scope of the regulated products and services for which Eircom is required to measure and report performance against KPIs, the Decision extends KPI requirements to cover the Next Generation Access ('**NGA**') products and services regulated under ComReg Decision D10/18[1], in addition to the CGA access products which remain essential inputs at this point. By contrast, demand for Local Loop Unbundling ('**LLU**')[2] products and service has declined to a level such that the burden of reporting these KPI Metrics outweighs the benefits and Eircom is no longer required to publish KPIs in respect of the LLU product suite, subject to a sunset period for Line Share.

KPI requirements for FACO products and services remain those set out in ComReg Decision D05/11

1.4 In the Consultation, ComReg had proposed that the products and services concerned by the KPI requirement will include products offered on the Fixed Access and Call Origination ('**FACO**') Market. At the time of the Consultation, ComReg expected that the then ongoing FACO Consultation (ComReg 20/46 of 17 June 2020) would be completed and that the extent of Eircom's obligations

[1] ComReg Decision D10/18, Wholesale Central Access: Decision Instrument Response to Consultation and Decision. Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products, ComReg Document 18/94, 19 November 2018.

[2] The LLU portfolio includes the Unbundled Local Metallic Path ('**ULMP**') product, and Line Share whereby the high frequency capacity of a line is made available to the Access Seeker.

as regards KPIs for FACO products would reflect the scope (in particular the geographic scope) of Eircom's FACO obligations as decided following ComReg 20/46.

1.5 However, following notification by ComReg of its Draft 2021 FACO Market Review Decision to the European Commission ('**EC**') on 18 June 2021[3], and the EC's letter of 16 July 2021[4] expressing serious doubts with that Draft Decision, by decision of 20 September 2021[5], the EC required that ComReg withdraw its Draft Decision. On 14 February 2022, ComReg withdrew its Draft Decision and on the same day, published Consultation 22/10 proposing to deregulate the FACO Markets (subject to a sunset period). In the light of ComReg's new proposals for the FACO markets as set out in Consultation 22/10, ComReg has decided not to amend or otherwise intervene in respect of the specification of KPI requirements as regards the FACO Market, and this Decision does not affect Eircom's obligations in respect of KPIs relevant to the FACO Markets under ComReg Decision D05/11 (in particular its Annex 1).

1.6 In effect, this Decision accordingly is only concerned with the specification of the KPI requirements in respect of products offered by Eircom under ComReg Decision D10/18.

KPI for CEI products and services to be subject to further consultation

1.7 In Decision D10/18, ComReg had found that it was necessary to develop a set of KPIs with respect to Civil Engineering Infrastructure[6] ('**CEI**') access and indicated it would consider consulting separately on specific CEI KPIs, at the appropriate time.[7] Against this background, the Consultation included proposals in respect of KPIs for CEI. In particular, ComReg proposed to require that the processes for gathering, processing, and reporting of CEI KPI metrics be put in place, but that the obligation to publish such metrics be delayed until demand for CEI has grown to a level that is sufficient to produce meaningful and useful CEI KPIs.

1.8 However, there was strong opposition to ComReg's proposals from Respondents to the Consultation including from ALTO, BT and NBI, which found that the proposed metrics were too narrow and would exclude large volume orders. Eircom agreed in principle but nevertheless expressed some concerns with ComReg's proposals.

[3] See ComReg Information Notice 21/65 of 18 June 2021.
[4] See ComReg Information Notice 21/76 of 20 July 2021.
[5] See ComReg Information Notice 21/94 of 21 September 2021.
[6] CEI also known as passive access infrastructure means the physical access path facilities deployed by Eircom to host cables such as copper wires, optical fibre and co-axial cables. It includes, but is not limited to, subterranean or above-ground assets such as Sub-Ducts, Ducts, Chambers and Poles.
[7] ComReg Decision D10/18, para. 7.973-7.974; 7.1029-7.1030; and 7.1091-7.1095.

1.9 Having considered the submissions to Consultation, ComReg is of the view that the appropriate course of action is to reconsider the proposed approach to ensure that CEI KPI metrics provide meaningful data in relation to all CEI access orders, including very large volume orders. Accordingly, CEI KPI metrics will be subject to a separate consultation and decision in due course.

Wholesale inputs and Retail Equivalents

1.10 In order that the wholesale products and services that Access Seekers and Eircom consume can be compared via the KPI Metrics, the network products and services that Eircom self-consumes when providing retail products and services to End Users ('**Retail Equivalents**')[8] must be selected for each wholesale inputs used by Access Seekers. Wholesale inputs and Retail Equivalents may or may not be the same depending on the market concerned and how Eircom self-supplies.

1.11 In the case of the WLA market, Access Seekers consume Eircom's Virtual Unbundled Access[9] ('**VUA**') product. Eircom, however, consumes Bitstream+ ('**BS+**'), a product that is offered to Access Seekers on a regulated basis in the Regional WCA market, downstream from WLA. As there are no material differences in terms of the ordering, provisioning and assurance processes for BS+ and VUA products. BS+ is the appropriate Retail Equivalent for VUA.

Scope

1.12 KPIs are to be published in respect of the following products and services:

(a) The suite of Eircom NGA WLA wholesale products and services (to include white-label products[10]) and their Retail Equivalents;

(b) The suite of Eircom NGA Regional WCA wholesale products and services (to include white-label products[11]) and their Retail Equivalents;

(c) The suite of Eircom CGA Regional WCA wholesale products and services (including white-label products) and their Retail Equivalents.

1.13 POTS based VUA and Standalone VUA and POTS based BS+ and Standalone BS+ for FTTC (which includes Exchange launched service EVDSL) are grouped

[8] See paragraphs 3.24 to 3.26 of this Consultation where retail equivalents and wholesale inputs are explained.
[9] Virtual Unbundled Access means the wholesale active access product provided by Eircom. It is an enhanced Layer 2 product which allows the handover or interconnection of aggregate End Users' connections at the MPoP. It allows the Undertaking a level of control similar to that afforded to the Undertaking connecting their own equipment to an unbundled Local Loop. VUA includes VUA provided on a stand-alone basis or VUA provided with SB-WLR;
[10] Please see Eircom's White Label Factsheet for a description of its white label products.
[11] Please see Eircom's White Label Factsheet for a description of its white label products.

for the purposes of the KPI metrics, and this is also the case for CGA Bitstream. No KPIs are required in respect of POTS based FTTH.

1.14 In order to have full transparency as regards the wholesale inputs, Retail Equivalents and associated order types that are in scope for the KPI metrics, Eircom is required to populate and maintain a table, to be published on its publicly available website, that lists the wholesale inputs and their Retail Equivalents with their associated order types.

Keeping KPIs current

1.15 As the regulated product portfolio evolves to meet changing customer preferences or technology, KPI Metrics must mirror these realities and a mechanism set up to allow for the addition or removal of products and services from the suite of KPI Metrics reflecting the dynamic nature of the demand for regulated access products and services, and for adjustments to the KPI Metrics as and where appropriate.

1.16 First, the requirement to monitor performance on a new regulated product applies from launch, using the KPI Metrics that apply to the new product's nearest regulated product in terms of functionality. Details of the KPI Metrics by which performance of the new regulated product will be measured are to be included in the notification for new product required under ComReg Decision D10/18.

1.17 Second, when the demand for a regulated access product or service becomes such that meaningful conclusions can no longer be drawn from the data, Eircom may request in writing that ComReg removes the relevant metrics from Eircom's reporting obligation. In deciding whether or not to allow Eircom to no longer publish the relevant KPI Metrics, ComReg will assess the continued requirement or otherwise of the relevant KPI Metrics.

KPI Metrics

1.18 In order that KPI Metrics provide transparency as regards the access provided to Access Seekers and to Eircom's downstream arm, it is essential that they measure all critical points in the product and service ordering, provisioning, and service assurance lifecycles. This means defining the KPI Metrics by reference to five main categories measuring ordering, provisioning, and service assurance (to the extent the metrics apply to any relevant product or service) including:

(i) Appointment related metrics;

(ii) Order (including e.g. recorded accepted, rejected, undeliverable, completed and cancelled orders);

(iii) Supply of service;

(iv) Fault and repair of service; and

(v) Quality of supply (by reference to numbers of installation failures (known as Dead-on-Arrival ('**DOA**') orders) and Early-Life-Failures ('**ELF**') orders where fauly occurs within a specified period following order completion.

1.19 Relevant KPI metrics have been further disaggregated into separate categories where appropriate in order to reflect performance accurately, distinguishing for instance between provisioning that requires physical intervention in the network and provisioning that does not. A Non Fault KPI Metric has been created in order to allow transparency regarding the volume of reported faults that are categorised as non-faults.

1.20 No obligation at this time is imposed on Eircom in respect of metrics designed to measure differences in Eircom's performance in the delivery of access as between different Access Seekers.[12] ComReg, however, may request random data sets from Eircom from time to time and conduct such population and statistical analysis.

Processing

1.21 In order that the KPI Metrics are truly representative of performance and to increase transparency as regards their calculation, KPI Metrics are to be calculated on the basis of all collected data, and the business rules used by Eircom to calculate the metrics, published and maintained by Eircom on its publicly available website in sufficient detail that Access Seekers may calculate their own metrics. Eircom may not distort or edit the collected data, that is, may not apply rules the effect of which is to exclude certain data from metrics calculation, especially as regards faults. The exclusion of faults from the calculation of the fault KPI metrics could result in actual under-reporting of product/service faults potentially masking equivalence issues and reducing transparency.

1.22 Audits may be conducted by ComReg from time to time (relying on third party auditors as appropriate).

Reporting and publication

1.23 Eircom is required to furnish a KPI Report of all KPI Metrics to ComReg, and to publish a non-confidential version of the Report on its publicly available website on a quarterly basis, using a mandated format in order to increase readability and ease of reference.

[12] For instance, by devising tests designed to measure statistical variations such as Z-testing. A Z-test is a statistical test used to determine whether two population means are different when the variances are known and the sample size is large.

Chapter 2

2 Introduction and Background

2.1 ComReg is the national regulatory authority ('**NRA**') for the electronic communications sector in Ireland. Section 10 of the Communications Regulation Act 2002 lists among ComReg's statutory functions, ensuring compliance by Undertakings[13] with obligations in relation to the supply of and access to electronic communications networks and services and transmission on such networks, carrying out investigations and, for the purpose of contributing to an open and competitive markets, collect, compile, extract, disseminate and publish information from undertakings, in relation to such supply and access and transmission. ComReg's statutory objectives include, under section 12 of the 2002 Act, the promotion of competition in electronic communications networks and services, contributing to the development of the internal market, and promoting the interests of the users within the European Union. ComReg is further required to take all reasonable measures which are aimed at ensuring that there is no distortion or restriction of competition in the electronic communications sector.

2.2 As the NRA under the European regulatory framework for electronic communications, ComReg is tasked with reviewing electronic communications markets and where ComReg finds that relevant markets are not competitive, ComReg is required to impose obligations on operators found to have significant market power ('**SMP**'). Obligations which ComReg may impose include obligations to meet reasonable requests for access to Regulated Access Products ('**RAPs**'), obligations of transparency and non-discrimination, obligations of price control and cost accounting and obligations of accounting separation.

2.3 Since 2011, as part of its obligations of transparency in a number of regulated markets, Eircom has been required to publish on a regular basis, Key Performance Indicators ('**KPIs**'). In particular, under ComReg Decision D05/11, Eircom has been required to measure its operational performance by reference to metrics which allow for a comparison between regulated access wholesale inputs supplied by Eircom to other Access Seekers and the inputs consumed by Eircom for its own supply of access to End Users. The KPIs allow comparison of Eircom's performance in respect of ordering, provisioning and service assurance when delivering RAPs to Access Seekers and when providing access to its downstream arms. The publication of KPIs allows for transparency and can

[13] Undertaking is defined in Regulation 2 of the the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011) ('**the Framework Regulations**') as "*a person engaged or intending to engage in the provision of electronic communications networks or services or associated facilities".*

support providing confidence in the provision of access by Eircom on a non-discriminatory basis. They provide both ComReg and Access Seekers with a means of identifying any equivalence concerns and take action accordingly and as appropriate.

2.4 Eircom is currently subject to an obligation to publish KPIs in respect of fixed access and call origination ('**FACO**'), wholesale central access ('**WCA**') and wholesale local access ('**WLA**')[14] in accordance with the requirements specified in ComReg Decision D05/11[15].

2.5 On 1 April 2021, ComReg published ComReg Document 21/33 ('**the Consultation**')[16], including a Draft Decision Instrument at Annex 1 of the Consultation, in accordance with the requirements of Regulation 12(3) of the Framework Regulations, in respect of KPIs in the FACO, WCA and WLA Markets. In the Consultation, ComReg, having assessed the continued relevance of existing KPI metrics, proposed new KPIs where appropriate, having regard to the evolution in the RAPs offered by Eircom since 2011, and a number of additional measures designed to ensure that KPIs are and remain relevant and meaningful. ComReg sets out here its final decision on these matters, having taken into account the submissions made by the five Respondents to the Consultation, namely ALTO (dated 2 June 2021), BT Ireland Limited ('**BT**') (dated 2 June 2021), Eircom Limited ('**Eircom**') (dated 2 June 2021 and 23 May 2022), National Broadband Ireland ('**NBI**') (dated 2 June 2021) and Sky Ireland Limited ('**Sky**') (dated 2 June 2021), and reference is made to the Respondents' submissions throughout this Decision as appropriate. This decision also reflects ComReg's taking utmost account of the European Commission's comments received by letter dated 20 May 2022 following ComReg's notification pursuant to Article 32 EECC on 22 April 2022.

2.6 ComReg believes the time is opportune to further specify the KPI metrics. ComReg notes that the European Electronic Communications Code ('**EECC**')[17] (which is not yet transposed in Irish law) makes it a requirement to have KPIs in

[14] As set out respectively, in Section 10.15 of the Decision Instrument at Appendix H of ComReg Decision D05/15 regarding the Fixed Access and Call Origination markets, Section 10.18 of the Decision Instrument at Annex 20 of ComReg Decision D10/18 in respect of the Wholesale Local Access market and Section 10.17 of the Decision Instrument at Annex 21 of ComReg Decision D10/18 in respect of Wholesale Central Access market. KPIs relating to the Terminating Segments of Wholesale of Leased line in ComReg Decision D05/11 have been replaced by the KPI requirements set out in ComReg Decision D03/20, Market Review – Wholesale High Quality Access at a fixed location, ComReg Document 20/06, 24 January 2020 (the '**WHQA Decision'**).Therefore, the WHQA KPI metrics are not in scope for the purpose of this Decision.

[15] Response to Consultation and Decision on the Introduction of Key Performance Indicators for Regulated Markets, ComReg Document 11/45, June 2011 ('**ComReg Decision D05/11**' or '**the 2011 KPI Decision'**)

[16] Access Products and Services Key Performance Indicators Metrics, ComReg Document 21/33, April 2021 ('**the Consultation'**)

[17] Directive EU 2018/1972 of the European Parliament and the Council of 11 December 2018 establishing the European Electronic Communications Code (Recast).

place where obligations are imposed on an operator in respect of wholesale access network infrastructure. Article 69 of the EECC, which is concerned with obligation of transparency, requires NRAs such as ComReg, "*where an undertaking has obligations under Article 72* [Access to Civil Engineering] *and Article 73* [Obligations of access to, and use of, specific network elements and associated facilities] *concerning wholesale access network infrastructure […] to ensure that key performance indicators are specified, where relevant, as well as corresponding service levels, and closely monitor and ensure compliance with them".* The EECC therefore confirms the relevance and importance of having KPIs in place.

2.7 Furthermore, since the development of the KPI Metrics in 2011, access network technology deployed in Eircom's network and the associated regulated broadband access products have changed significantly with the introduction of NGA i.e. Fibre-To-The-Cabinet ('**FTTC**')[18] and Fibre-To-The-Home ('**FTTH**')[19] access network technology. This has led to new and more complex provisioning[20] and service assurances processes for NGA[21] and changes to the existing CGA processes, with performance for these new products not adequately measured by existing KPIs. In that context, a review of KPIs in order that they remain meaningful and relevant, and to provide information in particular in respect of all relevant process points that could impact on End User[22] experience, is accordingly warranted to ensure that equivalence of access between Eircom and Access Seekers is ensured.

2.8 This Decision, following the Consultation, amends the KPIs in place in order that they align more closely with operational processes affecting End Users, and that

[18] Fibre to the Cabinet or FTTC means fibre to the cabinet which is a variant of the FTTN access network architecture where the Node used to house active equipment is the street cabinet.
Fibre to the Node" or "FTTN means an access network architecture where fibre optic cable is used to connect a Node in the local access network to the ODF in an Exchange.
[19] Fibre to the Home or FTTH means an access network architecture where fibre optic cable is used to connect the End User premises to the ODF in an Exchange. Fibre to the Home or FTTH means an access network architecture where fibre optic cable is used to connect the End User premises to the ODF in an Exchange.
[20] This is illustrated by way of the NGA FTTH provisioning. The provisioning process for FTTH requires an Optical Network Termination (hereafter, 'ONT') component and fibre Network Termination Unit (hereafter **'NTU'**) to be installed in the End User's (customer's) premises, and a fibre optic cable to be physically connected from the fibre distribution point to the ONT device. In many instances, the NGA FTTH provisioning requires remediation of the lead in duct or distribution poles (e.g. This remediation may include removing blockages from duct(s), the installation of and/or replacement of pole(s)). These remediation tasks are in addition to the standard interaction and co-ordination with the End User that is required for an NGA FTTH provisioning.
[21] Eircom currently publish KPI metrics for NGA on voluntary basis, the 2011 KPI Decision did not require Eircom to publish KPI metrics for NGA products and service because NGA products and services were not launched until 2013.
[22] In accordance with Regulation 2 of the Framework Regulations, End User means "a user not providing public electronic communications networks or publicly available electronic communications services". For the avoidance of doubt, End Users include any natural or legal person who facilitates or intends to facilitate the provision of public communications networks or publicly available electronic communications services to other End Users and who is not acting as an Undertaking.

the KPI metrics are sufficiently granular to ensure that the necessary transparency is provided to Access Seekers. Further requirements are being provided for in order to improve the overall management and clarity of existing KPI metrics, and to ensure that the KPI metrics used in respect of RAPs remain current and meaningful, by making sure that the KPIs that Eircom is required to publish are aligned to the RAPs and related processes availed of by, or available to, Access Seekers.

2.9 For these purposes and in order to ensure the accuracy of the KPIs published, ComReg requires access to the underlying data supporting the KPIs. In specifying KPIs and reporting and publication requirements, ComReg relies on Regulation 18 of the Access Regulations, and on Regulation 18 (1) of the Authorisation Regulations whereby ComReg may require an undertaking to provide information in respect of SMP obligations, where that requirement is proportionate and justified for systematic or case-by-case verification of compliance with SMP obligations.

2.10 This Decision is structured as followed:

- Section 3 sets out the scope of the KPI requirements, in terms of the products and services concerned;
- Section 4 sets out the KPI Metrics by which Eircom's performance is to be measured and reported;
- Section 5 sets out KPI processing, reporting and auditing requirements;
- Section 6 sets out ComReg's Regulatory Impact Assessment;
- Appendix 1 contains the Decision Instrument; and
- Appendix 2 contains a KPI Metrics classification.

Chapter 3

3 Scope of the KPI Requirements

3.1 The products concerned

3.1 The requirement that Eircom report to ComReg and publish KPIs has been in place since ComReg's 2011 KPI Decision (ComReg Decision D05/11). The 2011 KPI Decision requires Eircom to publish KPIs by reference to specific products provided by Eircom on a number of regulated markets where Eircom has been designated with SMP, namely :

(a) The Regional WCA Market under ComReg Decision D10/18;

(b) The WLA Market, under ComReg Decision D10/18; and

(c) The FACO Market under ComReg Decision D05/15.

3.2 Since 2011, the obligation on Eircom to publish KPIs in respect of the RAPs provided on these markets has been maintained in the market analysis decision reviewing the relevant market(s), by referring to ComReg Decision D05/11 as a further specification of (in particular) Eircom's obligation of transparency. However, there has been no amendment made to the KPIs themselves, or the products included in ComReg Decision D05/11. As markets have evolved and the regulated product range offered by Eircom has extended to NGA and CEI products, it is no longer the case that the KPIs that Eircom is required to publish under Decision D05/11 cover all the regulated products availed of by Access Seekers and consumed by Eircom's retail arms. It is accordingly appropriate and necessary to address this discrepancy by extending the scope of the products for which KPIs must be published to additional regulated products provided by Eircom, and to ensure that KPIs remain relevant for the duration of regulation of a market.

3.3 In the Consultation, ComReg had proposed to include within this exercise, the products in the FACO market and regulated under ComReg Decision D05/15. At the time of the Consultation, ComReg expected that the then ongoing FACO Consultation (ComReg 20/46 of 17 June 2020) would be completed and that ComReg's final decision on KPIs would refer to the FACO Decision following ComReg Consultation 20/46. The extent of Eircom's obligations as regards KPIs for FACO products would reflect the scope (in particular the geographic scope) of Eircom's FACO obligations as decided following ComReg 20/46.

3.4 However, following notification by ComReg of its Draft 2021 FACO Market Review Decision to the European Commission ('**EC**') on 18 June 2021[23], and the EC's letter of 16 July 2021[24] expressing serious doubts with that Draft Decision, by decision of 20 September 2021[25], the EC required that ComReg withdraw its Draft Decision. On 14 February 2022, ComReg withdrew its Draft Decision and on the same day, published Consultation 22/10 proposing to deregulate the FACO Markets (subject to a sunset period). In the light of ComReg's new proposals for the FACO markets as set out in Consultation 22/10, ComReg has decided not to amend or otherwise intervene in respect of the specification of KPI requirements as regards the FACO Market, and this Decision does not affect Eircom's obligations in respect of KPIs relevant to the FACO Markets under ComReg Decision D05/11.

3.5 In effect, this Decision accordingly is only concerned with the specification of the KPI requirements in respect of products offered by Eircom under ComReg Decision D10/18.

3.6 As a result, a number of the KPI metrics that had been proposed in the Consultation are not included in this Decision.[26] Amongst those KPI metrics are the Fault Allocation Metrics[27] whose purpose was to ensure that all reported faults are allocated to a market and to the products and services within that market on a consistent basis, and in particular allocated on a consistent basis across NGA and FACO products. As KPI metrics that are relevant to FACO are no longer proposed in this Decision, ComReg has decided not to require fault allocation KPI metrics and to rely instead on the prohibition of fault exclusions discussed in section 5.2.

3.7 In its submissions to the Consultation, Eircom made a number of preliminary observations taking issue in particular with the legal basis for ComReg's proposed decision expressing the view that "*the current review of the KPI regime has no legal basis*". Eircom was also of the view that ComReg had provided no tangible basis as to why the proposed changes in respect of the WLA and WCA markets are required at this time, and what in particular would have changed since ComReg Decision D10/18 adopted in November 2018 regulating those markets. In Eircom's view, in the absence of any such evidence, ComReg's proposals to substantially increase the KPI regime for broadband services would be without any legal basis under the European Regulatory Framework including Article 68 EECC. Eircom submitted that the appropriate time for ComReg to design appropriate remedies is at the time of the market analysis process, and that the regulatory regime would already make adequate provision in respect of

[23] See ComReg Information Notice 21/65 of 18 June 2021.
[24] See ComReg Information Notice 21/76 of 20 July 2021.
[25] See ComReg Information Notice 21/94 of 21 September 2021.
[26] Metrics 121 to 147 inclusive in the Consultation
[27] Metrics 148 to 154 in the Consultation.

quality of service. In proposing KPIs dealing with quality of service, ComReg would be "*exceeding its authority by proposing the inclusion of metrics in the KPI regime that go beyond the objective of monitoring open eir's compliance with its non-discrimination obligations*" where ComReg would have "*no evidence, based on the existing NGA KPIs, that open eir is acting in a discriminatory manner towards eir's retail arms*."

3.8 Having considered Eircom's submission, ComReg is satisfied that its decision has a proper legal basis, noting as follows:

3.8.1 First, insofar as the proposed KPIs for the WLA and WCA markets are concerned, ComReg fundamentally disagrees with Eircom's views that no intervention is justified at this point in time. It is not correct that ComReg is precluded under the regulatory framework from intervening in any way during the course of market review. Regulation 18 of the Access Regulations specifically entitles ComReg to specify requirements in relation to an existing obligation. ComReg notes further that Article 68(6) EECC specifically envisages in respect of new market developments that are not sufficiently important to require a new market analysis, that an NRA amends or imposes new obligations in order to address such developments.

3.8.2 In this regard, there have been developments since 2018, discussed below, which have rendered the KPI regime set out in ComReg Decision D05/11 ill-fitted and misaligned in terms of the products concerned by KPIs, and the products purchased by Access Seekers. The progressive replacement of CGA-based products provided by Eircom with NGA-based products also provided by Eircom is not a development that was unanticipated or is in any way at odds with the findings made in ComReg Decision D10/18; it does not require a market analysis to be taken into account with regard to KPIs. Rather it is appropriately dealt with by ensuring that the KPIs that Eircom is required to publish reflect the products available to Access Seekers.

3.8.3 Second, contrary to what Eircom suggests, it is not necessary for ComReg to show evidence, in order to require Eircom to publish new or different KPIs to those published to date, that "*open eir is acting in a discriminatory manner towards eir's retail arms".*[28] In order that KPIs play their role and assist with the monitoring of non-discrimination, they have to be meaningful and in particular measure performance for all relevant products on the market. This is no longer the case and that there may be no evidence of non-compliance says nothing of the requirement for updating the KPIs which Eircom is required to publish.

3.8.4 ComReg also does not agree with Eircom's objection that the "*metrics go beyond the scope of the remedy"* on the basis that the regime proposed in the

[28] Para 23 of Eircom's submission, p. 7.

Consultation would "*include quality of service measures".*[29] The nature of Eircom's objection is not entirely clear, but appears to rely on the notion that ComReg is wrong to consider among the benefits to accrue from improved KPI metrics, that they would enable operators to confirm to retail or wholesale customers the quality of service assurance available, and to provide them with evidence of service quality. Whether or not Eircom agrees that KPI metrics will be used so by operators, it does not mean that such metrics "*go beyond the scope of the remedy".* It is of course the case that Eircom's obligation of non-discrimination extends to the quality of the service it provides to Access Seekers and itself and KPI metrics measuring such quality of service clearly fall within the scope of relevant KPIs. In requiring Eircom to publish KPIs which measure performance, ComReg is not in any way "*exceeding its authority*" as Eircom contends, and ComReg did not take into account irrelevant considerations into account in this respect, as Eircom contends.[30]

3.9 ComReg is also satisfied, in response to Eircom's concerns set out in its submission to Consultation,[31] that in reaching its final Decision, ComReg has had regard to all relevant considerations including submissions received from Respondents to Consultation, has ensured that its Decision is evidence-based and imposes proportionate requirements as well as meets applicable requirements to provide adequate reasons.

3.2 Relevant products and services

CGA and NGA Products and Services

3.10 KPIs provide key information to Access Seekers and ComReg and facilitate the easy review of information on the relative quality of wholesale products and services compared to Eircom's self-supply of products and services. In helping demonstrate whether wholesale inputs supplied by Eircom are of comparable quality and are delivered in similar timeframes to Eircom's self–supplied retail equivalents, KPIs foster Access Seekers' confidence that there is equal treatment between them and Eircom, between the wholesale inputs they consume and the inputs consumed by Eircom's retail arm. However, in order for KPIs to play this role in full, they must be meaningful in terms of the RAPs concerned, and provide an objective measure of Eircom's key ordering, provisioning, and service assurance processes.

3.11 Access remedies in the regulated WLA and Regional WCA Markets are divided into two broad categories of access products and services: CGA and NGA. Since the introduction of NGA products, End Users have been migrating from CGA-

[29] Para 26 of Eircom's submission, p. 8.
[30] Para 30-31 of Eircom's submission, p. 10, and para 41, pp. 12-13.
[31] Para 41 of Eircom's submission, pp. 12-13.

based products and services to NGA-based products and services, where available, in order to benefit from higher broadband speeds. ComReg anticipates that the NGA products will replace CGA products and services over time. The important role played by NGA products in delivering regulated broadband access means that it is essential that Eircom's performance is tracked.

3.12 ComReg acknowledges that Eircom publishes certain wholesale performance metrics using aggregated Service Level Agreement ('**SLA**') reports[32]. However, the aggregated SLA metrics do not, on their own, demonstrate the absence of discrimination in the relevant markets. Eircom submitted in its response to Consultation that its publication of the KPI metrics required by Decision D05/11 and of NGA KPI metrics on a voluntary basis is sufficient to provide an objective measure of the processes that are under its control. ComReg does not agree that this is the case. In particular, the NGA KPI metrics published by Eircom on a voluntary basis do not provide sufficient transparency. For example, they do not monitor all relevant process points and it is not clear how exactly they are calculated.

3.13 Eircom also submitted that there is no justification for imposing granular KPI metrics in respect of NGA products and services, on the basis that there would be equivalent information available to Access Seekers as compared with Eircom's downstream arms in respect of ordering, provisioning, and service assurance given Eircom's obligation of non-discrimination obligation to the standard of EoI. Again, ComReg does not agree. A non-discrimination obligation does not address, and is not a substitute for transparency, which facilitates monitoring of compliance with a non-discrimination obligation.

3.14 The growing importance of NGA products does not mean that CGA, and KPIs for CGA, are no longer relevant. CGA products and services continue to be important for certain cohorts of End Users particularly in some rural areas where Eircom may not supply NGA products and services. In the medium term, ComReg envisages that the consumption of CGA products and services, namely the Bitstream portfolio, will continue its current downward demand trajectory. For the time being, however, these products remain essential inputs and it is justified and appropriate to continue to require Eircom to publish KPIs for those products but subject to the changes discussed in Chapters 4 and 5.

3.15 Regarding the LLU product portfolio, it is ComReg's view that the demand for LLU products and services has declined to a level[33] such that the burden of reporting these KPI metrics outweighs their benefits and Eircom's agreement to same in its submissions to Consultation is noted. In terms of BT's and Sky's

[32] Service Level Agreement reports lists the performance target and actual performance for each product and service parameter that has a performance target.
[33] LLU and LS new connection for June, July and August 2020 [✂ [redacted] ✂] orders respectively, from the confidential version of Eircom's "Equivalence KPI Q3 July – Sept 2020"

submissions that Line Share ('**LS**') repair metrics should be retained on the basis that there is a cohort of End Users whose services rely still on the LLU product portfolio, ComReg notes that the total number of unbundled connections in Q3 2021 was [✂ ✂], which breaks down as follows: [✂ ✂] LS and [✂ ✂] ULMP connections, and that the install base decreased for ULMP and LS decrease annually by [✂ ✂] and [✂ ✂] respectively[34]. ComReg expects that the install base for ULMP and LS will continue to decrease as End Users continue to migrate to NGA products. ComReg, accordingly, is of the view that it is appropriate to withdraw Eircom's obligation to report and publish KPIs in respect of the LLU products ULMP and GLUMP.

3.16 BT, in its submission to Consultation, proposed a three-year sunset period. For the same reasons as set out above, ComReg does not believe that a three-year period is appropriate. ComReg instead considers that it is sufficient and proportionate in the circumstances to make provision for a sunset period to apply in respect of the LS metrics only, until the end of 2022.

3.17 Accordingly, Eircom's reporting obligations insofar as the LLU portfolio is concerned will continue only insofar as LS is concerned until the end of 2022; they no longer apply from this Decision's effective date, to the ULMP and GLUMP products.

CEI Products and Services

3.18 Since 2011, in addition to NGA products and services, the regulated product range which Eircom is required to provide has been expanded to include access to CEI. In the Consultation document prior to ComReg Decision D10/18, ComReg noted that "t*he 2011 KPI Decision identified the importance of KPIs as a means of monitoring performance of the SMP operator with respect to its non-discrimination obligations"* and ComReg was of the view that it was "*necessary to develop a set of KPIs with respect to CEI access"* and that it would consider a separate consultation on specific CEI KPIs, at the appropriate time. Having taking into account Respondents' views, including Eircom's view that it would not be appropriate to consult on KPIs with respect to CEI access until it has been established that there is commercial demand for the products and that all parties have had some experience of their operation so that robust KPIs could be produced, in Decision D10/18, ComReg concluded that it was necessary to develop a set of KPIs with respect to CEI access and it would consider consulting separately on specific CEI KPIs, at the appropriate time[35] .

[34] Information Request with respect to Broadband Data Project and Quarterly Questionnaire issued by ComReg to Eircom on 16 Decemeber 2020 and response received by ComReg on 4 November 2021.
[35] ComReg Decision D10/18, para. 7.973-7.974; 7.1029-7.1030; and 7.1091-7.1095.

3.19 Against this background, the Consultation proposed a number of KPIs in respect of CEI. ComReg noted that although current consumption for CEI access is too low to support meaningful reporting of CEI KPI metrics, consumption of CEI products and services is expected to increase, having regard in particular to current ongoing product developments, such as the development of a sub-duct self-install access product. When consumption has increased to a sufficient volume, KPI Metrics should be in place in order to ensure that performance monitoring can commence without delay. The Consultation included proposals in respect of CEI KPI metrics including in respect of the appropriate trigger to commence reporting of CEI KPI metrics.

3.20 In particular, ComReg proposed to require that the processes for gathering, processing, and reporting of CEI KPI metrics are put in place, but Eircom's obligation to publish such metrics delayed until demand for CEI has grown to a level that is sufficient to produce meaningful and useful CEI KPIs. ComReg also proposed, because of the close relationship between the CEI component of the NGN Ethernet products and the CEI access products, to use the average order volume of the NGN Ethernet provisioning and service assurance orders in the period between Q3 2019 and Q3 2020 as the threshold to trigger the publication of the CEI KPI metrics.

3.21 However, there were strong opposition to ComReg's proposals from ALTO, BT, and NBI. Eircom agreed in principle but nevertheless expressed some concerns and proposed an alternative suite of consolidated CEI KPI metrics that are more aligned, in ComReg's view, with the performance metrics of the CEI SLAs. BT was surprised and disappointed with the limited scope of the CEI KPI metrics and suggested that ComReg carry out a deeper review of the CEI product KPI metrics. In BT's view ComReg's approach was too narrowly focussed and simplistic as the proposed CEI KPI metrics did not cover all CEI products and deployment scenarios. NBI was also of the view that the proposed KPI CEI metrics were too limited and the absence of CEI KPI metrics for each type of CEI access meant that there would be a transparency deficit.

3.22 Having considered the submissions to Consultation, ComReg is of the view that the appropriate course of action is to reconsider the proposed approach to ensure that CEI KPI metrics provide meaningful data in relation to all CEI access orders, including very large volume orders. ComReg agrees that it should reconsider the focus and the type of CEI KPI metrics that are required to provide necessary transparency and to help monitor compliance with the non-discrimination obligation.

3.23 Consequently, this Decision is not concerned with the CEI KPI metrics, which will be subject to a separate consultation and decision in due course.

Wholesale inputs Vs Retail Equivalents

3.24 For KPIs to facilitate the easy review of information on the relative quality of wholesale products and services compared to Eircom's self-supply of products and services, an appropriate basis for comparison must be selected. In order that the wholesale products and services that Access Seekers and Eircom consume can be compared, "retail equivalents" for Eircom must be identified for each wholesale inputs used by Access Seekers and chosen carefully to ensure that they appropriately align with the wholesale inputs used by Access Seekers in the relevant markets.

3.25 Wholesale inputs refer to the access provided to Eircom's network delivered through Eircom's wholesale products and services that are consumed by Access Seekers. Retail equivalents are the network products and services that Eircom self-consumes when providing retail products and services to End Users. The wholesale inputs and the retail equivalents may or may not be the same depending on the market concerned and how Eircom self-supplies.

3.26 Eircom and Access Seekers do not consume the same products for the provision of NGA access. Access Seekers consume Eircom's VUA[36] product, and Eircom consumes Bitstream+ ('**BS+**')[37] (a product that is offered to Access Seekers on a regulated basis on the Regional WCA market, downstream from WLA). BS+ combines an access path (i.e. VUA without a local handoff) and a backhaul component used to transport aggregated End User traffic to a point of interconnection. BS+ and VUA (in each case combined or not with a voice service) are sufficiently similar in terms of the ordering, provisioning, and assurance processes that BS+ is the appropriate Retail Equivalent for VUA. For the purpose of the KPIs, the performance of the ordering, provisioning, and service assurance operational processes for VUA and BS+ can be compared to see whether they operate in the same way, with the same degree of reliability and performance.

3.27 For the avoidance of doubt, NGA Retail Equivalents include all self-consumed NGA products and services including where the self-consumed NGA product is bundled with another product whether regulated or unregulated.

Products and services in scope

3.28 KPIs are to be published in respect of the following products and services:

[36] For the purposes of this Consultation VUA products includes both exchange and cabinet based products.
[37] For the purposes of this Consultation BS+ products includes both exchange and cabinet based products.

(a) The suite of Eircom NGA WLA wholesale products and services (to include white-label products[38]) and their Retail Equivalents.

(b) The suite of Eircom NGA Regional WCA wholesale products and services (to include white-label products[39]) their Retail Equivalents.

(c) The suite of Eircom CGA Regional WCA wholesale products and services (including white-label products) and their Retail Equivalents.

3.29 Eircom in its submission to Consultation made representations that it was not appropriate to report separately in respect of Standalone and POTS-based services. ComReg accepts in light of those submissions, that POTS based VUA and Standalone VUA and POTS based BS+ and Standalone BS+ for FTTC (which includes Exchange launched service EVDSL) may be grouped for the purposes of the KPI metrics, as POTS based VUA and POTS based BS+ on the one hand and Standalone VUA and Standalone BS+, on the other hand, are sufficiently similar in terms of ordering, provisioning, and assurance processes. The VUA wholesale inputs and the BS+ inputs that Eircom self-consumes, i.e. the NGA Retail Equivalents, are also sufficiently similar in terms of the ordering, provisioning, and service assurance processes. Consequently, the ordering, provisioning, and service assurance processes of the VUA products and services and their Retail Equivalents can be compared.

3.30 Finally, ComReg also accepts that having regard to the install-base for POTS based FTTH and the demand profile it is not necessary to measure performance and have KPI metrics for POTS based FTTH. ComReg notes that in Q3 2021 the POTS based FTTH VUA install base was [✂ [redacted] ✂] connections, and the install base for Standalone FTTH VUA was [✂ [redacted] ✂] connections. The install base for FTTH VUA in Q3 2021 was [✂ [redacted] ✂] connections[40]. On an annual basis, the install base POTS based FTTH increased by approximately [✂ [redacted] ✂] connections per month.

3.31 Insofar as CGA Bitstream is concerned, ComReg, having considered Respondents' submissions, has decided not to split the KPI metrics into POTS based and Standalone metrics as proposed in the Consultation. Eircom in particular argued that because the install based for CGA Bitstream is relatively low and decreasing no distinction should be made in the metrics between Standalone Bitstream and bundled CGA (i.e. Bitstream with an analogue voice service).

[38] Please see Eircom's White Label Factsheet for a description of its white label products.
[39] Please see Eircom's White Label Factsheet for a description of its white label products.
[40] Information Request with respect to Broadband Data Project and Quarterly Questionnaire issued by ComReg to Eircom on 16 Decemeber 2020 and response received by ComReg on 4 November 2021.

3.32 In order to have full transparency as regards the wholesale inputs, Retail Equivalents and associated order types that are in scope for the KPI metrics, Eircom is required to populate and maintain a table, in the form of Table 1 below, to be published on its publicly available website, that lists the wholesale inputs and their Retail Equivalents with their associated order types, subject to notification to ComReg.

3.33 Table 1 provides examples of Wholesale Inputs and their Retail Equivalents with their associated order types. For the avoidance of doubt, Table 1 is not exhaustive and is only for illustration purposes.

Table1:

Wholesale Inputs		Eircom Retail Equivalent	
PRODUCT TYPE	**ORDER TYPE**	**PRODUCT TYPE**	**ORDER TYPE**
FTTH VUA	PNO, PNN, PNW, PNS	FTTH Bitstream +	PNO, PNN, PNW, PNS
FTTH VUA SA	PNO, PNN	FTTH BS+ SA	PNO, PNN,
FTTC VUA	PNO, PNN, PNW, PNS	FTTC Bitstream +	PNO, PNN, PNW, PNS

‘

3.3 Keeping the scope of KPIs current

3.34 Experience shows that over time markets evolve, and products and services develop. These changes are typically caused by the evolution of access network technology or changes in End User preferences for products and services. In short, the demand for regulated access products and services is dynamic. Consequently, KPIs may lose some of their relevance unless they are updated. For example, since the 2011 KPI Decision, NGA products, for which no KPI Metrics were defined in 2011, have become key products for the supply of broadband access.

3.35 Against this background, a mechanism is required that allows for the addition or removal of products and services from the suite of metrics that Eircom is required to monitor and report. Respondents to Consultation were generally supportive of ComReg’s view that KPIs should remain current. BT agreed that KPI metrics should be dynamic to ensure that they are current and relevant. Eircom also agreed with the need to ensure that KPI metrics are kept current, and NBI noted that the focus of the KPI metrics should be on those products and services that are being actively consumed by Access Seekers.

Introduction of New Products

3.36 With the view to keeping KPIs current in terms both of the metrics and the products and services concerned, when a new regulated product or service is

launched, Eircom is required to include KPI Metrics (e.g. the appointments, order, supply-of-service, faults and quality-of-supply metrics.) for that new product in the subsequent KPI report. This will allow KPI Metrics to mirror the evolution of the regulated product portfolio to meet the needs of the market because of customer preferences or technology changes.

3.37 While regulated products and services may change over time, the fundamental requirement to measure the appointments, order statuses, supply of service (provisioning activities) and repair of service (service assurance activities) are largely similar for current and future products and services. To ensure that the KPIs are available without delay for new products and services, a pragmatic approach may be adopted for the launch of new products and services in relation to KPI metrics whereby Eircom informs ComReg of the existing KPI Metrics to be produced for the new or amended product or service, using the same notification timeline (i.e. seven months) prior to publication and processes currently used to notify new products and services to ComReg.

3.38 This approach was supported by Respondents to Consultation, including Eircom, who noted that the impact of new RAP or changes to RAP on the equivalence KPI metrics is part of its established RAP development process, as well as NBI and BT for whom the revision of KPI metrics should be coordinated with the launch of new products and services in a similar way to SLAs.

3.39 Eircom, however, also argued that there should be a minimum order threshold reached before KPI metrics reporting begins so that they are meaningful. This however does not appear to be either practicable or necessary. Rather, and continuing with a pragmatic approach anchored in current development processes and regulatory notification requirements, where appropriate, Eircom may seek as part of its product notification a derogation from the general rule that KPI Metrics are in place for product launch. ComReg may grant a derogation where it is satisfied, on the basis of the reasons provided by Eircom, that performance monitoring and reporting should be delayed to a later date requested by Eircom or as specified by ComReg.

Removal of KPI requirements in respect of a specific product or service and where a product or service is withdrawn

3.40 Where demand for an existing regulated access product or service subject to KPI requirements falls, or the product population size becomes so small that meaningful conclusions can no longer be drawn from the data, the obligation to publish KPIs in respect of that product or service may be lifted by ComReg at Eircom's request made in writing. In considering Eircom's request, ComReg will assess the continued requirement or otherwise of the relevant KPI Metrics and may seek input from Access Seekers and/or third-party experts as ComReg considers necessary to reach its decision, as appropriate.

3.41 Respondents to the Consultation generally agreed with the principle that the requirement to publish KPIs in respect of certain products may be lifted by ComReg. However Eircom suggested that the process of establishing the relevant thresholds for lifting KPI requirements needs to be further specified, and Sky suggested that the population size should be defined. Having considered Eircom's and Sky's submissions, ComReg, however, does not believe at this stage that a specific threshold is necessary.

3.42 ComReg notes in particular that not having a set threshold means that Eircom is not precluded from applying to ComReg for lifting KPI requirements in appropriate circumstances, as Eircom sees fit. The continued requirement or otherwise for KPIs in respect of certain products and services may be determined by ComReg in light of Eircom's submissions including evidence as regards demand levels and implications for population parameters and/or statistical relevance and reliance, on a case-by-case basis.

3.43 BT also proposed in its submission to Consultation to have a two-stage process, including in a first phase, the removal of supply of service KPI metrics, and in a second phase, the removal of Repair-of-Service KPI metrics, on the basis of a need to protect customers against a degraded fault repair service (i.e. service assurance).[41] ComReg does not believe that this is necessary, given KPI requirements may only be lifted on the basis of low demand for the product concerned such that the population parameters and/or statistical relevance of the KPI metrics is called into question, and the KPIs are no longer meaningful, whether or not the product continues in use and is considered to be important by an Access Seeker, is not relevant, as that will not address the lack of meaningfulness of the KPIs concerned arising from too small a pool of data.

3.44 Where Eircom applies to ComReg to withdraw access to facilities already granted, and ComReg approves the request, in such circumstances the KPI metrics requirements associated with those products and services will become redundant and will no longer apply from the time that the product is withdrawn. Eircom accordingly will no longer be required to include those relevant KPI metrics from the KPI metrics reports. Any conditions relating to the publication of KPI metrics will be included in the decision to grant the withdrawal of access to facilities already granted.

3.45 Regarding Bitstream Ethernet Access (**'BEA'**), Eircom explained that there has been no take up of the product BEA so that it should be excluded from the KPI metrics. ComReg accepts Eircom's submission that were volume of orders is already low and continues to decline, to an extent that it gives rise to issues of

[41] Sky also submits (p. 2 of its Submission to Consultation) in respect of LLU that while there are not significant orders for LLU there is still a relatively sizeable base and the KPIs for service performance should be maintained.

variation in parameters that would undermine the meaningfulness of monitoring the KPI metrics for that product or service. This Decision caters for BEA the scenario, as appropriate Eircom can request to withdraw KPI metric reporting.

Adjusting KPIs

3.46 Keeping KPIs current may also involve adjusting them from time to time, for instance to ensure that they continue to align to product characteristics and applicable Eircom processes, to the extent necessary to maintain their usefulness and ensure transparency in the delivery of products and services availed of by Access Seekers.

3.47 One such example may be adjustments to KPI measurement intervals – that is the measurement points for performance: e.g., the number of orders completed at say, D+5, D+10 and D+15 days. For the time being the intervals for the KPI Metrics are set at the same points as they are for SLA performance metrics, for instance, the measurement points for FTTH VUA provisioning are set for the purpose of the KPI Metrics at the same 11, 21, 41, 66 and 131[42] working days respectively as they are in the relevant SLAs. Although the purpose and function of KPI metrics and SLAs are different,[43] and they need not be identical, their alignment help minimise the burden on Eircom by leveraging off existing Eircom monitoring processes. This does not mean, however, that measurement intervals for KPI and SLAs will necessarily remain the same. For instance, over time the SLA measurement points which trigger service credits may change by agreement between Access Seekers and Eircom, causing the KPI and SLA measurement points to diverge. Eircom in this regard pointed in its Submission to Consultation that differences in SLAs and KPI metric measurement intervals may result in an additional overhead on Eircom. It may also be over time that different intervals than those in place would provide more relevant information – for instance, it may be that measuring performance at say, Day D+7 rather than D+10 is more meaningful.

3.48 In the light of this, allowing for the adjustment of the definition of the specific KPI Metrics by which Eircom's performance is to be assessed is an important principle that will help ensure that KPI Metrics remain meaningful and also that the burden on Eircom remains proportionate to the benefits brought by the KPIs. In this regard the impact on any adjustment of the Metrics on Eircom is one aspect which ComReg can take into account when considering whether to adjust

[42] These represent the number of working days 11, 21, 41, 66 and 131 for 80%, 85%, 90%, 95% and 100% of FTTH or non-standard orders to orders completed in a measuring period will be post-completed working days plus parked time from the order being recorded on the UG.

[43] SLA performance metrics measure the performance of the regulated products, services and facilities against Eircom's contractual service level commitments with Access Seekers. KPI metrics are regulatory requirements designed to provide transparency with regards to Eircom's performance in its access obligations to Access Seekers and to assist with the effective application of non-discrimination obligations.

a metric or not, e.g., when considering whether to disalign or realign KPI and SLA measurement intervals.

Transparency

3.49 A number of Respondents raised the matter of the transparency of the mechanisms to be used to keep KPIs current in their submissions to Consultation, raising the matter of consultation and sufficient prior notice.[44] Eircom's submission to Consultation[45] takes the view that Article 67(5) EECC will be engaged in respect of any changes to KPI requirements so that public consultation and prior notification to the European Commission will be required under Article 32 EECC.

3.50 ComReg does not believe that this is correct and notes that in fact Eircom itself outlined in its submission to Consultation a concern that a public consultation requirement in respect of a new category of KPI metrics may not be workable in practice and may unduly delay the introduction of new products and services into the market to the detriment of enhancing competition and innovation. Under the mechanism set up under this Decision, the introduction of a new category of metrics will not delay the introduction of new products and services. As explained above, Eircom is required to ensure on launch of such products and services to apply to them KPI metrics in place for similar products and services, and detail of same would be included as part of the new product publication. Any new category metrics would be additional to existing applicable metrics and subject to a separate process including public consultation.

3.51 ComReg also notes that consultation in respect of decisions associated with keeping KPI current, including in terms of removing KPI requirements in respect of certain products or adjustment to KPI metrics definition and calculation, is not excluded under this Decision. ComReg will hold public consultations where appropriate, depending on the scope and nature of the decision concerned and in accordance with all applicable statutory requirements. ComReg in this respect does not believe that a fixed rule should be established. A requirement to consult in all cases could result in delaying matters unnecessarily and adding unwarranted procedural costs.

3.52 ComReg is satisfied that the flexibility built in within the Decision provides for a mechanism that is proportionate and efficient allowing to keep KPIs current for the benefit of Eircom and all Access Seekers.

[44] See BT's Submission to Consultation, p. 3; Sky's Submission to Consultation, p. 2.
[45] Paragraphs 54-55 of Eircom's Submission to Consultation, p. 16.

Chapter 4

4 KPI Metrics

4.1 Categories of Metrics

4.1 One of the objectives of the KPI metrics is to enable ComReg and Access Seekers assess whether products and services offered on a wholesale basis are being provided in a non-discriminatory manner by Eircom.

4.2 To achieve this objective, it is important to ensure that the reported KPI Metrics provide comparisons between wholesale inputs and the Retail Equivalents at the appropriate points in the product and service ordering, provisioning and service assurance lifecycles, and that the KPI Metrics are accurate and fully transparent.

4.3 Consistent with the proposals in the Consultation, this Decision continues with, and expands upon the approach under ComReg Decision D05/11 and requires publication of KPI Metrics for key aspects of the ordering, provision and assurance lifecycles of access products and services. This is done by classifying and grouping the proposed KPI Metrics to align with the lifecycles of regulated access products and services. Each proposed KPI Metric is designed to have a specific purpose from a transparency perspective and to monitor the most relevant ordering, provisioning, and service assurance processes. The reasons and benefits of each proposed KPI Metric, and any changes that are required with respect to the processing and reporting of all KPI Metrics, are set out in paragraphs 5.1 to 5.33 below.

4.4 In order to better understand the scope of the changes as consulted on and implemented in this Decision, ComReg has included in Appendix 2 tables with the following information for each metric:

(a) Metric reference number, which is a unique identifier;

(b) A description of the metric;

(c) The status of the metric, namely whether the metric is a metric introduced by this Decision (new metric), a pre-existing metric amended by this Decision or a pre-existing metric;

4.5 The KPI Metrics are grouped into five categories, with each category containing several KPI Metrics as follows:

Appointments metrics

(a) Onsite appointment met

(b) More-Than-One appointment

(c) Locally-Arranged-Appointments

Order metrics

(a) Accepted orders
(b) Rejected orders
(c) Undeliverable orders
(d) Completed orders
(e) Cancelled orders
(f) Cancellation Requests
(g) Referred orders

Supply metrics

(a) Supply-of-Service

Fault metrics

(a) Accepted and Rejected faults
(b) Repair-of-Service
(c) Repeat faults
(d) No Fault Found
(e) No entry obtained

Quality of supply metrics

(a) Dead-on-Arrival
(b) Early-Life-Failures

4.6 The categories of KPI Metrics listed in paragraph 4.5 above represent the full suite of KPI Metrics. However, not all KPI Metrics apply in respect of each regulated access product and service, as illustrated by the tables in Schedule 4 of the Decision Instrument. Rather they vary according to the relevant product's ordering, provision and assurance lifecycle and associated processes.

4.7 As a result of the extension of KPI Metrics to include NGA products, the KPI Metrics expand on the pre-existing metrics as set out in the 2011 KPI Decision (D05/11). While Eircom disagreed in its submission to Consultation with the increase in the number of metrics and in the number of data points requiring validation,[46] for the reasons explained in further detail in this Decision, ComReg is satisfied that the KPI Metrics are proportionate. In addition to amending its

[46] para. 15 of Eircom's submission to Consultation (p. 5).

proposals to reflect Respondents' submissions (for instance as regards the split between Standalone and POTS-based services), in arriving at the KPI Metrics, ComReg has built on the metrics used to date, and experience and learnings on their workings and the metrics which Eircom uses for the purposes of Service Level Agreements (SLA).

4.8 ComReg has also taken into account new requirements arising from the NGA suite of products which may rely on different ordering, provision and assurance processes as compared with narrowband access and CGA products. This means that there are two new categories of metrics, to deal with appointment and orders. New metrics have been added to the existing service and fault metric categories. Having considered all submissions to the Consultation, ComReg is satisfied that the resulting KPI Metrics, while expanded upon as compared to the 2011 KPI Decision, are necessary and proportionate, and reflect the increased scope of the regulated products and services availed of by Access Seekers, and the more complex or different ordering, provisioning, and assurance processes applicable to NGA products, as compared with CGA.

4.2 Classification of NGA provisioning

4.9 ComReg notes that there are different provisioning requirements for NGA products and services which have direct relevance to measuring Eircom's performance in respect of order processing and provisioning. During the sales process, the Access Seekers and Eircom will determine what services are available at the End User's premises and the status of those services using data queries from the UG. The Access Seekers and Eircom will select the appropriate provisioning order based on the type of service requested by the End User.

4.10 It is possible to determine whether a field intervention will be required to complete the order, or not. "Electronically Enabled" ('**EE**') provisioned orders are activated remotely, through systems configuration, without the need of physical intervention. Non In-Situ provisioned orders and In-Situ provisioned orders both require field intervention. Non In-Situ provisioning requires a field intervention at the End User's premises and therefore, access is required to the End User's premises; whereas in the case of In-Situ provisioning, a field intervention is not required at the End User's premises but elsewhere in the network (e.g. in the exchange or cabinet).

4.11 For the purposes of this Decision, Non In-Situ and In-Situ orders can accordingly be classified by the type of activities that are required to complete the product or service provisioning. Tables 2 and 3 below demonstrate the differences between EE, In-situ and Non In-situ provisions by way of illustrative examples.

Table 2

Product	Eircom activate and configure Network equipment	Eircom Field intervention at cabinet and/or exchange	Eircom install NTU and/or drop cable	Connection type
SA FTTC*	✓			Electronic Enablement
SA FTTC*	✓	✓		In-situ
SA FTTC*	✓	✓	✓	Non In-situ
FTTC*	✓			Electronic Enablement
FTTC*	✓	✓		In-situ
FTTC*	✓	✓	✓	Non In-situ

(*) means must include EVDSL

Table 3

Product	Eircom activate and configure Network equipment	Eircom Field intervention at cabinet and/or exchange	Eircom install Fibre NTU And fibre drop cable	Eircom install ONT	Connection type
SA FTTH	✓				Electronic Enablement
SA FTTH	✓		✓		Non In-situ
SA FTTH	✓		✓	✓	Non In-situ

4.3 Appointments Metrics

Appointments-Met

4.12 The Appointments-based provisioning model means that an appointment is scheduled to provision the product or service. For instance, this will the case for a Non In-situ FTTC/FTTH provisioning which requires access to the End User's premises to install line terminating equipment, for example a copper Network Termination Unit (**'NTU'**) or an Optical Network Terminal (**'ONT'**) device. The appointment time slot is agreed with the End User at the point-of-sale, so that the End User can make the necessary arrangements to facilitate the technician's visit (for instance by taking time off work). From a relationship management perspective, it is important to the End User that the Eircom technician meets the scheduled appointment time. An appointment is considered met when the Eircom technician is physically at the End User's premises at the agreed timeslot to carry out the necessary work.

4.13 The Onsite Appointments-met metric measures the percentage of scheduled End User appointments that have been met by Eircom technicians at the agreed timeslot. This is an important metric from an Access Seeker's perspective because the appointment is typically the first engagement that the Access Seeker has with the End User (customer), following the completion of the sales process, either for a new service offering or for an upgraded service offering. Therefore, it is considered by ComReg to be a sensitive time in establishing or maintaining a good End User (customer) relationship. Failure to meet an agreed appointment slot could have negative consequences for the Access Seeker i.e. cancellation of an order and loss of the customer.

4.14 Eircom expressed the view in its submission to the Consultation that the Onsite Appointments-met metric should be aligned with Eircom's definition of Appointments met metrics,[47] whereby an order is met when [✂ [redacted] ✂]. ComReg does not agree that this is appropriate. The purpose of the Onsite appointments met metric is to measure a particular aspect of provisioning namely whether the Eircom technician visits the End User's premises (i.e. On-site) on the appointment day and at the appointment timeslot (e.g. A.M, P.M). Eircom's voluntary NGA Appointment-met metric in effect measures rescheduling of appointments, which is a different metric.

4.15 On further consideration, ComReg however believes that it is appropriate, and proportionate, to limit the scope of the Onsite Appointments met metric to Non In-situ provisions, rather than including all NGA provisioning types.

4.16 This is because Electronically Enabled provisioning is in effect an automated task that is executed by an IT system at a specific time, without an onsite (customer premises) technician visit. In these circumstances there is limited value in measuring whether the IT system has executed the process. Similarly, for In-situ provisioning, an Eircom technician is not required to visit the End User's (customer) premises. For these reasons, ComReg has limited the Onsite Appointments-met KPI metrics, to Non In-situ provisioned orders where it is necessary for an Eircom technician to be onsite at the customers premises.

[47] Eircom's *Business Rules for Metrics in KPI Equivalence Report*, e.g., Metric 11I.1 Appointments met by open eir.
[✂ [redacted] ✂]

4.17 ComReg notes, in response to a comment of BT enquiring as to how an appointment rearranged bilaterally between the Eircom technician and customer (either date and/or timeslot) is considered for the Onsite Appointments-Met metric, that such bilateral arrangements are to be considered as unmet appointments.

4.18 Finally ComReg notes Sky's proposals in its submission to Consultation for a number of additional metrics, including (i) the percentage of provisioning orders that obtained an appointment within 5 days of the customer's requested delivery date; (ii) a local arrangement metric to measure the percentage of orders that were delivered on the actual appointment date as opposed to those that were delivered on an appointment date locally agreed with customers post order submission; and (iii) a metric measuring the accuracy of the forecasted date for Non-standard provisions. On consideration of BT's comments noted above and Sky's proposal, ComReg is of the view that a Locally Arranged Appointments metric will provide additional helpful insight in the manner in which appointments are met for provisioning orders and delivered in practice, for Eircom and for Access Seekers. This metric will measure the number and the percentage of accepted orders that reached final status (e.g. completed, undeliverable etc.), with a Locally Arranged Appointment.

4.19 In ComReg's view the combination of the Locally Arranged Appointment and the Onsite Met Appointment KPI metrics will provide sufficient transparency. The other measurements proposed by Sky are in ComReg's view more appropriate to SLAs than KPIs.

Number of appointments per order metric

4.20 Another important appointment-related metric is the average number of appointments required to complete a provisioning order. Sometimes, unforeseen access network related technical issues and/or a customer related issue (e.g., a blocked duct or the need to replace a pole) can prevent order completion on the first attempt. Consequently, one or more appointments may be required. In such cases multiple appointments may inconvenience the End User (customer) resulting in negative consequences such as order cancellations, delay etc.

4.21 A metric measuring the average number of appointments per order provides some insight and assurances that the average number of appointments required per order is equivalent across Eircom and Access Seekers. The aim of this metric is to identify any differences, should they exist, in the average number of appointments required to complete an appointment-based provisioned order.

4.22 In its submission to Consultation, Eircom noted that a metric measuring the mean number of appointments per accepted NGA order[48] may not provide

[48] Metric 24 in the Consultation

valuable information because it is not sufficiently granular. ComReg accepts that this may be the case and in particular, a metric measuring the aggregate number of appointments for different order types namely Electronically Enabled, In-Situ, and Non In-situ provisioned orders will ignore that there could be significant differences in their respective average number of appointments required between these provisioning types and, as a result, such a metric could be misleading.

4.23 While, accordingly, Eircom is not required to report against the average number of appointments-met, ComReg, on the submissions of Respondents, in particular Sky, finds that this metric should be replaced by a metric measuring the percentage of provisions that require more than one appointment to complete the provisioning process (More-Than-One appointment required metric). In particular, a metric measuring the number of appointments required to complete the provisioning process which will provide insight into the processes and help to provide assurances that there is equivalence between Eircom and Access Seekers.

4.24 The More-Than-One appointment required metric considers not only the number of provisioning orders which have not completed on first appointment, but also the number of subsequent appointments which have been required prior to the provisioning order completing.

4.25 To take a hypothetical example (1000 provisioniong order are in scope), 70% (700 orders) of the Access Seekers' provisioning orders were completed (reach their final status) on the first appointment during a data collection period. This means that 30% (300 orders) of the Access Seekers' provisioning orders were not completed on the first appointment. The More-Than-One appointment required metric (i.e in this example the 30% of the orders), will be grouped by the number of appointments required (e.g. 2, 3, 4 appointments etc).

4.26 Using the hypothetical 30% (300 orders) More-Than-One appointment required metric example from above to illustrate the breakdown could be as follows: 18% (180 orders) were completed with two appointments, 7% (70 orders) were completed with three appointments, 3% (30 orders) were completed with four appointments[49] and 2% (20 orders) did not reach a final status in the data collection period.

4.27 ComReg considered whether to distinguish further according to the reason why the orders did not complete by reference to customer-caused and non customer-caused category but found that the recurring burden on Eircom would be

[49] This approach to the metric is based on Sky's proposed First Time Install metric – the percentage of installations that were delivered with a single appointment; and Second Time Install – the percentage of installations that were delivered on the second appointment.

disproportionate. However, this type of analysis may be conducted from time-to-time by ComReg using the KPI data sets.

4.28 The More-Than-One appointment required metric will be limited to Non In-situ provisioned orders to avoid the metric being artificially skewed by including Electronically Enabled and In-situ appointments-based provisioned orders.

4.4 Order Metrics

4.29 ComReg understands that when a provisioning order is processed by Eircom, that the order is automatically given a 'Recorded' status. The recorded order is then validated, and once the validation process is completed the order will be assigned either an Accepted or Rejected status. (Order statuses are explained in the inter-operator process manuals[50,51,52].)

4.30 Performance can accordingly be measured by reference to the numbers of recorded, accepted and rejected order metrics and furthermore, by reference to the proportion of undeliverable orders, completed orders, cancelled orders, orders for which a cancellation request has issued, and orders referred back to Access Seekers as set out below.

4.31 ComReg notes Sky's view that the order-related KPI metrics do not provide sufficient transparency, and that the reasons for cancelled, rejected, and undelivered orders should be identified, categorised, and monitored with KPI metrics. Sky also proposed that there should be KPI metrics to monitor the accuracy of the Advanced Pre-qualification file and the Masked CLI file.

4.32 ComReg however does not believe that information as to the reasons why orders are cancelled, rejected, and undelivered properly form part of process performance measurement by way of KPI metrics at this time and would be more appropriately addressed by process improvements to provide more information to Access Seekers. Similarly, ComReg is of the view that measuring the accuracy of the Masked CLI and the Advanced Pre-qualification files is better dealt with as part of an SLA, rather than through the KPI metrics.

Recorded, Accepted and Rejected order metrics

4.33 An accepted order status means that an Access Seeker has entered an order using one of the order submission mechanisms (e.g. Unified Gateway[53] (**'UG'**))

[50] See page 23 of Eircom's NGA IPM Version 18 dated 5 June 2020 https://www.openeir.ie/wp-content/uploads/2020/06/NGA-IPM-V18_0-Unmarked-15062020.pdf
[51] See page 64 of Eircom's Bitstream IPM Version V40 date 1 May 2018 https://www.openeir.ie/wp-content/uploads/2020/04/Bitstream-IPM-V40_0-Unmarked-01052018.pdf
[52] See Eircom's Single Billing through Wholesale Line Rental IPM Version 17 dated 11 December 2020 https://www.openeir.ie/products/voice/single-billing-wholesale-line-rental/
[53] Unified Gateway is an interface into Eircom's OSS used by Access Seekers in order to avail of regulated wholesale services, including WLA products, services and facilities.

containing all the required data accurately within the mandatory fields. A rejected order means that the order has not been accepted due to validation failing i.e. there is missing data or inaccurate data. Once an order is accepted the provisioning process can begin.

4.34 To have a provisioning or a fault order validated, Access Seekers and Eircom need access to certain data i.e., an exchange code etc. Knowing whether there are differences in the percentage of accepted and rejected orders as a percentage of recorded[54] orders between Access Seekers and Eircom will help to highlight whether there are any potential differences in the information available to Access Seekers, or whether there are potential differences in the order validation processes. ComReg identifies five such metrics:

(a) The total number of recorded orders

(b) The total number of accepted orders

(c) The total number of rejected order

(d) The total number of accepted orders as a percentage of recorded orders

(e) The total number of rejected orders as a percentage of recorded orders

4.35 ComReg appreciates that there may be legitimate reasons for differences in the percentage of accepted and rejected orders between Access Seekers and Eircom. Monitoring for relative differences in the percentage of accepted and rejected orders, should they exist, will assist in establishing whether Access Seekers receive equal treatment.

4.36 According to Eircom's submission to Consultation, metrics measuring the total number of recorded orders[55], the total number of rejected orders,[56] the total number of accepted orders as a percentage of recorded orders[57] and the total number of rejected orders as a percentage of recorded order[58] are not appropriate and should be deleted. Eircom in particular submitted that a RAP development would be required to report on recorded orders; that using accepted orders as the denominator for the calculation of order related KPI metrics would cause confusion because there could be more completed orders than accepted orders in a measurement period; and that the metrics would provide no insight on equivalence as the accepted and the completed orders would be in different

[54] A recorded order is an order that an operator enters an Order into the UG and automatically this Order has a status of recorded but has not yet been accepted or rejected by the UG.
[55] Metric 1 in the Consultation.
[56] Metric 3 in the Consultation.
[57] Metric 13 in the Consultation.
[58] Metric 14 in the Consultation.

time periods, and "equivalence could only be expressed where using one data set for example the metric is % of orders completed in 5 working days"[59].

4.37 Eircom stated further that it does not have full control over whether an order is successfully validated because the operator is responsible for populating the order data, which would bring into question the proportionality of monitoring accepted and rejected order KPI metrics from an equivalence perspective.[60]

4.38 ComReg does not accept that these are valid reasons to exclude the relevant KPI metrics. The fact that a system or process change might be required to report a KPI metric is not a compelling reason not to proceed. ComReg notes in any event that recorded status is used by Eircom for the purposes of NGA appointed provisioning orders in the context of SLA.[61] ComReg also notes that there is an inherent relationship between the accepted, the rejected, and the recorded orders statuses. For example, when NGA provisioning orders (known as (P**)[62]) are submitted to the UG, they are validated by the UG with a binary outcome, namely the order is either accepted or it is rejected, using criteria such as using account number, address information etc., and the operator notified accordingly of acceptance or rejection. By adding the acceptance and rejection notifications the number of recorded orders can be calculated.

4.39 ComReg also does not see the fact that one of the causes for rejected orders is Access Seeker agent training as a reason not to monitor and report on rejected orders. Regardless of the order rejection root cause, the order rejection KPI metric still provides valuable information as regards performance of an important process point. Performance information in turn may help identify process improvements, or to identify changes in operators' behaviours that will ultimately benefit End Users. Eircom notes in its response to Consultation that [✂ ✂] of orders were rejected in 2020 because operators failed to order Bitstream Plus Unicast (a logical circuit), which is a prerequisite for Bitstream plus. In that case the publication of a rejected order KPI metric may have helped to flag the Bitstream Plus Unicast error to operators at an earlier stage and corrective actions could have been taken in a timelier manner. Eircom's example illustrates the value of this KP metric.

[59] para. 68 of Eircom's submission to Consultation (p. 19).
[60] Eircom also stated that the proposed recorded order metric implied that not all orders where being processed by the U.G. However, ComReg does not see that there is such implications and does not accept that it has suggested so.
[61] "80% of appointed provisioning orders for FTTH or non-standard orders completed in a measuring period will be post-completed no more than 11 working days plus parked time from the order being recorded on the UG." Appointment-based-SLA-Final-V1_0-01042018
[62] The majority of NGA provisioning orders are identified with a code beginning with the P (PNN,PNO,PMW,PPN,PPW etc.) Rather than list all order types, it is customary to write (P**) to refer to all provisioning order variants. For the purposes of this Decision P** also includes the LNB (new line optional broadband) order type.

4.40 It is also not the case that using accepted orders as the denominator for the calculation of order related KPI metrics would cause confusion or that the metrics would provide no insight on equivalence as the accepted and the completed orders would be in different time periods.

4.41 The KPI order metrics, and how they relate to each other and paint a consistent picture of performance, are represented in the high-level order flow diagram below (Diagram 1) with some hypothetical order figures for illustration purposes. Assuming 1000 orders provisioning are received and recorded the reporting period Q1 2020 (note: for the purposes of the example the data collection period is Q1).

(a) 900 orders accepted and 100 orders are rejected.

(b) 900 orders are accepted, and 900 appointments are created.

(c) 100 customers decide to cancel their orders.

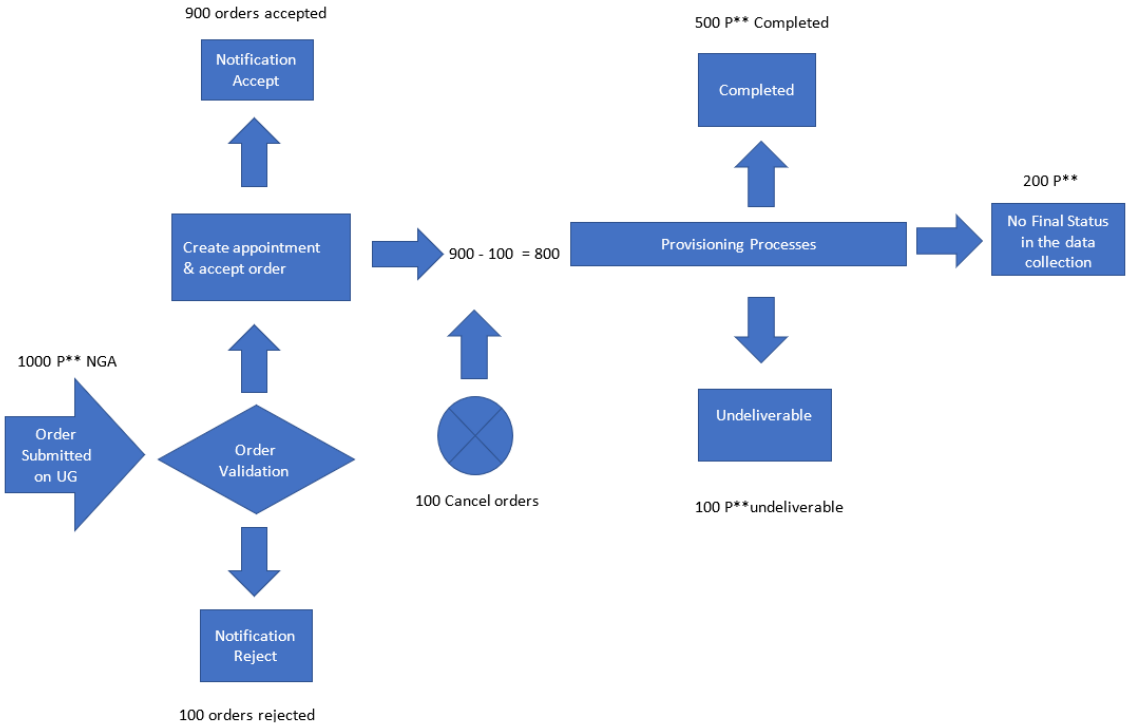
(d) 100 orders are undeliverable

(e) 500 orders are completed.

(f) 200 orders do not reach a final status in the current quarter

Note: accepted orders will ultimately have a final status of completed, undeliverable, cancelled.

Diagram 1:



4.42 The metrics would be calculated as follows:

Table 4

Order Metric calculations	
Accepted orders	
Completed orders / Accepted orders * 100	500/900 * 100 = 55.6%
Undeliverable / Accepted orders *100	100/900 * 100 = 11.1%
Cancelled / Accepted orders *100	100/900 * 100 = 11.1%
No final status/ Accepted orders *100	200/900 * 100 = 22.2%
Total:	56.6% + 11.1% + 11.1% + 22.2% = 100.0%
Recorded orders	
Accepted order / Recorded order *100	900/1000 *100 = 90%
Rejected order / Recorded order *100	100/1000 *100 = 10%
Total:	90% + 10 %= 100%

4.43 In both cases, the tally of the percentages demonstrates that all recorded orders are accounted for and there is no source of confusion arising from the calculation. The metrics will allow for a comparison of the treatment of orders for, respectively, Eircom and Access Seekers and there is no basis in this regard to Eircom's contention that equivalence can only be expressed using one data set[63].

4.44 Accepted NGA orders from Q1 that do not reach their final status by the end of Q1 become the Q1 residual NGA orders, to be calculated and reported at the end of Q2. Using the data from the example in paragraph 4.41, there are 200 P** orders that did not reached their final status in Q1. Table 5 below illustrates how the Q1 residual NGA order KPI metrics are to be calculated at the end of Q2.[64]

Table 5

Residual Order Metric calculations	
Completed orders / Accepted orders * 100	100/900 * 100 = 11.1%
Undeliverable / Accepted orders *100	50/900 * 100 = 5.6%
Cancelled / Accepted orders *100	40/900 * 100 = 4.4%
No final status/ Accepted orders *100	10/900 * 100 = 1.1%
Total:	11.1% + 5.6% + 4.4% +1.1% = 22.2%

[63] Eircom's Submission to the Consultation, para 68, p. 19.
[64] Note: the same demoninator is used for the NGA order metrics and the residual NGA oder calculations.

4.45 The residual NGA order KPI metric reporting cycle is repeated, so that accepted NGA orders from Q2 that have not reached their final status by the end of Q2 then become the residual NGA orders for Q2 which will be reported at the end of Q3.

4.46 ComReg expects that the majority of the residual NGA orders from one quarter will reach their final status by the end of the following quarter. Consequently, it is not necessary to report the residual NGA orders KPI metrics for more than one quarter. To illustrate using the hypothetical data from tables 4 and 5, it is not necessary to account for the 1.1% (i.e. the 10 remaining orders) in the subsequent KPI metric reports.

Undeliverable orders metric

4.47 An Undeliverable order is an order that cannot delivered – but was not rejected. The undeliverable order metric measures undeliverable orders as a percentage of accepted orders.

4.48 Measuring the extent and relative differences in undeliverable orders for Eircom versus Access Seekers is important due to the potential for End User satisfaction, the operational cost and revenue impacts for Access Seekers related to undelivered orders. In particular, when an order is accepted and an appointment arranged by the Access Seeker with the End User, the End User will have an expectation that the product or service ordered will be delivered. If the requested product or service is not provided as expected, then End User (customer) dissatisfaction is likely to arise. This may reflect unfavourably on the Access Seekers and will have financial impacts such as cost-of-sale (expenditure such as the Access Seeker's sales team, call centre agent time handling queries from End Users etc.) and potential loss of future revenue (e.g. lost revenue from monthly subscriptions to services and rental charges).

4.49 There are three related NGA undeliverable order metrics: the total number of undeliverable orders,[65] the total number of undeliverable orders that were referred[66] (some undeliverable orders are referred back to Access Seekers to perform a task or request the customer to perform a task before the order progresses to its final status of undeliverable) and the number of undeliverable orders as percentage of accepted orders.[67]

4.50 In its submission to Consultation, Eircom takes the view that there is no need to measure the total number of undeliverable orders and the total number of undeliverable orders that were referred on the basis that a review of the data for 2020 shows that [✂ [redacted] ✂][68] of orders were undeliverable due to Access

[65] Metric 11 in the Consultation.
[66] Metric 12 in the Consultation.
[67] Metric 20 in the Consultation.
[68] Eircom's Submission to the Consultation, para 67, p. 19

Seekers failing to reschedule appointments. ComReg notes however that this data also shows that [✂ [redacted] ✂] (on the basis of the metric quoted in Eircom's Submission) of undeliverable orders were not caused by Access Seekers failing to reschedule appointments.

4.51 Knowing the percentage of undeliverable orders due to Access Seekers' failure to reschedule appointments is in itself valuable performance information, as is understanding whether the overall rate of undeliverable orders is trending up or down, or whether there has been an abrupt change in the undeliverable rate between consecutive data reporting periods. This may help to identify whether product, process, or system changes may be necessary. Trend analysis for undeliverable orders will facilitated with this KPI metric providing transparency to all stakeholders.

4.52 Also, knowing the percentage of orders that were referred before reaching their final status of undeliverable provides transparency into the relationship between order referrals and undeliverable order status.

4.53 The combination of the Undeliverable KPI order metrics, in ComReg's view, provides appropriate and necessary transparency.

4.54 ComReg accordingly does not accept that the Undeliverable order KPI metrics should be deleted as Eircom argued in its submission to the Consultation.

Completed orders metric

4.55 The completed order[69] metric measures the percentage of accepted orders that successfully complete the provisioning process (i.e. has the End User been provided with the product or service that they requested from their Access Seeker or Eircom), both completed orders[70] and completed orders that were referred as a percentage of the[71] accepted orders. ComReg considers that it is necessary to monitor completed orders[72] through a KPI metric because a difference in percentage of completed orders between Access Seekers and Eircom could have negative consequences, such as raising costs through repeat orders, additional End User engagement etc. which could negatively impact on competition.

4.56 Eircom in its submission to Consultation expressed the view that calculating the completed order KPI metric as a percentage of accepted orders would cause confusion and would not improve transparency. ComReg does not see that this is case where the basis for the calculation and the metrics is clear.

[69] "The Order status is updated to completed when all tasks relating to the Order are finished and the billing commences against the account / telephone number." NGA-IPM-V25_0-Unmarked-24012022
[70] Metric 18 in the Consultation.
[71] Metric 19 in the Consultation.
[72] Completed orders means Metric 18 and 19 in the Consultation.

4.57 ComReg has explained in paragraphs 4.41 to 4.43 why calculating order metrics based on the total number of accepted orders is the appropriate approach for order related KPI metrics.

Cancelled orders metric

4.58 A cancelled order is an order that an operator has requested to be cancelled prior to its reaching delivered status. The cancelled order metrics measure the total number of cancelled orders as a percentage of accepted orders.[73] ComReg considers that a KPI metric reporting the percentage of cancelled orders is necessary, as a high percentage of cancelled orders may be symptomatic of potential underlying process differences. Without a KPI metric to monitor for any potential differences between Access Seekers and Eircom such potential differences could remain undetected.

4.59 ComReg recognises that the actual number of Access Seeker cancelled orders is not directly in the control of Eircom. However, the reason for the cancelled orders may be related to process issues that Eircom does control. Eircom disagreed with the metrics in its submission to Consultation, including on the basis that it is impossible to divert orders from an undeliverable to a cancelled order final state. ComReg notes however that human intervention may achieve that which appears to be not possible technically. For instance, it could be suggested that a provisioning order is cancelled rather than become undeliverable, or the order could be referred back to the Access Seeker although it is readily apparent it cannot be provisioned, in which case the Access Seeker may decide to cancel the order.

4.60 Unless there is a metric to monitor and highlight any potential differences in the percentage of cancelled orders, any potential process differences or End User engagement differences should they exist, legitimate or otherwise, may not be detected.

4.61 For the avoidance of doubt, contrary to what Eircom suggests in its submissions to Consultation, there is as part of the cancelled order metrics, no categorisation by cancellation reason. While an analysis of the cancellation reasons may be required in certain circumstances such as a preliminary fact-finding investigation or a compliance investigation, categorisation by cancellation reason is not a KPI metric requirement. This means that Eircom's concerns with the metrics that they would be subjective and involve a burdensome process in fact do not apply.

Request to Cancel metric

4.62 The Cancellation request metric measures the percentage of accepted orders that require cancelling and re-submitting (i.e. a new order) because data on the

[73] Metrics 6 and 22 in the Consultation.

order was identified as incorrect post acceptance.[74] Unless the order is re-submitted within five working days, Eircom will categorise the order as undelivered. The metric is expressed in terms of the number of request-to-cancel notifications (RC "notification requesting the Operator to Cancel the order") as a percentage of accepted orders in the data collection period.[75]

4.63 In its submission to Consultation, Eircom submitted that the fact that the circumstances that can cause cancel requests may be beyond its control makes the metrics inappropriate or redundant. Eircom focussed on the role of Access Seekers in ensuring the accuracy of address information, noting that it was for the operators' agents to validate address information with customers before submitting provisioning orders to Eircom. However, ComReg notes that not only is the process for populating and managing the address file controlled by Eircom as owner of the address file, but there are other reasons that can cause cancel requests. ComReg understands, for example, that [✂ [redacted] ✂][76]orders were referred because of incorrect exchange codes in 2020, in each case an error which may have been caused by the Access Seeker in transcribing the reference or may reflect errors in the source data. The cancel request metric will enable and facilitate analysis, including trend analysis, to help identify potential operator behaviour and/or process issues. Where issues are identified, corrective action can be taken proactively to address those issues to the ultimate benefit of End Users.

Referred orders metric

4.64 A Referred order is a provisioning order that requires further action(s) to be taken, either by Eircom's wholesale arm or the Access Seeker or the customer (End User). The action that is required depends on the cause for the referral, whether it is for example an access network issue (e.g. FTTH Distribution Point not lit – i.e. no optical carrier) or a customer issue, for instance, a blocked customer duct is identified during the provisioning process which prevents order completion. The reason for the referral is identified with a refer code.

4.65 Eircom has four categories of referral reasons: Customer, Local Arrangements, Non-standard, and open eir. For the purpose of this Decision, the referred order KPI metrics is limited to the non-standard referrals that Eircom is responsible for resolving.

[74] This means that a provisioning order completed Eircom's validation process, but at later stage an error was discovered, for example the exchange code was incorrect in the data provided to Access Seekers. The error is only discovered at some stage during the provisioning process.
[75] Metrics 7 and 23 in the Consultation.
[76] Information Request with respect to the reporting of order analysis issued by ComReg to Eircom on 10 June 2019 and 2 October 2020 and response received by ComReg on 24 February 2020, 19 June 2020, 23 October 2020 and 22 January 2021.

4.66 In its response to the Consultation, Eircom claimed that the scope of the referred orders to be included in the KPI metrics is subjective and that significant analysis of the order activity would be required to identify those where Eircom has responsibility for resolving. For the avoidance of doubt, the referred orders that are in scope are those that are currently identified by the combination of UG Notice – "Reschedule Indicated (RI)", UG Notification Text ("Eircom Unable to") – meaning Eircom is responsible, and a Reason of Non-Standard. All provisioning orders with refer codes that meet these criteria are in scope for this metric.

4.67 For example, a referred order with Refer Code 56 would be in scope for the KPI metric. This is because Refer Code 56 meets the three criteria of RI, "Eircom Unable to" and Non Standard. (Table 6 below provides a tabular description.) Accordingly, the Refer Codes in scope are not subjective and limited analysis will be required to identify referred orders that Eircom has responsibility for resolving; rather they are identified objectively by reference to the Refer Codes.

Table 6

Refer Code	CODE DESC	UG Notice	UG Notification Text	Reason
56	DUG Lead	RI	Underground Cable Issue - Eircom Unable to complete current appointment work	Non Standard

4.68 ComReg notes that as refer codes that are in scope may change over time, in order to ensure transparency, the list of refer codes that are in scope for the referred order metric must be included in the KPI business rules document.

4.69 A referred order is effectively suspended while awaiting resolution of the issue that caused the referral in the first place. When the cause of the referral has been resolved the order becomes active again and the provisioning process can resume. As such, performance of the 'referred orders' in scope will be measured both as a percentage of accepted orders; and, in terms of the referred order parameters namely the mean, median and standard deviation for the cumulative parked.

4.70 Given that parked time is also an SLA term, in order to avoid confusion between SLA parked time and KPI parked time, the metric now refers to 'Suspended Time', rather than Parked Time, as used in the Consultation. Suspended Time is defined as the interval between Reschedule Indicated (RI) notification and the Rescheduled Request (RR) notification.

4.71 Knowing the percentage of orders that are referred and the mean, median and standard deviation for the cumulative Suspended Time for referred orders, will provide Access Seekers with further transparency on potential key issues affecting the provisioning process.

4.72 ComReg accordingly does not accept that the Referred order KPI metrics should be deleted as Eircom argued in its submission to the Consultation.

4.5 Supply of Service Metrics

4.73 The Supply-of-Service metrics measure the cumulative percentage of provisioning orders completed at set intervals, measured in working days from the date when the orders were accepted.

4.74 Supply-of-Service metrics are important from an Access Seeker's perspective as the time taken to supply the service (the supply time) following the completion of the sales process is important in establishing and maintaining a good End User (customer) relationship. Differences in the supply time between wholesale inputs and their retail equivalent could be detrimental to Access Seekers and ultimately End Users. An objective measurement of the time taken (measured in working days) between the provisioning processes for wholesale inputs and their retail equivalents in equivalent circumstances provides reassurance to Access Seekers that they are receiving equal treatment.

4.75 Eircom's submission to Consultation expresses the concern that the level of granularity required for the KPI metrics may produce meaningless volumes of KPI metrics, and therefore meaningless metrics. However, aggregating different provisioning classes into one category of appointment-based orders when measuring Supply-of-Service has the potential of hiding significant differences in the Supply-of-Service across different modes of provisioning, given that the service provisioning requirements for Electronic Enablement, Non In-situ and In-situ are different. In particular, the issues that can arise during an Electronic Enablement service provision may be easier to resolve than complex issues which may be encountered with Non In-situ service provision, including issues such as nil cable[77], Eircom blocked duct, etc.

4.76 Table 7 below demonstrates examples of how significant differences in the calculated Supply-of-Service KPI metrics could occur when NGA provisioning orders are aggregated. Consider two examples with fifty NGA provisioning orders (a combination of EE and Non In-situ provisioned orders). The average delivery time calculated without disaggregation is four working days for both examples. However, there is a fifteen-workday difference in the actual supply of service time

[77] Nil cable means the infrastructure required to connect your service is not yet in place. Installation-delays.

for the Non In-situ provisioned orders between the two groups of orders used in example 1 and 2. These examples illustrate in ComReg's view, why it is necessary to disaggregate appointments-based provisioning into different classes to facilitate more accurate comparisons and therefore transparency.

Table 7

Hypothetical Examples
Example 1
There is a total of 50 provisioning orders, 40 of the orders are provisioned by Electronically Enabled and are provisioned on the appointment date i.e. no delay. The other 10 orders are Non In-situ provisions. However, the provisioning process for the Non In-situ provisioned orders is delayed by 20 working days in each case. Using this hypothetical, the average number delivery days are calculated: The sum number of delivery days / total number of orders (40 * 0) + (10 * 20) = 200/50 200/50 = 4 days (aggregate average delivery)
Example 2
There is a total of 50 provisioning orders, 10 of the orders are provisioned by Electronically Enabled and are provisioned on the appointment date i.e. no delay. The other 40 orders are Non In-situ provisions. However, the provisioning process for the Non In-situ provisioned orders is delayed by 5 working days in each case. Using this hypothetical, the average number delivery days are calculated: The sum number of delivery days / total number of orders (10 * 0) + (40 * 5) = 200/50 200/50 = 4 days (aggregate average delivery)

4.77 ComReg also accepts, on Eircom's submissions to Consultation that NGA orders are not delivered on the basis of fixed time parameters (2 days, 5 days, or 10 days) that a time-based approach to measure supply of service is inappropriate.

4.78 Consequently, the NGA Electronic Enabled KPI metrics[78] proposed in the Consultation have been amended[79] to measure the number and percentage of completed NGA (P**) orders provisioned by means of Electronic Enablement

[78] Metrics 60 to 64 in the Consultation.
[79] Metrics 61,62 and 64 in the Consultation.

within the data collection period up to ten working days and the mean, median, and standard deviation parameters providing additional insight and transparency.

4.6 Fault Metrics

Accepted and Rejected fault orders metric

4.79 ComReg understands that when a fault order is logged it is automatically given a 'Recorded' status[80]. When the fault order validation process is completed, a fault transitions to either a 'Reported' status (meaning the order is accepted on Eircom's assurance systems) or the fault order is rejected. The difference between the number of recorded and reported orders gives the number of rejections for fault orders.

4.80 Unless there is a metric to monitor and highlight any potential differences in the percentage of accepted and rejected fault orders, the cause of any potential process differences should they exist, legitimate or otherwise, may not be detected. The Accepted and Rejected fault order metric will help to identify potential differences in the fault order validation processes between Access Seekers and Eircom.

4.81 In its submission, Eircom posits that Eircom does not have full control over the processes for screening and logging faults, which would be primarily dependent on the training and behaviour of operator agents screening and logging faults. ComReg does not agree with Eircom's submission that the fault order reject metrics[81] should be deleted on these grounds.

4.82 ComReg, in particular, does not accept Eircom's position that Eircom does not have control over the relevant processes. In particular, Eircom controls the validation criteria including the scope of the mandatory testing and the network test equipment. In this regard, ComReg notes that when fault orders are submitted to the UG, the UG validates those fault orders based on a predetermined set of rules, which Eircom fully control. One of the steps in the fault order validation process is to confirm whether the mandatory test(s) associated with the fault report code have been executed or at least have been attempted within 60 minutes of the fault being submitted. If the required mandatory tests have not been executed or attempted, then the fault order is rejected. In the case where the fault order is accepted, the fault can be assigned to a field technician to execute the sequence of diagnosis, localise, repair, and test.

[80] See section 3.7 of Eircom's NGA IPM Version 18 dated 5 June 2020 https://www.openeir.ie/wp-content/uploads/2020/06/NGA-IPM-V18_0-Unmarked-15062020.pdf
[81] Metrics 72 and 82 in the Consultation.

4.83 A reported fault order (i.e. Fault has been accepted on open eir's Assurance System)[82] means that Eircom has agreed that a fault may exist in its network because the mandatory test and other requirements are met. If the UG fault validation results in a false positive, this may not be the responsibility of the Access Seekers.

4.84 After a fault is accepted on the UG, it may be assigned to a field technician. At this point the field diagnosis, localise, repair and test sequence commences. Like the UG validation order processes, the processes and procedures used by the Eircom field technicians are fully controlled by Eircom.

4.85 In that context, the fault reject metric will provide valuable insights for stakeholders.

Repair of Service Metrics

4.86 Once a fault has been accepted the most critical aspect from the Access Seekers and the End User's point of view is the time taken to restore service. Faults in the access and core networks result in the interruption of services such as internet access, indirect services including Over-The-Top ('**OTT'**) voice, video streaming services, medical and security alarms etc. Considering the impact to End Users services when faults occur, the time taken to restore service is extremely important from a quality of experience perspective. The time taken to repair a fault and to restore services may influence the End User's decision to switch or to remain with their current Access Seeker. Objective measurements of repair of services will allow demonstrate that the service assurance performance for Access Seekers and Eircom are comparable.

4.87 The faults metrics measure the cumulative percentage of faults permanently[83] cleared, at set intervals, measured in working days from the date the fault was reported and time stamped. For example, the cumulative percentage of permanently cleared fault metric is measured after 2, 5 and 10 working days respectively and aligns with current SLA repair performance measurement points.

4.88 ComReg notes that the Respondent's who expressed a view regarding the Repair-of-Service KPI metrics namely Eircom and BT were supportive.

[82] NGA-IPM-V25

[83] "The issue has been permanently cleared - the Trouble Ticket is closed. A trouble ticket is the mechanism by which all NGA faults will be recorded by the Operator." See Eircom's NGA IPM Version 18 dated 5 June 2020 https://www.openeir.ie/wp-content/uploads/2020/06/NGA-IPM-V18_0-Unmarked-15062020.pdf

Repeat fault metrics

4.89 The repeat fault metric measures whether the service assurance process has effectively resolved the reported fault i.e. whether the true root cause of the fault has been identified and fixed.

4.90 ComReg is cognisant that faults can be linked to the underlying network rather than a product or service. Therefore, a network fault with a recurring root cause (e.g. water ingress (rain) caused by damage to the cable's insulation) can impact multiple services. When a fault is reported and cleared, and another fault is reported and cleared for the same product within a twenty-eight-calendar day window, then those faults must be counted as repeat faults.

4.91 Repeat faults cause service interruption which may impact on the perception of the Access Seeker's ability to provide service to its customer. The inclusion of the repeat fault KPI metric will provide transparency to Access Seekers regarding the incidences of repeat faults.

4.92 ComReg agrees with Eircom that it is important to have a repeat fault metric linked to the products and services, but disagrees with Eircom's interpretation that the proposed repeat fault metric is a network quality metric. In particular, where a product is the combination of a physical access path, a virtual circuit and active equipment, a fault relating to any one of the product's components is a product fault.

4.93 Eircom noted in its response that analysing the root cause of each fault for the purposes of the repeat fault metric would be onerous. However, Eircom need not establish the root cause of each repeat fault that occurs within the twenty-eight day period for the purposes of the repeat fault KPI metric. Instead, Eircom is only required to count the number of recurring faults within the twenty-eight day calendar period for the product or service. This simplified approach reduces the analysis overhead because there is no need to establish the root cause relationship between each of the faults just that the faults occurred and that they are counted.

4.94 To illustrate, consider a standalone FTTC VUA product that has a physical access path fault permanently cleared on 7 February, an active equipment fault (e.g. DSLAM port) fault permanently cleared on 10 February, a physical access path fault permanently cleared on 21 February. The faults that were permanently cleared on February 10, 14, and 21 are considered repeat faults for the purposes of the repeat fault KPI metric. The reason why ComReg considers these faults as repeat faults is that from an Access Seeker's perspective, they are reoccurring faults on the same FTTC VUA product within a short period.

No Fault Found Metrics

4.95 The No Fault Found ('**NFF**') metrics measure the number of reported faults that have been cleared according to a specific set of permanent clear codes.

4.96 When a fault is reported, after validation by Eircom, the fault is typically assigned to an Eircom field technician to identify the root cause of the fault and, usually, to make the necessary repairs to the network. As part of the service assurance process the Eircom technician assigns a clear code(s) to identify the root of the fault. However, some permanently cleared faults may be assigned clear codes which means that the technician or service centre staff could not identify the presence of a fault. It is ComReg's view that these non-fault clear codes should be categorised into a separate NFF category.

4.97 NFFs are not actually considered faults *per se* and it would be inappropriate to include these non-fault incidences in the Repair-of-Service KPI metric. Nevertheless, they are an important fault-related metric to provide transparency regarding the volume of reported faults that are categorised as non-faults (NFF). There are several possible causes for NFFs, such as reporting errors, technician errors (which ComReg accepts, may occur regardless of adequacy of technician training), a temporal fault (a temporary fault condition) etc. Examples of clear codes within the NFF category include: "Right When Tested" (**'RWT'**)[84], "Found O.K." (**'F.O.K'**)[85]. The RWT and F.O.K identifiers are used to indicate that either the service centre or the field technician could not identify the fault reported during the fault analysis process.

4.98 An NFF metric will be particularly useful in cases where Access Seekers can demonstrate that they have fully executed the required diagnosis process prior to raising faults, but the reported fault is ultimately categorised by Eircom as RWT or F.O.K. Consequently, the NFF metric may help to identify process improvements, or to identify changes in Access Seekers' behaviours that will ultimately benefit End Users.

4.99 Because a significant proportion[86] of reported faults can be classified NFF, in ComReg's view it is appropriate and necessary to have a separate metric category. The NFF metrics will facilitate the appropriate monitoring of reported faults that are non-faults (NFF), which will provide meaningful insights regarding: the overall volume of NFFs, the relative NFF rates, and the trend in NFF performance over time.

[84] The clear code RWT (001) is a clear code used by service centre staff.
[85] The clear code F.O.K (002) is clear code used by field staff.
[86] Information Request with respect to the reporting of Eircom's Wholesale RAP products equivalence KPIs issued by ComReg to Eircom on 17 January 2021 and response received by ComReg on 21 Febuary 2021

4.100 ComReg disagrees with Eircom's stated position in their Consultation response that NFF metrics[87] are inappropriate on the basis that Access Seekers are largely responsible for NFFs. In Eircom's view, Access Seeker call centre staff are not allocated sufficient time to diagnose faults using the available fault screening tools. As a result, the true root causes of faults such as faulty CPE are not diagnosed and resolved resulting in fault orders, which are ultimately cleared to no fault found. According to Eircom under resourcing of call centres is one of the root causes of NFFs. However, the NFF Data gathered by ComReg demonstrates that a significant proportion of reported faults for both Eircom and Access Seekers are categorised as NFF. In the twelve months from Q3 2020 to Q4 2021 NFF rates for Eircom's downstream arm and for Access Seekers (in aggregate) were [✂ ✂] respectively. These figures show that NFF is as much an issue for Access Seekers and Eircom's downstream arm, and not exclusively an Access Seeker related issue as Eircom suggests in its submission to the Consultation.

4.101 ComReg also does not accept Eircom's submission that Eircom has no control over NFFs and that Access Seekers are largely responsible for NFFs. In short,[88] ComReg understands from the processes as described in Eircom's relevant process manuals[89] that when fault orders are submitted to the UG, the UG validates those fault orders based on a predetermined set of rules, which Eircom fully controls. To reiterate (as stated paragraph 4.82), one of the steps in the fault order validation process is to confirm whether the mandatory test(s) associated with the fault report code have been executed or at least have been attempted within 60 minutes of the fault being submitted. If the required mandatory tests have not been executed or attempted, then the fault order is rejected. In the case where the fault order is accepted, the fault can be assigned to a field technician to execute the sequence of diagnosis, localise, repair, and test.

4.102 Where the fault order is accepted, this means that Eircom has agreed that a potential fault may exist in its network which is appropriate to investigate further because the mandatory testing and other requirements are met that justifies further investigation. After a fault is accepted on the UG, it can be assigned to a field technician. At this point the field diagnosis, localise, repair and test sequence commences. Like the UG validation order processes, the processes and procedures used by the Eircom field technicians are fully controlled by Eircom. Contrary to what Eircom suggests in its submission to Consultation, accordingly, Eircom has a very active role in the fault diagnoses processes that could affect the corresponding NFF volumes.

[87] Metrics 73, 74, 83 and 84 in the Consultation.
[88] Note: This is a high-level overview that is not intended to be comprehensive.
[89] Next Generation Access | Open Eir

No-entry-obtained Metric

4.103 "No-entry-obtained" is the clear code (003) used when a technician has been assigned a fault that requires that the technician gain entry to the End Users premises to be resolved, but the technician cannot enter the End User's premises. The No Entry Obtained KPI metric is designed to measure the incidence of clear code 003.

4.104 When a field technician has already attended to a reported fault and has set the fault to a pending clear status with a clear code of 003, this triggers a notification through the UG alerting the Access Seeker that a site visit is required. The Access Seeker will then engage with the End User to agree a convenient date and time and book an appointment with Eircom for the technician visit. These activities will consume Access Seeker resources and places a requirement on the End User. It is accordingly an important measure in ensuring that Access Seekers receive equal treatment as compared to Eircom's retail arm.

4.105 Eircom in its consultation response objects to the No-Entry-Obtained metrics,[90] on grounds that they will result in double counting leading to confusion and additional onerous overhead on Eircom having to explain and justify any instances of double counting, are sufficient for not imposing the metrics. ComReg does not accept Eircom's position on this matter.

4.106 Eircom gives no explanation as to how double counting could occur or the potential scale of double counting. On a further review of the Inter-operator Process Manual ComReg does not see where a double counting scenario could arise as claimed in Eircom's submission to Consultation, both where access to the customer's premises is not available, or where no response is received from the customer.

4.107 In addition, even if a double counting scenario(s) is identified during the implementation of the No-Entry-Obtained KPI metric, this can be adequately addressed by describing the circumstances in the published business rules documentation. In this way, operators will understand the details in advance of the KPI metrics being published, thereby providing transparency, while avoiding any onerous overheads on the part of Eircom.

4.7 Quality of Supply Metrics

4.108 Quality of Supply may be measured by the following two KPI metrics: Early Life Failure ('**ELF**') and Installation failures/Dead on Arrival ('**DOA**').[91] These two

[90] Metrics 76 and 86 in the Consultation.

[91] "Installation failures / Dead on Arrival (DOA) are instances where open eir has advised an Access Seeker that the requested service was provisioned when, in reality, the service was never provisioned correctly in the first instance. For the avoidance of doubt this excludes all provisioning work carried out

metrics are designed to measure the incidences of installation faults (i.e. the product never worked or partially worked[92]), and other installation related faults within a specific timeframe. A fault incidence which occurs within a short period after an End User changes service type or switches Access Seeker is likely to impact on the customer's perception of their Access Seeker. The ELF and DOA KPI metrics are intended to provide objective measures for the Access Seeker to monitor fault incidences more accurately and, if necessary, to manage End User perceptions.

4.109 More specifically, the ELF and DOA KPI metric measures the incidence of latent fault(s) that occur within a specified period (i.e. a 28 calendar-day window) after the provisioning order has been completed. Its primary purpose is to measure the quality of the provisioning process.

4.110 For the avoidance of doubt, contrary to what Eircom suggests in its submission to Consultation, Quality-of-Supply metrics are not Repair-of-Service metrics. Quality-of-Supply metrics provide transparency regarding the quality of the installation process and on faults that occur shortly after provisioning has finished; Repair-of-Service metrics provide transparency regarding the quality of repair of in-life faults. The fact that quality of supply is to be assessed by reference to the initial 28 day period following order completion does not make that measurement a quality of repair measurement. The Quality-of-Supply and the Repair-of-Service metrics are different and they serve different purposes.

4.111 ComReg also does not accept that the fact that DOA faults may, as an exception, be caused by Access Seekers, means that they cannot be subject to KPIs. What is appropriate and proportionate is to address this scenario by excluding the relevant DOA faults from the metric calculation.

4.112 ComReg sees in this regard that there are two relevant categories of provisioning, Electronic Enablement and Field Interventions i.e In-situ and Non In-Situ Install. In the case of an Electronic Enablement no physical network intervention is required and the service(s) are activated by configuring network equipment electronically. Non In-situ Install, in contrast, involves activating and configuring network equipment electronically, field intervention at the cabinet and/or exchange, installation of a drop wire/fibre and installation of a copper NTU or the installation of a fibre NTU and/or an ONT. In this latter case, Co-ordinated Appointments may occur when an Access Seeker wish to schedule their own technician's visit to the End User's premises to coincide with the open eir technician's visit. Co-ordinated Appointments[93] is an optional feature and is

by an Operator on behalf of open eir." https://www.openeir.ie/wp-content/uploads/2020/06/NGA-IPM-V18_0-Unmarked-15062020.pdf

[92] Partially worked means that when multiple services are provisioned, but one of those service is not provisioned correcting and does not work as expected.

[93] NGA-IPM-V25

available for FTTH where the ONT is always installed by the Eircom technician, and for FTTC regardless of who installs the NTU. A further distinction can be drawn as follows in respect of the scenarios in which co-ordinate customer appointment can be utilised:

(a) In *Scenario (a)* the Operator arranges to send its technician to the end user's premises during the same slot as an Eircom technician visits both the exchange/cabinet for jumpering and the end user's premises. The Eircom technician in this case will install the NTU / ONT while the Operator technician may install the modem or other CPE.

(b) In *Scenario (b),* the Operator arranges to send its technician to the end user's premises and during the same slot an Eircom technician visits the exchange/cabinet for jumpering only. In this case the Operator installs the NTU and may also install the modem or other CPE.

4.113 In the cases of Electronic Enablement, In-situ Install and Non In-situ Install/Co-ordinated appointment Scenario (a), Eircom is fully responsible for the installations and therefore the DOAs. In the case of Coordinated Appointment scenario (b), where a DOA is caused by the improper installation of the copper NTU, this would be not Eircom's responsibility so would not be a DOA.

4.114 For example a DOA may not be Eircom's responsibility in the case where the VDSL port is operational and that the physical access path's electrical parameters are within specification by using a Metallic Electrical Line Test[94]. In such cases Eircom may exclude the relevant DOA from the metric calculations. However, the criteria and its application for excluding DOA faults from the Quality-of-Supply KPI metrics must be documented in the published KPI business rules document.

4.115 If there are scenarios where the root cause of the DOA is clearly the responsibility of the Access Seeker then such scenarios can be explained in the KPI business rules document and can be excluded from the DOA KPI metrics.

4.116 Eircom in its submission to the Consultation suggested to modify the formulas for Quality of Supply Transfer Connections and for Quality of Supply Other Connections Metrics[95]. ComReg notes the formulas included in the draft KPI Decision for these Metrics are consistent with the formulas used in ComReg's Decision D05/11. ComReg accepts Eircom's submission that the Supply of CGA Bitstream service metrics can be expressed in terms of the number of faults as follows i.e. 1 – (total number of orders that incurred a fault within 28 day) x 100 / Number of DSL Connections completed within the Data Collection Period, and 1 - (Number of Faults reported within 28 Days for DSL Connections completed

[94] A Metallic Electrical Line Test measures the electrical characteristics of a copper access path.
[95] Metrics 90 and 93 in the Consultation.

within the Data Collection Period X 100)/ (Total number of DSL Connections completed within the Data Collection Period).

Chapter 5

5 KPI processing, reporting, and auditing

5.1 Overview

5.1 In addition to the primary KPI metrics, other KPI building blocks or ancillary requirements must be in place in order to ensure that the KPI metrics are effective and useful, in terms of the reporting and publication requirements and verification of metrics.

5.2 Fault Exclusions

5.2 For KPI metrics relating to repair to be meaningful, it is essential that all faults are included in the fault metrics. ComReg notes that Eircom lists and describes[96] the clear codes for various products/services. As part of the service assurance process Eircom technicians assign clear codes that identifies the cause of the fault, for example clear code 100 means the cause of fault relates to "Wires Down". In the case where an Eircom technician assigns a fault clear code to identify the cause of a fault then that Fault[97] must be accounted for in the KPI metrics. The exclusion of a Fault from the KPI metrics because a fault clear code is deemed to be a "Non Valid Fault" for a particular product/service can result in actual under-reporting of product/service faults.

5.3 For example[98], a reported fault for a NGA POTS Based Broadband FTTC product that is cleared with the clear code 100 (Wires Down) which is currently

[96] The list of Valid Fault and Non valid Fault clear codes used by Eircom for current regulated access products can be found at https://www.openeir.ie/wp-content/uploads/2020/05/Fault-Clear-codes-Nov-2019.xlsx

[97] "Fault" means an incident of disrupted or degraded service.

[98] To assist with the understanding of the example, ComReg has included an extract from Eircom's"Fault-Clear-codes-Nov-2019" file: https://www.openeir.ie/wp-content/uploads/2020/05/Fault-Clear-codes-Nov-2019.xlsx

Extact from Fault Clear codes files

categorised as “Non Valid Fault” for NGA POTS Based Broadband FTTC. A “Wires Down” is an incident that causes disrupted or degraded service. Therefore, “Wires Down” in the case NGA POTS Based Broadband FTTC product/service is a Fault by definition, so such a Fault must be included in the KPI metrics for NGA POTS Based Broadband FTTC.

5.4 Information provided by Eircom[99] demonstrates that a [✂ [redacted] ✂] percentage of recorded fault orders for POTS Based FTTH and SA FTTH [100] ([✂ [redacted] ✂] for Access Seekers and Eircom respectively and for POTS Based FTTC and SA FTTC[101] [✂ [redacted] ✂] for Access Seekers and Eircom respectively were excluded from the KPI metrics.

5.5 The exclusion of faults from the calculation of the KPI metrics has the effect of masking equivalence issues. Given the extent of fault exclusion, ComReg finds that it is necessary to prohibit this activity in order that the KPIs metrics for faults cover all faults, thereby providing greater transparency and accuracy to the metrics.

								Standalone NGA	Standalone NGA	NGA Pots Based Broadband	NGA Pots Based Broadband
Clear Code	Description	Category	SB-WLR	ULMP	Bitstream	Standalone Bitstream	Line Share	FTTC	FTTH	FTTC	FTTH
100	Wires Down	LINE	Valid fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Non Valid Fault	Non Valid Fault
101	Dis (Perm/Int)	LINE	Valid fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Non Valid Fault	Non Valid Fault
102	Earth (Perm/Int)	LINE	Valid fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Non Valid Fault	Non Valid Fault
103	Contact(Perm/Int)	LINE	Valid fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Non Valid Fault	Non Valid Fault
104	S/C (Perm/Int)	LINE	Valid fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Non Valid Fault	Non Valid Fault
105	Low Insulation	LINE	Valid fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Valid Fault	Non Valid Fault	Non Valid Fault	Non Valid Fault

[99] Information Request with respect to the reporting of Eircom's Wholesale RAP products equivalence KPIs issued by ComReg to Eircom on 17 January 2021 and response received by ComReg on 21 Febuary 2021

[100] FNH code - code used to log an FTTH fault.

[101] FNC code - code used to log an FTTC fault.

5.6 In its submission, as ComReg understands it, Eircom takes the view that the status quo in relation to excluding faults should be maintained and that it is sufficient to publish the list of Valid Fault and Non Valid Fault clear codes and suffixes[102] used by Eircom to define the scope of the faults to be included in the KPI metrics. ComReg does not agree that this is the case as this approach excludes faults and provides a distorted view of the actual number of faults. Excluding faults presents KPI metrics that do not accurately reflect Eircom's fault levels. ComReg's analysis of the fault data[103] shows that a large proportion of faults, and in some instance most faults for certain product types, are excluded from the current KPI metrics reports.

5.7 The requirement that there is no exclusion of faults does not mean that Eircom will not be in the position of defining and using clear repeatable business rules for fault metrics or that there will be confusion, as Eircom appears to contend. Rather any such rules must not lead to excluding faults from the KPI metrics. Eircom may continue to use the fault report type that Access Seekers select when submitting a fault to categorise faults. Furthermore, if it is necessary to recategorise clear codes from "Non Valid Fault" to "Valid Fault", for the purposes of the KPI metrics, this recategorization can be clearly explained in the published business rules document.

5.8 Simply, where there is an actual Fault with a RAP product or a RAP component of a wholesale input, then those Faults must be included in the KPI fault metrics. The objective is clear; all Faults for products/services must be included in the KPI fault metrics. It is also not the case the Repair-of-Service KPI metrics could be skewed by the inclusion of non-faults, as Eircom contends. Non-faults are in a separate metric category, so only actual Faults cleared are in scope. Therefore, the Repair-of-Service KPI metrics will not be skewed by the inclusion of non-faults.

5.9 For the avoidance of doubt suffixes shall not be used to exclude faults from the KPI fault metrics.

5.10 ComReg accepts that in order not to exclude faults, Eircom will have to redefine the criteria for the allocation of faults, publish the allocation criteria as part of the KPI business rule documentation, and implement the criteria. However, ComReg is also satisfied that there is nothing that makes this unachievable or otherwise a disproportionate requirement.

[102] Suffixes are codes denoted by a by letter or letters with flag value of N meaning (to exclude), examples of suffixes are DF- Damaged by Fire, DG - Damaged by Gunshot, DW Damaged by Flood. Other suffixes such as CC - Change Cable Pair, CD – Cleaned do not result in the fault exclusion.
[103] Information Request with respect to the reporting of Eircom's Wholesale RAP products equivalence KPIs issued by ComReg to Eircom on 17 January 2021 and response received by ComReg on 21 Febuary 2021

5.11 In this respect, Eircom also contended that changes will be required to the fault reporting processes of Access Seekers. ComReg also does not accept that this is the case and for the avoidance of doubt, ComReg did not propose that the fault screening process prior to submitting a fault should be changed. The changes that are necessary relates to how faults will be categorised for the purposes of KPI fault metrics using the assigned "Valid Fault" clear codes.

5.3 Frequency of Publication

5.12 To maximise the benefits of KPIs, KPI reports need to be published on a regular basis so that, if necessary, timely actions can be taken on foot of the information. At the same time, ComReg is mindful that resources are required for Eircom to publish, review, and investigate potential differences in the reported KPI metrics.

5.13 When the KPI obligation was first introduced in 2011, the preparation of KPI reports was largely manual. At that time, ComReg considered it necessary to balance the need for timely publication of the KPIs metrics with the additional burden of compiling and preparing the reports on Eircom.

5.14 In the interim, data collection and analysis tools have advanced significantly. Eircom's Business Rules for KPI Metrics show that Eircom has migrated from largely manual processes to a largely automated process for the preparation of KPIs, which reporting capabilities can be built upon and re-used.

5.15 Against this background, given the potential for automation of the KPI metrics report, a thirty working day period (six weeks) from the end of each quarterly reporting period as proposed in the Consultation ought to be sufficient to allow Eircom to publish the KPI metrics reports. In its submission to the Consultation, Eircom submitted that a thirty working day period may not be sufficient to complete the processing, validation, and publication of the KPI metrics (noting for example that the Quality-of-Supply metrics are calculated twenty-eight calendar days after the end of the reporting period). Having considered Eircom's submission, ComReg has aligned the publication period with the existing two-month (40 working days) publication timeline. Accordingly, the KPI metrics will be published within 40 working days after the end of the data collection period.

5.16 ComReg is satisfied that this is a sufficient period of time to run validation checks, identify any potential anomalies and conduct an initial investigation of root cause(s). In particular, once the processes for collection and processing of the KPI metrics have been established, the preparation and processing of the KPIs ought to be a procedural driven process supported with automated sub-processes. While ComReg acknowledges that the validation checking will be manual in nature, ComReg does not anticipate that errors/mistakes in calculations of the KPI metrics will be frequent and simple processing errors/mistakes may be identified and corrected prior to publication.

5.17 In the case where Eircom has identified an issue(s) or potential issue(s) with its validation checks that may require a process change or similar to remediate/resolve, rather than postpone the publication of the KPI metrics, Eircom is required to publish the KPI metrics and to include in the KPI report an advisory note explaining which KPI metrics are subject to further analysis and accordingly, subject to change following the completion of the internal investigation, together with the expected timeline for the conclusion of its analysis, to be followed by progress updates on its internal investigation/analysis at least every 10 working days. Eircom in its Submission to Consultation was of the view that this approach would cause confusion and uncertainty. ComReg does not agree and is of the view, on the contrary, that this approach will provide confidence to the stakeholders that the validation processes have worked, and that Eircom is working proactively to address any issues identified and to keep Access Seekers informed with regular updates.

5.18 ComReg notes that to date and since the 2011 KPI Decision, Eircom has reported the CGA KPI metrics on a quarterly basis sub-divided by month. ComReg has no issue with Eircom continuing with sub-dividing metrics by month in respect of the CGA KPI metrics. However ComReg does not believe that it would be appropriate to use that same approach in respect of the NGA KPI metrics which are accordingly to be reported quarterly, not sub-divided by month.

5.4 Implementation, report milestone, and publication of Metrics

5.19 ComReg understands from Eircom's Business Rules for KPI Metrics[104] that data from Eircom's Operation Support Systems is gathered using a File Transfer Protocol ('**FTP**') and processed using Extract Transform and Load ('**ETL**') procedures. The resulting data set is stored in Eircom's Enterprise Data Warehouse, which is processed using software modules (mainly SQL scripts) to create the KPI metrics tables for publication. Eircom can re-use and modify existing processes and scripts so that the implementation effort on the part of Eircom for the purpose of implementing this Decision are not significant and ought not to involve a large scale/major IT project. A period of six months is accordingly sufficient to allow Eircom to make any amendments required to existing systems and processes to comply with the requirements of this Decision.

[104] Eircom's document entitled "Business Rules for Metrics in KPI Equivalence Report" ('Eircom's Business Rules for KPI Metrics') Version 1 dated 19 June 2019

5.20 In setting the period for implementation at six months, ComReg considered Eircom's submission to the Consultation that a minimum of eighteen months would be required to make the transition and implement the KPI metrics as proposed. In particular, ComReg asked Cartesian Ltd to independently assess the effort required to implement ComReg's proposed KPI metrics and sought further information from Eircom, given Eircom's view that "*it [was] difficult see how ComReg has reached such a conclusion absent any engagement with eir on its current systems*,"[105] in the form of a list of technical questions seeking to establish Eircom's assessment (and the grounds for same) of the IT changes required to collect and process the data necessary to compile and publish the KPI metrics.

5.21 Cartesian assesses the time required for Eircom to make the changes required to ensure that it can collect the data and compile and publish the KPI metrics to be between 104 and 121.5 [106] man-days of effort for the CGA and NGA metrics. This estimate is generous given that it allows for any work required in respect of the disaggregation of all KPIs metrics into POTS Based and Standalone, which this Decision does not in fact require.

5.22 ComReg is accordingly satisfied that a six-month period to implement the product and service KPI metrics is a fair and reasonable timeframe and Eircom has not provided any reasons or data to support its claim that an 18-month period would be necessary.

5.23 Eircom is required to prepare two versions of the KPI metrics report: a confidential version for submission to ComReg, containing the numerical data values (i.e the actual values for example the number of provisioning order accepted) and calculations such as percentage values etc., and a non-confidential version excluding numerical data and calculations, as appropriate, for publication. The confidential version of the KPI metric report is to be provided to ComReg at the same time as the quarterly reports are published, namely 40 working days after Q1 (January – March) , Q2 (April -June), Q3 (July – September) and Q4 (October - December). The detailed content for the KPI metric reports is set out in Schedule [4] of the Decision Instrument.

[105] Para. 113 of Eircom's submission to Consultation (p. 33).
[106] The effort estimates are based on project team include a project manager, developers and testers with tasks being completed in parallel.

5.24 The non-confidential version of the KPI metrics report is to be published by Eircom on its publicly available website. Publicly available means that there must be no restrictions[107] in accessing either current or historical non-confidential versions of the KPI metrics reports, such as password-controlled access or similar. ComReg notes that the historical KPI reports will enable potential new entrants to the market to compare their performance with the historical performance of Eircom and the aggregate performance of Access Seekers Verification and Audit of KPI metrics

5.25 ComReg may from time to time audit the KPI metrics preparation processes. The audit of KPI metrics may include, inter alia, the collection of source data, the processing of the source data, the calculation of KPI metrics, the application of business rules, and the KPI reporting processes.

5.26 ComReg may conduct audits with the assistance of third-party experts, as appropriate. The scope of the audit will be determined by ComReg when the audit process commences. ComReg in this regard agrees with Eircom that the costs of a KPI audit(s) are for ComReg to bear; however, contrary to Eircom's suggestion, the terms of reference of the audit(s) are for ComReg to set with no agreement required on the part of Eircom.

5.27 Accordingly, the KPI audits will be conducted by ComReg or by auditors working on behalf of ComReg, in accordance with terms of reference set by ComReg, and the costs of the KPI audit(s) borne by ComReg.

5.28 Eircom in its submission to Consultation expressed the concern that ComReg's auditing of KPI metrics would amount to "*an additional layer of oversight*" that is not required given that the Independent Oversight Board (IOB) (established under the Settlement Agreement of 10 December 2018 between Eircom and ComReg) has a role in determining the effectiveness of the KPI preparation process.[108] ComReg notes however that the IOB's role is without prejudice to ComReg's statutory role in relation to monitoring Eircom's discharge of its regulatory obligations.

5.5 Statistical Verification KPI Metrics

5.29 The KPI metrics as structured only provide transparency at the macro level between Eircom on the one hand, and Access Seekers collectively on the other. This approach alone does not allow for identifying any potential discrimination in the treatment of individual Access Seekers by Eircom. As noted in the Consultation, ComReg is of the view that requiring Eircom to implement new processes to produce additional KPI metrics and monitoring the existence of

[107] ComReg notes that the non-confidential version of the KPI metric reports have been published on Eirom's publicly available website since 2011.
[108] Eircom's Submission to Consultation, para 117, p. 34.

potential discrimination between Access Seekers on a recurring basis using sample-based Z-testing and other approaches, may be disproportionate at this time and that less burdensome approaches should first be utilised.

5.30 For the time being, it is sufficient that, on an annual basis or as considered necessary, ComReg may request Eircom to provide it with the underlying data sets used to prepare the KPI Metrics, for ComReg's analysis, and to require that Eircom has in place adequate processes to ensure that it can meet ComReg's requests. In particular, Eircom is required to retain or be able to reproduce the underlying data set it used to prepare the KPI metrics contained in the KPIs reports for a period of not less than two years. Upon request Eircom shall provide the data, in the format requested, within 15 working days. For the avoidance of doubt, where issues are identified or for example for the purpose of a compliance investigation, ComReg may require Eircom to ensure that specific data sets are retained beyond the two year period.

5.31 In response to Eircom's submission in this regard that "*In line with the data protection regulations eir only retains data for as long as is legally necessary and the KPI data is retained for a rolling 9 quarters where on the start of the 10th quarter the 1st quarter is removed*" and the suggestion that "*Where ComReg wish data to be retained they need to inform eir so the data can be taken offline and stored in a secure location. eir is concerned at the duration investigations may take where more than 2 years is required.*", ComReg notes, for the avoidance of doubt, that no data protection issue should arise where ComReg seeks data for the discharge of its statutory functions. Where Eircom has been put on notice from ComReg that ComReg will require specific data, Eircom is required to put a hold to any process of destruction of the data concerned, including data that is more than two years old. If ComReg's analysis highlights potential discrimination issue(s) or there are other concerns that need further investigation, ComReg may, in accordance with its statutory functions and powers, undertake a more extensive data analysis and may require additional data sets from Eircom beyond the random periods indicated above.

5.32 ComReg also notes Eircom's concern in its submission to Consultation that as statistical analysis is based on the sampling of a population, a sampling error may result in false conclusions regarding possible difference in treatment between Access Seekers and Eircom. ComReg will ensure that the appropriate safeguards are included in cases where a sampling approach is used and ComReg may rely on appropriate expert technical advice. This support may include conducting all of the data analysis or parts of the data analysis.

5.33 For the avoidance of doubt, ComReg's above reference to Z-testing does not mean that ComReg will confine its analysis to that one statistical analysis method. ComReg will be guided, as appropriate, by such third-party experts as ComReg may appoint to assist ComReg with this task.

5.6 Publication of the KPI reporting business processes

5.34 In order that KPI metrics are properly understood and that there is adequate transparency, the processes for gathering, processing, and reporting of the KPI metrics must also be made available to ComReg and Access Seekers. This means that the business processes used by Eircom for the preparation and reporting of the KPI metrics for the products in scope are published and maintained by Eircom on its publicly available website.

5.35 BT in its submission to Consultation[109] noted that it is essential in this regard that the KPI business rules provide a clear explanation of any formulas or algorithms, so that Access Seekers may calculate their own KPI metrics for comparison with the industry aggregate. It is one objective of mandating the publication of KPIs that Access Seekers may calculate their own KPI metrics to compare against the industry aggregate. In order that this is the case, the published KPI business rules must be those relied upon by Eircom for the purpose of preparing and publishing the KPI metrics. These business processes and rules by definition ought to be sufficiently detailed and clear so that Access Seekers are able to calculate their individual KPI metrics using available information (e.g. notification and status information etc.) that is provided to them via the UG or by other channels.

5.36 In its Submission to Consultation, BT also noted that it is unclear how faults are allocated to a particular month within a quarter for CGA KPI metrics, in the circumstances when a fault is raised in one month (e.g. April) and is cleared the following month (in that case, May). ComReg agrees that clarity in this respect is important and notes that the process for the allocation of faults to a particular month in a data collection period should be clearly explained in KPI Business rule documentation for the CGA KPI Metrics.

5.37 Were there concerns arising in respect of the detail and clarity of the document published by Eircom, ComReg may rely further on Regulation 9 (4) of the Access Regulations and specify the precise information to be made available and the level of detail required as and if necessary.

5.38 ComReg accepts that Eircom has a legitimate concern that confidential information may be divulged if the business rule document is published explaining how the KPI metrics are processed and calculated. It is appropriate in this respect that Eircom may restrict access to its business rule documentation to Access Seekers that have signed the relevant applicable reference offers schedule and/or signed a Non-Disclosure Agreement ensuring that the business rules are only used for the purpose for which they are made available.

[109] BT's submission to the Consultation, p6 and p7

5.39 In order to facilitate reporting and enhance consistency, comparison and readability of metrics, a standardised format for the tables is to be used by Eircom, as set out in Schedule 4 of the Decision Instrument. The non-confidential version of the tables are to be published on Eircom's publicly available website, and both the confidential and non-confidential versions submitted to ComReg.

Chapter 6

6 Regulatory Impact Assessment

6.1 Introduction

6.1 This Chapter summarises the Regulatory Impact Assessment carried out by ComReg in respect of the KPI regime imposed by this Decision on Eircom in further specification of Eircom's obligation of transparency including its obligation to publish KPIs under ComReg D10/18. This RIA should be read in conjunction with the overall Consultation and Response to Consultation and Final Decision, having taken into account submissions from Respondents, and any comments from the EC.

6.2 ComReg's RIA follows five steps:

(a) Step 1: Describe the policy issue and identify the objectives;

(b) Step 2: Identify and describe the regulatory options;

(c) Step 3: Determine the impact on stakeholders;

(d) Step 4: Determine the impact on competition; and

(e) Step 5: Assess the impacts on stakeholders and competition and choose the best regulatory option.

6.2 Principles in Selecting Remedies

6.3 Since the 2011 KPI Decision, significant changes have occurred including changes to the regulated markets (i.e. the WBA market is now the WCA market, the WPNIA market is now the WLA market referenced in the 2011 KPI Decision, the development of new access network technology and a wider portfolio of regulated access products, and changes relating to NGA service delivery and service assurance processes. Besides these market, technology, product and process changes, the dependence of End Users on broadband products and services delivered over NGA products has greatly increased, so that End Users are now more sensitive to delays with service delivery and/or service assurance.

6.4 Consequently, ComReg considers that it is necessary to modify the existing KPIs where appropriate and to add new forms of KPIs to augment Eircom's transparency obligations on the relevant markets identified above and to ensure the effectiveness of the non-discrimination obligations. This is because the existing published KPIs do not provide a complete set of necessary performance data, and do not monitor all relevant process points to the appropriate level of granularity.

6.5 A key ComReg objective is to ensure that transparency exists in the provision by Eircom of wholesale products and services. Transparency is intended to promote competition in the interest of End Users of electronic communications services by ensuring that all Access Seekers, End Users and ComReg can observe the price and non-price terms which underpin important investment decisions concerning entry and expansion in markets where Eircom has been designated with SMP. Transparency obligations are also, in part, designed to allow ComReg to determine whether the SMP operator is meeting its non-discrimination obligations. Non-discrimination obligations require the SMP operator, *inter alia*, to supply wholesale products and services to all Access Seekers to an equivalent quality, including to its own downstream retail arm. Effective non-discrimination obligations are thus critical in promoting undistorted competition in the best interests of End Users.

6.6 The KPI regime set out in the Decision is designed to address the shortcomings identified by ComReg in the KPIs regime which has applied since 2011 in order to ensure that the processing and methodology related to underlying metric data do not result in misleading conclusions and by adding new KPIs as appropriate. It is intended to ensure that a complete set of relevant, accurate, performance data is made available to Access Seekers and ComReg, on a regular basis.

6.7 The improved KPI metrics will assist Access Seekers in comparing critical aspects of wholesale products and services with Eircom's retail equivalent on an objective basis. They will also assist Access Seekers in analysing product performance over time. Evidence, through published KPIs, of inferior performance wholesale inputs when compared to their Retail Equivalent, or evidence of a degraded wholesale product is critical information for Access Seekers to have when negotiating with Eircom for better services, or to maintain an appropriate standard of service, and in turn putting them in a better position to inform and serve their retail customers thereby enhancing retail competition delivering important benefits to consumers in terms of price and product innovations over the medium to longer term.

6.8 The improved KPI metrics will provide an objective data source for ComReg for monitoring compliance with non-discrimination obligations, while further equipping Eircom with a means to more effectively verify its own performance, thereby contributing to effective regulatory processes for handling potential complaints or disputes.

Step 2: Identify and describe the regulatory options

6.9 ComReg has identified three options:

(a) **Option 1**: Withdraw the current transparency obligation to publish KPIs;

(b) **Option 2**: Leave the current transparency obligation to publish KPIs unchanged; or

(c) **Option 3**: Further specify the current transparency obligations to publish KPIs, and in particular:

i. Setting up a mechanism in order to keeping KPI metrics current;

ii. Providing for NGA KPI metrics;

iii. Creating a dedicated fault category for NFFs;

iv. Prohibiting Fault exclusion from KPIs

v. Providing for Verification and Audit

vi. Providing for Statistical Verification of KPIs; and

vii. Requiring the publication of Eircom's KPI business rules.

Step 3: Determine the impact on stakeholders

6.10 This section summarises the impact of the proposed changes on stakeholders. ComReg seeks to consider the potential burden incurred by Eircom in complying with the proposed further specification of the KPI obligations while also considering and evaluating the potential benefits that would accrue to Eircom, its wholesale customers, and End Users as a result of the obligations being imposed.

Option 1: Withdraw the obligation to publish KPIs

6.11 ComReg's view is that the withdrawal of the obligation to publish KPIs would have a detrimental effect on Access Seekers. Since their implementation in 2011, KPIs have contributed to a higher level of transparency in Eircom's services, demonstrating equivalence (or lack thereof) between the products and services offered to its wholesale customers, compared to that offered to its own downstream arm, and helping to establish Access Seekers' (as well as End Users' and ComReg's) confidence in Eircom's wholesale offerings. Published KPIs have also identified equivalence and discrimination issues resolved by process changes, for the benefit of Access Seekers and ultimately, End Users. Therefore, the publication of the KPIs serves as an important tool for ComReg, and potentially Access Seekers in dispute cases, to identify issues and to effectively monitor Eircom's compliance with its obligations. As a result, ComReg considers that withdrawing the obligation to publish KPIs would hamper the effective application of Eircom's non-discrimination obligations and would reduce overall transparency and is, therefore, not appropriate or justified.

Option 2: Leave the current transparency obligation to publish KPIs unchanged

6.12 ComReg's view is that leaving the current KPIs established in 2011, unchanged, would also be inappropriate. Since 2011, there have been significant changes, such as the introduction of NGA access network technology, changes to the demand pattern for CGA products and services and the introduction of a new service delivery model (i.e. appointments based). As a result, the KPIs specified in 2011 are incomplete and are becoming progressively less meaningful and useful and do not allow for effective monitoring of Eircom's compliance the non-discrimination obligations and adequate transparency to the detriment of Access Seekers (and ultimately End Users). Therefore, ComReg does not consider that leaving the current KPIs unchanged is appropriate or justified.

Option 3: Further specify Eircom's transparency obligations

6.13 This option involves further specifying to Eircom's transparency obligations with respect to the scope and content of KPI metrics to be published, and certain changes relating to the processing and publication of KPIs, as proposed in the Consultation. ComReg considers it appropriate to implement these proposed changes collectively because the proposals are complementary to each other and each of them is required to deliver the overall improvement in transparency that is considered necessary, to ensure the effectiveness of the non-discrimination obligation and to provide a useful basis for ComReg (and other stakeholders) to monitor Eircom's performance or compliance with its obligations. Therefore, ComReg considers it appropriate to assess the impact of the proposals in this Consultation on stakeholders collectively, rather than assessing each proposed change to the KPIs on a separate and individual basis.

Impact on Eircom

6.14 ComReg acknowledges that additional effort would be necessary for Eircom in order to produce the updated set of KPI metrics associated with its regulated wholesale products and services. However, ComReg considers that the additional effort should not be overly burdensome for Eircom for the reasons outlined below.

6.15 ComReg notes that Eircom's ordering, service delivery and service assurance processes are automated for its high-volume products and services. These automated systems control, track, and report status information of orders as they progress from creation to completion. More importantly, the data from the various automated systems, which manage end-to-end order flow, are gathered, transferred to, and loaded into, an Enterprise Data Warehouse, thereby creating a centralised data repository.

6.16 More specifically, ComReg understands from Eircom's KPI documentation, including in particular the document entitled "*Business Rules for Metrics in KPI*

Equivalence Report" that data from Eircom's Operation Support Systems is gathered using a File Transfer Protocol ('**FTP**') and processed using Extract Transform and Load ('**ETL**') procedures. The resulting data set is stored in Eircom's Enterprise Data Warehouse, which is processed using software modules to create the KPI metrics tables for publication.

6.17 The net effect of the proposals set out in this Consultation will be an evolution of Eircom's KPI processing capabilities with the continued publication of existing KPIs and new KPIs. New KPIs will be generated by processing data already available to Eircom from its Operation Support Systems and building upon Eircom's existing capabilities and expertise.

6.18 Furthermore, the publication of performance metrics would also generate benefits for Eircom, since the published data would enable Eircom greater visibility over the performance of its own wholesale products, and will help Eircom to identify potential equivalence issues both at the industry level and between individual Access Seekers, should they exist. Also, the metrics could be used to identify process and other changes so that Eircom can hone its wholesale products and services[110].

Impact on Access Seekers

6.19 Implementing Option 3 will improve the ability of wholesale customers to compare the performance of Eircom's regulated wholesale inputs with that of Retail Equivalents. The improved transparency would instil wholesale customers with greater confidence in Eircom's regulated wholesale products, by offering greater knowledge on the performance of Eircom's wholesale product suite. Increased visibility of Eircom's ongoing wholesale performance supports Access Seekers in making investment decisions which in turn, promotes competition in the associated downstream markets.

Impact on End Users

6.20 The proposed changes would provide a mechanism that allows ComReg to effectively and efficiently monitor Eircom's compliance with its non-discrimination obligations in the aforementioned relevant markets. In addition, the changes would also meet ComReg's ultimate strategic objective of promoting competition in the markets concerned for the benefit of End Users.

[110] For instance, consider the hypothetical situation where the NFF rates for Access Seekers and Eircom is 55 percentage for all reported faults. This may indicate that training of field staff is required or that other process changes may be required.

Step 4: Determine impact on competition

6.21 ComReg provided examples of potential competition problems and their impact on competition and End Users[111]. ComReg notes that its objective in regulating each market is to prevent the restriction or distortion of competition and to promote effective competition in downstream and related markets.

6.22 The imposition of appropriate and specific *ex-ante* remedies to address such competition problems in the relevant markets was discussed and justified in ComReg's WCA and WLA Decisions, which established it was appropriate and justified to require Eircom to publish KPI metrics as part of its transparency obligations in those markets.

6.23 The further specification of the existing transparency obligations to publish a broader and updated set of KPIs in this Consultation is specifically aimed at addressing vertical leveraging (i.e. quality discrimination[112]) competition problems in a more targeted manner in those markets.

6.24 Without the proposed changes to KPI metrics important process points in the ordering, provisioning and fault repairing would not be monitored or would not be effectively monitored.

Step 5: assess the impacts and choose the best option

6.25 Having assessed the potential burden in terms of the changes Eircom will need to make to its KPI processing capabilities versus the benefits arising from having a more up-to-date, robust, and granular set of KPIs that monitor the most relevant process points of interest to stakeholders, ComReg considers that the changes required are justified, reasonable and proportionate for the following reasons:

(a) The effort incurred in implementing the proposed measures is not considered overly burdensome, taking account of the current KPIs already produced by Eircom and modifications required to current processes for gathering, processing, and producing the data set, and publication of KPIs;

(b) The publication of product performance metrics helps Eircom to demonstrate the performance of its wholesale products to existing and potential wholesale Access Seekers, as well as compliance with regulatory obligations imposed by ComReg;

[111] See paragraphs 11.1 to 11.7 of WLA Decision, and see paragraphs 6.1 to 6.8 of WLA Decision
[112] Quality discrimination means providing downstream competitors with wholesale inputs at a lower quality of service (or inferior information) to that which Eircom provides to its own downstream arm (or to certain other competitors). For example, the Eircom could give priority to its own retail customers when ordering, provisioning and fault repairing.

(c) The benefits of the proposed KPIs would be substantial in terms of enhancing investor and consumer confidence in Irish telecommunications markets and the resulting promotion of competition and reduction of ongoing regulation costs. The benefits would apply across the board to Eircom, Access Seekers, End Users and to ComReg.

(d) The KPIs can be used by Eircom as a form of control to help identify issues and mitigate the potential risk of non-compliance.

6.26 On the basis of the foregoing, the anticipated benefits associated with the changes to the KPI metrics, namely a strengthened regulatory and competitive process capable of delivering important pricing and product innovations to End Users, mean that, overall, ComReg considers the benefits to exceed the burden involved. ComReg therefore considers that it is justified, reasonable and proportionate to further specify the KPI metrics in relation to the Relevant Markets.

Appendix: 1 – Decision Instrument

1 STATUTORY POWERS GIVING RISE TO THIS DECISION INSTRUMENT

1.1 This Decision Instrument is made by the Commission for Communications Regulation:

(i) Pursuant to and having regard to sections 10 and 12 of the Communications Regulation Act 2002 and Regulation 16 of the Framework Regulations;

(ii) Pursuant to Regulation 18 of the Access Regulations;

(iii) Pursuant to Regulation 18(1)(a) of the Authorisation Regulations;

(iv) Having regard to Regulations 8, 9 and 10 of the Access Regulations;

(v) Having regard to Regulation 10(13) of the Framework Regulations;

(vi) Having, where applicable, pursuant to Section 13 of the Communications Regulation Act 2002, complied with Ministerial Policy Directions;

(vii) Having regard to ComReg Decision D10/18, including in particular Section 9 and Section 10.18 of the WLA Decision Instrument and Section 9 and Section 10.17 of the WCA Decision Instrument;

(viii) Having regard to the analysis and reasons set out in ComReg Document No. 21/33;

(ix) Having consulted with, and taken into account the submissions received from interested parties, pursuant to Regulations 12(3) of the Framework Regulations;

(x) Having notified the proposed final decision to the European Commission, BEREC and the national regulatory authorities of other EU Member States pursuant to Regulation 27 of the Framework Regulations and at the same time published the proposed final decision in accordance with Article 32 of the EECC by way of Information Notice 22/27;

(xi) Having regard to the analysis and reasons set out in ComReg Document 22/49

(xii) Having taken the utmost account of the comments received from the European Commission.

1.2 This Decision Instrument shall be construed consistently with the provisions of ComReg Decision D10/18 and ComReg Document No.18/94.

PART I – GENERAL PROVISIONS

2 DEFINITIONS

2.1 In this Decision Instrument, unless the context otherwise requires:

"Access" shall have the same meaning as under Regulation 2 of the Access Regulations;

"Access Regulations" means the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011);

"Access Seeker" means a Service Provider ('**SP**') that purchases wholesale services from another SP.

"Authorisation Regulations" means the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011;

"Communications Regulation Act 2002" means the Communications Regulation Act 2002 (No. 20 of 2002), as amended;

"ComReg" means the Commission for Communications Regulation, established under Section 6 of the Communications Regulation Act 2002;

"ComReg Decision D10/18" means ComReg Document No. 18/94, entitled "Market Review – Wholesale Local Access (WLA) provided at a Fixed Location & Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products: Response to Consultation and Decision", dated 19 November 2018;

"ComReg Decision D05/11" means ComReg Document No. 11/45, entitled "Response to Consultation and Decision on the Introduction of Key Performance Indicators for Regulated Markets", dated 29 June 2011;

"ComReg Decision D04/22" means ComReg Document No. 22/49, entitled Access Products and Services: Key Performance Indicator (KPI) Metrics, dated 29 June 2022;

"Decision Instrument" means this decision instrument;

"Effective Date" means the date set out in Section 13.2 of this Decision Instrument;

"Eircom" means Eircom Limited, a company incorporated in Jersey (Number 116389), registered as a Branch in Ireland (Number 907674), with an Irish registered Branch Office at 2022 Bianconi Avenue, Citywest Business Campus, Dublin 24, D24 HX03;

"End User(s)" has the same meaning as under Regulation 2 of the Framework Regulations.;

"Framework Regulations" means the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011);

"Implementation Date" means the date set out in Section 4.2 of this Decision Instrument;

"Publicly available wholesale website" means the website, or that part of a website, used by Eircom in respect of its wholesale business that is accessible to the general public;

"Quarter" means a 3 month period (July to September, October to December, January to March or April to June) of a calendar year.

"Regulated Product or Service" means a product, service or associated facility which Eircom is required to provide under ComReg Decision D10/18, and may include a Retail Equivalent;

"Relevant Decision Instrument" means the WLA Decision Instrument or the WCA Decision Instrument;

"Retail Equivalent" means the network products and services that Eircom self-consumes when providing retail products and services to End Users which are comparable in functionality to the products and services consumed by Access Seekers;

"Undertaking" has the same meaning as under Regulation 2 of the Framework Regulations;

"WCA Decision Instrument" means the Decision Instrument at Annex 21 of ComReg Decision D10/18;

"Working Day" means Monday to Friday excluding bank and public holidays;

"WLA Decision Instrument" means the Decision Instrument at Annex 20 of ComReg Decision D10/18.

2.2 The definitions set out in Section 2.1 shall also apply to Schedules 1, 2, 3 and 4.

3 SCOPE AND APPLICATION

3.1 This Decision Instrument shall apply to Eircom and its subsidiaries and any related companies, and any entity which it owns or controls, and any entity which owns or controls Eircom, and its successors and assigns, and the terms "subsidiary" and "related company" shall have the meaning ascribed to them in the Companies Act 2014.

3.2 This Decision Instrument specifies, and hereby directs Eircom to comply with the following requirements:

3.2.1 Requirements relating to Eircom's obligation to publish KPIs under Section 10.18 of the WLA Decision Instrument and Section 10.17 of the WCA Decision Instrument and references therein to ComReg Decision D05/11 shall be construed as references to this Decision and Decision Instrument; and

3.2.2 Requirements to provide ComReg with certain information that is necessary for the verification of compliance by Eircom of its obligation of non-discrimination under Section 9 of the WLA Decision Instrument and Section 9 of the WCA Decision Instrument.

PART II – KEY PERFORMANCE INDICATORS

4 REGULATED PRODUCTS AND SERVICES

4.1 Eircom shall, on a Quarterly basis, monitor its performance in respect of its provision of the Regulated Products and Services which it is required to provide under ComReg Decision D10/18, including, where applicable, the Retail Equivalent products and services which Eircom consumes for its own purposes and which are comparable in functionality to the products and services consumed by Access Seekers.

4.2 For the purpose of this Decision Instrument, Eircom shall commence monitoring performance of the Regulated Products and Services on the first day of the first Quarter six months after the Effective Date (the '**Implementation Date**'), or as otherwise agreed with ComReg in writing, and shall ensure that all necessary measures for the monitoring of performance as further detailed in this Decision Instrument have been put in place by the Implementation Date.

4.3 Eircom shall, within four weeks of the Effective Date, notify to ComReg, and at least 15 Working Days in advance of the Implementation Date, publish on its publicly available wholesale website, a list of the Regulated Products and Services (the '**List**' or the '**List of Regulated Products and Services**') which fall within the scope of Section 4.1 in the format set out in Schedule 2, as notified to ComReg or amended as ComReg may direct. Eircom shall keep the List up to date, including without limitation in terms of the Regulated Products and Services which fall within the scope of Section 4.1 and the monitoring of a new product or service added to the List shall commence immediately on the launch of the product unless otherwise agreed by ComReg, in the manner set out in Section 7 below.

4.4 ComReg may, in considering an application from Eircom or at its own discretion, review the list of Regulated Products and Services published by Eircom and may direct Eircom to amend the List including without limitation to add, or withdraw, a Regulated Product and Service from the List.

5 KPI METRICS

5.1 For each Quarter from the Implementation Date, Eircom shall collect and retain the data that is necessary for monitoring the performance of each Regulated Product or Service ('**Quarterly Data**') in terms of the following indicators:

- Appointments,
- Ordering,
- Provisioning and Supply,
- Faults and Repair, and
- Quality of Supply,

and measure performance by reference to the performance metrics that are applicable to the relevant Regulated Products and Services calculated in accordance with the definitions and requirements set out in Schedule 3 ('**KPI Metrics**').

5.2 ComReg may, having followed any, as the case may be, applicable statutory procedural requirements, amend the definitions and requirements set out in Schedule 3 and any such amendments shall apply, following publication of such amendments by ComReg, upon no less than six months' notice to Eircom.

5.3 Eircom shall ensure that the KPI Metrics are calculated on the basis of the full set of the Quarterly Data as collected and in accordance with the requirements specified in Schedule 3, as may be amended from time to time. Eircom shall set out in full the rules, known as the "business rules", applied to the data to arrive at the KPI Metrics, and make such business rules, in such detail as to allow replication of the KPI Metrics calculation by a party other than Eircom, available on Eircom's publicly available website (save that confidential and commercially sensitive information may be redacted for publication) at least 5 Working Days in advance of the publication of the first KPI Report required under Section 6 below. Eircom may not provide in the business rules for the exclusion of faults, and may not exclude faults, in the Quarterly Data.

5.4 Where demand for a Regulated Product or Service becomes such that meaningful conclusions can no longer be drawn from the data, Eircom may, upon obtaining prior approval from ComReg, cease the monitoring

of the performance of the said Regulated Product or Service and Eircom shall update without delay the List of Regulated Products and Services.

5.5 ComReg may for the purpose of Section 5.4 consult with other Undertakings and/or seek input from third party experts, as ComReg considers appropriate in accordance with applicable statutory requirements and powers.

6 KPI REPORT

6.1 From the Implementation Date, within 40 Working Days of the end of the Quarter to which the KPI Metrics relate, Eircom shall furnish the KPI Metrics to ComReg, in the format set out in Schedule 4 (the '**KPI Report**') including an editable comma-separated values (.csv) file of the KPI Report and publish on its publicly available wholesale website the KPI Report excluding any KPI metric which is identified as being confidential to ComReg in Schedule 3 ('the **Non-Confidential KPI Report**').

6.2 Eircom shall make available, on its publicly available wholesale website, historical versions of the Non-Confidential KPI Report.

6.3 Eircom shall ensure that the information in the KPI Report is true and accurate. Where Eircom identifies anomalies with the Quarterly Data or the KPI Metrics in respect of any Quarter, Eircom shall investigate those anomalies and seek to rectify them as soon as possible and in any event within 40 Working Days of the end of the Quarter to which the data relates. Eircom shall inform ComReg in writing when such anomalies are identified. Where anomalies remain unresolved at the end of the 40 Working Day period, Eircom shall:

6.3.1 In both the KPI Report and the Non-Confidential KPI Report, set out the issues arising and unresolved together with the expected timeline for resolution;

6.3.2 Within ten Working Days of furnishing the KPI Report to ComReg and at least every ten Working Days thereafter until resolution, provide ComReg with a written update on the investigation's progress;

6.3.3 Following conclusion of the investigation, publish the outcome of its findings and, if necessary, amend or replace the KPI Report and the Non-Confidential KPI Report.

7 NEW PRODUCT AND AMENDMENT TO EXISTING PRODUCT

7.1 The applicable KPI Metrics for a new product or an amended product within the meaning of the Relevant Decision Instruments shall be the KPI Metrics applicable to the existing Regulated Product or Service that is the nearest equivalent in terms of functionality.

7.2 When Eircom introduces a new product, or Eircom makes an amendment to an existing product, in each case within the meaning of the applicable Relevant Decision Instrument, Eircom shall include as part of the documents notified to ComReg, in accordance with the requirements of the Relevant Decision Instrument, a draft updated List and set out the detail of the KPI Metrics and calculations which apply in accordance with Section 7.1. Eircom shall publish the updated List at the same time that the relevant documents required to be published under the Relevant Decision Instrument are published and KPI performance monitoring for the new or amended product shall commence immediately upon launch, by reference to the KPI Metrics as notified or as otherwise directed by ComReg within the notification period under the Relevant Decision Instrument, including without limitation further to Section 7.3 below, and ComReg may update Schedule 3 accordingly.

7.3 On notifying ComReg of a new product under the Relevant Decision Instrument, Eircom may request that the commencement of performance monitoring be delayed until a specified date, setting out the reasons therefor, and in such case:

7.3.1 ComReg may refuse Eircom's request in full, in which case Eircom shall commence monitoring the performance of the new product immediately on launch; or

7.3.2 ComReg may accept Eircom's request for delay, in which case Eircom shall cause to be recorded on the List the date upon which monitoring of the performance of the new product will commence, which date shall be the date notified to ComReg or another date directed by ComReg as the case may be; or

7.3.3 ComReg may accept Eircom's request in part, namely in respect only of certain of the KPI Metrics by which performance is measured in accordance with Section 5, in which case Eircom shall commence monitoring the performance of the new product immediately on launch in respect of the relevant KPI Metrics.

8 VERIFICATION AND AUDIT

8.1 Eircom shall retain the Quarterly Data for a period of two years following the end of the Quarter to which the data relates.

8.2 Strictly without limitation to the exercise of its statutory powers, at any point in time, ComReg may request to be provided with any Quarterly Data set for the purpose of verification and audit. Eircom shall meet any such request within 15 Working Days where the request is made within two years of the end of the Quarter to which the data relates, or as otherwise agreed with ComReg.

8.3 In particular, ComReg may from time to time request one or more Quarterly Data sets with the view to performing checks and statistical analysis and producing additional performance information for the purpose of verifying Eircom's compliance with obligations of non-discrimination. ComReg may publish any such additional information in respect of Eircom's performance as ComReg believes is appropriate in accordance with statutory requirements and its statutory powers.

8.4 ComReg may from time to time audit, or cause to be audited by a third party, the processes used by Eircom to collect, compile, calculate and report the KPI Metrics, including without limitation the processes used by Eircom for the collection of source data, the processing of the source data for KPI Metrics, the processing of the KPI Metrics, the application of the business rules, the calculation of KPI Metrics, and the KPI reporting processes, upon giving Eircom one calendar month advance notice of the audit and its scope, and Eircom shall facilitate ComReg's access to all relevant documentation and systems.

PART III – OPERATION AND EFFECTIVE DATE

9 STATUTORY POWERS NOT AFFECTED

9.1 Nothing in this Decision Instrument and these Directions shall operate to limit ComReg in the exercise and performance of its statutory powers or duties conferred on it under any primary or secondary legislation in force prior to or after the Effective Date of this Decision Instrument.

10 MAINTENANCE OF OBLIGATIONS AND WITHDRAWAL

10.1 Unless expressly stated otherwise in this Decision Instrument, all obligations and requirements contained in Decision Notices and Directions made by ComReg applying to Eircom and in force immediately prior to the Effective Date , including all obligations specified in ComReg Decision D10/18, continue in force and Eircom shall comply with same.

10.2 Obligations related to the Metrics set out in Annex 2 of ComReg Decision D05/11 shall continue to apply until the Implementation Date and are thereafter withdrawn.

10.3 Obligations related to Metrics associated with Line Share (Sections 3.1 to Section 3.8 of Annex 3 of ComReg Decision D05/11) shall continue to apply until 31 December 2022 and are thereafter withdrawn.

10.4 Obligations related to Metrics associated with ULMP (Sections 4.1 to Section 4.12 of Annex 3 of ComReg Decision D05/11) are hereby withdrawn from the Effective Date.

11 CONFLICT

11.1 For the avoidance of doubt, to the extent that there is any conflict between a ComReg Decision Instrument or ComReg document dated prior to the Effective Date and Eircom's obligations now set out herein, this Decision Instrument shall prevail.

12 SEVERANCE

12.1 If any Section(s), clause(s) or provision(s), or portion(s) thereof, contained in this Decision Instrument, is(are) found to be invalid or prohibited by the Constitution, by any other law or judged by a court to be unlawful, void or unenforceable, that(those) Section(s), clause(s) or provision(s), or portion(s) thereof, shall, to the extent required, be severed from this Decision Instrument and rendered ineffective as far as possible without modifying the remaining Section(s), clause(s) or provision(s), or portion(s) thereof, of this Decision Instrument, and shall not in any way affect the validity or enforcement of this Decision Instrument or other Decision Instruments.

13 PUBLICATION, NOTIFICATION AND EFFECTIVE DATE

13.1 This Decision Instrument shall be published on ComReg's website (www.comreg.ie) and notified to Eircom.

13.2 The Effective Date of this Decision Instrument shall be the date of its notification to Eircom.

13.3 This Decision Instrument shall remain in force until further notice by ComReg.

ROBERT MOURIK
CHAIRPERSON
THE COMMISSION FOR COMMUNICATIONS REGULATION
THE 29TH DAY OF JUNE 2022

SCHEDULE 1

DEFINITIONS

1. Acronyms used in this Schedule, in Schedule 2 [List], Schedule 3 [Metrics] and Schedule 4 [Tables] are defined as follows:

   BS+, Bitstream Plus
   CGA, Current Generation Access
   DoA, Dead on Arrival
   DSL, Digital Subscriber Line
   ELF, Early Life Failures
   FTTC, Fibre to the cabinet
   FTTH, Fibre to the home
   F.OK, Found OK
   NFF, No Fault Found
   NGA, Next Generation Access
   POTS, Plain old telephone service
   RWT , Right When Tested
   SB-WLR, Single-Billing Wholesale Line Rental
   VUA, Virtual Unbundled Access
   WHL, Whitelabel

2. The following definitions shall apply for the purpose of Schedule 1, Schedule 2, Schedule 3 and Schedule 4 of the Decision Instrument:

   "**Accepted order**" means the order has been accepted by Eircom; the operator has submitted an order which contains all the required accurate data within the mandatory fields.

   "Access Path" means the connection from the NTU/ONT in the End User's premises to the Point of Handover, including the MDF (for metallic) and the ODF (for fibre) in the Exchange, and (for virtual access) the WEIL at the serving Aggregation Node for the End User, i.e., at the MPoP.

   "Aggregation Node" means a network concentration point for Access Paths.

   "**Appointment Based order**" means an order where it is mandatory to select an appointment prior to order placement irrespective of the network inventory at the address.

   "**Bitstream**" means Eircom's wholesale products which consists of an Access Path to the End User's premises and a transmission service to a defined set Points of Handover.

"Bitstream Plus" or **"BS+"** means a specific implementation of the Bitstream Wholesale product. The Bitstream Plus product is described in detail in Eircom's product description "NGA Product Description Bitstream Plus" V8.0 dated 05 August 2021.

"CGA Fault" means an incident of disrupted or degraded Bitstream service.

"Clear – Permanent" means the issue has been permanently cleared and the trouble ticket has been closed.

"Completed Order" means the order status used by Eircom to indicate that all tasks relating to the Order are finished and the billing commences against the account / telephone number.

"Completion Date" means the date all tasks relating to the Order are finished.

"Customer" means a natural or legal person making a valid request for a service at a specified address.

"Data" means the data relating to the KPI Metrics.

"Data Collection Period" means the quarterly periods in each year: from 1 January to 31 March, from 1 April to 30 June, from 1 July to 30 September; from 1 October to 31 December.

"Date received" means the date that an order is first registered on the order handling system.

"Day" means a calendar day.

"Dead on Arrival" or **"DOA"** means the instances where Eircom advised an Undertaking that the requested product or service is provisioned. However, the product or service never worked.

"Delivered" means the Order status is updated to delivered when the work at the local exchange has been carried out, the Order is basically completed only the billing triggers are left to be implemented.

"DSL" means digital subscriber line.

"DSL Connection" means the activation of a DSL Service on a DSL Line, excluding any connections that require work to be performed at a Customer premises.

"DSL Fault" means an incident of disrupted or degraded DSL Service excluding PSTN related faults.

"DSL Fault Repair" means the repair of a DSL Fault resulting in the restoration of the DSL Service to normal working order.

"DSL Fault Repair Time" means the duration from the instant of a DSL Fault Report to the instant of DSL Fault Repair.

"DSL Fault Report" means a DSL Fault reported by a Customer which is valid unless it can be reasonably attributed to components outside the Eircom network.

"**DSL Fault Repair**" means the repair of a DSL Fault resulting in the restoration of the DSL Service to normal working order.

"DSL Lines" means those Access Lines that carry a DSL Service.

"DSL Supply Time" means the duration from the date all Valid DSL Connection Orders in respect of a DSL Connection are received by Eircom to the date a working DSL Service is made available for use.

"Early Life Fault" or **"ELF"** means a fault reported within the 28 calander days period following completion of a provisioning order.

"Electronically Enabled provision " means a product or service that is remotely activated and configured without the need of physical intervention in the network by an Eircom technician.

"Exchange" means an Eircom network premises or equivalent facility used to house network and associated equipment and may include a Remote Subscriber Unit (RSU). The Exchange sometimes, but not always, houses the MPoP.

"**Found OK"** or **"F.OK**" means that Eircom field staff could not identify a network fault.

"Fault" means an incident of disrupted or degraded service.

"Fault Repair" means the restoration of the service to normal working order.

"Fault Repair Time" means the duration from the instant of a Fault Report to the instant of Fault Repair.

"Fault Report" means a Fault recorded that can be attributed to a component(s) of the Eircom network.

"**Fibre to the Cabinet"** or **"FTTC"** means fibre to the cabinet which is a variant of the FTTN access network architecture where the Node used to house active equipment is the street cabinet.

"Fibre to the Home" or **"FTTH"** means an access network architecture where fibre optic cable is used to connect the End User premises to the ODF in an Exchange.

"Fibre to the Node" or **"FTTN"** means an access network architecture where fibre optic cable is used to connect a Node in the local access network to the ODF in an Exchange.

"Locally Arranged Appointment" means a request to change an agreed appointment date and/or timeslot that is not initiated by the End User/Customer.

"In-Situ Provision" means that network intervention is required by an Eircom technician to complete the provisioining process excluding tasks at the customer's premises and/or curtilage.

"MDF" means main distribution frame.

"Metropolitan Point of Presence" or **"MPoP"** means the point of inter-connection between the access and core networks of an Undertaking.

"NFF" or **"No Fault Found"** means a reported fault which is found not to lie within the Eircom network.

"Network Termination Unit" or **"NTU"** means the physical interface which provides the service demarcation or Point of Handover of the wholesale service within the customer premises.

"NGA orders" includes Wholesale VUA, Wholesale BS+, WHL and Retail Equivalent .

"**No Entry Obtained**" means in respect of a fault**,** that the technician was unable to gain access to the NTU/ONT/Fibre NTU or similar in or at the customer premises to validate service to that point.

"Non In-situ Provision" means that network intervention is required by an Eircom technician to complete the provisioning process at the customer's premises and/or curtilage.

"Non-Standard Order" means an order that cannot be progressed to completion without additional tasks by Eircom and/or the Access Seeker and/or the End User.

"ODF" means optical distribution frame.

"ONT" or **"Optical Network Terminal"** means the device that terminates the fibre Access Path at the End User's premises.

"**On-site Met Appointment**" means that an Eircom technician physically must be present at the End User's /Customer's premises on the agreed date and at the agreed timeslot.

"**Other connections**" means all new CGA broadband connection.

"Pending Clear or PC" means a fault status indicating that the technician has attended to the fault and the Access Seeker has been notified via the U.G. which then requires the fault resolution to be validated with the customer.

"POTS Based VUA" or **"PB VUA** " means the combination of POTS and a Virtual Unbundled Access.

"POTS Based Bitstream plus" or **"PB BS +** means the combination of POTS and a Bitstream Plus.

"**Recorded order**" means an order entered into the U.G. that has not yet been accepted or rejected by the UG.

"Referred order" means an order that has been assigned a refer code.

"**Rejected order"** means an order for which validation failed on the U.G.

"**Repeat Fault**" means a Fault that is reported in respect of the same product or service within 28 days of another fault being cleared

"**Request to Cancel**" means in some scenarios where the data on the order is incorrect the order must be cancelled and re-issued to allow delivery of the order complete.

"**Right-When-Tested"** or **"RWT"** means that service centre staff could identify a network fault.

"Standalone" or **"SA"** means the Bitstream, Bitstream Plus, and VUA products supplied by Eircom without a POTS service.

"Suspended Time" means the duration in time between Reschedule Indicated (RI) notification and the Rescheduled Request (RR) notification measured hour and minutes – weekends and excluding public holidays.

"Transferred Connection" means all Electronic Transfer of Broadband services to/from OAOs (incl. Eircom Retail) or electronic provision of Broadband serivces excluding provisioning /transfers with Jumpering.

"**Undeliverable**" is where an order obtains the undeliverable status when the order cannot be Delivered, however it was not rejected.

"Unified Gateway" or **"U.G"** means the interface offered by Eircom to Access Seekers into its Operation Support Systems to place orders for regulated wholesale services, products, services and facilities.

"**Virtual Unbundled Access**" or **"VUA"** means the wholesale active access, enhanced Layer 2, product provided by Eircom allowing the handover or interconnection of aggregate End Users' connections at the MPoP, on a Standalone basis, or with SB-WLR.

"**Working Hour**" means any 60 minutes duration between 9.00 – 17.00 from Monday – Friday (excluding Saturday, Sunday, bank and public holidays).

SCHEDULE 2

RELEVANT PRODUCTS AND SERVICES AND RETAIL EQUIVALENTS

1. The definitions set out in section 2 of the Decision Instrument and Schedule 1 to the Decision Instrument shall apply to this Schedule 2.

2. Relevant Products and Services including Retail Equivalents include the following:

Wholesale Inputs		Eircom Retail Equivalent	
PRODUCT TYPE	**ORDER TYPE**	**PRODUCT TYPE**	**ORDER TYPE**

SCHEDULE 3

DEFINITION AND CALCULATION OF KPI METRICS

1. **Definitions**

1.1. The definitions set out in section 2 of the Decision Instrument and Schedule 1 to the Decision Instrument shall apply to this Schedule 3.

2. **NGA Orders**

2.1. In each Data Collection Period, Eircom shall collect data, and calculate the following metrics on a quarterly basis, in respect of NGA orders, separately for FTTC and FTTH products:

METRIC 1. The number of recorded NGA orders

METRIC 2. The number of accepted NGA orders

METRIC 3. The number of rejected NGA orders

METRIC 4. The number of accepted NGA EE, In Situ and Non In-situ orders

METRIC 5. The number of NGA orders referred

METRIC 6. The number of NGA orders cancelled

METRIC 7. The number of cancel requested NGA orders

METRIC 8. The number of NGA orders completed

METRIC 9. The number of referred NGA orders completed

METRIC 10. The cumulative Suspended time for referred NGA orders completed calculated as the sum of the Suspended times for those referred NGA orders completed

METRIC 11. The number of undeliverable NGA orders

METRIC 12. The number of undeliverable referred NGA orders defined as the total number of referred NGA orders that were undeliverable

METRIC 13. The number of accepted NGA orders as a percentage of recorded NGA orders, calculated as follows:

(Number of orders accepted x100) /(Number of orders recorded)

METRIC 14. The number of rejected NGA orders as a percentage of recorded NGA orders, calculated for as follows:

(Number of rejected orders x100)/ (Number of recorded orders)

METRIC 15. The number of referred NGA orders as a percentage of NGA orders accepted, calculated as follows:

(Number of referred NGA orders x 100) / (Number of NGA accepted)

METRIC 16. The number of cancelled NGA orders as percentage of accepted NGA orders calculated as follows:

(Number of cancelled NGA orders x 100)/ (Number of NGA orders accepted)

METRIC 17. The number of completed NGA orders as a percentage of accepted NGA orders , calculated as follows:

(Number of NGA orders completed x 100)/ (Number of NGA orders accepted)

METRIC 18. The number of completed referred NGA orders as a percentage of accepted NGA orders, calculated as follows:

(Number of referred NGA orders completed x 100) / (Number of NGA orders accepted)

METRIC 19. The number of undeliverable NGA orders as a percentage of accepted NGA orders, calculated as follows:

(Number of undeliverable NGA orders x 100) / (Number of NGA orders accepted)

METRIC 20. The percentage of Non In-situ Onsite Met Appointments as a percentage of accepted NGA Non In-situ orders calculated for **accepted NGA Non In-situ** orders as follows:

(Number of Non In-situ Onsite appointments met for NGA orders x 100)/ (Number of NGA Non In-situ orders)

METRIC 21. The percentage of Locally Arranged Appointments as a percentage of accepted NGA Non In-situ orders, calculated for NGA Non In-situ orders as follows:

(Number of Non In-situ locally arranged appointments for Non In-Situ NGA provisioned orders x 100)/ (Number of Non In-situ NGA orders)

METRIC 22. The percentage of NGA Non In-situ orders that did not reach their final status (Cancelled, Completed or Undeliverable) as a percentage of accepted Non In-situ orders calculated as follows:

(Number of Non In-situ NGA orders that required more than one Onsite appointments x 100)/ (Number of accepted Non In-situ NGA orders)

METRIC 23. The percentage of NGA Non In-situ orders that required <u>two</u> appointments to reach their final status (Cancelled, Completed or Undeliverable) as a percentage of accepted Non In-situ orders as follows:

(Number of Non In-situ NGA that required two Onsite appointments x 100)/ (Number of accepted Non In-Situ NGA orders)

METRIC 24. The percentage of NGA Non In-situ orders that required <u>three</u> appointments to reach their final status (Cancelled, Completed or Undeliverable) as a percentage of accepted Non In-situ orders as follows:

(Number of Non In-situ NGA orders that required three Onsite appointments x 100)/ (Number of accepted Non In-Situ NGA)

METRIC 25. The percentage of NGA Non In-situ orders that required <u>four</u> appointments to reach their final status (Cancelled, Completed or Undeliverable) as a percentage of accepted Non In-situ orders as follows:

(Number of Non In-situ NGA orders that required four Onsite appointments x 100)/ (Number of Non In-situ NGA orders)

METRIC 26. The percentage of NGA Non In-situ orders that required <u>greater than four</u> appointments to reach their final status (Cancelled, Completed or Undeliverable) as a percentage of accepted Non In-situ orders as follows:

(Number of Non In-situ NGA orders that required greater than four Onsite appointments x 100)/ (Number of accepted Non In-Situ NGA orders)

METRIC 27. The percentage of cancelled NGA orders as a percentage of accepted NGA orders, calculated as follows:

(Number of cancelled NGA orders x 100) / (Number of accepted NGA orders)

METRIC 28. The percentage of Cancel requested as a percentage of accepted NGA orders calculated as follows:

(Number of Cancel requested x 100) / (Number of accepted NGA orders)

METRIC 29. The mean, median and standard deviation of Suspended Time for completed in scope referred NGA orders, calculated according to the following formula:

$$\sigma = \sqrt{\frac{\sum(x_i - \mu)^2}{N}}$$

σ - standard deviation
∑ - summation
μ - population mean
N - population size

Where Xi is the Suspended Time, for each of the referred NGA orders completed

Where μ is calculated as (Total Suspended Time,for completed referred NGA orders*100)/N,

N is the number of completed referred NGA orders, and

The Median is the middle value in the ascending series of Suspended Times for each of the completed referred NGA orders

2.2. Metrics 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 shall be reported to ComReg only; they shall be kept confidential and shall not be published.

3. **In-Situ NGA provisioned orders**

3.1. In each Data Collection Period, Eircom shall collect data, and calculate the following metrics on a quarterly basis, in respect of NGA In-situ provisioned orders, separately for FTTC and FTTH-products:

METRIC 30. The number of In-situ NGA orders completed within (i.e. <=) 6 working days

METRIC 31. The number of In-situ NGA orders completed within (i.e. <=) 11 working days

METRIC 32. The number of In-situ NGA orders completed within (i.e. <=) 21 working days

METRIC 33. The number of In-situ NGA orders completed within (i.e. <=) 41 working days

METRIC 34. The number of In-situ NGA orders completed within (i.e. <=) 66 working days

METRIC 35. The number of In-situ NGA orders completed within (i.e. <=) 133 working days

METRIC 36. The mean, median and standard deviation for the number of working days for completed In-situ NGA orders, calculated using the following formula:

$$\sigma = \sqrt{\frac{\sum(x_i - \mu)^2}{N}}$$

σ - standard deviation
∑ - summation
μ - population mean
N - population size

Where Xi is the working days for of each of the completed In-situ NGA orders

Where μ is calculated as (Total completion time, for completed in-situ NGA orders*100)/N,

N is the number of completed In-situ NGA orders, and

the Median is the middle value in the ascending series of the for each Xi of the completed In-situ NGA orders

METRIC 37. The percentage of In-situ NGA orders completed within (i.e. <=) 6 working days, calculated as follows:

(Number of In-situ NGA orders completed within (i.e. <=) 6 working days)/ (Number of completed In-situ NGA orders)

METRIC 38. The percentage of In-situ NGA orders completed within (i.e. <=) 11 working days, calculated as follows:

(Number of In-situ NGA orders completed within (i.e. <=) 11 working days x 100) / (Number of completed In-situ NGA orders)

METRIC 39. The percentage of In-situ NGA orders completed within (i.e. <=) 21 working days, calculated as follows:

(Number of In-situ NGA orders completed within (i.e. <=) 21 working days x 100) / (Number of completed In-situ NGA orders)

METRIC 40. **The percentage of In-situ NGA orders completed within (i.e. <=) 41 working days,** calculated as follows:

(Number of In-situ NGA orders completed within (i.e. <=) 41 working days x 100) / (Number of completed In-situ NGA orders)

METRIC 41. **The percentage of In-situ NGA orders completed within (i.e. <=) 66 working days,** calculated as follows:

(Number of In-situ NGA orders completed within (i.e. <=) 66 working days x 100) / (Number of completed In-situ NGA orders)

METRIC 42. **The percentage of In-situ NGA orders completed in the within (i.e. <=) 133 working days**, calculated as follows:

(Number of In-situ NGA orders completed within (i.e. <=) 133 working days x 100) / (Number of completed In-situ NGA orders)

3.2. Metrics 30, 31, 32, 33, 34, and 35 shall be reported to ComReg only; they shall be kept confidential and shall not be published.

4. Quality of Supply of In-situ NGA orders

4.1. In each Data Collection Period, Eircom shall collect data, and calculate the following metrics on a quarterly basis, in respect of NGA In-Situ provisioned orders, separately for FTTC and FTTH products:

METRIC 43. **The number of In-situ NGA orders completed that are DOA**

METRIC 44. **The number of In-situ NGA orders completed that are ELF**

METRIC 45. **The percentage of In-situ NGA orders completed that are DOA**, calculated as follows:

(Number In-situ NGA orders completed that are DOA x 100) / Number of completed In-situ NGA orders)

METRIC 46. **The percentage of In-situ NGA orders completed in that are ELF**, calculated as follows:

(Number of In-situ NGA orders completed that are ELF x 100)/ (Number of completed In-situ NGA orders)

4.2. Metrics 43 and 44 shall be reported to ComReg only; they shall be kept confidential and shall not be published.

5. Non In-Situ NGA orders

5.1. In each Data Collection Period, Eircom shall collect data, and calculate the following metrics on a quarterly basis, in respect of Non In-situ NGA provisioned orders, separately for FTTC and FTTH products:

METRIC 47. The number of Non In-situ NGA orders completed within (i.e. <=) 6 working days

METRIC 48. The number of Non In-situ NGA orders completed within (i.e. <=) 11 working days

METRIC 49. The number of Non In-situ NGA orders completed within (i.e. <=) 21 working days

METRIC 50. The number of Non In-situ NGA orders completed within (i.e. <=) 41 working days

METRIC 51. The number of Non In-situ NGA orders completed within the Data Collection Period (i.e. <=) 66 working days

METRIC 52. The number of Non In-situ NGA orders completed within (i.e. <=) 133 working days

METRIC 53. The mean, median and standard deviation for the number of working days to complete Non In-situ NGA orders, calculated using the following formula:

$$\sigma = \sqrt{\frac{\sum(x_i - \mu)^2}{N}}$$

σ - standard deviation
∑ - summation
μ - population mean
N - population size

Where Xi is the working days, for completion of each of the Non in-situ NGA orders

Where μ is calculated as: (Total delivery time for completed Non In-situ NGA orders *100)/N,

N is the number of completed NGA orders completed, and

the Median is the middle value in the ascending series Xi for the completed Non-In-situ NGA orders.

METRIC 54. The percentage of Non In-situ NGA orders within (i.e. <=) 6 working days, calculated as follows:

(Number of Non In-situ NGA orders completed within (i.e. <=) 6 working days x 100) / (Number of completed Non In-situ NGA orders)

METRIC 55. The percentage of Non In-situ NGA orders completed within (i.e. <=) 11 working days, calculated as follows:

(Number of Non In-situ NGA orders completed within (i.e. <=) 11 working days x 100) / (Number of completed Non In-situ NGA orders)

METRIC 56. The percentage of Non In-situ NGA orders completed in t**within (i.e. <=) 21 working days**, calculated as follows:

(Number of Non In-situ NGA orders completed within (i.e. <=) 21 working days x 100) / (Number of completed Non In-situ NGA orders)

METRIC 57. The percentage of Non In-situ NGA orders completed within (i.e. <=) 41 working days, calculated as follows:

(Number of Non In-situ NGA orders completed within (i.e. <=) 41 working days x 100) / (Number of completed Non In-situ NGA orders)

METRIC 58. The percentage of Non In-situ NGA orders completed within (i.e. <=) 66 working days, calculated as follows:

(Number of Non In-situ NGA orders completed within (i.e. <=) 66 x 100) / (Number of completed Non In-situ NGA orders)

METRIC 59. The percentage of Non in-situ NGA orders completed within (i.e. <=) 133 working days,calculated as follows:

(Number of Non In-situ NGA orders completed within (i.e. <=) 133 working day x 100) / (Number of completed Non In-situ NGA orders)

5.2. Metrics 47, 48, 49, 50, 51, and 52 shall be reported to ComReg only; they shall be kept confidential and shall not be published.

6. Quality of supply for Non in-situ NGA orders

6.1. In each Data Collection Period, Eircom shall collect data, and calculate the following metrics on a quarterly basis, in respect of the quality of supply of Non In-situ NGA provisioned orders, separately for FTTC and FTTH products:

METRIC 60. The number of Non In-situ NGA orders completed that are DOA

METRIC 61. The number of Non In-situ NGA orders completed that are ELF

METRIC 62. The percentage of Non In-situ NGA orders completed that are DOA, calculated as follows:

(Number Non In-situ NGA orders completed that are DOA x 100)/ (Number of completed Non In-situ NGA orders)

METRIC 63. The percentage of Non In-situ NGA orders that are ELF, calculated as follows:

(Number of Non In-situ NGA orders that are ELF x 100) / (Number of completed Non In-situ NGA orders)

6.2. Metrics 60 and 61 shall be reported to ComReg only; they shall be kept confidential and shall not be published.

7. Electronically Enabled NGA orders

7.1. In each Data Collection Period, Eircom shall collect data, and calculate the following metrics on a quarterly basis, in respect of NGA Electronically Enabled provisioned orders, separately for FTTC and FTTH products:

METRIC 64. The number of Electronically Enabled NGA orders completed within (i.e. <=) 10 working days

METRIC 65. The mean, median and standard deviation for the number of working days to deliver electronically enabled NGA orders, **calculated using the following formula**:

$$\sigma = \sqrt{\frac{\sum(x_i - \mu)^2}{N}}$$

σ - standard deviation
∑ - summation
μ - population mean
N - population size

Where Xi is the working days for completion of each of the electronically enabled NGA orders

Where μ is calculated as: (Total time for completed electronically enabled NGA orders*100)/N,

N is the number of completed electronically enabled NGA orders, and

the Median is the middle value in the ascending series of time for completed electronically enabled NGA orders.

METRIC 66. The percentage of Electronically Enabled NGA orders completed within (i.e. <=) 10 working, calculated as follows:

(Number of electronically enabled NGA orders completed within (i.e. <=) 10 working days x 100) / (Number of completed electronically enabled NGA orders)

7.2. Metric 64 shall be reported to ComReg only; it shall be kept confidential and shall not be published.

8. Quality of supply for Electronically Enabled NGA orders

8.1. In each Data Collection Period, Eircom shall collect data, and calculate the following metrics on a quaterly basis, in respect of the quality of supply of Electronically Enabled NGA provisioned orders, separately for FTTC and FTTH products:

METRIC 67. The number of Electronically Enabled NGA orders completed that are DOA

METRIC 68. The number of Electronically Enabled NGA orders completed that are ELF

METRIC 69. The percentage of Electronically Enabled NGA orders completed that are DOA, calculated as follows:

(Number of Electronically Enabled NGA orders that are DOA x 100)/ (Number of completed electronically enabled NGA orders)

METRIC 70. The percentage of Electronically Enabled NGA orders completed that are ELF, calculated as follows:

(Number of ELF electronically enabled NGA orders completed that are ELF x 100)/ (Number of completed electronically enabled NGA orders)

8.2. Metrics 67 and 68 shall be reported to ComReg only; they shall be kept confidential and shall not be published.

9. NGA Faults

9.1. In each Data Collection Period, Eircom shall collect data, and calculate the following metrics on a quaterly basis, in respect of faults, separately for FTTC and FTTH products:

METRIC 71. The number of NGA faults permanently cleared within (i.e. <=) 2 working days

METRIC 72. The number of NGA faults permanently cleared within (i.e. <=) 5 working days

METRIC 73. The number of NGA faults permanently cleared within (i.e. <=) 10 working days

METRIC 74. The number of rejected NGA faults

METRIC 75. The number of NGA NFF faults

METRIC 76. The number of NGA faults deemed as RWT

METRIC 77. The number of NGA faults deemed as F.OK

METRIC 78. The number of NGA faults deemed as No Entry Obtained

METRIC 79. The number of repeat NGA product faults occurring within 28 days of a fault clearance

METRIC 80. The mean, median and the standard deviation of the number of days to permanently clear faults, calculated using the following formula:

$$\sigma = \sqrt{\frac{\sum(x_i - \mu)^2}{N}}$$

σ - standard deviation
∑ - summation
μ - population mean
N - population size

Where Xi is the working days, for each of the NGA faults permanently cleared

Where μ is calculated as: (Total time for NGA faults permanently cleared *100)/N,

N is the number of completed NGA faults permanently cleared, and

the Median is the middle value in the ascending series of time Xi or the NGA faults permanently cleared.

METRIC 81. The percentage of NGA faults permanently cleared within (i.e. <=) 2 working days, calculated as follows:

(The number of NGA faults cleared within 2 working days x 100) / (Number of NGA faults permanently cleared)

METRIC 82. The percentage of NGA faults permanently cleared within (i.e. <=) 5 working days, calculated as follows:

(The number of NGA faults cleared within 5 working x 100) / (Number of NGA faults permanently cleared)

METRIC 83. The percentage of NGA faults permanently cleared within (i.e. <=) 10 working days, calculated as follows:

(The number of NGA faults cleared within 10 working days x 100) / (Number of NGA faults permanently cleared)

METRIC 84. The percentage of rejected NGA faults, calculated as follows:

(The number of NGA faults rejected x 100) / (Number of Recorded NGA faults permanently cleared)

METRIC 85. The percentage of NGA Faults NFF,calculated as follows:

(The number of NGA faults deemed NFF x 100) / (Number of NGA faults permanently cleared)

METRIC 86. The percentage of NGA faults deemed as RWT, calculated as follows:

(The number of NGA faults deemed as RWT x 100) / (Number of NGA faults permanently cleared)

METRIC 87. The percentage of NGA faults deemed as F.OK, calculated as follows:

(The number of NGA faults deemed as F.OK x 100) / (Number of NGA faults permanently cleared)

METRIC 88. The percentage of NGA faults deemed as No Entry Obtained, calculated as follows:

(The number of NGA faults deemed as No Entry Obtained) x 100) / (Number of NGA faults permanently cleared)

METRIC 89. The percentage of repeat NGA product faults within 28 days of a fault clearence calculated as follows:

(The number of repeat NGA faults within 28 days of a fault clearance) x 100) / (Number of NGA faults reported)

9.2. Metrics 71, 72, 73, 74, 75, 76, 77, 78, and 79 shall be reported to ComReg only; they shall be kept confidential and shall not be published.

10. **Supply of CGA Bitstream Services**

10.1. In each Data Collection Period, Eircom shall collect data, and calculate the following metrics on a per quarter basis and/or per month basis, in respect of the quality of supply of CGA Bitstream services, separately for Electronically Enabled CGA Bitstream orders, and CGA Bitstream orders requiring field intervention.

10.2. Connections:

METRIC 90. The percentage of Transfer Connection in 2 Working Days in the Data Collection Period, calculated as follows:

(Number of DSL Transfer Connections completed within 2 Working Days in the Data Collection Period) x 100 / Number of DSLTransfer Connections completed within the Data Collection Period

METRIC 91. The average supply time for Transfer Connection in the Data Collection Period, expressed in Working Days, calculated as follows:

(Sum of Supply Times for DSL Transfer Connections completed within the Data Collection Period) / (Total number of DSL Transfer Connections completed within the Data Collection Period)

METRIC 92. The quality of supply of Transfer Connection in the Data Collection Period, calculated as follows:

((1 minus (Number of Faults reported within 28 Days for DSL Transfer Connections completed within the Data Collection Period / (Total number of DSL Transfer Connections completed within the Data Collection Period)) X100

noting that for the purpose of the calculation, no separation between Electronically enabled orders, and orders subject to field intervention, is required.

METRIC 93. The percentage of Other Connections completed in 5 Working Days in the Data Collection Period, calculated as follows:

(Number of DSL Connections completed within 5 Working Day within the Data Collection Period 100) / Total number of DSL Connections completed within the Data Collection Period)

METRIC 94. The average supply time for Other Connections in the Data Collection Period, expressed in Working Days, calculated as follows:

(Sum of DSL Supply Times for DSL Other Connections completed within the Data Collection Period) / (Total number of DSL Other Connections completed within the Data Collection Period)

METRIC 95. Quality of supply of Other Connections in the Data Collection Period, calculated as follows:

((1 minus (Number of Faults reported within 28 Days for DSL Other Connections completed within the Data Collection Period) /
(Total number of DSL Other Connections completed within the Data Collection Period))X 100

METRIC 96. Number of Transfer Connection in 2 Working Days in the Data Collection Period, calculated as the number of DSL Connections completed within 2 Working Days in the Data Collection Period

METRIC 97. Total number of Transfer Connection in the Data Collection Period, calculated as the number of DSL Connections completed within the Data Collection Period

METRIC 98. The total supply time for Transfer Connection in the Data Collection Period, expressed in Working Days, calculated as the sum of DSL Supply Times for DSL Connections completed within the Data Collection Period

METRIC 99. The number of Other Connections completed in 5 Working Days in the Data Collection Period, calculated as the Number of DSL Connections completed within 5 Working Days within the Data Collection Period

METRIC 100. **The total number of Other Connections** in the Data Collection Period calculated as the Number of DSL Connections completed within the Data Collection Period.

METRIC 101. **The total supply time for Other Connections** in the Data Collection Period, calculated as the Sum of DSL Supply Times for DSL Connections completed within the Data Collection Period

METRIC 102. The total number of faults in 28 day of other connections delivery

10.3. Metrics 96, 97, 98, 99, 100, 101 and 102 shall be reported to ComReg only; they shall be kept confidential and shall not be published.

11. CGA Bitstream Faults

11.1. Each Data Collection Period, Eircom shall collect data, and calculate the following metrics, in respect of CGA Bitstream faults, separately for connections, and in each case with, and without, multiple Pending Clear:

METRIC 103. **The percentage of DSL faults repaired within 2 Working Days** in the Data Collection Period, calculated as follows:

(Number of DSL Fault Repairs completed within the Data Collection Period ithin 2 Working Days X 100) / (Total DSL Fault Repairs completed within the Data Collection Period)

METRIC 104. **The percentage of DSL faults repaired within 5 Working Days** in the Data Collection Period, calculated as follows:

(Number of DSL Fault Repairs completed within the Data Collection Period within 5 Working Days X 100) / (Total DSL Fault Repairs completed within the Data Collection Period)

METRIC 105. **The percentage of DSL faults repaired within 10 Working Days** in the Data Collection Period, calculated as follows:

(Number of DSL Fault Repairs completed within the Data Collection Period within 10 Working Days X 100) / (Total DSL Fault Repairs completed within the Data Collection Period)

METRIC 106. **The average repair time for DSL faults** in the Data Collection Period, calculated as follows:

(Sum of the number of working days for DSL Fault Repairs completed within the Data Collection Period) /

(Total DSL Fault Repairs completed within the Data Collection Period)

METRIC 107. The quality of repair for DSL faults in the Data Collection Period, measured as follows:

(Number of repeat DSL Faults reported within the Data Collection Period occurring within 28 days of repair) / (Total DSL Fault Repairs completed within the Data Collection Period)

METRIC 108. The number of Faults repaired in 2 Working Days in the Data Collection Period, calculated as the Number of DSL Fault Repairs completed within the Data Collection Period within 2 Working Days

METRIC 109. The number of Faults repaired in 5 Working Days in the Data Collection Period, calculated as the Number of DSL Fault Repairs completed within the Data Collection Period within 5 Working Days

METRIC 110. The number of Faults repaired in 10 Working Days in the Data Collection Period, calculated as the Number of DSL Fault Repairs completed within the Data Collection Period within 10 Working Days

METRIC 111. The total number of faults repaired in the Data Collection Period, calculated as the total number of DSL Fault Repairs completed within the Data Collection Period

METRIC 112. The total fault repair time in the Data Collection Period, calculated as the sum of DSL Fault Repair Times of all DSL Fault repairs completed within the Data Collection Period

METRIC 113. The number of repeat faults within 28 days in the Data Collection Period, calculated as the Number of repeat DSL Faults reported within the Data Collection Period occurring within 28 days of repair

11.2. Data Collection Period Metrics 108, 109, 110, 111, 112 and 113 shall be reported to ComReg only; they shall be kept confidential and shall not be published.

SCHEDULE 4

KPI REPORTS [TABLES]

Table 1 NGA orders										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
1	The number of recorded orders									Y
2	The number of accepted orders									Y
3	The total number of rejected orders									Y
4	The number of accepted NGA EE, In Situ and Non In-situ orders									Y
5	The number referred orders									Y
6	The number of cancelled orders									Y
7	The number of cancel requested orders									Y
8	The number of completed orders									Y
9	The number of completed orders - for orders that were referred									Y
10	The cumulative suspended time for referred orders									Y
11	The number of undeliverable orders									Y
12	The number of undeliverable orders- for orders that were referred									Y
13	The total number of accepted orders as a percentage of recorded orders									N
14	The number of rejected orders as a percentage of recorded orders									N
15	The total number of referred orders as									N

Table 1 NGA orders										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
	percentage of accepted orders									
16	The number of cancelled orders as percentage of accepted orders									N
17	The number of completed orders as percentage of accepted orders									N
18	The number of completed orders - for referred orders as a percentage of accepted orders									N
19	The number of undeliverable orders as percentage of accepted orders									N
20	The percentage of non-in-situ met appointments as a percentage of accepted non-in-situ orders									N
21	The percentage of locally arranged appointments as a percentage of accepted NGA Non In-situ provisioned orders									N
22	The percentage of NGA Non In-situ provisioning orders not reaching their final status as a percentage of accepted Non In-situ provisioning orders									N
23	The percentage of NGA Non In-situ provisioning orders that required two appointments to reach their final status as a percentage of accepted Non In-situ provisioned orders									N
24	The percentage of NGA Non In-situ provisioning orders that required three appointments to reach their final status as a percentage of accepted Non In-									N

Table 1 NGA orders										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
	situ provisioned orders									
25	The percentage of NGA Non In-situ provisioning orders that required four appointments to reach their final status as a percentage of accepted Non In-situ provisioned orders									N
26	The percentage of NGA Non In-situ provisioning orders that required greater than four appointments to reach their final status as a percentage of accepted Non In-situ provisioned orders									N
27	The number of cancelled orders as a percentage of accepted orders									N
28	The number of cancels requests as a percentage accepted orders									N
29	The mean, median and standard deviation of Suspended time for referred orders									N

Table 2 NGA orders in-situ delivery										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
30	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 6 working days									Y
31	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 11 working days									Y
32	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 21 working days									Y
33	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 41 working days									Y
34	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 66 working days									Y

Table 2 NGA orders in-situ delivery										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
35	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 133 working days									Y
36	The mean, median and standard deviation for the number of working days to deliver the orders which have been completed in the Data Collection Period									N
37	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 6 working days									N
38	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 11 working days									N
39	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 21 working days									N

Table 2 NGA orders in-situ delivery										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
40	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 41 working days									N
41	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 66 working days									N
42	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 133 working days									N
43	Quality of supply-The number of DOA									Y
44	Quality of supply-The number of ELF									Y
45	Quality of supply-The percentage of DOA									N
46	Quality of supply-The percentage of ELF									N

Table 3 NGA Non in-situ orders based delivery										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
47	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 6 working days									Y
48	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 11 working days									Y
49	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 21 working days									Y
50	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 41 working days									Y

Table 3 NGA Non in-situ orders based delivery										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
51	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 66 working days									Y
52	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 133 working days									Y
53	The mean, median and standard deviation for the number of working days to deliver the orders which have been completed in the reporting period									N
54	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 6 working days									N

Table 3 NGA Non in-situ orders based delivery										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
55	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 11 working days									N
56	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 21 working days									N
57	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 41 working days									N
58	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 66 working days									N

Table 3 NGA Non in-situ orders based delivery										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
59	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 133 working days									N
60	Quality of supply-The number of DOA									Y
61	Quality of supply-The number of ELF									Y
62	Quality of supply-The percentage of DOA									N
63	Quality of supply-The percentage of ELF									N

Table 4 NGA Electronic Enabled orders										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
64	The number of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 10 working days									Y
65	The mean, median and standard deviation for the number of working days to deliver the orders which have been completed in the Data Collection Period									N
66	The percentage of orders completed in the Data Collection Period which have been delivered within (i.e. <=) 10 working days									N
67	Quality of supply-The number of DOA									Y
68	Quality of supply-The number of ELF									Y
69	Quality of supply-The percentage of DOA									N
70	Quality of supply-The percentage of ELF									N

Table 5 NGA faults										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
71	The number of faults permanently cleared within (i.e. <=) 2 working days									Y
72	The number of faults permanently cleared within (i.e. <=) 5 working days									Y
73	The number of faults permanently cleared within (i.e. <=) 10 working days									Y
74	The number of rejected faults									Y
75	The number of faults deemed as having NFF									Y
76	The number of faults RWT									Y
77	The number of faults FOK									Y
78	The number of faults No Entry obtanied									Y
79	The number of repeated faults									Y
80	The mean, median and standard deviation for the number of working days to permanently clear faults									N

Table 5 NGA faults										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
81	The percentage of faults which have been permanently cleared within (i.e. <=) 2 working days									N
82	The percentage of faults which have been permanently cleared within (i.e. <=) 5 working days									N
83	The percentage of faults which have been permanently cleared within (i.e. <=) 10 working days									N
84	The number of rejected faults as a percentage of faults									Y
85	The number of faults deemed as NFF as a percentage of faults									Y
86	The number of reported faults deemed as RWT as a percentage of faults									Y
87	The percentage of faults FOK									N

Table 5 NGA faults										
Metric No.	Metric Description	Wholesale VUA		Wholesale BS+		Retail		WHL		ComReg only (Y/N)
		FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	FTTC	FTTH	
88	The percentage of reported faults No Entry Obtained									N
89	The percentage of repeated faults as a percentage of reported faults									N

KPI reports Table 6 CGA supply (percentage)			
Metric no.	Metric Description	Wholesale	Retail
90	The percentage TransferConnections within 2 Working Days		
91	The average transferred Connection Time		
92	The quality of transfer Supply		
93	The percentage Other Connections in 5 Working Days		

KPI reports Table 6 CGA supply (percentage)			
Metric no.	**Metric Description**	**Wholesale**	**Retail**
94	The average of other connections supply time		
95	The quality of other connections supply		

KPI reports Table 6 CGA supply (Number)- ComReg only			
Metrics no.	**Metric Description**	**Wholesale**	**Retail**
96	The number transfer connections within 2 Working Days		
97	The total number transfer connections		
98	The total supply time for transfer connections		
99	The number of Other Connections in 5 Working Days		
100	The total number other connections		
101	The total supply time for other connections		

KPI reports Table 6 CGA supply (Number)- ComReg only			
Metrics no.	**Metric Description**	**Wholesale**	**Retail**
102	The total number of faults in 28 day of other connections delivery		

KPI reports Table 7 CGA repair (percentage)				
Metrics no.	Metric Description	MPC included (Y/N?)	Wholesale	Retail
103	The percentage fault repair 2 working Days	Y		
		N		
104	The percentage fault repair 5 working Days	Y		
		N		
105	The percentage fault repair 10 working Days	Y		
		N		
106	The average repair time	Y		
		N		
107	The Quality of repair	Y		
		N		

KPI reports Table 8 CGA repair (Number)- ComReg only				
Metrics no.	**Metric Description**	**MPC included Y/N**	**Wholesale**	**Retail**
108	The Number fault repair 2 Working Days	Y		
		N		
109	The number fault repair 5 Working Days	Y		
		N		
110	The number fault repair 10 Working Days	Y		

KPI reports Table 8 CGA repair (Number)- ComReg only				
Metrics no.	**Metric Description**	**MPC included Y/N**	**Wholesale**	**Retail**
		N		
111	The number fault repair	Y		
		N		
		Y		
		N		
112	The total fault repair time	Y		
		N		
113	The total repeat faults in 28 days of fault repair	Y		
		N		

Appendix: 2 – Metrics classification

Set out in the table below are by type of KPI Metrics, the list of all KPI Metrics with the following information:

- No: Metric reference number;
- Metric: Description of the metric;
- Reporting requirements: **C** denotes that the metric is to be furnished to ComReg only, **P** that is to be published;
- Status: **N** denotes that it is a new Metric, **E** that it is a pre-existing metric.

No.	Metric			No.	Metric		
NGA Orders							
1	Number of recorded orders	C	N	2	Number of accepted orders	C	N
3	Total number of rejected orders	C	N	4	Number of accepted NGA EE, In Situ and Non In-situ provisioned orders	C	N
5	Number referred orders	C	N	6	Number of cancelled orders	C	N
7	Number of cancel requested orders	C	N	8	Number of completed orders	C	N
9	Number of completed orders for orders that were referred	C	N	10	Cumulative suspended time for referred orders	C	N
11	Number of undeliverable orders	C	N	12	Number of undeliverable orders for orders that were referred	C	N
13	Number of accepted orders as a percentage of recorded orders	C	N	14	Number of rejected orders as a percentage of recorded orders	C	N
15	Number of referred orders as percentage of accepted orders	C	N	16	Number of cancelled orders as percentage of accepted orders	C	N
17	Number of completed orders as percentage of accepted orders	C	N	18	Number of completed orders for referred orders as a percentage of accepted orders	C	N
19	Number of undeliverable orders as percentage of accepted orders	C	N	20	Percentage of non-in-situ met appointment as a percentage of accepted non-in-situ orders	P	N

No.	Metric			No.	Metric		
21	Percentage of locally arranged appointments as a percentage of accepted NGA Non In-situ provisioned orders	P	N	22	Percentage of NGA Non In-situ provisioning orders not reaching final statusas a percentage of accepted Non In-situ provisioning orders	P	N
23	Percentage of NGA Non In-situ provisioning orders that required two appointments to reach final status as a percentage of accepted Non In-situ provisioned orders	P	N	24	Percentage of NGA Non In-situ provisioning orders that required three appointments to reach final status as a percentage of accepted Non In-situ provisioned orders	P	N
25	Percentage of NGA Non In-situ provisioning orders that required four appointments to reach final status as a percentage of accepted Non In-situ provisioned orders	P	N	26	Percentage of NGA Non In-situ provisioning orders that required greater than four appointments to reach final status as a percentage of accepted Non In-situ provisioned orders	P	N
27	Number of cancelled orders as a percentage of accepted orders	C	N	28	Number of cancels requests as a percentage accepted orders	C	N
29	Mean, median and standard deviation of Suspended time for referred orders	C	N				
NGA Orders – In Situ Delivery							
				30	Number of orders completed in the Data Collection Period delivered in 6 working days	C	N
31	Number of orders completed in the Data Collection Period delivered within 11 working days	C	N	32	The number of orders completed in the Data Collection delivered in 21 working days	C	N
33	Number of orders completed in the Data Collection Period delivered in 41 working days	C	N	34	Number of orders completed in the Data Collection Period delivered in 66 working days	C	N
35	Number of orders completed in the Data Collection Period delivered in 133 working days	C	N	36	Mean, median and standard deviation for the number of working days to deliver the orders completed in the Data Collection Period	P	N
37	Percentage of orders completed in the Data Collection Period delivered in 6 working days	P	N	38	Percentage of orders completed in the Data Collection Period delivered in 11 working days	P	N
39	Percentage of orders completed in the Data Collection Period delivered in 21 working days	P	N	40	Percentage of orders completed in the Data	P	N

No.	Metric			No.	Metric		
					Collection delivered in 41 working days		
41	Percentage of orders completed in the Data Collection Period delivered in 66 working days	P	N	42	Percentage of orders completed in the Data Collection Period delivered in 133 working days	P	N
43	Quality of supply - Number of DOA	C	N	44	Quality of supply – Number of ELF	C	N
45	Quality of supply - Percentage of DOA	C	N	46	Quality of supply – Percentage of ELF	P	N
NGA Orders – Non In Situ Delivery							
47	Number of orders completed in the Data Collection Period delivered in 6 working days	C	N	48	Number of orders completed in the Data Collection Period delivered in 11 working days	C	N
49	Number of orders completed in the Data Collection Period delivered within in 21 working days	C	N	50	Number of orders completed in the Data Collection Period delivered in 41 working days	C	N
51	Number of orders completed in the Data Collection Period delivered in 66 working days	C	N	52	Number of orders completed in the Data Collection Period delivered in 133 working days	C	N
53	Mean, median and standard deviation for the number of working days to deliver the orders	P	N	54	Percentage of orders completed in the Data Collection Period delivered in 6 working days	P	N
55	Percentage of orders completed in the Data Collection Period delivered in 11 working days	P	N	56	Percentage of orders completed in the Data Collection Period delivered in 21 working days	P	N
57	Percentage of orders completed in the Data Collection Period delivered in 41 working days	P	N	58	Percentage of orders completed in the Data Collection Period delivered in 66 working days	P	N
59	Percentage of orders completed in the Data Collection Period delivered in 133 working days	P	N	60	Quality of supply - Number of DOA	C	N
61	Quality of supply – Number of ELF	C	N	62	Quality of supply - Percentage of DOA	P	N
63	Quality of supply – Percentage of ELF	P	N				
NGA Electronic Enabled Orders							
				64	Number of orders completed in the Data Collection Period delivered in 10 working days	C	N

No.	Metric			No.	Metric		
65	Mean, median and standard deviation for the number of working days to deliver the	P	N	66	Percentage of orders completed in the Data Collection Period delivered in 10 working days	P	N
67	Quality of supply - Number of DOA	C	N	68	Quality of supply – Number of ELF	C	N
69	Quality of supply - Percentage of DOA	P	N	70	Quality of supply – Percentage of ELF	P	N
NGA Faults							
71	Number of faults permanently cleared in 2 working days	C	N	72	Number of faults permanently cleared in 5 working days	C	N
73	Number of faults permanently cleared in 10 working days	C	N	74	Number of rejected faults	C	N
75	Number of faults deemed as having NFF	C	N	76	Number of faults RWT	C	N
77	Number of faults FOK	C	N	78	Number of faults No Entry obtanied	C	N
79	Number of repeated faults	C	N	80	Mean, median and standard deviation for the number of working days to permanently clear faults	P	N
81	Percentage of faults permanently cleared in 2 working days	P	N	82	Percentage of faults permanently cleared in 5 working days	P	N
83	Percentage of faults permanently cleared in 10 working days	P	N	84	Number of rejected faults as a percentage of faults	P	N
85	Number of faults deemed NFF as a percentage of faults	P	N	86	Number of reported faults deemed RWT as a percentage of faults	P	N
87	Percentage of faults FOK	P	N	88	Percentage of reported faults No Entry Obtained	P	N
89	Percentage of repeated faults as a percentage of reported faults	P	N				
CGA Supply							
				90	Percentage Transfer Connections within 2 Working Days	P	E
91	Average transferred Connection Time	P	E	92	Quality of transfer Supply	P	E
93	Percentage Other Connections in 5 Working Days	P	E	94	Average of other connections supply time	P	E
95	Quality of other connections supply	P	E	96	Number transfer connections within 2 Working Days	C	E

No.	Metric			No.	Metric		
97	Number transfer connections	C	E	98	Total supply time for transfer connections	C	E
99	Number of Other Connections in 5 Working Days	C	E	100	Number other connections	C	E
101	Total supply time for other connections	C	E	102	Total number of faults in 28 day of other connections delivery	C	E
CGA Repair							
103	Percentage fault repair 2 working Days	P	E	104	Percentage fault repair 5 working Days	P	E
105	Percentage fault repair 10 working Days	P	E	106	Average repair time	P	E
107	Quality of repair	P	E	108	Number fault repair 2 Working Days	C	E
109	Number fault repair 5 Working Days	C	E	110	Number fault repair 10 Working Days	C	E
111	Number fault repair	C	E	112	Total fault repair time	C	E
113	Total repeat faults in 28 days of fault repair	C	E				