Universal Service Requirements

Provision of access at a fixed location (AFL)

Quality of Service (QoS)

Response to Consultation and Decision

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Content

Section **Page**

1. Executive Summary

1 The Commission for Communications Regulation (**"ComReg"**) is the independent regulator for the electronic communications sector in Ireland. ComReg was established by section 6 of the Communications Regulation Act 2002 (the **"Act of 2002"**).

2 ComReg's key statutory objectives in relation to the provision of of electronic communications services (**"ECS"**) are to:

(i) Promote competition.

(ii) Contribute to the development of the internal market.

(iii) Promote the interests of users in Ireland, as well as within the European Union.

3 In order to promote the interests of users of ECS, ComReg must ensure the provision of basic telecommunications services in the State. This is known as the universal service and ComReg may designate one or more ECS providers to be a universal service provider (**"USP"**) with universal service obligations (**"USO"**).

4 Decision 05/16 obliged eircom Ltd (**"eir"**), as the designated USP, to provide access at a fixed location and telephone services **("AFL")** in accordance with Regulation 3 of the Universal Service Regulations **("the Regulations")**[1]**.** The manner in which this is achieved by the USP is not prescribed and the principle of technological neutrality allows the USP to choose the optimum method of providing such access and service.

5 In addition, Regulation 10 of the Regulations "*Quality of service of designated undertakings*" allows ComReg to specify requirements to be complied with by the USP in relation to the quality of service performance metrics (**"QoS performance targets"**) of certain USOs that it delivers to end-users.

[1] The European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011.

6 In the consultation process that led to Decision 05/16[2] ComReg consulted on appropriate new QoS performance targets for the provision of access and telephone services, to replace the existing QoS performance targets set out in Decision D02/08. However, to allow time to consider the submissions in respect Quality of Service, ComReg deferred a final decision on new QoS performance targets for access at a fixed location. In the interim, until December 2016, ComReg maintained the existing QoS performance targets set out in Decision D02/08.[3]

7 ComReg has now concluded its considerations on new QoS performance targets and this Decision specifies appropriate QoS performance targets on eir as the USP for AFL.

8 ComReg has taken into account a number of key considerations in making its Decision including:

- Protecting the interests of end-users;
- The likely deterioration in performance, in particular in certain areas, absent any targets;
- Ensuring the obligation to provide access at a fixed location is technology neutral;
- eir's initial indication[4] of its intention to transition its copper network to fibre;
- The NBP transition period;
- eir's predictive model for investment/network performance **("eir's model")**[5];
- The possibility that eir may utilise other provider's connections to deliver access at a fixed location;
- The likely rate of change of technology used in the coming two year period;

[2] Consultation 15/89 "USO-Provision of access at a fixed location" 7/8/15 and Consultation 16/31 "Universal Service Requirements – Provision of access at a fixed location (AFL)" 23/5/16.
[3] *"Eircom's Universal Service Obligation – Quality of Service Performance Targets."*
[4] See Information Notice ComReg 17/05, 19 January 2017.
[5] eir's model 25th August 2016 "20160526_AFLUSO_QoS_Repaired.xlsx (Excel workings) provided to ComReg in response to Section 13D Information Request. ComReg notes a number of aspects in respect of the model. These are detailed in section 2, for example see paragraph 201 onwards.

- Changes in work practices by eir relating to agreed date connections;
- The submissions to ComReg consultation 16/31 and 15/89;

9 In making its decision regarding the QoS Performance Targets, ComReg has had regard to the following principles:-

- The targets should aim to balance the interests of end-users with promoting efficient investment.
- The targets should allow eir to have the flexibility to balance investment (in current and new networks) and repair expenditure as it considers appropriate to meet the targets.
- The cost and other implications for eir should be proportionate.

10 ComReg's Decision is summarised as follows:-

- ComReg has introduced a "service availability" target which combines the two previous metrics of fault occurrence and fault repair. ComReg has decided to state this target in terms of "maximum of working days outage per line" instead of as a "percentage" value. This is illustrated in the table below.
- ComReg has introduced annual targets both national (maximum of 0.237 working days outage per line (99.935%) and sub-national (maximum of 0.607 working days outage per line (99.834%). (See paragraphs 11 to 279).

Service Availability	Decision
National - Maximum working days outage per line	**0.237**
Service Availability - National	99.935%
Sub- National -Maximum working days outage per line	**0.607**
Service Availability - Sub-National	99.834%

Figure 1 National and Sub-National Service Availability - Maximum working days outage per line

- ComReg has introduced targets which are the same as previous national targets as both national and sub-national targets for connections.

- ComReg has removed the target of "agreed date connections" to reflect eir practices.
- ComReg has altered appropriate definitions so that, if appropriate, they can encompass other technologies, including fibre which may be used to provide access at a fixed location instead of the current generation network.
- ComReg has decided to require eir to maintain the existing auditing obligation, prior to the USP's submission of the periodic performance data to ComReg and prior to publication.
- ComReg's Decision will last for two years. A review will commence prior to its expiry with a view to ascertaining what targets may be appropriate in the period after this Decision expires.

11 ComReg Consultation 16/31 proposed an annual national availability target of 99.94% (which equates to a maximum of 0.219 working days outage per line). In this Decision, ComReg has adjusted the national availability target from that proposed in Consultation 16/31 to an annual national maximum of 0.237 working days outage per line (99.935%).

	Service Availability National	National Maximum working days outage per line
Consultation 16/31	99.940%	**0.219**
ComReg's Decision - adjustment	-0.005%	**-0.018**
Final Target	99.935%	**0.237**

Figure 2 National Service Availability - Maximum working days outage per line

12 ComReg Consultation 16/31 proposed an annual sub-national availability target of 99.86% (which equates to a maximum of 0.511 working days outage per line). In this Decision, ComReg has adjusted the sub-national availability target from that proposed in Consultation 16/31 to an annual sub-national maximum of 0.607 working days outage per line (99.834%).

	Service Availability Sub-National	Sub- National Maximum working days outage per line
Consultation 16/31	99.860%	**0.511**
ComReg's Decision - adjustment	-0.026%	**0.096**
Final Target	99.834%	**0.607**

Figure 3 Sub-National Service Availability - Maximum working days outage per line

13 All *additional* investment in eir's model appears to be focused on reducing the LFI, while the "*achievable speed of repair*" for each sub-national area remains constant in all investment scenarios. During the NBP transition period when alternative networks are being deployed, ComReg's objective is to ensure that reasonable requests for access at a fixed location and associated quality of service are met, but without requiring unnecessary investment in the USP's copper network and without inhibiting the retirement of that network, once an alternative is available. Therefore, it would not be appropriate to require eir to make *additional* capital investment to solely reduce the LFI, in circumstances where ComReg understands that regardless of such investment, eir's "*achievable speed of repair"* nationally and for each of the sub-national areas is expected by eir to remain the same during this transition period.

14 eir's model does not seek to improve further *eir's "achievable speed of repair"* in particular in certain sub-national areas. ComReg disagrees with eir's assertion that it is not possible for an efficient operator to target its network repair resources in one area more than another, as proposed by TERA. It is clear that the number of staff could, for example, be allocated based on the number of faults in the area (as opposed to the lines) to ensure greater similarity in QoS between areas, despite different prevailing network conditions (e.g. percentage overhead, weather, line length etc.).

National Service Availability target

15 The detailed reasons for this Decision are set out in sections 3 and 4. In summary, ComReg requested eir to submit the analysis and supporting calculations which it used to support its submission to consultation 16/31.[6] ComReg notes that eir's model used to support its submission to Consultation 16/31 claims that the *"additional"* national investment (in addition to *"planned"*) required to reach the proposed national target of a maximum of 0.219 working days outage per line (99.94%) in 4 out of 5 years would be an additional ✂ over 3 years, total national investment *("planned"*, and *"additional"* of ✂ over 3 years).[7]

16 However, using eir's model for its *"planned"* national investment and its national "*achievable speed of repair"*, eir's figures illustrate that there would be no *"additional"* investment other than its *"planned"* investment of ✂ each year required to meet the national target maximum of 0.237 working days outage per line (99.935%).

17 ComReg accepts in light of the circumstances at this time that eir should be allowed a margin between the average annual level of performance that ComReg considers should be delivered and the minimum target to be achieved in any year in order to avoid the need for "additional" investment. In light of this, ComReg has reduced the national target proposed in Consultation 16/31 by 0.018 working days outage per line (0.005%), so as not force eir's claimed "*additional"* national investment, which ComReg considers is a proportionate approach at this time.

	Service Availability National	National Maximum working days outage per line
Consultation 16/31	99.940%	**0.219**
eir's model - claimed adjustment	-0.005%	**-0.018**
ComReg's Decision - adjustment	-0.005%	**-0.018**
Final Target	99.935%	**0.237**

Figure 4 National Service Availability - ComReg's Decision - adjustment

[6] eir investment model 25th August 2016 "20160526_AFLUSO_QoS_Repaired.xlsx (Excel workings) provided to ComReg in response to Section 13D Information Request.

[7] eir's model implies that this investment would result in an expected national level of availability in an average year of ✂, with the additional ✂ availability being the margin needed to mitigate the risk of failing to meet the target on account of natural variability in performance from year to year.

18 This approach also allows eir the ability to meet the national availability target in each of the next two years covered by this Decision, and also further increases its ability to meet and exceed these targets by improving its repair time and/or by rolling out fibre connections (in place of poor performing lines), which will improve overall performance.

19 ComReg has therefore decided to set the national annual target for the next two years at a maximum level of 0.237 working days outage per line (99.935%), allowing eir a margin of 0.005%. eir's model demonstrates that this target could be achieved on the basis of its currently -*"planned"* national investment on the basis of the national *"achievable speed of repair"* that it uses in its modelling. This means that no *"additional"* investment in reducing line faults would be required as a result of ComReg setting this target.

20 ComReg considers that this is a proportionate response to eir's concerns about year-to-year variability in performance. ComReg notes that in addition, eir can improve its national performance by improving repair times (especially in the NBP area (Area 2) and eir-only (Area 3) areas[8]) and as a consequence of its announced plans to roll out additional fibre connections in rural areas – neither factor being taken into account in eir's model.

Sub-National Service Availability Target

21 In this Decision, ComReg has adjusted the sub-national availability target from that proposed in Consultation 16/31 to an annual sub-national maximum of 0.607 working days outage per line (99.834%).

	Service Availability Sub-National	Sub-National Maximum working days outage per line
Consultation 16/31	99.860%	**0.511**
eir's model - claimed adjustment	-0.050%	**0.129**
ComReg's Decision - adjustment	-0.026%	**0.096**
Final Target	99.834%	**0.607**

Figure 5 Sub-National Service Availability - ComReg's Decision - adjustment

[88] In 2015 and for the purpose of the analysis of the AFL USO and measuring the QoS performance against the targets, three new sub-national areas were identified in the specific context of USO, by taking account of potential competitive constraints including the demand and supply side developments on the delivery of the universal service, see paragraph 82.

22 The detailed reasons for this Decision are set out in sections 3 and 4. In summary, notwithstanding the approach taken in eir's model, ComReg notes that eir's model (used to support its submission to Consultation 16/31) claims that the *"additional"* sub-national investment (in addition to *"planned"*) required to reach the proposed (in Consultation 16/31) sub-national target of 99.86% in 4 out of 5 years would be an *"additional"* €✂ over 3 years, total national investment *("planned"*, and *"additional"* of €✂ over 3 years).

23 However, using eir's model for its *"planned"* sub-national investment and its sub-national *"achievable speed of repair"*, together with eir's claimed adjustment, eir's figures illustrate that there would be no *"additional"* investment other than its *"planned"* investment of €✂ each year required to meet a sub national target maximum of ✂ working days outage per line (✂) .

24 ComReg accepts, in light of the circumstances at this time, that eir should be allowed a margin between the average annual level of performance that ComReg considers should be delivered and the minimum target to be achieved in any year in order to avoid the need for *"additional"* investment.

25 However, in this case ComReg is of the view that eir can further improve performance in the NBP area, (recognising the conservative approach within eir's model) through the following possible mechanisms (1) increasing the number of eir resources per fault (towards the ratio in the competitive area) and/or (2) altering any policy in relation to the dispatch of resources for repair in certain areas, to narrow the gap in speed of repair, between the NBP and other areas and (3) rolling out new technology to poor performing lines to increase performance. ComReg has also noted eir's practice in relation to certain exchanges identified by eir, where repairs were delayed as it decided that;

✂[9]

Further information on this practice was provided to ComReg by eir in 2014.[10]

26 In light of the factors outlined at paragraphs 23, 226 and 230, ComReg has decided that the sub-national target proposed in Consultation 16/31 could be marginally reduced, but not the to extent suggested by eir.

[9] 'Fault Repair' letter from eir; 19 September 2011.
[10] Provision of information with respect to USO provision 1 January 2013 to 31 December 2013.

27 Therefore, ComReg has reduced the sub-national target proposed in consultation 16/31 by 0.096 working days outage per line (0.026%) so as not force eir's claimed additional national investment, which ComReg considers is a proportionate approach at this time.

	Service Availability Sub-National	Sub-National Maximum working days outage per line
Consultation 16/31	99.860%	0.511
eir's model - claimed adjustment	-0.050%	0.129
ComReg's Decision - adjustment	-0.026%	0.096
Final Target	99.834%	0.607

Figure 6 Sub-National Service Availability - ComReg's Decison adjustment

28 This approach also allows eir the ability to meet the sub-national availability target in each of the next two years covered by this Decision and also further increases its ability to meet and exceed these targets by improving its repair time and/or by rolling out fibre connections (in place of poor performing lines), which will improve overall performance.

29 ComReg has therefore decided to set the sub-national annual target for the next two years at a maximum of 0.607 working days outage per line (99.834%). This means that no additional investment in reducing line faults would be required as a result of ComReg setting this target.

2. Background

2.1 A Quality of Service ("QoS") Regime for the Universal Telecommunications Service in Ireland

30 The Commission for Communications Regulation (**"ComReg"**) is the independent regulator for the electronic communications sector in Ireland. ComReg was established by section 6 of the Communications Regulation Act 2002 (the **"Act of 2002"**).

31 In order to promote the interests of users of ECS, ComReg must ensure that all users have access to basic telecommunications services in the State. This is known as the universal service and ComReg may designate one or more ECS providers to be a universal service provider (**"USP"**) with universal service obligations (**"USO"**).

32 In Decision 05/16 ComReg designated eircom Ltd (**"eir"**) as the USP in Ireland for the period 29 July 2016 – 30 June 2021 to provide connections and a voice service at a fixed location. That Decision seeks to ensure that end-users will continue to have access to the universal service. This includes access to a communications network (**"PCN"**) and a publicly available telephone service over a network connection that allows for originating and receiving of national and international calls. This connection must be capable of supporting voice, and facsimile, as well as data communications at data rates that are sufficient to permit functional internet access (**"FIA"**).

33 Decision 05/16 obliged eir, as the designated USP, to provide access at a fixed location and telephone services **("AFL")** in accordance with Regulation 3 of the Universal Service Regulations **("the Regulations")**[11]**.** The manner in which this is achieved by the USP is not prescribed and the principle of technological neutrality allows the USP to choose the optimum method of providing access and service.

34 In addition, Regulation 10 of the Regulations "*Quality of service of designated undertakings*" allows ComReg to specify requirements to be complied with by the USP in relation to the quality of service performance metrics (**"QoS performance targets"**) of certain USOs that it delivers to end-users.

[11] The European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011.

35 In the consultation process that led to Decision 05/16[12] ComReg consulted on appropriate new QoS performance targets for the provision of access and telephone services, to replace the existing QoS performance targets set out in Decision D02/08. However, to allow time to consider the submissions in respect Quality of Service, ComReg deferred a final decision on any new QoS performance targets for access at a fixed location. In the interim, until December 2016, ComReg maintained the existing QoS performance targets set out in Decision D02/08.[13]

36 ComReg has now concluded its considerations on new QoS performance targets and this Decision specifies appropriate QoS performance targets on eir as the USP for AFL.

2.2 ComReg Statutory and Policy Objectives

37 ComReg's Decision takes account of its statutory and policy objectives, which are set out in the Framework Regulations 2011 and the Act of 2002.

38 One of ComReg's key statutory objectives is to promote and protect the interests of end-users of the universal telecommunications service in the State. In fulfilling this overall statutory objective, ComReg seeks to ensure that it appropriately considers and balances the requirements of its other related objectives. ComReg is for example, required to promote efficient investment and innovation in new and enhanced infrastructures, while acting in a technological neutral manner (by not favouring one technology over another and not unduly placing constraints or obligations on certain technologies). Further, ComReg has a statutory objective to take due account of the variety of conditions relating to competition and consumers that exist in the various geographic areas within the State.

39 ComReg is aiming to promote and protect the interests of end-users by adopting the measures in this Decision, as they are intended to ensure that end-users will have access to a universal service that is of an acceptable level of quality, in terms of availability of the service. The QoS Performance targets encompass both fault occurrence and the time taken to repair faults when they occur in eir's network, as well as time to connect.

[12] Consultation 15/89 "USO-Provision of access at a fixed location" 7/8/15 and Consultation 16/31 "Universal Service Requirements – Provision of access at a fixed location (AFL)" 23/5/16.
[13] *"Eircom's Universal Service Obligation – Quality of Service Performance Targets."*

2.3 NBP Transition Period

40 In December 2014, ComReg published its Call for Input[14] to provide an opportunity for stakeholders to identify areas where they believed regulatory clarity may be desirable in the context of the National Broadband Plan.

41 In eir's submission to the Call for Input it raised the issue of a potential future transition from its existing copper access network to fibre access network(s) in the NBP intervention area.

42 On 18 June 2015, ComReg published its response to the call for input (ComReg Document No15/57[15]). ComReg made it clear in consultation ComReg 16/01[16], that ComReg would not want regulation to unnecessarily obstruct the replacement of legacy network elements with new technologies, where this is economically efficient and in the interests of end-users. However, ComReg also made it clear that regulation should ensure that the transition arrangements take due account of the need to minimise the disruption for end-users and OAOs.

43 At this time, ComReg does not know the how the winning bid(s) for the tender for NBP services in the NBP intervention area(s) will be constructed; the identities of the eventual winning bidder(s); what technologies will be used; the specific timing of implementation; and to what extent copper will be reused as part of the solution(s).

44 ComReg has therefore assumed that some form of new infrastructure will be deployed in the NBP intervention area as part of the winning bid(s), and that this will be rolled out in parallel to the existing copper access network.

45 ComReg also assumes that in the intervening period, between NBP contract award and completion of the NBP roll-out, there may be a period during which dual running of the existing copper access network and the new infrastructure will be unavoidable.

[14] ComReg Document No. 14/26 entitled "National Broadband Plan – Call for Input on Regulatory Implications" dated 4 December 2014.
[15] ComReg Document No. 15/57 entitled "National Broadband Plan – Response to Call for Input" dated 18 June 2015.
[16] Call for Input; 16/01; "Transition from Eir's copper network; Proposed principles and notification procedures".

2.4 eir's Proposed Transition from Copper

46 Prior to ComReg's receipt of a letter from eir, dated 21 July 2016, ComReg had not been informed by eir of any specific intention regarding its retirement or reduction of access to eir's legacy service or networks outside the NBP intervention area.

47 An Information notice containing eir's letter and ComReg's response was published on 19 January 2017.[17]

48 The information notice also details the next steps in that process.

49 Critically, during this transition period, it is imperative that the minimum quality of service targets are provided, while allowing greater flexibility as to how this can be achieved by eir, particularly in remote areas[18], so as to not adversely affect end-users.

2.5 The need for QoS performance targets for the Universal Service

50 In order for ComReg to form the view that the measures in the Decision are appropriate and justified, it was necessary for ComReg to consider what outcome for consumers would likely arise in the absence of QoS performance targets for access at a fixed location.

51 In their report accompanying Consultation 15/89, our consultants TERA, considered this matter at length. They concluded that absent regulation, eir would be more likely than not to allow the quality metrics associated with access at a fixed location to deteriorate in the short to medium term.

[17] See Information Notice ComReg 17/05, 19 January 2017.
[18] For the purpose of the analysis of the AFL USO and measuring the QoS performance against the targets, three new sub-national areas were identified in the specific context of USO, by taking account of potential competitive constraints including the demand and supply side developments on the delivery of the universal service Areas derived for this purpose in 2015, see paragraph 82.

52 The reason for this conclusion is that eir, as a profit maximising telecommunications firm, in the short to medium term, has little or no incentive to financially invest in preventative maintenance[19] and repairs to its network, in areas of the country where no competitive constraints from rival firms exist, which might otherwise encourage eir to invest, in order to protect its subscriber base and market share. ComReg's consultant TERA's analysis, which ComReg agrees with, demonstrates that in comparison to areas of the country where market conditions are competitive, eir's QoS performance is lower in both NBP areas and areas where only eir is present. TERA also found that the cost of repair to eir if it stops investing is less than the alternative scenario, of continuing to invest to maintain the existing level of line faults, in the short to medium term.

53 ComReg considers therefore that there are sound reasons to conclude that absent regulation, eir's QoS performance would deteriorate even further and consumer welfare would suffer as a result, particularly in those areas of the country where end-users are uneconomic for eir to serve, and where no competitive constraints from rival firms exist. ComReg considers that in end-users' interests it is imperative that eir compensates for any expected higher fault rates with speedier repairs.

54 ComReg has considered eir's investment/network performance scenario model **("eir's model")**[20]**.** While the performance of its planned fibre connections are not factored in, it has included planned investment and its estimate of "*achievable speed of repair"* in its model.

55 ComReg took into account the views of all respondents to its consultation which led to this Decision. Many respondents raised arguments in support of the retention of the current regime (separate fault occurrence (LFI) and repair time targets) in the context of event based SLAs. However, ComReg is of the view that commercial SLAs are a separate matter and that in the context of universal service an availability target best meets the requirement at this time to ensure that eir has the flexibility to balance investment levels and cost of repairs as it sees fit to meet the targets, in light of the transition to new networks and as the NBP transition period commences.

[19] Preventative maintenance means making repairs and improvements to the network so as to prevent issues such as faults occurring.
[20] eir investment model 25th August 2016 "20160526_AFLUSO_QoS_Repaired.xlsx (Excel workings) provided to ComReg in response to Section 13D Information Request

56 ComReg does not agree with eir's submissions that ComReg's proposed measures are unnecessary and disproportionate, however, ComReg has made a number of modifications which ComReg believes allow eir a greater flexibility to achieve the targets.

57 Having formed the preliminary view that QoS performance targets are necessary, ComReg then considered how to design a regulatory regime that was proportionate, appropriate and consistent with our statutory and policy objectives.

2.6 The appropriate level of QoS performance targets

58 In considering what QoS performance targets should be set ComReg has applied the following overarching principles:

- The targets should aim to balance the interests of end-users with promoting efficient investment.
- The targets should allow eir to have the flexibility to balance investment (in current and new networks) and repair expenditure as it considers appropriate to meet the targets.[21]
- The cost and other implications for eir should be proportionate.

59 With a view to fulfilling ComReg's statutory duties to protect the interests of end-users, to take proportionate measures whilst also promoting efficient investment and innovation by eir, ComReg has decided to impose service availability targets instead of separate fault occurrence and repair targets. In summary, combining the targets together means that if fault occurrence performance deteriorates (i.e. there are more faults) then eir can address this issue to meet the performance targets by repairing the faults quicker. Equally, if fault levels improve, particularly with the rollout of fibre, then eir's repair performance would not be as critical in meeting the targets.

[21] The approach should not seek to require further improvement by eir in respect of its current generation network, beyond its current general performance levels at this time (LFI), which means that eir has the flexibility to balance investment costs against operational costs, in light of the NBP and the rollout of next generation networks on a commercial basis. eir will have the necessary commercial freedom to choose how they will meet their USO obligations.

60 It is ComReg's view that the introduction of national and sub-national service availability targets allows eir to balance investment with reactive maintenance and repairs, while continuing to protect end-users by ensuring a minimum service availability level.

61 This Decision sets a national service availability targets of a maximum of 0.237 working days outage per line (99.935%),[22] having regard to the 5 year observed average of availability (2009-2014) and the predicted performance based on eir's model.

62 This Decision sets the same sub-national service availability targets of a maximum of 0.607[23] working days outage per line (99.834%) for three subnational areas, having regard to the 5 year observed average of availability (2009-2014) and the predicted performance based on eir's model. The same sub-national target has been set for all areas, based on the lowest performing area. This is intended to ensure that quality of service performance in that area does not deteriorate below what ComReg regards as the minimum.

63 Most importantly the service availability targets allow eir to decide whether to invest to prevent faults by either rolling out new technology or maintain existing network connections or by carrying out repairs more quickly instead of investing in preventative maintenance.

64 In this Decision, ComReg has also introduced sub-national service availability targets to ensure that the minimum sub-national availability levels do not deteriorate, while affording greater flexibility to eir as to how they achieve this. These sub-national targets are a particularly important measure in light of the introduction of a single national service availability metric instead of the previous six separate national targets relating to fault repairs and fault occurrence.

[22] The availability target is calculated using fault occurrence during the period and repair performance.
[23] The availability target is calculated using fault occurrence during the period and repair performance.

65 ComReg also notes that by applying the national service availability target set out in this Decision to eir's annual 2015 performance metrics for fault occurrence (LFI) and Fault Repairs eir's 2015 performance levels would be within 0.022 working days outage per line of meeting these new national availability targets,[24] [25], even though eir's repair metrics for 2015 fell short of eir's "*achievable speed of repair*"[26] used in its submission to consultation ComReg 16/31[27].

66 Therefore, ComReg is confident that the introduction of both national and sub-national service availability targets is a proportionate approach to achieving a minimum QoS performance standard and that it is appropriate to oblige eir to achieve this minimum standard, during this NBP transition period, while at the same time adequately protecting the interests of end-users.

67 The introduction of national and sub-national service availability targets will not force eir to invest extensively and/ or exclusively in its copper network. This will provide the necessary innovation and investment incentives for eir to accelerate any of its desired network deployment and/or replacement. It will also give eir the flexibility to make commercial decisions about whether and where to commit capital expenditure (**"CAPEX"**) on proactive maintenance of its network (essentially, prevention of line faults) and/or whether and where to commit operational expenditure (**"OPEX"**) on reactive maintenance (essentially, repair of line faults).

68 The QoS performance targets established by this Decision are constructed to allow eir maximum flexibility during the NBP transition period. ComReg is of the view that as new networks are deployed the targets may need to be reviewed in light of the expected better performance of those new networks, which are also expected to become more prevalent and widespread nationally. In this context, ComReg is of the view that it will be appropriate to review the QoS performance targets in a shorter timeframe than then USO Designation itself. ComReg has for this reason decided to review the operation of this Decision, prior to its expiry on 31 December 2018.

[24] 13.4 (Fault Occurrence/LFI)/100 * 1.93 (speed of repair performance).
[25] For illustration only -- Decimal places used are less than those set out in actual calculation specified in the Schedules to this Decision.
[26] eir submitted a national achievable speed of repair of ✂.
[27] eir would have likely achieved the new national availability target if it had met its *"achievable speed of repair".*

2.7 Summary of ComReg's Final Decision

69 There is a continued need for USO quality of service performance targets in the State, for the period 2 February 2017 to 31 December 2018.

70 ComReg has decided to:

- Introduce new service availability targets[28] at the national and sub-national level.
- Retain national connection[29] targets and also introduce the same connection targets sub-nationally.
- Minimise changes to the existing reporting and publication regime (save for the addition of the new national and sub-national connections targets and service availability targets)[30].
- Maintain the existing auditing obligation, prior to the USP's submission of the periodic performance metrics to ComReg and prior to publication.

71 Performance targets and associated reporting will commence from 2 February 2017[30].

72 ComReg will continue its practice of publishing eir's performance on a quarterly basis.

73 ComReg has decided to review the operation of this Decision, prior to its expiry on 31 December 2018.

2.8 Summary of the QoS Targets

74 The D02/08 QoS performance targets measured the following on a national basis:

[28] Replaces the separate fault occurrence and fault repair targets and ccombines fault occurrence with fault repair metrics.
[29] In-situ and new connections as per D02/08.
[30] ComReg will make an adjustment to any calculations relevant to Q1 2017 to ensure that the variation from the usual 3-month Data Collection Period for Q1 to the 2-month Data Collection Period in Q1 of 2017 is appropriately reflected when assssing compliance against the Performance Targets for the Year.

(i) Connection times;

(ii) Fault Occurrence - Line fault index (LFI); and

(iii) Repair times.

75 **Connection times:** measures the length of time taken to connect an end-user for various different connection types (i.e. in-situ; new connections etc.) The connection methods tend to remain reasonably constant. It is a measure of the ease of reconnection and of obtaining a new connection to the underlying network.

76 **Fault Occurrence (LFI):** measures the number of faults occurring per one hundred lines. It is a proxy measure for the quality of an underlying network. It is an indicator as to the level of *preventative maintenance* being undertaken within a network. No network will be completely fault free and the targets define what an appropriate/tolerable level of fault occurrence should be.

77 **Repair time:** measures the length of time it takes from when a fault is reported until it is repaired. It is a measure of the level of *reactive maintenance* being undertaken within a network.

78 To date, connection, fault occurrence and repair times have all been set at a national level, with the result that the targets may be achieved overall, while having large regional/geographical variations in performance. This may, for example, typically result in compensating for areas of underperformance with areas of over performance, in order to achieve the overall national average.

79 To date, ComReg considered it appropriate to measure and set targets against each of these individual components, to ensure that reasonable requests for access and phone service at a fixed location are met at an appropriate QoS standard and therefore D02/08 has continued to apply.

2.9 Summary of new QoS Targets

80 ComReg has taken into account the overarching principles and key considerations set out in paragraphs 8 and 9 and ComReg considers that it is now appropriate to put in place QoS performance targets which are reasonable and proportionate measures to ensure that end-users have access to universal service with appropriate QoS levels at the same time, promote efficiency and efficient investment and innovation.

81 The new QoS targets measure two specific elements:

(i) connection times, at national and sub-national levels; and

(ii) service availability at national and sub-national levels.

82 For the purpose of the analysis of the AFL USO and measuring the QoS performance against the targets, three new sub-national areas were identified in the specific context of USO, by taking account of potential competitive constraints including the demand and supply side developments on the delivery of the universal service. The three sub-national areas identified by the analysis set out in the consultations are:

(i) **"Area 1"** - Market Driven Infrastructure Based Competition – based on areas where eir faces greater market-driven infrastructure-based competition, including, from Vodafone/ESB/SIRO or UPC.

(ii) "**Area 2 "** NBP – based on the NBP intervention area[31] where a high capacity broadband access network is intended to be made available through Irish Government subsidies.

(iii) **"Area 3"** eir only - based on areas where eir faces no competition from any fixed infrastructure providers but could face competition from mobile networks providing fixed access solutions.

It is important to note that these 3 areas are defined in the specific context of USO and especially by looking at the provision of competitive constraints on the provision of voice AFL. This analysis is therefore different from the analysis aiming at defining Larger Exchange Areas (LEA) conducted in ComReg Document No. 11/72 and in ComReg Document No. 13/14 in the context of the obligation not to unreasonably bundle imposed on eircom in the Retail Fixed Narrowband Access Markets (LEA have been defined in the specific context of the implementation of a margin squeeze test). In these documents, LEA have been defined on the basis of 5 criteria and the presence of LLU or NGA in a given area is an important criteria. However, in the context of AFL USO, the presence of LLU and of NGA is less relevant since LLU and NGA are rarely used for the provision of standalone voice services. As a consequence, the definition of LEA has not been considered further in this analysis.

83 The national area refers to the total of the combination of all three of the sub-national areas.

[31] As defined in the TERA reports.

84 The introduction of both national and sub-national connection targets is intended to ensure consistency in minimum service provision nationally and across all three geographic areas. The new national connection targets are based on the D02/08 national connection targets, which have largely been achieved by eir in 2015. However, in light of Decision 05/16, and the modifications to the reasonable access request criteria, connection targets are expected to be easier to achieve.

85 Both national and sub-national connection[32] targets are set at the same target levels.

Description of Target	Annual Performance Target National and Sub-National
In-situ connections within 24 hours of request	80%
In-situ connections within 2 weeks of request	99.8%
In-situ connections within 2 months of request	100%
All other connections within 2 weeks of request	80%
All other connections within 4 weeks of request	85%
All other connections within 8 weeks of request	90%
All other connections within 13 weeks of request	95%
All other connections within 26 weeks of request	100%

Figure 7 National and Sub-National Connection Targets

[32] In-situ and new connections.

86 This Decision sets new service availability targets, both nationally and sub-nationally. Service availability combines:

(i) the level of line faults (fault occurrence); and

(ii) the time needed to repair line faults (fault repair) into an overall target.

87 The national service availability target of maximum of 0.237 working days outage per line, sets the minimum service availability target to be achieved nationally. This provides the USP with further flexibility within each of the sub-national areas, in how the national service availability target is achieved. The over achievement in one or more sub-national areas, may be off set against the under achievement in other sub-national area(s), provided always, that the minimum sub-national target is achieved within each of the three individual sub-national areas in each year.

88 The national minimum service availability target of maximum of 0.237 working days outage per line (99.935%) has been set having regard to the fault occurrence and repair times observed 5 year average (2009-2014), translated into service availability targets. This target has also been set having regard to eir's model, which suggests that eir can achieve this national target with its 'planned investment'. Notably eir has previously achieved, or exceeded this national service availability target level in 2009/2010, 2010/2011, 2011/2012, and 2012/2013.

89 ComReg also notes that by applying the national service availability target set out in this Decision to eir's annual 2015 performance metrics for fault occurrence (LFI) and Fault Repairs eir's 2015 performance levels would be within 0.022 working days outage per line of meeting these new national availability targets,[33] [34], even though eir's repair metrics for 2015 fell short of eir's "*achievable speed of repair*"[35] used in its submission to consultation ComReg 16/31[36].

90 The sub-national service availability target of a maximum of 0.607 working days outage per line establishes the minimum level of service availability to be achieved in each of the three sub-national areas.

[33] 13.4 (Fault Occurrence/LFI)/100 * 1.93 (speed of repair performance).
[34] For illustration only -- Decimal places used are less than those set out in actual calculation specified in the Schedules to this Decision.
[35] eir submitted a national achievable speed of repair of ✂.
[36] eir would have likely achieved the new national availability target if it had met its *"achievable speed of repair".*

91 The sub-national service availability target of maximum of 0.607 working days outage per line (99.834%) has been set having regard to the actual (5 year average) service availability level in the worst performing sub-national area. This target has also been set having regard to eir's model, which suggests that eir can achieve this sub-national target with its *"planned"* investment together with improvements in performance which may include the speed of repair in relation to ✂. The sub-national service availability targets of 99.834% has been achieved or exceeded by eir in 4 of the 5 years reviewed (2009-2010, 2010-2011, 2011-2012 and 2012-2013).

92 The introduction of minimum service availability targets now provide the USP with the flexibility to balance investment costs against operational costs. The USP can choose whether to engage in preventative maintenance (capex) or reactive repair (opex). In this way service availability targets actively encourage and incentivise commercial investment and innovation in new networks as they do not force unnecessary investment in current generation networks or prevent the USP from gradually retiring that network where it is appropriate to do so.

93 As outlined earlier, the obligation to provide AFL USO is technology neutral and it allows the USP to choose the optimum method and technology of providing access and service to satisfy reasonable requests.

2.10 Reporting, Measurement, Auditing and Publication of QoS performance

94 There is no change to the current calculation, reporting and audit regime[37], save for, the addition of the new service availability target at sub-national and national level, and the national and sub-national connection targets. The availability targets are to be derived from the fault occurrence and fault repair metrics, now also at sub-national level.[38]

95 The methodology for measurement of performance is set out in the Schedules to this Decision (ComReg Document No. 17/10a, and D17/03).

[37] ComReg will make an adjustment to any calculations relevant to Q1 2017 to ensure that the variation from the usual 3-month Data Collection Period for Q1 to the 2-month Data Collection Period in Q1 of 2017 is appropriately reflected when assessing compliance against the Performance Targets for the Year.

[38] An increased number of decimal places will be used in the calculation.

96 The Decision Instrument includes the obligation for an external audit of the QoS performance data. ComReg had previously invoked Regulation 10 (6) of the Regulations[39] to ensure the completeness and accuracy of the data submitted by Eir by requiring it to arrange for an independent audit of the data. Accordingly, performance information published by eir continues to be subject to independent external audit.

97 ComReg's detailed reasons for its Decision are set out in detail in Sections 3 and 4.

[39] Regulation 10 (6) – *"The Regulator may arrange, or require an undertaking to which this Regulation refers to arrange, an independent audit or review, paid for by the undertaking concerned, of the performance data supplied to the Regulator by that undertaking to ensure the accuracy and compatibility of that data with the undertaking's universal service obligations*."

3. The Need For an AFL USO Quality of Service

98 In Section 1, ComReg gave a brief overview of the regulation of the universal services in the State and the consultation process that has led to the publication of this Decision. This Section sets out further ComReg's decision that there is a need for AFL USO QoS in the State post 31 December 2016 and the reasons for ComReg's Decision.

99 This Section is structured as follows :

3.1 Summary of the issues raised in Consultation 15/89 and Consultation 16/31.

3.2 Summary of ComReg's Decision.

3.3 ComReg's Decision.

3.4 Reasons for ComReg's Decision.

3.1 Summary of the Issues Raised - Consultation 15/89 and Consultation 16/31

100 Consultation 15/89 considered the forward looking requirements for the AFL element of the USO, including a high level review of the Quality of Service obligation, having regard, amongst other aspects, to any implications of the Government's National Broadband Plan (NBP).

101 The first TERA report analysed eir's past record with respect to compliance with specified QoS performance targets and also considered eir's likely future conduct absent of AFL USO and AFL USO QoS, assuming it would act as a profit maximising operator.

102 In summary[40], it anticipated that absent any AFL USO QoS targets, eir would be unlikely to have financial incentives to invest in its network in the short to medium term in order to reduce the number of faults or to improve speed of repair times for certain faults. The TERA report found that:

[40] Refer to Consultation 15/89 calculation methodologies for the metrics are set out in Annex 3

- ✂
- ✂
- ✂
- ✂

103 Consultation 16/31 considered what QoS performance targets might be appropriate in light of current generation networks, having regard to the deployment of next generation access networks both commercially and as a result of the NBP.

104 Consultation 16/31 proposed QoS performance targets that could be introduced at a sub-national level, as well as national level. The consultation proposed that fault occurrence targets and fault repair targets could be replaced by an availability target which combines both measures and provides flexibility to the USP to balance investment and operational costs. It also proposed a further review of the new QoS performance targets within two years of the effective date, at the relevant time.

105 Having considered the analysis put forward in TERA's First Report, Consultation 15/89, respondents' views, the Second TERA report and issues consulted on in Consultation 16/31, ComReg was of the preliminary view that there is a continued need for QoS targets.

106 In light of ComReg's preliminary view in Consultation 15/89 that there was a continued need for QoS performance targets, in Consultation 16/31, ComReg considered further appropriate options for QoS targets for the future.

- Option 1 – Keep the existing targets.
- Option 2 – Modify existing targets.
    - Sub-national targets.
    - Service availability targets.
    - Connection targets.

107 The Second TERA Report (Section 5.2.1) considered the principle of sub-national targets and concluded that the addition of sub-national targets should provide clarity about performance levels regionally and will assist in assuring that more end-users will have a consistent experience of QoS.

108 The Second Tera report also considered the level at which the sub-national targets might be set (by line, by MDF, based on technical factors, or by MDF by the 3 areas identified by TERA). ComReg proposed to set the sub-national targets based on these 3 areas.

109 Consultation 16/31, section 7.3.2 considered what would be a reasonable level of fault occurrence in each of the 3 areas for the next period. TERA considered the use of a formula which recognises the factors that affect fault occurrence (e.g. weather conditions, line length, and percentage of overhead infrastructure), and predicts an LFI based on these TERA also considered technical factors (level of LFI per kilometre and the percentage of overhead infrastructure).

110 In the Second TERA Report, Tables 12 and 13 demonstrate that based on infrastructure, weather data and fault data, ✂. This is illustrated using both data over 5 years and for the financial year 2013-2014, with similar results.

111 ✂

112 ComReg's preliminary view in Consultation 16/31 was that it may not be appropriate at this time to set targets in certain areas which are stronger than those currently in place, and that sub-national targets should not be different for different areas.

113 Consultation 16/31 section 7.3.3, considered service availability targets. TERA's analysis indicates that a service availability target may be an appropriate mechanism to ensure that the amount of time services are not working, (unavailable), either because of a fault or a delayed repair, is more consistent across all areas of the State.

114 ComReg was of the preliminary view in Consultation 16/31 was that an availability target, measured by combining fault occurrence and fault repair performance should be put in place to allow a greater flexibility for eir to choose how best to balance preventative maintenance (investment) with operational expenditure (opex) necessary for timely repairs in different areas, including the NBP area. ComReg proposed to set a national service availability targets of 99.94% and a sub-national service availability target of 99.86%, for each of the three sub-national areas (see paragraph 10).

115 ComReg is of the view that these sub-national targets are a particularly important measure in light of the introduction of a single national service availability metric instead of the previous six separate national targets relating to fault repairs and fault occurrence.

116 TERA analysed connection times (in-situ and other) by each of the identified sub-national areas. ComReg agreed with TERA's assessment that the current connection targets under Decision 02/08 remain appropriate and in light of the proposals on reasonable access requests connection targets would be easier to achieve. ComReg was of the preliminary view in Consultation 16/31 that on balance, sub-national connection targets are appropriate to guard against large variations of service experience, for connection times across the three areas of the country.

117 In Consultation 16/31 the preliminary view was that connection targets should also be introduced at the sub-national level so that incentives are balanced.

3.2 Summary of ComReg's Decision

118 There is a continued need for USO quality of service in the State, for the period 2 February 2017 to 31 December 2018.

119 As summarised at section 2.7 above, ComReg has decided to:

- Introduce new service availability targets[41] at the national and sub-national level.
- Retain D02/08 national connection[42] targets; and

[41] Combines fault occurrence with fault repair metrics.
[42] In-situ and new connections (except for agreed date).

- Introduce new sub-national connection targets;
- Minimise changes to the existing reporting and publication regime[43] (save for in respect of the addition of the new national, sub-national connection and service availability targets).
- Maintain the existing auditing obligation, prior to the USP's submission of the periodic performance data to ComReg and prior to publication.

120 The continued need for USO quality of service will be reviewed prior to the expiry of this Decision, 31 December 2018.

3.3 ComReg's Decision

3.3.1 Need for AFL USO Quality of Service (QoS) in the State

121 ComReg has made the decision that there is a continued need for USO QoS performance targets in the State.

3.3.1.1 Reasons for ComReg's Decision

122 The USO QoS ensures the provision of basic telecommunications services in uneconomic areas of the State as well as for uneconomic end-users in economic areas, at an appropriate quality of service. These end-users are dispersed throughout the State. AFL USO QoS contributes to social and economic inclusiveness and cohesiveness.

123 Currently there is no programme or mechanism which ensures that AFL at an appropriate level of QoS is provided to those who need it, other than a regulatory decision by ComReg.

124 ComReg's overall objective is to ensure that AFL USO QoS levels are appropriate, having regard to the existing and future network deployments (copper and fibre), both commercially and as a result of the NBP.

[43] ComReg will make an adjustment to any calculations relevant to Q1 2017 to ensure that the variation from the usual 3-month Data Collection Period for Q1 to the 2-month Data Collection Period in Q1 of 2017 is appropriately reflected when assessing compliance against the Performance Targets for the Year.

125 D02/08 considered eir's performance relating to a number of indicators of quality of service. These included (1) targets relating to installation times (2) the level of line faults (fault occurrence) and (3) the time needed to repair line faults. The rationale for setting binding performance targets in D02/08 was:

- the importance of the quality of service measures to consumer welfare; and
- the evidence of recent worsening of performance in some areas.

126 D02/08 set binding targets in respect of connections; line fault index (fault occurrence) and repair times. While some aspects of performance were satisfactory, ComReg believed that performance could be improved in a manner that would give considerable benefits to end-users. In particular, performance in relation to the level of fault occurrence and the time taken to repair faults was not satisfactory. ComReg was of the view in 2008 that the poor performance may be related to past issues in not ensuring a high quality network.

127 Although set in 2008, the targets included a glide path for performance on fault occurrence from 15.5 faults per 100 lines in 2009 to 12.5 faults per 100 lines in 2012.

128 Since then a number of performance improvement programmes (PIP 1, PIP 2 and- PIP 3) have been agreed with eir, with associated penalties as appropriate for year on year factors.

129 The measures that ComReg has put in place since 2008 to bring about improvements in eir's quality of service performance for USO clearly showed progress up to and including the performance period 2012/2013. However, performance for the period 2013/2014 did not display the same improvement trend. This lead to PIP 3.

130 PIP 3 targets and penalties remained the same as those of PIP 2 except in respect of fault occurrence, and fault repairs, within two working days. The PIP 3 target for fault occurrence was reduced (higher allowed fault occurrence), and to compensate for this reduction, the target for fault repair, within two working days, was increased. In addition, eir undertook to ensure that any customer (wholesale and retail) were automatically refunded if they suffered service outage in excess of 10 working days.

131 The target LFI of 12.5 by 2012 contained in D02/08 has not yet been achieved and fault repairs have been below target for 2015.

132 As outlined earlier, eir's likely behaviour in the absence of AFL USO QoS was assessed to determine whether eir had financial incentives to invest in its network to reduce the number of faults.

133 The following two scenarios (2015-2022) were considered in the Second TERA report :

- *"Keep investing"* scenario – eir keeps investing in the network in order to stabilise the level of faults and has a lower number of faults to repair. Estimated cost (without penalties) € ✂M.

- *"Stop investing"* scenario- eir stops investing in the network, and the network keeps deteriorating. The number of faults to be repaired increases. Estimated cost of repair without penalties €✂M.

134 To quantify these scenarios the PIP3 design assumptions were used. The Second TERA report concluded that eir, acting as a profit-maximising operator, in the short to medium term, would have incentives to reduce its investment in the network absent of any USO QoS (€✂M saving). In the longer term, the cost of repairing faults may exceed the *"stop investment"* scenario and the deterioration in the level of QoS would be significant.

135 TERA also conducted a geographical assessment of QoS levels and established that the fault levels, the time to repair faults, staff distribution per fault, and investment per fault, varied by each of the three geographic areas. It concluded that absent of AFL USO QoS, these trends would potentially increase.

136 The Second TERA report took account of the future evolution of the number of working lines and its PIP 3 investments (based on eir's response to consultation) and by analysing QoS performances in each area concluded that:

- ✂
- ✂
- ✂

137 This report, also concluded that eir, acting as a profit maximising company, and absent of any AFL USO QoS, would have financial incentives not to invest significantly in the short to medium term to improve QoS, in particular NBP and eir only areas.

138 Section 7 of Consultation 16/31 considered TERA's counterfactual analysis, Consultation 15/89 and respondents' views and the Second TERA report.

139 The TERA reports analysed eir's past results with respect to compliance with specified QoS performance targets and also considered eir's future behaviour absent of AFL USO and AFL USO QoS, assuming it would act as a profit maximising operator. It also noted that deterioration in the level of QoS would likely be significant.

140 No new evidence has been provided to ComReg that suggests that its's views on TERA's counterfactual scenario is not valid.

141 In summary, it is anticipated that absent of any AFL USO QoS targets, eir would be unlikely to have financial incentives to invest (capex/opex) in its network in the short to medium term in order to retain the level of fault occurrence.

142 Because of this, there can be no assurance that all AFL customers would be provided with basic telecommunications services, at an appropriate quality of service standard, under normal market conditions without AFL USO QoS being imposed.

143 In considering what QoS targets should be set, ComReg applied the following overarching principles:

- The targets should aim to balance the interests of end-users with promoting efficient investment.
- The targets should allow eir to have the flexibility to balance investment (in current and new networks) and repair expenditure as it considers appropriate to meet the targets. [44]
- The cost and other implications for eir should be proportionate.

144 Critically, during the NBP transition period, and rollout of any new networks, it is imperative that minimum quality of service target are in place, while ensuring that performance, particularly in remote areas, such as the NBP area do not adversely affect end-users.

145 ComReg has decided that there is a need for AFL USO QoS in the State. ComReg is unpersuaded by eir's arguments to the contrary, due to TERA's counterfactual analysis and uncertainty in respect of NBP transition period.

[44] The approach should not seek to require further improvement by eir in respect of its current generation network, beyond its current general performance levels at this time (LFI), which means that eir has the flexibility to balance investment costs against operational costs, in light of the NBP and the rollout of next generation networks on a commercial basis. eir will have the necessary commercial freedom to choose how they will meet their USO obligations.

146 ComReg's Decision on AFL USO QoS, goes no further than to ensure that AFL USO is being provided at an appropriate, minimum quality of service standard, in light of the relevant factors.

147 The introduction of service availability allows eir greater flexibility to choose how best to balance preventative maintenance (investment) with operating expenditure (opex) necessary for timely repairs in different areas.

148 The manner in which this is achieved is not prescribed by law and the principle of technological neutrality allows the USP to choose the optimum method of providing access and service. eir therefore does not have to maintain a national narrowband network to deliver AFL USO QoS. eir can use NGA or purchase wholesale from alternative infrastructure providers (including any NBP provider) and associated services, where appropriate to deliver on its USO obligations

3.3.2 Period of Application of QoS Decision

149 The duration is 2 February 2017 – 31 December 2018.

3.3.2.1 Reasons for ComReg's Decision

150 The duration of the AFL USO quality of service Decision is 2 February 2017 – 31 December 2018. This period which is shorter than the AFL USO designation itself is reflective of the more dynamic nature of the technology used by eir to deliver AFL and the likely impact of this on the appropriate level of quality of service targets.

151 ComReg may designate an undertaking(s) where necessary to provide the services specified in the Regulations and may, if it considers necessary, specify further measures applicable to those designated undertakings where appropriate. QoS Performance Targets is an example of this.

152 It is ComReg's view that the QoS Performance Targets will need to reflect the changing environment, including the NBP and the rollout of new technologies which are envisaged to be of a higher quality than the current predominant network.

153 Unlike the specification of Reasonable Access Requests (RAR) which is dynamic and accommodates the changing technological environment likely over the coming years, it is not possible for ComReg to create a dynamic QoS performance targets regime which automatically accommodates technological changes as they are implemented. In this context, it is more appropriate for ComReg to establish the QoS Performance Targets based on current information for a shorter period and to review them on a more regular basis.

3.3.3 Introduction of Service Availability

154 ComReg's decision is to introduce a service availability performance target by combining fault occurrence and fault repair metrics.

3.3.3.1 Reasons for ComReg's Decision

155 Fault Occurrence or Line Fault Index (LFI) measures the number of faults occurring per one hundred lines. It is a proxy measure for the quality of an underlying network. It is an indicator as to the level of *preventative maintenance* being undertaken within a network. No network will be completely fault free and the targets define what an appropriate/tolerable level of fault occurrence should be.

156 Repair time measures the length of time it takes from when a fault is reported until it is repaired, and is a measure of the level of reactive maintenance/operating expenditure (opex) being undertaken. In recognition that no network will be completely fault free, the targets define what the appropriate time taken to repair faults should be.

157 To date, it has been appropriate to set and measure targets against each of these individual components, to ensure (1) an appropriate balance of investment and operational cost in the current network; and (2) that reasonable requests for access at a fixed location are met at an appropriate quality of service.

158 The Second TERA Report, Section 5.2.5, recommended the introduction of service availability targets. The introduction of service availability now combines (1) the level of line faults (fault occurrence) and (2) the time needed to repair line faults (fault repair) into overall service availability targets. TERA's analysis indicated that a service availability target may be an appropriate mechanism to ensure that the time duration that services are not working (unavailable), either because of a fault or a delayed repair, is more consistent across all areas of the State.

159 Having regard to the overarching principles, service availability does not expressly require eir to invest extensively and exclusively in its existing copper network, rather it provides the necessary innovation and investment incentives for eir to accelerate any desired network deployment and/or replacement, by giving eir greater freedom to decide commercially the balance between proactive and reactive maintenance, while achieving the service availability targets.

160 The principle of technological neutrality allows the USP to choose the optimum method of providing access and service. eir therefore does not have to maintain a national narrowband network to deliver AFL USO QoS. It can use NGA or purchase wholesale from Alternative Infrastructures (its own or others, including NBP) and associated services, where appropriate to deliver on its USO obligations.

161 Where any transition from eir's copper network is ultimately proposed, eir as the designated USP will need to provide end users with an alternative method of connecting to the public telecommunications network and accessing voice services. Specifically, where copper-based products have been provided and this is being withdrawn, then there will be a requirement that a suitable alternative product is offered and that the customer is not required to bear any significant cost in order to continue to avail of the service[45].

162 ComReg is cognisant that a number of respondents cited the proposed move away from fault occurrence and repair targets, in the context of wholesale matters, as part of their rationale for not being supportive of USO service availability targets. ComReg notes this perspective, however ComReg is of the view that commercial SLAs and any associated disputes are an entirely separate matter and that a service availability target is the correct approach at the current time. This approach is supported by the introduction of sub-national targets as an additional end-user protection.

[45] Call for Input ComReg 16/01 "Transition from eir's copper network" published 6/1/2016.

163 ComReg's Decision on what constitutes AFL USO QoS, and in particular, service availability, now provides eir with greater flexibility to balance preventative maintenance (Capital investment) with operating expenditure (Opex), in light of the NBP and the rollout of next generation networks on a commercial basis. This is particularly important during this transition period. Service availability targets will actively encourage and incentivise commercial investment and innovation in new networks, by not requiring any unnecessary investment in current generation networks and without ultimately inhibiting the retirement of these networks, where appropriate.

3.3.4 National Service Availability Target

164 ComReg's Decision is to introduce a national annual service availability target of maximum of 0.237 working days outage per line (99.935%).

3.3.4.1 Reasons for ComReg's Decision

165 Service availability provides eir with the flexibility to choose how best to balance preventative maintenance (Capital investment) with operating expenditure (Opex).

166 In Consultation 16/31 ComReg was of the preliminary view that it was appropriate to introduce a national service availability target of 99.94% based on PIP3, D02/08 targets and analysis undertaken by TERA[46].

167 In Consultation 16/31 TERA's analysis illustrated that on the basis of the 5 year observed actual national service availability average (2009-2014) eir has achieved a national service availability of 99.94%. eir did not achieve this in 2013/2014.

168 ComReg, therefore, was of the preliminary view that setting the national service availability target of 99.94% would ensure that there would be no decrease in existing service quality, and no required improvement beyond the 5 year actual (2009-2014) observed average national service availability levels[47], consistent with ComReg's policy objectives.

[46] In D02/08 the target LFI is set at 12.5 and the two days repair target is set at 80% etc., resulting in a national average repair rate of 1.70 days, which gives a service availability target of 99.94%. In PIP 3 the target LFI is set at 14.5 and the two day repair target is set at 82%, resulting in a national average repair rate of 1.58 days, which gives a service availability target of 99.94%. For illustrative purposes – increased decimal places to be used in the calculation.

[47] Fault occurrence and fault repair times converted into service availability

169 eir's response to Consultation 16/31 claimed that the introduction of a national service availability target of 99.94% would require an *"additional"* investment of €✂M over three years (i.e. an *"additional"* investment of €✂M per annum).

170 eir provided the following scenario where it claimed that an *"additional"* national investment would be required (with no sub-national breakdown) to achieve the national service availability targets outlined in Consultation16/31. According to eir, the following table forecasts the national network performance after 3 years with the *"additional"* investment.

✂

Figure 8 eir's scenario

171 ComReg issued a request for information seeking further details including details of eir's model (eir's model) underpinning its consultation submission[48].

172 ComReg has reviewed eir's model and noted that eir has forecasted future estimates of fault occurrence based on past performance and factoring in aspects such as:

- *"achievable speeds of repair".*
- weather (including rain/wind, lightening).
- line mix.
- copper network deterioration.
- capital investment.

173 In addition, ComReg is of the view that eir's model underestimates its likely performance. This is further explained in section 3.1.2.7.

174 Analysis of eir's model highlighted the following:

- eir's model is capital in nature – i.e. is based on preventative fault maintenance and fault removal.
- eir's *"achievable speed of repair"* appears to remain constant (irrespective of which investment scenario is considered).

[48] eir Response to ComReg's13D Information Request, 25th August 2016 file 20160526_AFLUSO_QoS_Repaired.xlsx (Excel workings).

- All eir's investments scenarios in eir's model reflect eir's copper access network connections only

175 eir's supporting overview document submitted in response to the information request describes how eir has based its calculation of eir's *"achievable speed of repair"* on:

- ✂
- ✂
- ✂

176 eir provided the following table of "achievable speed of repairs" ("Ave Days"). eir state that fault occurrence targets were calculated based on the average availability targets and the "achievable speed of repair" targets.

✂

177 ***Figure 9 eir's "achievable speed of repair" Values***

("achievable speed of repair" values) will be achieved by eir. eir has subsequently confirmed the aforementioned in writing, on foot of a subsequent ComReg 13D Information Request[49].

178 eir's supporting overview document submitted in response to the information request describes how eir currently plans to invest €✂M capital in the copper network on replacement/renewal in F/Y 2016/17 (€✂M capital over 3 years). Furthermore, eir presents the following table showing the expected network performance nationally/sub-nationally after 3 years with this level of investment each year (€✂M), based on eir's *"achievable speed of repair"* values.[50]

[49] eir response to 13D 28th October 2016.

✂

Figure 10 eir's current planned investment (€✂M capital over 3 years)

179 eir also provided an annual breakdown, which, using eir's *"achievable speed of repair"* demonstrates that the targets are predicted to be met both nationally and sub-nationally in each of the three years.

✂

Figure 11 Service Availability based on LFI and on eir's "achieveable speed of repair" values

180 This demonstrates that according to eir's model, both the national maximum of 0.237 working days outage per line (99.935%) and sub-national maximum of 0.607 working days outage per line (99.834%) service availability targets would be met.

181 Furthermore, using eir's current *"planned"* investment scenario (as described in paragraph 153), and eir's yearly projected fault occurrence with its achievable speed of repair to calculate yearly projected national and sub-national availability, the new performance targets are achievable each year commencing July 2016.

182 ComReg has noted that using this methodology, eir also predicts that to meet a national availability target of 99.94% it would need to invest an additional €✂M over three years (i.e. an additional investment of €✂M per annum).

183 ComReg has taken into account eir's submission of the extra investment required to meet the proposed national availability target of 99.94% proposed in Consultation 16/31. ComReg has also taken into account the expected fault occurrence result at the end of each of the next 3 financial years as modelled by eir.

184 ComReg has therefore decided, based on the actual observed 5 year national service availability average (2009-2014), and having regard to eir's "achievable speed of repair" values and its predicted fault occurrence levels in the context of its current planned investment, to set the national service availability target at maximum of 0.237 working days outage per line (99.935%).

	Service Availability National	National Maximum working days outage per line
Consultation 16/31	99.940%	0.219
eir's model - claimed adjustment	-0.005%	-0.018
ComReg's Decision - adjustment	-0.005%	-0.018
Final Target	99.935%	0.237

Figure 12 National Service Availability Target - Maximum working days outage per line

185 This target allows eir to maintain its current planned investment levels and also allows further flexibility to improve repairs or to invest in new networks to bring fault occurrence levels down.

3.3.5 Service Availability – Sub-National Targets

ComReg has decided to introduce sub-national service availability target of maximum of 0.607 working days outage per line (99.834%).

3.3.5.1 Reasons for ComReg's Decision

186 National quality of service obligations alone may be insufficient to ensure an appropriate quality of service across all regions in the State. ComReg remains concerned by the extent of eir's ability to differentiate investment levels and fault repair rates in different geographic areas. This can create unacceptable disparities in performance across the country.

187 Sub-national service availability targets are an appropriate mechanism to ensure that the amount of time that services are not working, (either because of a fault, or a delayed repair), are more consistent across all of the State and at least do not fall below a minimum standard in all specified areas.

188 The Second TERA report concluded that, in addition to setting national targets, setting geographically targeted QoS obligations would better protect customers in areas where QoS performance is currently at the lowest level and where there is a low level of competition.

189 ComReg has decided to set sub-national service availability targets for each of the three TERA defined areas (defined in the first TERA report, section 3.2.3).

- **"Area 1" -** Market Driven Infrastructure Based Competition – based on areas where eir faces greater market-driven infrastructure-based competition, including, from Vodafone/ESB/SIRO or UPC.
- **"Area 2" NBP** – based on the NBP intervention area[51] where a high capacity broadband access network may be made available through Government subsidies.
- **"Area 3"** eir only - based on areas where eir faces no competition from any fixed infrastructure but could face competition from mobile networks providing fixed access solutions, especially forward looking.

190 These three areas are defined in the specific context of USO, by looking at the potential competitive constraints, and demand and supply side developments, on the delivery of universal service, primarily voice AFL. The TERA analysis provides the correct "big picture" using eir exchange areas to provide the granularity. These areas were manually mapped onto eircom exchanges based on publically available data. TERA accept that these may not 100% be homogenous, however they provide the best proxy.

191 The Second TERA report concluded that, in addition to setting national targets, setting geographically targeted QoS obligations would better protect customers in areas where QoS is currently poor and where there is a low level of competition.

[51] As defined in the TERA Reports.

192 This is clearly illustrated in 16/31, Figure 9 Service Availability Calculations, shows the significant sub-national variations in the LFI, and repair times.

✂

Figure 13 Source: TERA Report Figure 14 -% of availability calculations

193 The Second TERA report also concludes that in the absence of QoS obligations at sub-national level some end-users may not receive a minimum level of service.

194 ComReg is of the view that it is critical that minimum quality of service targets (translated to availability) are maintained, through the introduction of sub-national minimum service availability targets. These sub-national targets should ensure that performance in availability terms, particularly in remote areas, such as NBP, does not deteriorate to an unacceptable level.

195 TERA's analysis clearly illustrates that (based on the 5 year service availability average (calculated using fault occurrence and repair performance metrics):

- the actual service availability achieved within the market driven infrastructure-based competition area was ✂% which is significantly exceeding the new sub-national service availability target; and
- the actual service availability achieved within the eir only areas was ✂% which is also significantly exceeding the new sub-national service availability target and

- the actual service availability achieved within the NBP area was ✂% which is meeting the new sub-national service availability target.

196 This analysis demonstrated that currently sub-national targets are being met or exceeded.

197 TERA's sub-national service availability analysis, used the actual 5 year trend (2009-2014 fault occurrence and repair times), weather conditions, line length and overhead infrastructure to derive the proposed sub-national availability targets.

198 In eir' response to Consultation 16/31, eir estimated that the *"additional"* investment required to meet the proposed sub-national service availability targets of 99.86% is €✂M over 3 years (i.e. €✂M per annum) (over and above the *"additional"* investment required to meet the national service availability target).

199 Also in its response to Consultation 16/31, eir estimated that the *"additional"* investment requirement[52] to meet the sub-national service availability targets outlined in Consultation 16/31 is €✂M[53].

200 According to eir, this table show the expected network performance nationally/sub-nationally after 3 years with *"additional"* investment levels targeted at the NBP sub-national area. This is based on the assumption that both the *"planned"* and *"additional"* national investments have taken place (i.e. Total investment of €✂M)

✂Table

Figure 14 eir's expected network performance

[52] Beyond eir's current planned investment of €✂M per annum (€✂M over 3 years).
[53] Additional national investment (€✂M over 3 years), and sub-national (€✂M over 3 years).

201 ComReg issued a request for information seeking further details including details of eir's model underpinning its consultation submission[54] and ComReg also received further explanations and clarifications.

202 The details of eir's model identified that eir has isolated each of the following variables and individually evaluated their impact:

- *"achievable speeds of repair"* and fault occurrence targets.
- weather (including rain/wind, lightening).
- Line mix.
- Copper network deterioration.
- Capital investment.

203 eir's model records that, absent the national and sub-national service availability targets proposed in Consultation 16/31, eir's planned investment in the copper network for the period FY 2016/17 – FY 2018/19 cumulatively is €[redacted]M.[55]

204 eir has calculated *"achievable speed of repair"* as detailed in paragraph 175.

205 However, ComReg is of the view that eir's scenario model approach under estimates eir's achievable performance for the following reasons:

a) Isolation of variables.
b) Failure to incorporate repair time scenarios into investment scenarios model.
c) capital investment only.
d) modelling confined to the copper network.

206 ComReg now addresses each of these elements.

a) Isolation of Variables.

207 eir has taken each variable in isolation into the scenarios model. ComReg notes the following anomalies with this approach;

[54] eir Response to ComReg's13D Information Request, 25th August 2016 file 20160526_AFLUSO_QoS_Repaired.xlsx(Excel workings).
[55] i.e. €[redacted]M per annum.

- ✂
- ✂[56] [57]
- ✂
- ComReg's sub-national service availability targets (based on a five year average) already takes into account variations in performance years ((weather (rain, wind, and lightening) and average repair time performance variations)).

b) Failure to incorporate repair time scenarios into investment scenarios model.

208 eir's model predicts fault occurrence outturn based on the input variables already described. It does not go further to model repair time scenarios in order to be able to model its effect on service availability. This would provide further details of the impact on service availability of all the contributing factors. ComReg has used this further step in its analysis, based on eir's *"achievable speed of repair"* values.

c) Capital investment only.

209 eir has formally confirmed to ComReg that all of its investment scenarios in the model used to support its submission are capital by nature.

[56] ✂
[57] ✂

210 As outlined earlier, it would appear counter-intuitive to proactively choose to exclusively invest in preventative maintenance. The more intuitive approach during this transition period would appear to be to minimise preventative maintenance and ensure sufficient resources are accessible so that when faults occur in the network, they are dealt with and resolved quickly.

d) Modelling confined to the copper network.

211 Regulation 3 (1-3), provision of access at a fixed location and provision of telephone services, do not stipulate the network or technology to be used. eir is free to meet its USP obligations utilising either copper or fibre networks, or both.

212 The manner in which this is achieved is not prescribed by law and the principle of technological neutrality allows the USP to choose the optimum method of providing access and service. eir therefore does not have to maintain a national narrowband network to deliver AFL USO QoS. It can use NGA or purchase wholesale from Alternative Infrastructures (its own or others, including NBP) and associated services, where appropriate to deliver on its USO obligations.

213 ComReg has now set national and sub-national service availability targets as opposed to fault occurrence/LFI and fault repair time targets. This provides the necessary innovation and investment incentives to eir to accelerate any desired network deployment and/or replacement, with the mix of proactive and reactive maintenance being a commercial eir decision.

214 eir has submitted that it may no longer be appropriate for it to continue investing in certain areas where new infrastructure is envisaged to be fully deployed, in particular as a result of the NBP. eir has further submitted that should it not win part or all of the NBP, "…*it would leave the eir network with a dwindling customer base of voice only customers and insufficient revenue streams to justify capital investment on its network items with a pay-back period longer than a few years*."

215 ComReg already issued a Call for Input *"Transition from eir's copper network – Proposed Principles and Notification Procedures" 16/01*.

216 eir has just recently communicated with ComReg[58] of its intention to withdraw a number of services in the coming years which are delivered over eir's copper network.

217 eir has an obligation in several regulated markets not to withdraw access to services and facilities already granted (as well as obligations as per its current USO designation). Prior to the receipt of the aforementioned eir letter[44] ComReg was not aware of any potential intention regarding the transition from eir's copper network outside the NBP intervention area. Where copper based products are being provided under a USO, there will be a requirement that a suitable alternative product is offered and that the customer is not required to bear any significant cost in order to continue to avail of the service.

218 eir, as opposed to ComReg, is making commercial decisions as to which networks eir will utilise and/or deploy, to meet their existing USO service obligations.

219 During the NBP transition period when alternative networks are being deployed, our objective is to ensure that reasonable requests for access at a fixed location and associated quality of service are met, but without requiring unnecessary investment in the USP's copper network and without inhibiting the retirement of that network, once an alternative is available.

220 eir has formally confirmed to ComReg that all of its investment scenarios in its model are based on the copper network only and eir's scenarios model supplied to ComReg takes no account of possible performance improvements as a result of:

- eir's own fibre deployment strategy and the associated migration of customers.
- any cost comparison of copper versus fibre deployment and the associated service availability improvements.
- ✂[59] [60] eir has taken no account in its model used to support its submission of its significant planned rural FTTH deployment.

[58] See Information Notice ComReg 17/05, 19 January 2017.
[59] ✂
[60] ✂

- eir's has announced that it plans to expand access to high speed fibre broadband in rural Ireland by extending its fibre footprint from 1.6 million homes and businesses to 1.9 million premises throughout the country at an investment of €400m in fibre over the next five years[61] which eir claim will reach 70% of country by the end of 2016.
- A further eir press release[62] announced that 100,000 of these premises will be able to access high speed broadband in rural Ireland by 31 March 2017. In light of this announcement, ComReg estimates that up to ✂% of all working lines may have been replaced by fibre to the premises lines by March 2017 and ✂% of all working lines by 2020, based on eir's estimate of working lines.

221 This is expected to potentially remove poor performing connections from the areas with the poorest QoS and has therefore has the potential to automatically assist eir in improving the actual national and sub-national service availability.

222 Having considered all the above factors ComReg is of the view that eir can achieve the proposed national and sub-national availability targets with its current investment plan.

223 Based on eir's own modelling, eir can achieve a national service availability target of maximum of 0.237 working days outage per line (99.935%) and sub-national targets of maximum of 0.607 working days outage per line (99.834%) with an annual capital investment of €✂M per annum and some further improvements in the sub-national performance in the NBP area as set out in paragraphs 22 to 29.

224 Regardless of which eir investment scenario is selected, and any associated improvement in the LFI, the repair times remain constant across all eir's investment scenarios within eir's model, at eir's "achievable speed of repair" values.

[61] eir press release "eircom expands fibre broadband investment", 4th June 2015.
[62] eir press release "First rural FTTH locations announced", 3rd March 2016.

225 In summary, recognising of the potential for performance variations in a national service availability target, sub-national service availability targets are now introduced, so that incentives are balanced and comparisons across the three areas can be made. This will create the right incentives that safeguard the interest of consumers, while allowing the USP the flexibility in terms of investment and innovation.

226 The table below shows eir's expected network performance nationally and sub-nationally after three years with this current planned level of investment each year. This demonstrates that according to eir's model both the national and sub- national targets would be met.

✂

Figure 15 eir's planned investment - €✂M capital over 3 years

227 Furthermore, using eir's current planned investment scenario (as described in paragraph 153), and eir's yearly projected fault occurrence with its *"achievable speed of repair"* to calculate yearly projected national and sub-national availability, the sub-national targets are estimated to be achieved each year commencing July 2016.

228 However, using eir's model for its planned sub-national investment and its sub-national *"achievable speed of repair"*, eir's figures illustrate that there would be no additional investment other than its planned investment of €✂M each year required to meet a sub national target of a maximum of ✂ working days outage per line (✂%).

229 ComReg accepts, in light of the circumstances at this time, that eir should be allowed a margin between the average annual level of performance that ComReg considers should be delivered and the minimum target to be achieved in any year in order to avoid the need for additional investment.

230 However, in this case ComReg is of the view that eir can further improve performance in the NBP area, (recognising the conservative approach within eir's model) through the following possible mechanisms (1) increasing the number of eir resources per fault (towards the ratio in the competitive area) and/or (2) altering any policy in relation to the dispatch of resources for repair in certain areas to narrow the gap in speed of repair between then NBP and other areas[63] and (3) rolling out new technology to poor performing lines to increase performance. ComReg has also noted eir's practice in relation to certain exchanges identified by eir, where repairs were delayed as it decided that;✂"[64] Further information on this practice was provided to ComReg by eir in 2014.[65]

231 In light of the factors outlined at 226 and 230, ComReg has decided that the sub-national target proposed in Consultation 16/31 could be marginally reduced, but not the to extent suggested by eir.

232 ComReg has calculated this adjustment having regard to among other aspects, the variance in eir's "*achievable speed of repair* "across the sub-national areas,. For example, ✂. ComReg also considered other factors including those set out in paragraph 230.

233 Therefore, ComReg has reduced the sub-national target proposed in consultation 16/31 by 0.096 days (0.026%) so as not force eir's claimed additional sub-national investment, which ComReg considers is a proportionate approach at this time.

	Service Availability Sub-National	Sub-National Maximum working days outage per line
Consultation 16/31	99.860%	**0.511**
eir's model - claimed adjustment	-0.050%	**0.129**
ComReg's Decision - adjustment	-0.026%	**0.096**
Final Target	99.834%	**0.607**

Figure 16 Sub-National Service Availability - Maximum working days outage per line

[63] See Paragraph 294.
[64] 'Fault Repair' letter from eir; 19 September 2011.
[65] Provision of information with respect to USO provision 1 January 2013 to 31 December 2013.

234 This approach also allows eir the ability to meet the sub-national availability target in each of the next two years covered by this Decision and also further increases its ability to meet and exceed these targets by improving its repair time and/or by rolling out fibre connections (in place of poor performing lines), which will improve overall performance.

235 ComReg has therefore decided to set the sub-national target for the next two years at a maximum of 0.607 working days outage per line (99.834%). This means that no additional investment in reducing line faults would be required as a result of ComReg's setting of this target.

3.3.6 Retain D02/08 National Connection Targets

236 ComReg has decided to retain the D02/08 national connection[66] targets set out in paragraph 85.

3.3.6.1 Reasons for ComReg Decision

237 Connection targets are important to ensure that end-users do not experience unacceptable delays in getting a connection and telephone service.

238 Figure 17 provides an overview of eir's national connection performance from 2011 to Q2 2016 compared with the most recent PIP3.

In Situ Connections completed within the following time slots (%)	PIP 3 2014-2015	Annual Rate 2011	Annual Rate 2012	Annual Rate 2013	Annual Rate 2014 (Full Year)	Annual Rate 2015 (Full Year)	Year To Date Q1/Q2 2016
Within 24 hours of request	**80%**	86.048%	85.469%	83.841%	76.364%	83.00%	84.90%
Within 2 weeks of request	**99.50%**	99.560%	99.335%	96.899%	97.465%	98.90%	99.40%
Within 2 months of request	**99.80%**	99.996%	99.973%	99.987%	99.895%	100.00%	99.90%
All Other Connections completed within the following time slots (%)							
Within 2 weeks of request	**80%**	87.730%	83.099%	81.655%	82.555%	86.10%	83.40%
Within 4 weeks of request	**85%**	95.015%	94.007%	89.928%	93.482%	94.70%	94.30%
Within 8 weeks of request	**90%**	98.309%	98.634%	95.751%	98.054%	98.20%	97.50%
Within 13 weeks of request	**95%**	99.306%	99.552%	98.211%	99.327%	99.20%	99.30%
Within 26 weeks of request	**99.80%**	99.853%	99.920%	99.506%	99.911%	99.80%	99.80%

Figure 17 eir's national connection performance 2011 - Q2 2016

239 This demonstrates over a 5 year period, that eir has exceeded the proposed national connection targets; both "in-situ" and other connections except for the "in-situ - within 2 weeks of request" targets.

[66] In-situ and new connections.

240 ComReg notes that while eir has objected to the setting of national and sub-national connection targets, eir has not provided any additional information on how this may financially or operationally impact eir.

241 Furthermore, the modified Reasonable Access Request criteria in ComReg Decision D05/16 means that there will be less USO requests to be fulfilled by eir than before because;

- At premises where affordable voice services are provided on a commercial basis over an alternative wired network or acceptable quality mobile network, the USO does not apply if the cost to eir is > €1,000; and
- At premises where wholesale broadband connections are available over an alternative network, but affordable voice service is not provided on a commercial basis, the USP need not invest in its own connections but is free to procure a wholesale connection and service which may include voice over internet protocol ("VoIP") to provide the required voice service.

242 Three groups of connection metric have been monitored on a quarterly basis:

- Connections "By Date of Request" for in-situ connections.
- Connections "By Date of Request" for other (non in-situ) connections.
- Connections "By Agreed Date" for all connections.

243 However, ComReg note eir's claim that connection targets for "By agreed date" orders have almost now become obsolete[67]. ComReg has therefore decided to remove the "By Agreed Date" target (data will still be required to be collected and reported) and to include these orders with "other connections" in the category within "By Date of Request".

244 TERA has analysed[68] connection times (in-situ and other) by each of the identified sub-national areas. TERA found that there is no apparent discrepancy between connection times across these areas, except for "agreed date" connections, whose speed of connection is lower in Area 2.

[67] eir Response to ComReg Consultation Paper: Universal Service Requirements Provision of Access at a Fixed Location ComReg Document 16/31, Page 35 Figure 8 "By Agreed Date Order Volumes".
[68] TERA Phase 2 Report April 2016: *"forward-looking review of the future of AFL element of USO in Ireland: appropriate level and scope of the various proposed obligations of an AFL USO"* section 5.2.6.

245 This Decision now incorporates the reporting of Connections "By Agreed Date" for all connections into the Connections "By Date of Request" for non in-situ connections, reflecting eir's claim that all "agreed date" orders by will decline to single figures or possibly zero by the end of 2016[69].

246 Since 2010, connections have been measured on the basis of calendar days and this measurement is well understood by service providers and end-users. ComReg has therefore decided to maintain the current calendar day calculation for connection targets both national and sub-national.

3.3.7 Introduce Sub-National Connection Targets

247 ComReg's decision is to introduce new sub-national connection targets as set out in paragraph 85.

248 ComReg decided to set the level sub-national connection targets at the same level as the national connection targets.

3.3.7.1 Reasons for ComReg's Decision

249 On-balance, sub-national connection targets are appropriate to guard against any variations in connection times across each of the three defined areas of the country.[70]

250 The setting of sub-national targets ensures that the incentives in respect of connections and service availability are balanced and that end-users do not suffer detriment due to their geographic location.

251 ComReg has decided that the measurement of connection targets at the sub-national level is appropriate, in each of the three TERA defined areas (defined in the first TERA report, section 3.2.3).[71]

252 The Second TERA Report (section 5.2.1) considered sub-national targets and it found that the addition of sub-national targets provides greater certainty, and will ensure that more end-users have a consistent experience of QoS.

[69] *"eir Response to ComReg Consultation Paper: Universal Service Requirements Provision of Access at a Fixed Location 13 June 2016."* Page 35.
[70] Refer to Paragraph 82.
[71] Refer to Paragraph 82.

253 The national connection targets are, on average, being over achieved. TERA's analysis also showed that the sub-national targets are also generally being achieved. Considering the new reasonable access criteria and the removal of the performance target for "by agreed date" connections at national and sub-national level will further assist eir in achieving the new connection targets.

254 ComReg has therefore decided that it is appropriate to set the level of the sub-national targets at the same level of the national targets, as this will better protect end-users in areas where there is a low level of competition (e.g. Area 2).

255 Decision D05/16 on "reasonable access requests", will now ensure that connection targets should be easier to achieve, and more importantly should ensure that they are achieved, as in certain circumstances the USP is not required to satisfy a request for connection, for example where there exists at the time of the request Alternative Infrastructure in the geographic location of the end-user that can provide equivalent AFL USO.

256 In summary, ComReg has decided that the measurement of connection targets at the sub-national level is appropriate and proportionate.

3.3.8 Minimise Changes to Existing Reporting and Publication Regime

257 ComReg has decided to minimise changes to the existing reporting and publication regime[72] (save for the addition of the new national, sub-national connection and service availability targets).

3.3.8.1 Reasons for ComReg's Decision

258 There will be no change to the current calculation, reporting and audit regime, save for, the addition of the new service availability target at sub-national and national level, and the national and sub-national connection targets. These are to be derived from the fault occurrence and fault repair metrics, as they are currently calculated. (Schedules 1 and 2).

[72] ComReg will make an adjustment to any calculations relevant to Q1 2017 to ensure that the variation from the usual 3-month Data Collection Period for Q1 to the 2-month Data Collection Period in Q1 of 2017 is appropriately reflected when assessing compliance against the Performance Targets for the Year.

259 Any of the existing additional data and metrics that are also calculated and supplied to ComReg will continue to be supplied, including agreed date connections (nationally and sub-nationally).

260 The reporting of connection targets was modified in Q3 15[73]

3.3.9 Retain Existing Auditing Obligation Regime (Prior to submission and publication)

261 ComReg had previously invoked Regulation 10 (6) of the Regulations to ensure the completeness and accuracy of the data submitted by eir by requiring it to arrange for an independent audit of the data. Accordingly, performance information published by eir continues to be subject to independent external audit.

3.3.9.1 Reasons for ComReg's Decision

262 ComReg decided there will be no change to the current reporting and audit regime, save for the addition of the new service availability targets at sub-national and national levels and the new sub national connection targets.

263 eir is required to report performance data on a quarterly basis, 2 months after the quarter end.

264 This data is required to be audited and submitted in both written and electronic format, accompanied by an auditor's letter.

265 This is in line with ComReg's duty to use reasonable and proportionate measures to ensure that end-users have access to universal service as specified, and at an appropriate quality of service, while promoting efficiency, and efficient investment and innovation.

266 For regulation to be effective, ComReg must ensure compliance with obligations can be monitored and, where necessary enforced. ComReg compliance functions include monitoring ongoing compliance with obligations, enforcing existing obligations and dispute resolution. ComReg will monitor and enforce compliance with any QoS obligations in line with these functions.

[73] Information Notice 16/46 "Provision of Universal Service by eir Performance Data – Q4 2015 and Annual ,published 3/6/1,6 page 8 footnote 7.

267 These obligations will ensure that adequate and up to date information concerning the USPs performance in the provision of AFL USO and supply it to ComReg.

268 As this regime is one with which eir is familiar, ComReg is of the view that compliance in this respect should not be onerous on eir. In order for ComReg to determine compliance with the targets, ComReg requires eir to provide ComReg with accurate information, and it is therefore necessary for eir to provide ComReg with reports on a regular basis. Furthermore the publication of ComReg quarterly USO compliance reports gives transparency to end-users and industry.

4. Quality Of Service – Consultation Issues

269 In Section 1 ComReg gave a brief overview of the regulation of the universal services in the State and the consultation process that has led to this Decision. Section 2 provides a summary of ComReg's QoS Decision. This Section sets out a summary of the issues raised in respect of QoS by respondents to Consultations 16/31, and our response to these submissions.

4.1 Respondents' Submissions to QoS in Consultation 16/31

4.1.1 General concerns raised by eir and ComReg's response

270 In its response to ComReg Consultation 16/31 eir raised a number of general concerns it had with the approach taken by ComReg in respect of QoS. ComReg set out below its response in relation to these concerns.

4.1.1.1 Framework for Analysis

271 The design of the AFL USO is forward looking, taking into account the current market trends and likely evolutions in the coming years. These include, amongst other things, the intensification of competition from UPC, the deployment of NGA infrastructure, and FFTH by SIRO and eir, the development of the NBP and selection of one or more companies to deploy and operate the State funded network, the adoption of VoIP services, and further development of mobile networks.

272 In May 2014, ComReg undertook a consultation on the provision of AFL under USO in the Irish market (Ref: 14/48[74]). Stakeholders were asked to express their views on, among other things, the proposed maintenance of a USO for the provision of AFL for a period of three to five years after the designation period commencing on 1 July 2014.

273 In August 2015, ComReg issued a second consultation where it sought the views of stakeholders on the need for and proposed evolution of the USOs in relation to AFL.

[74] ComReg Consultation and Draft Decision 14/48 "The provision of telephony services under the Universal Service Obligation - Access at a Fixed Location" 16 May 2014.

274 This public consultation was supported by an expert report produced by TERA Consultants, which described the AFL USO context in Ireland, studied the latest fixed access services market evolution, assessed counterfactual scenarios, notably, the consequences of ceasing AFL USOs and/ or some aspects of AFL USO. TERA concluded by giving their preliminary recommendations on the possible scope of future AFL USOs. This report also included a review of AFL USOs in other European Member States.

275 Following on from the initial findings of the First TERA Report, that, because of the counterfactual analysis and other relevant developments, there is a continued need for an AFL USO in Ireland, the Second TERA report set out TERA's views on the proposed imposition of elements associated with an AFL USO. This included possible amendment or lapse of particular USOs, criteria for assessing options in relation to reasonable requests and options regarding affordability measures, quality of service targets and terms and conditions.

276 TERA took into account the views of respondents to the August 2015 consultation and subsequent consultation, and the practices of other NRAs and the AFL USOs that have been imposed in other Member States (as detailed in the First TERA report, annex B).

277 The First TERA Report considered a number of different types of infrastructure (including fixed wired and wireless) when considering infrastructure trends (supply side). TERA concluded that that these infrastructures have different coverage and that the competitive constraints with respect to AFL are likely to be heterogeneous across the country. For the purposes of the assessment three main areas were identified:

- Areas where eir faces greater market-driven infrastructure-based competition.
- Anticipated NBP intervention area.
- Areas where eir faces no competition from any fixed infrastructure.

278 These three areas were defined in the specific context of USO.

279 In the Second TERA report the following approach was adopted in respect of each of the components of the USO obligations. A list of methodological questions on the form of the obligations was set out. A list of options, in respect of each of these questions, were presented and an impact assessment of each option was performed by studying the impact on the different stakeholders and comparing the pros and cons of the option.

What if QoS AFL USO is ceased?

280 To assess eir incentives to invest or not absent any AFL QoS USO, two scenarios are compared.

281 In the **"keep investing"** scenario, the LFI would remain stable around ✂ until 2022 (and hence would be aligned with the PIP 3 LFI target).

282 In the **"stop investing"** scenario, the LFI would reach ✂ in 2022.

283 Therefore, in the latter scenario more faults would have to be repaired which would increase the level of operating expenditure. A decrease in QoS (greater fault occurrence) would affect in the same way both eir and OAOs relying on eir's copper network (with SB-WLR or with ULMP).

284 The savings generated by the "stop investing scenario" can be significant as compared to the "keep investing scenario".

285 As set out below, the savings difference between the two scenarios can be even greater in a context of ceased USOs when there are implications (such as penalties) for non-compliance with QoS targets:

286 Total 2015-2022 estimated cost for the "keep investing" scenario: €✂m (without penalties);

287 Total 2015-2022 estimated cost for the "stop investing" scenario: €✂m (without penalties).

288 Not investing is therefore estimated to be less costly by €✂m.

289 With penalties in play, the situation in respect of incentives would be significantly different since the cost under the "keep investing" scenario would be €✂m while it would be €✂m in the "stop investing" scenario. In the presence of a penalties mechanism, eir would have stronger incentives to invest, which shows that the calibration of the QoS targets is adequate.

290 The qualitative and quantitative analysis on investment performed corresponds to the "worst case but possible scenario". However, this remains true in the short and medium term: in the long run the costs of repairing faults may exceed "no investment savings".

291 Acting as a profit maximising company and absent any AFL QoS USO, eir would have financial incentives not to invest significantly in the short to medium term to maintain or improve the QoS, at least in particular areas. TERA's analysis of QoS performance in each of the areas demonstrated that:

- ✂
- ✂
- ✂
- ✂

292 In its response to the August 2015 consultation, eir made four main comments with respect to repair time;

- The fact that travel time is longer outside market-driven fixed network competition areas.
- The fact that weather events can generate a relatively high volume of faults in a short period of time outside market-driven fixed network competition areas.
- The number of active lines per staff is lower in rural areas relative to urban.
- The changes in performances over time are consistent for the 3 areas.

293 While these points are all correct, the key point remains that if eir wished to achieve similar level of QoS in each of the identified areas, or more locally, it could allocate even more staff outside market-driven fixed network competition areas. Contrary to the fault occurrence rate, for which eir cannot easily change the share of overhead versus underground infrastructure as well as cannot easily change line length and cannot influence weather events, eir can allocate staff differently across areas with a view to improving repair times in greater affected areas.

294 ComReg notes and agrees with the analysis presented in the Second TERA report (Page 90) below:-

"*The longer repair times observed above seems to be explained by the way staff responsible for the maintenance of the access network is distributed across the country (see table below). It can be observed that the number of fault to be handled per staff member is significantly lower in market-driven infrastructure based competition areas compared to other areas."*

✂

Figure 18 TERA REport Table 11 ; Average number of faults per staff

295 To conclude, acting as a profit maximising company and absent any AFL QoS USO, eir would have financial incentives not to invest significantly in the short to medium term to at least keep the QoS at an acceptable minimum level at least in particular areas.

296 Analysing QoS performances in each area demonstrates that: ✂

4.1.1.2 Framework for QoS Targets

297 The second TERA report considered the options for AFL USO QoS.

- Set geographically de-average targets.

- How to define geographic areas.
- What is a fair and reasonable level of LFI (considering MDF specificities).
- Whether national targets should be maintained.
- Dynamic evolution of QoS obligations.
- Introduce service availability target (fault occurrence and fault repair time)
- Connection targets.

Geographically De-averaged Targets

298 There is a risk that eir may concentrate its efforts in competitive areas. To avoid this risk, in additional to nationally average QoS objective, it may be relevant to specify targets for specific areas.

299 Different levels of QoS throughout the country may be partially explained by technical differences. National QoS obligations alone may be insufficient to ensure an appropriate quality of service in all areas, considering the lower level of QoS currently experienced in the NBP area.

300 In a scenario of sub-national targets, it is necessary to define at which level of dis-aggregation or "unit" QoS obligations and target should defined. The dis-aggregation levels considered were:

- Per line.
- Per MDF.
- Per MDF group.

301 As there are more than 1,200 MDFs in Ireland, some of which are small and therefore single incidents for a given MDF can make the target very difficult to achieve, a more sensible approach was to group MDFs with similar features (weather conditions, line lengths etc.) and QoS obligations are imposed at group MDF level. In this way the obligation becomes easier to manage and monitor and the level of QoS less dependent on localised incidents.

302 As investment incentives vary depending on the level of competition intensity, incentives to invest and to improve QoS should be different in market-driven infrastructure based competition areas, NBP areas and eir only areas.

303 The most relevant approach to define groups of MDFs is therefore to define groups based on the competitive environment (.e. the three groups defined the first TERA report).

Fair and Reasonable Level of LFI (considering MDF specificities)

304 It was necessary to define what would be a fair and reasonable percentage line fault target for the three groups of MDFs. A number of approaches were considered.

- Monitor the evolution of the level of faults over the last years in order to assess which is achievable and what is not.
- Determine a formula that could be used to which enables the LFI to be predicted (based on the two main fault drivers (length of local loop and percentage overhead deployment and weather).
- The more appropriate option could be to impose the same level of QoS in each MDF group where the target is set based on the LFI within the MDF group with the lowest QoS level.

305 TERA proposed to predict the LFI per MDF group taking into account weather conditions, the line length and the percentage overhead infrastructure. This showed a correlation between the percentage overhead and faults per 100 lines per km. While the level of correlation is not high, the goal was to try to estimate a high level relationship which can be used to derive targets.

306 Weather is an additional fault driver and setting different formulas for different weather areas seems relevant. As the county of each MDF is known it is then possible to attribute relevant weather metrics for each MDF. ComReg notes that eir adopts a similar approach to modelling weather in eir's model. It is then possible to introduce "areas with similar weather conditions" based on wind and rainfall metrics and to derive a different relationship between LFI, line length and the percentage overhead infrastructure and assess whether the relationship has improved. Ireland can be divided into the areas depending on the wind and rain conditions.[75]

[75] See 2nd TERA report section 5.2.2 (Blue areas on the west coast facing a lot of rain and wind, orange areas , the rain is less heavy but the wind is very strong and green areas that have the most favourable conditions.).

307 It was then possible to recalculate the linear relationship between the share of overhead infrastructure within in an exchange and the number of faults per 100 lines per km for each of the newly defined areas. The resulting formulas were significantly different in the three weather areas, indicating that weather is a relevant fault factor. It is therefore relevant to define different formulas for target LFI in different areas. TERA then compared the predicted LFI for each of the three areas against the actual. TERA identified that imposing area specific obligations is less relevant in the eir only and market driven infrastructure based competition areas because the actual LFI is already lower than the predicted LFI.

Whether national targets should be maintained

308 TERA then analysed the pros and cons for the combination of national and local QoS obligations. This is set out in The Second TERA Report, Section 5.2.3. The recommendation was to set the sub-national target on the basis of the figures in areas with the poorest LFI and to retain the overall national target.

Dynamic evolution of QoS obligations

309 TERA examined whether there was a need for specific QoS obligations in areas where there are competing alternative infrastructure providing AFL service at affordable prices. This is set out in The Second TERA Report, Section 5.2.4. TERA was of the view that it could be possible to remove QoS obligations some months before the NBP is available, however it is not clear whether there will be sufficient visibility about when the NBP will be made available in a given area.

Introduce service availability target (fault occurrence and fault repair time)

310 TERA then considered whether it may be appropriate to introduce a single service availability target instead of LFI and repair time targets. TERA conclude that it would be likely to give more flexibility to the USP and enable it to make efficient decisions either by investing in reducing the number of faults or by making sure that the time of repair is short with overall similar levels of service availability for the end-user. TERA recommended a move to service availability target at both the national and sub-national level.

311 TERA's analysis examined the difference between the current LFI (✂) and the predicted LFI (✂) within the NBP area. TERA looked at the addition investment required in the NBP area to move from the current to the predicted LFI, by removing an estimated ✂ faults, which TERA calculated to be €✂M.[76]

312 This Decision now implements service availability targets, nationally and sub-nationally in the three defined areas.

Connection targets

313 TERA then considered whether it may be appropriate to introduce national and sub-national connection targets. TERA reviewed the relevant connection data and recommended keeping the national connection targets and imposing sub-national level connection targets at the level of each competition area.

National Broadband Programme (NBP)

314 The ECS market is likely to change significantly as a result of the NBP. ComReg does not anticipate that this will be fully implemented before the end of the AFL USO 5 year designation period, and ComReg anticipate that the full effect will not be realised for a minimum of 5 years. ComReg will however, carefully monitor and review these developments in order to evaluate what impact it may have on the provision of basic communication services within the State. The most immediately foreseeable event is the NBP contract award. Accordingly, ComReg will begin a review 3 months after the Department has concluded the NBP contract award process. On foot of this review, ComReg will decide if it needs to commence a new consultation process in relation to AFL USO in the state and will publish an information notice regarding this.

315 For clarity, ComReg has no decision-making role in the design of the NBP (including decisions on the mapping or tendering process) or the award of any contracts under the NBP. As such, these NBP decision-making matters are outside of ComReg's remit. The decision-making with respect of these matters is the responsibility of the DCCAE and the Minister.

316 Depending on the outcome of the NBP tender, eir' proposed copper transition could be underpinned in the future, by inter alia, a continuing of an SMP designation on eir or another operator applying for the New Network a set of New Network obligations under a contract with DCCAE, or a combination of both.

[76] [76] Second TERA Report, Section 5.2.2. page 62.

317 ComReg has already issued a Call for Input "*Transition from eir's copper network – Proposed Principles and Notification Procedures"* 16/01.

318 eir has submitted that it may no longer be appropriate for it to continue investing in certain areas where new infrastructure is envisaged to be fully deployed, in particular as a result of the NBP. eir has further submitted that should it not win part or all of the NBP, "…it would leave the eir network with a dwindling customer base of voice only customers and insufficient revenue streams to justify capital investment on its network items with a pay-back period longer than a few years."

319 ComReg assumes that some form of new infrastructure will be deployed in the NBP intervention area as part of the winning bid and that this would be rollout out in parallel to the existing copper access network. ComReg also assumes that in the intervening period between NBP contract award and completion of the NBP roll-out there may be a period during which dual running of the existing copper access network and the NBP network will be unavoidable.

320 Indeed, eir in its response to Consultation 15/89 states that: *"…If eir wins the NBP bid it will likely roll-out FTTH in the NBP area. This will not be a separate network by an upgrade of an existing network. In a relatively short period of time we would expect the network to migrate from copper to fibre. Post migration many of the existing assets such as telegraph poles will continue to support the network. …."*

321 eir has an obligation in several regulated markets not to withdraw access to services and facilities already granted (as well as obligations as per its current USO designation). Where copper based products are being provided under a USO, there will be a requirement that a suitable alternative product is offered and that the customer is not required to bear any significant cost in order to continue to avail of the service.

Costs

322 In the first TERA report, TERA highlighted that the level of LFI is very different in the 3 areas:

- ✂
- ✂
- ✂

323 Such disparities in LFI can largely be explained by the fact that a significant amount of infrastructure is underground in market-driven infrastructure-based competition areas (and therefore cables are less prone to faults) while a significant share of infrastructure is overhead in other areas. As indicated by eir in its response to the August 2015 consultation, the impact of weather events is an important consideration also for the level of LFI. The LFI in areas with less competition did not increase or decrease faster than in market-driven infrastructure-based competition areas. As a consequence, the disparities in the LFI between areas can be somewhat explained by technical reasons.

324 In the last 5 years, the level of investment in market-driven infrastructure-based competition areas increased significantly while the level of investment in NBP areas decreased significantly and the level of investment in eir only area slightly increased. This is reflected in investments per retail line fault by eir which have been significantly higher in market-driven infrastructure-based competition areas over the last couple of years. Despite a higher level of fault occurrence in areas with limited competition, TERA's analysis shows that eir tends to invest relatively more in areas with market-driven infrastructure-based competition (in terms of € per fault).

325 In contrast to the level of fault occurrence target, there are no technical reasons to believe that repair times should be better in areas with market-driven infrastructure-based competition, NBP areas and "eir only" areas. This is because the number of staff ensuring the maintenance of the access network can be adjusted and distributed according to the number of faults. Despite this flexibility, the share of faults repaired in less than 2 working days is significantly lower in NBP areas (✂% in 2013) as compared to market-driven fixed network competition areas (✂% in 2013).

326 The longer repair times seem to be explained by the way staff responsible for the maintenance of the access network is distributed across the country: the number of faults to be handled per staff member is significantly lower in market-driven infrastructure based competition areas compared to other areas.

327 In its response to the August 2015 consultation, eir made four main comments with respect to repair time;

- The fact that travel time is longer outside market-driven fixed network competition areas.

- The fact that weather events can generate a relatively high volume of faults in a short period of time outside market-driven fixed network competition areas.

- The number of active lines per staff is lower in rural areas relative to urban.

- The changes in performances over time are consistent for the 3 areas.

328 While these points are all correct, the key point remains that if eir wished to achieve similar level of QoS in each of the identified areas or more locally, it could allocate even more staff outside market-driven fixed network competition areas. Contrary to the fault occurrence rate, for which eir cannot easily change the share of overhead versus underground infrastructure as well as cannot easily change line length and cannot influence weather events, eir can allocate staff differently across areas with a view to improving repair times in greater affected areas.

329 ComReg notes and agrees with the analysis presented in the Second TERA report (Page 90) below:-

"*The longer repair times observed above seems to be explained by the way staff responsible for the maintenance of the access network is distributed across the country (see table below). It can be observed that the number of fault to be handled per staff member is significantly lower in market-driven infrastructure based competition areas compared to other areas."*

Table 11 - Average number of faults per staff

✂

Figure 19 TERA Report - Average number of faults per staff

330 To conclude, acting as a profit maximising company and absent any AFL QoS USO, eir would have financial incentives not to invest significantly in the short to medium term to at least keep the QoS at an acceptable minimum level at least in particular areas, as outlined at paragraph 296.

4.2 Approach Taken to Estimate Predicted Fault Occurrence – Respondents' Submissions

331 Consultation 16/31 asked the following question regarding the approach taken to estimate the predicted fault occurrence based on weather, line length and overhead percentage.

> Q. 13 Do you agree with the approach taken to estimate the predicted fault occurrence based on weather, line length and overhead percentage? Please provide reasons and evidence to support your view

332 Sky stated that: *"… Any approach to this matter necessarily has some degree of subjectivity/arbitrariness attached to it….. However Sky considers the general approach taken by TERA to be sensible and grounded in sound reasoning but it is important that a Line Fault Index and repair performance metrics are maintained separately under the proposal".*

333 BT, ALTO and Vodafone do not agree with the three TERA criteria taken to estimate the predicted fault occurrence, indicating that other additional criteria, such as the level of investment, should be included.

334 BT stated that*: "…We do not agree with the TERA three criteria for predicting Line Fault Index. Whilst these components are clearly influential there are other criteria that should be included. For example, the level of investment within the access network in maintenance and new plant is important (could be linked to agree of the poles etc.). We therefore consider TERA should modify the model to test against maintenance investment levels on a regional basis."*

335 ALTO stated that *"… While the components are clearly influential there are other criteria that should be included. For example, the level of investment within the access network in maintenance and new plant is important (could be linked to the ages of the poles etc.). eir has been the subject of economic studies looking at how some incumbents can be asset stripped and the continuing changing ownership at eircom has led to periods where we believe underinvestment was made in the access network. eir may claim a high proportion of new poles following the 2014 storm; however what percentage of these new poles were due to potential underinvestment in maintenance. ALTO considers and strenuously submits that TERA should modify its model to test against maintenance investment levels on a regional basis…. ALTO also submits that TERA should benchmark the network LFI against similar networks."*

336 Vodafone stated that: *"… Vodafone disagrees with the approach taken by ComReg and TERA to the Line Fault Index – LFI. The criteria do not take account of the level of investment within the access network. eir has been reducing resources from fault repair to the bizarre outcome that staff dealing with the provision of services for wholesale customers were re-allocated to fault repair last winder during what eir called "Storm mode". eir wholesale makes returns well in excess of other incumbents and have reduced capex to ensure the financials are attractive for new investors. This scenario is not in line with a commitment to provide decent response to faults. Vodafone is seriously concerned at the performance of the eir network and believe ComReg cannot assess performance or progress without some form of benchmarking in setting fault targets."*

337 eir stated that: *"the weather parameters used consist of count data generally regarded as less statistically useful than continuous data which is available for both wind and rain…the TERA report derives (very basis) statistical relationships/correlation between faults per 100 lines per km and the % of overhead cables for each of these weather type areas. In doing so it aggregates MDFs into "deciles"…….. by aggregating into deciles a significant amount of information is lost and the analysis will appear to show a higher correlation (R2) than would otherwise be the case… "… TERA's analysis to derive the fault rate targets is conceptually flawed and shows a fundamental misunderstanding of statistical analysis. …..To summarise, the TERA analysis uses the MDFs to derive a relationship, applies that relationship back to individual MDFs and then aggregates these… Thus TERA's analysis derives fitted values rather than "predicted" values. Moreover, as can be seen from the graphs that TERA present on page 61 of the report, there are large differences between the fitted outcomes (as represented by the lines) and the actual outcomes. …..The combination of using MDF deciles and the missing variables certainly explains the differences between TERA's "predicted LFI" at the area type level and the actual 5 year average i.e. those differences are not to do with anything fundamental but, rather are due to errors in the analysis and the limited explanatory power of the model…..There is no sensible basis for using the fitted values that TERA has derived. There is nothing predictive about them at all and the analysis itself is fundamentally flawed. That ComReg is planning to regulate eir, imposing 10s of €millions of cost, on the basis of such flawed analysis is highly concerning*".

4.3 Approach Taken to Estimate Predicted Fault Occurrence –ComReg's Response

338 ComReg notes the views of respondents, in respect of the approach taken to estimate the predicted fault occurrence based on weather, line length and overhead percentage, and in particular:

- level of investment within the access network.
- use of count data weather parameters.
- Predicted and fitted LFI values.

339 ComReg now addresses each of these elements in turn.

Level of Investment within the Access Network

340 Both BT and ALTO stated that the level of investment within the access network and new plant should be taken into account to estimate the predicted fault occurrence and that TERA should modify its model to test against maintenance investment levels on a regional basis.

341 The revised copper access model (CAM) already takes into account eir's actual costs the level of investment within the access network at MDF level.

342 The purpose of TERA's analysis in the second report is to assess the level of faults that would arise in the context of a number of external conditions (e.g. weather, line length and overhead percentage), as these are elements that eir has limited control over.

343 The level of investment within the access network is completely within eir's control. In TERA's modelling, investment is treated as an exogenous explanatory variable. TERA's modelling approach therefore helps to identify any potential investment discrimination policy, though the identification of predicted performance within each of the three sub-national areas (market driven infrastructure-based competition, eir only and NBP).

344 The first TERA report, Section 4.7, considered eir's possible investment strategies with respect to QoS and concluded that without USO QoS, eir would have financial incentives not to invest significantly in the short to medium term to reduce the number of faults.

345 The Second TERA report, updated assumptions to take into account the information provided by eir in response to Consultation 15/89. The updated assumptions included information on the future evolution of the number of working lines and eir's investments. It also concluded that eir, would have financial incentives not to invest significantly in the short to medium term to reduce the number of faults.

Use of Count Data Weather Parameters

346 eir stated that it would have been better for ComReg to use continuous weather inputs (available for both wind and rain), as count data is generally regarded as less statistically useful than continuous data.

347 ComReg and TERA has used the best available data at the time, in the preparation of the relevant reports and consultations.

348 Subsequent to Consultation 15/89, ComReg issued an information request to eir, requesting eir to provide any information it has in respect of weather conditions affecting QoS at MDF level. eir responded to ComReg stating that it did not have weather impact data that could be provided at MDF level.

349 In the absence of any weather information being provided by industry, TERA therefore relied on publically available count data weather information published by Met Eireann on the following metrics:

- number of days with rainfall >10mm;
- number of days with a maximum 10-min; and
- mean wind speed >=15m/s.

These metrics were available for the 4 years, 2012 to 2015, by each of 23 sites/stations within Ireland.

350 TERA adopted the following approach to map the Met Éireann information.

- The figures from the closest measuring station(s) were allocated to each county. Assumptions were made in the absence of county by county data, in order to build a pragmatic and as robust as possible approach.
- As the county of each MDF is known, it was possible to attribute relevant weather metrics for each MDF.
- For each of the measuring stations the rainfall and wind speed metrics were applied to the MDF groups. This showed three significantly different weather areas, where weather appears to be a relevant fault driver, and therefore relevant to define three different formulas for target fault occurrence (LFIs) in different areas.

351 Pursuant to information received from eir, in response to a subsequent 13D Information Request issued to eir, highlighted that eir's own weather analysis is based on count data and that eir also applies very similar principles to those used by TERA, when modelling weather.

352 ComReg is therefore of the view, based on the aforementioned, that ComReg has implemented a robust approach in light of the available weather information (count data), at the time.

Predicted and Fitted Fault Occurrence (LFI) Values

353 eir stated that: *"… by aggregating MDFs into deciles a significant amount of information is lost and the analysis will appear to show a higher correlation (R2) than would otherwise be the case*".

354 ComReg addresses eir's comments by briefly describing:

(1) how Comreg sought to identify any potential relationships;

(2) the rationale for ComReg's approach; and by

(3) highlighting that ComReg cannot create a correlation that does not exist.

Identification of Any Potential Relationships

355 For each of the 3 weather areas, exchanges have been classified in deciles based on the % of overhead infrastructures (e.g. 10% of lines from exchanges with a higher % of overhead infrastructure have been grouped together etc.) in order to identify any potential relationship between the Line Fault Index and the % of overhead infrastructure.

Approach Rationale

356 The rationale was to simplify the approach and to consider groups that have a minimum number of lines in order to eliminate outliers. For example, some exchanges have less than 50 lines. Therefore, any repair works on these lines would turn the exchange into an outlier for the purposes of this analysis.

Correlation

357 The use of deciles made it easier to identify the relationship between high level faults and % overhead. In principle, the use of deciles could increase the correlation. It could not however create a correlation that does not exist.

358 eir stated that the QoS values are more "fitted" than "predicted" and that there is no sensible basis for using the fitted values that TERA has derived. eir also state that the analysis itself is fundamentally flawed and that ComReg is planning to regulate eir, imposing 10s of millions € of cost.

359 For the avoidance of doubt, the national targets proposed in Consultation 16/31 was set having regard to the prevailing national target at the time[77] (converted to availability). Neither fitted or predicted QoS values were used to derive the national targets proposed in Consultation 16/31.

[77] PIP3

360 ComReg now address eir's comments by summarising briefly the principles of our sub-national targets approach, clearly demonstrating that, regardless of which approach is used, the results are broadly similar.

361 The Second TERA report, Section 5.2.2 considered what the fair and reasonable level of target Fault Occurrence (LFI) is, considering MDF specificities. The report considered a number of approaches:

- **Approach 1** - Monitor the evolution of the level of faults over the past years in order to assess what service availability level is achievable and what is not;
- **Approach 2** - Determine a formula which:
  - assesses the level of LFI that eir achieves, on average in given conditions (based on the length of the local loop, the percentage of overhead deployment, and taking account of weather conditions); and
  - imposes the same level of QoS in each MDF group, where the target is set based on the LFI within each MDF group, with the lower QoS level.

362 TERA used both of the aforementioned approaches to estimate fault occurrences at the sub-national level. TERA compared the current LFI and the predicted LFI in each area. TERA noted that the results were very sensitive to the evolution of the LFI. TERA therefore also considered the 5 year LFI average.

363 It is noteworthy that eir, in its response to Consultation 16/31, while challenging the predictive fault occurrence approach, provided no proposed alternative methodology. eir's own model, submitted in response to ComReg's information request, also predicts future fault occurrence (LFI) based on past performance.

364 Figure 20 below shows the results for both the 5 observed (actual) year sub-national average and the predicted fault occurrence approaches. It may be argued that the values derived by TERA in respect of sub-national LFI are more fitted than predicted.

365 Regardless of which approach is used, the results are broadly similar. ComReg is therefore of the view that the principle of TERA's approach is reasonable.

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Figure 20 observed (actual) 5 year sub-national average and the predicted fault occurrence

366 ComReg has now decided to set the sub-national targets at a maximum of 0.607 working days outage per line (99.834%), taking into account the observed (actual) 5 year (2009-2014) sub-national averages fault occurrence levels, as opposed to the predicted targets by TERA, and also having regard to eir's submission/eir's model.

	Service Availability Sub-National	Sub-National Maximum working days outage per line
Consultation 16/31	99.860%	**0.511**
eir's model - claimed adjustment	-0.050%	**0.129**
ComReg's Decision - adjustment	-0.026%	**0.096**
Final Target	99.834%	**0.607**

Figure 21 Sub-national Service Availability - Maximum working days outage per line

367 Claims by eir that ComReg is planning to impose 10s of millions of euros in cost, on the basis of flawed analysis, is addressed in ComReg's response to Q17.

4.1.2 Sub-national Targets (3 areas - TERA reports) – Respondents' Submissions

368 Consultation 16/31 asked the following question regarding whether sub-national targets should be in accordance with the 3 areas defined in the TERA reports.

> Q14. Do you agree with the preliminary view that any sub-national targets should be in accordance with the 3 areas defined in the TERA reports? Please provide reasons and evidence to support your view.

369 The majority of respondents (SKY, BT, ALTO and Vodafone) agreed that any sub-national targets should be in accordance with the three areas defined in the TERA report (the market driven infrastructure based competition, eir only, and NBP areas), for the reasons outlined by TERA.

370 Sky stated that: *"…Sky considers the sub-national targets should be in accordance with the 3 areas defined in the TERA report for the reasons outlined by TERA. It is clear that notwithstanding regional differences in factors like over-ground versus underground cabling, line length etc. that eircom has clearly neglected investment in NBP areas due to the lack of competitive pressure. As such their under-performance in these areas merits special attention through QoS based targets in order to protect consumers in these areas."*

371 BT stated that: *"…we agree with the preliminary view that any sub-national targets should be in accordance with the 3 areas defined (Eir only, NBP, and market driven infrastructure) as defined in the TERA reports. We agree with the TERA analysis of the incentives to invest and to provide certain service levels is increased where there is competition."*

372 ALTO stated that: *"…ALTO agrees with ComReg's preliminary view that any sub-national targets should be in accordance with the 3 areas defined (Eir only, NBP, and market driven infrastructure) as defined in the TERA reports. ALTO agrees with the TERA analysis of the incentives to invest and provide certain services levels is increased where there is competition."*

373 Vodafone stated that: *"…Vodafone agrees with ComReg's preliminary view that any sub-national targets should be in accordance with the 3 areas defined (Eir only, NBP, and market driven infrastructure) as defined in the TERA reports."*

374 eir disagrees that any sub-national targets should be in accordance with the 3 areas defined within the TERA reports. eir stated that: "… *the attempt to clash MDFs with the three defined areas results in a mishmash of the three areas, within Open eir's MDF regions*." eir is of the view that segregation by MDF fails to isolate each of the areas which TERA has attempted to outline (i.e. that within each of the 3 TERA defined areas, there are individual cases and/or small areas, where this classification is not correct).

4.1.3 Sub-national Targets (3 areas - TERA reports) – ComReg's Response

375 The majority of respondents (SKY, BT, ALTO and Vodafone) agreed that any sub-national targets should be in accordance with the three areas defined in the TERA report (the market driven infrastructure based competition, eir only, and NBP areas), for the reasons outlined by TERA. eir disagrees.

376 ComReg addresses eir's comments by:

(1) briefly describing how the sub-national targets are set in accordance with the three areas defined in the TERA report; and

(2) how eir's concerns are already accounted for.

Definition of the Three Areas (market driven infrastructure based competition, eir only, and NBP)

377 The first TERA report, Section 3.2.3 outlined that for the purposes of TERA's assessment, broadly three main areas can be identified.

- Areas where eir faces greater market-driven infrastructure-based competition, including, from Vodafone/ESB/SIRO or UPC (referred to as "market-driven infrastructure based competition areas").
- The anticipated NBP intervention area where a high capacity broadband access network will be made available through Government subsidies (referred to as "NBP areas").
- Areas where eir faces no competition from any fixed infrastructure, but could face competition from mobile networks providing fixed access solutions ("eir only" areas), especially on forward looking basis.

378 These areas were then manually mapped onto eir exchanges, based on publically available data.

379 It is important to note that these 3 areas were defined in the specific context of USO – by looking at the potential competitive constraints, demand and supply side developments, on the delivery of AFL USO, amongst other things.

eir's Concerns

380 TERA's analysis (first TERA Report) recognises that not all lines within an exchange area will be contained within just one of these 3 areas. The map and table in Section 3.2.3 of the first TERA report, provides a high level view of the coverage of the different network infrastructures in place in Ireland.

381 The TERA analysis[78] explicitly notes that*: "… in reality not all lines within an exchange area would be in just one of the three areas, and note that manual mapping is not precise and therefore a 10% range is set instead of a unique figure."*

382 The TERA analysis provides the correct "big picture" using eir exchange areas to provide the necessary granularity. ComReg accept that these areas may not be 100% homogenous, however they do provide the best proxy.

383 ComReg notes that while eir in its response disagreed that sub-national targets should be set in accordance with the 3 areas defined in the TERA reports, eir did not propose any alternative method.

384 ComReg does not agree with eir's view. ComReg has decided that sub-national targets will be in accordance with the three areas defined and outlined in the TERA report, for the reasons outlined above.

4.1.4 Service Availability Target – Respondents' Submissions

385 Consultation 16/31 asked the following question regarding a service availability target.

> Q15. Do you agree with the preliminary view that fault occurrence targets and repair targets should be combined to provide a service availability target? Please provide reasons and evidence to support your view.

[78] TERA First Report*: "Forward looking review of future AFL element of USO in Ireland" July 2015* Ref: 2015-22DB-ComReg-Scope of USO.

386 The majority of respondents (Sky, BT, ALTO, and Vodafone) disagree that fault occurrence targets and repair targets should be combined to provide a service availability target and were of the view that service availability targets should not replace the individual fault occurrence and fault repair components. Service availability is generally viewed by the majority of respondents, as a retrograde step in the context of SLAs at the wholesale level.

387 Sky stated that: *"…Sky has serious reservations about this proposal, not least because of the implied extremely lax fault occurrence rate in TERA's proposal of 99.86%availability. ….Maintaining an average repair rate of 1.6 days implies a fault occurrence of 31 per 100 lines at an availability rate of 99.86%. This represents a significant move in the wrong direction and is remarkable lacking in ambition by comparison to D02/08 which anticipated a LFI of 12.5 by 2012. ….. In Sky's view no justification has been offered for this retrograde step…eir's short to medium term ownership/sale ambitions are therefore a relevant consideration for ComReg in determining whether or not they introduce a QoS target based on availability or its individual components. Sky consider there are compelling reasons to maintain QoS targets based on individual components in order to promote a positive customer experience on both the occurrence and repair of faults."*

388 BT stated that:"*…we consider this a most unhelpful proposal which has forgotten a key stakeholder i.e. the customer. There are two key parameters for the customer here. (1) The customer does not want his line to go faulty (2) if it goes faulty, it must be fixed quickly. The problem with having a single availability figure is this is not good at dealing with events – i.e. faults are events and must be managed as an event i.e. a fix time of X days/hours. The industry in Ireland has spent several years moving eir away from availability SLAs within the wholesale contracts given problems with managing such SLAs such as working hour's definition. Whilst we can see what TERA are trying to do we do not consider this approach end customer friendly and suggest we go back to LFI SLA per area and national event based SLAs with an event based service credit regime."*

389 ALTO stated that: *"…ALTO considers this a most unhelpful and un-useful proposal and is to be found wanting for care for a/key stakeholder in this debate, i.e. the end-user/customer."….. "While we can see what TERA is trying to do, we do not consider this approach end user friendly and suggest we go back to LFI SLA per area, an event based service credit regime"*.

390 Vodafone stated that*: "Vodafone disagrees with this proposal, it does not add any value as eir need to be measured on fault occurrence and repair separately. Vodafone believes that this is a retrograde steps industry has spent several years moving away from availability SLAs within wholesale contracts given the problems with eir SLA working hour definition issues that creep in – it's also difficult to set meaningful SLA targets.*"

391 eir stated that: *"…combination of the targets presents façade of flexibility. In reality eir will be forced to invest. If eir were to attempt not to invest, it would face an exponential increase in line faults. This would be compounded by the fact that the bulk of these faults would manifest during adverse weather conditions. Such conditions prevail during the winter months, therefore eir would be forced to increase staff numbers across it maintenance crews far beyond the current efficient level in order to address growing level of faults that occur in the winter months in particular".*

392 eir stated that: *"…eir is planning to retire its copper network and this demands a managed wind-down of investment and the near term retirement of copper lines. ComReg's proposed continuation of stringent QoS targets and USO access criteria which are biased to the degree of imposing a copper solution would have the effect of forcing eir to inefficiently prolong the operation of the copper network, with an escalating fault rate and the choice of inefficiently high staff numbers of somewhat less costly yet highly inefficient network investment in order to keep a pace with QoS requirements."*

4.1.4.1 Service Availability Target - ComReg's Response

393 ComReg notes the views of respondents, in respect of whether fault occurrence targets and repair targets should be combined to provide a service availability target, and in particular the following:

- Other respondents views that individual component target structure should be retained
- Other respondents views that service availability is perceived as a retrograde step in the context of wholesale SLAs.
- eir's view that service availability targets present a façade of flexibility.
- eir's view that there would be inefficient prolonging of the operation of the copper network.

394 ComReg now addresses each of these elements in turn.

Retention Individual component target structures

395 **LFI:** measures the number of faults occurring per one hundred lines. It is a proxy measure for the quality of an underlying network. It is an indicator as to the level of *preventative maintenance* being undertaken within a network. ComReg recognises that no network will be completely fault free and the targets define what an appropriate/tolerable level of fault occurrence should be.

396 Repair time measures the length of time it takes from when a fault is reported until it is repaired, and is a measure of the targets of reactive maintenance being undertaken. In recognition that no network will be completely fault free, the targets define what the appropriate time taken to repair faults targets should be.

397 To date, it has been appropriate to set and measure targets against each of these individual components, to ensure (1) an appropriate balance of investment and operational cost in the current network; and (2) that reasonable requests for access at a fixed location are met at an appropriate quality of service.

398 Both ComReg and respondents recognise that the market within the NBP area is in transition and that there is a need to ensure that end-users are not are disadvantaged during this transition period. The introduction of service availability now combines (1) the level of line faults (fault occurrence) and (2) the time needed to repair line faults (fault repair) into overall service availability targets, providing investment flexibility.

399 This flexibility is particularly important during the NBP transition period. Service availability targets actively encourages and incentivises commercial investment and innovation in new networks, by not requiring any unnecessary investment in current generation networks and without ultimately inhibiting the retirement of that network, where appropriate.

It is important to note that while there are no longer individual LFI and repair time availability targets set, eir as the USP, will continue to have an obligation to measure and report on each of these metrics, in the calculation of the national and sub-national service availability targets levels.

400 Retaining both an LFI and average repair time targets on a forward looking basis would not achieve our policy objectives. eir would have very limited discretion to balance the level of investment with the level of operating expenditure, which could potentially result in unnecessary investment in the current generation network and could dis-incentivise commercial investment and innovation in new networks.

401 Based on the aforementioned ComReg does not agree that the individual components should be retained as targets, in preference to service availability targets.

Perception of Service availability (Retrograde Step)

402 A number of respondents cited a move away from availability measures within wholesale SLAs as part of their rationale for rejecting USO service availability targets.

403 ComReg is of the view that this is an entirely separate matter.

404 For clarity, in respect of Wholesale SLAs, the current dispute relates to contractual agreements for wholesale service performance levels between eir and the parties to the dispute[79].

405 It is ComReg's view that the AFL QoS is a separate matters and that nonetheless it can co-exist with wholesale SLAs.

406 Based on the aforementioned, ComReg does not agree with the statements and reasoning that service availability is a retrograde step.

Service Availability Targets - eir's claim of façade of flexibility

407 eir claim that it the target would force it to invest, as if it attempted not to invest it would face an exponential increase in line faults and *"would be forced to increase staff numbers across its maintenance crews far beyond the current efficient level."*

408 ComReg addresses eir's views by:

1) outlining the greater investment flexibility service availability targets provide over individual LFI and repair time targets:
2) re-iterating eir's current capability to cost recover copper access maintenance costs, through ComReg's revised copper access model[80] , via SB-WLR, and LLU pricing, where appropriate.
3) By explaining that the measures provide an incentive for eir to migrate end-users to its new network.

[79] "Final Determination in a dispute between (i) BT Communications Ireland Limited, Magnet Networks Limited, Sky Ireland Limited and Vodafone Ireland Limited and (ii) Eircom Limited". Document No. 17/08, published on 31 January 2017.

[80] ComReg 16/39, "Pricing of eir's Wholesale Fixed Access Services: Response to Consultation Document 15/67 and Final Decision" D03/16, 18/5/16 page 24. 2.44 and page 218, 12.17.

409 It would appear that the appropriate approach would be to minimise preventative maintenance and to ensure that sufficient resources are provided to ensure that when faults occur in the network, that they are dealt with and resolved quickly.

410 The introduction of service availability provides eir with the flexibility to balance investment costs with operational costs. It also provides eir with greater commercial freedom to choose the appropriate level of opex/capex expenditure between preventative and reactive maintenance on the existing network.

411 ComReg's revised copper access model[81] (CAM) reflects the network structure and associated cost allocations of the copper access network. This model is used to support all wholesale copper access related product pricing such as SB-WLR and LLU, ensuring that relevant costs are recovered appropriately.

412 Based on the aforementioned, ComReg does not agree with eir's statement that the combination of service availability targets present a façade of flexibility.

Copper Network - claim of inefficient prolonging

413 eir has submitted that it may longer be appropriate for it to continue investing in certain areas where new infrastructure is envisaged to be fully deployed, in particular as a result of the NBP. eir has further submitted that should it not win part or all of the NBP, "…*it would leave the eir network with a dwindling customer base of voice only customers and insufficient revenue streams to justify capital investment on its network items with a pay-back period longer than a few years*."

414 ComReg has already issued a Call for Input "*Transition from eir's copper network – Proposed Principles and Notification Procedures"* 16/01.

415 It is important to note that eir has an obligation in several regulated markets not to withdraw access to services and facilities already granted (as well as obligations such as USO). ComReg has not up to now mandated a specific timeframe for the prior notification of any intended withdrawal of access to eir's copper access network. However, ComReg signalled that a notice period of 5 years may be reasonable in the context of eir exchanges which had been unbundled, but acknowledged that there may be circumstances within which a shorter timeframe may be appropriate.[82]

[81] ComReg 16/39, "Pricing of eir's Wholesale Fixed Access Services: Response to Consultation Document 15/67 and Final Decision" D03/16, 18/5/16 page 24. 2.44 and page 218, 12.17.
[82] ComReg Call for Input 16/01 Transition from eir's copper network , paragraph 18.

416 The principle of technological neutrality allows the USP to choose the optimum method of providing access and service. eir therefore does not have to maintain a national narrowband network to deliver AFL USO QoS. It can use NGA or purchase wholesale from Alternative Infrastructure providers (its own or others, including NBP) and associated services, where appropriate to deliver on its USO obligations.

417 ComReg is of the view that the introduction of national and sub-national quality of service targets will not require eir to invest extensively and exclusively in its copper network. ComReg has set national and sub-national service availability targets as opposed to LFI and fault repair time targets.

418 ComReg has not specified the technology to be used in providing voice services. ComReg has altered appropriate definitions so that, if appropriate, they can encompass other technologies, including fibre which may be used to provide access at a fixed location instead of the current generation network. This provides the necessary innovation and investment incentives and flexibility to eir to accelerate any desired network deployment and/or replacement, with the mix of proactive and reactive maintenance being a commercial eir decision.

419 Based on the aforementioned, ComReg does not agree with eir's statement that service availability targets would inefficiently prolong the operation of the copper network.

420 In the preceding sections ComReg has addressed the views of respondents.

421 ComReg is satisfied that its decision that to combine fault occurrence targets and repair targets to provide national and sub-national service availability targets is well reasoned, proportionate and justified.

4.1.5 Service Availability Targets (National/Sub-National) – Respondents' Submissions

422 Consultation 16/31 asked the following question regarding whether a service availability target should be set nationally and sub-nationally by area.

> Q16. Do you agree with the preliminary view that a service availability target should be set nationally and sub-nationally by area? Please provide reasons and evidence to support your view.

423 Notwithstanding the majority of respondent's views on the introduction of a service availability target, Sky, BT and ALTO can see how service availability targets could be set on a sub-national basis, given the type of network (rural overhead versus urban underground).

424 Sky stated that: *"…Sky considers that service availability target should not be set in preference to a QoS against the individual components of service availability target. Irrespective of ComReg's ultimate determination on this point we consider it appropriate that targets are set on a sub-national basis given the type of network (rural overhead versus urban underground)."*

425 BT stated that: *"…" we believe that the concept of availability should be dropped, but we could see how the LFI and targets could be set on a sub-national basis given the type of network (rural overhead vs urban underground). However, we consider the event based repair SLAs should continue on a national basis."*

426 ALTO stated that: *"…ALTO considers that the concept of availability should be dropped entirely. ALTO can see however, how the LFI and targets could be set on a sub-national basis given the type of network involved. However, ATO considers that the event based should continue on a national basis."*

427 Vodafone stated that*…" that Vodafone are of the view that this concept is misjudged and should not be perused.*"

428 Virgin Media stated that*: "…that onerous performance targets can have significant impact on the cost of USO. A reasonable approach should be taken when setting service availability targets which balances cost impact against the cost burden associated with the specific target"*.

429 eir referred to its response to Q17.

4.1.5.1 Service Availability Target (National/Sub-National) - ComReg's Response

430 In ComReg's response to Q15, ComReg addressed respondents views in respect of whether fault occurrence targets and repair targets should be combined to provide a service availability target, and in particular the following:

- Other respondents views that individual component target structure should be retained.
- Other respondents views that service availability is perceived as a retrograde step in the context of wholesale SLAs.

- eir's view that service availability targets present a façade of flexibility.
- eir's view that there would be inefficient prolonging of the operation of the copper network.

431 ComReg remains unpersuaded by these views. ComReg has decided that that fault occurrence targets and repair targets will now be combined to provide national and sub-national service availability targets.

432 ComReg has outlined the reasons for its decision to introduce service availability targets in Sections 3.3.4 and 3.3.5.

433 Notwithstanding respondents' views on the introduction of service availability targets, SKY, BT and ALTO acknowledged how service availability targets could be set on a sub-national basis, given the type of network (rural overhead versus urban underground).

434 ComReg has decided to introduce both national and sub-national service availability targets, which are forward looking and dynamic and give appropriate flexibility in terms of investment and innovation to the USP, while safeguarding the interests of consumers.

4.1.6 Service Availability – Level of Targets (National and sub-national) - Respondents' View

435 Consultation 16/31 asked the following question as to what the service availability targets should be, nationally and sub-nationally.

> Q17. Please provide reasons and evidence to support your view. If not, what alternative availability targets do you believe are justified and why?

436 As previously discussed, the majority of respondents (Sky, BT, ALTO, and Vodafone) disagree that fault occurrence targets and repair targets should be combined to provide a service availability target[83] and that service availability targets should not be set in preference to QoS against individual components.

437 Sky stated that: *"…Sky considers that service availability target should not be set in preference to a QoS against the individual components of the service availability target (see response to Q15). ..."*

[83] Both the LFI and the fault repair metrics will still need to be captured and reported by the USP (as they are required to calculate the service availability performance against the new service availability target(s))

438 BT stated that: *"…. We do not agree to use availability targets for the sub-areas for the reasons given in our response to Q15. We would agree to varying the LFI targets, but the same event based repair targets nationally."*

439 ALTO stated that: *"…. ALTO does not agree to using availability targets for the sub-areas for the reasons given in our response to Q15. ALTO can agree to varying the LFI targets, but based upon the same event based repair targets nationally."*

440 Vodafone stated that: *"…. Vodafone disagrees with the service availability target proposed by ComReg and consider that the use of service availability as a measure is flawed."*

441 Virgin Media stated that: *"…. …in setting service availability targets, ComReg should be mindful that onerous service availability targets can have significant implications for the cost of USO, and therefore on the impact of the market and on existing and on existing broadband consumers. A reasonable approach therefore should be taken by ComReg when setting service availability targets, which balances the customer impact against the cost burden associated with the specific target."*

442 eir stated that: "……..*eir is of the view that a QoS focus is inappropriate for an end of life copper network…….Without prejudice to the disproportionate proposal to continue to impose QoS targets eir objects strongly to further specify the proposed targets on a national and sub-national basis ….*"

4.1.6.1 National Service Availability – Level of Targets

443 Sky and eir were the only respondents who responded specifically on the proposed levels of the national service availability targets.

444 Sky stated that: *"…In the event that ComReg ultimately determine that it is still minded to go with a service availability target, then, at a minimum, it should be based on average repair rate and at least a LFI equivalent to the level eircom was supposed to have achieved by 2012. This would give a service availability QoS target of 99.5%. Based on the components of the equation we can see that this is not an overly ambitious target given that (a) the current repair rate is being used and (b) a LFI that was supposed to be achieved several years ago is being proposed. Sky considers 99.95% should be the minimum service availability target sought."*

445 (ii) eir stated that: "……..*Without prejudice to the disproportionate proposal to continue to impose QoS targets eir objects strongly to further specify the proposed targets on a national and sub-national basis….*"

4.1.6.2 Sub-National Service Availability – Level of Targets

446 eir was the only respondent who responded specifically on the proposed levels of the sub-national service availability targets.

447 eir stated that:

> (iii) *"…without prejudice to eir's objections to the continued imposition of QOS targets and in particular the proposed sub-national targets on the basis that they cannot be considered to be objectively justified or proportionate,*

448 *(iv) ….crucially the formula used is mathematically incorrect. The speed of repair is measured in terms of working days whereas the formulae used by TERA calculate based on an assumption that speed of repair is measured in calendar days……*

449 *(v)…it is logistically not possible for an efficient operator to target its network repair resources in the way that TERA has proposed, therefore any improvement in performance in NBP areas can only be achieved by improving performance in all three of the areas defined by TERA….*

450 *(vi) …Due to the existence of random weather events eir would have to plan to exceed the target each year in order to compensate for those years in which unforeseen weather events make it impossible for eir as an efficient operator to achieve the targets. In our analysis we have applied a parameter of 1 in every four years bring weather such random extreme weather events. Therefore we would have to exceed the target 80% of the time and exceed it sufficiently to compensate for the remaining 20% of the time that the target would be missed…….investment levels that achieve average availability performance equal to the targets will result in targets being missed 1 of every two years. To achieve a better confidence of hitting the target more often more investment is required to achieve average performance that is better than targets…*

451 *(vii)… …… that the cost of €8.6m (5 year period) in achieving the availability target in the NBP area, proposed by the second TERA report, massively underestimates the projected cost that eir would incur in meeting the proposed 99.86% proposed NBP sub-national target. Eir has projected the cost would amount to €3M."*

452 (viii) *… ComReg has not provided a sound basis to justify the proposed quality of service regime. At a time when the copper network is being retired, the QoS regime should be relaxed or removed, however through the introduction of sub-national areas in ComReg's proposed QoS regime, ComReg would in effect be imposing significant additional investment costs on eir to improve the performance of the legacy copper network specifically in rural NBP areas. The proposed QoS regime relies on the assumption that eir will maintain a legacy narrowband copper network in parallel with next generation networks that are designed to deliver high speed broadband whether state subsidised (as will be the case in NBP areas) or otherwise. Irrespective of the NBP tender outcome eir Retail will seek to migrate customers to the new fibre network. We expect other retail service providers to migrate customers to the new fibre network…*

4.1.6.3 Service Availability – Level of National Targets - ComReg's Response

453 The rationale for adopting service availability targets has already been set out in section 2 and outlined in ComReg's response to Q15.

454 ComReg has addressed respondents' views in respect of whether fault occurrence targets and repair targets should be combined to provide a service availability target, and in particular the following views:

455 ComReg does not agree with these views. ComReg has decided that that fault occurrence targets and repair targets will now be combined to provide service availability targets.

456 ComReg notes the views of Sky and eir, in respect of the level of the national service availability target, and in particular:

(i) Level of ambition of the national service availability targets

(ii) eir's claim that the proposal to continue to impose QoS is disproportionate

457 ComReg now address each of these elements in turn.

(i) Level of ambition - National Service Availability Target Level

458 Sky expressed concern in respect of the level of ambition of the national service availability target.

459 This proposed annual national service availability target of 99.94% or a maximum of 0.219 working days outage per line, outlined in Consultation 16/31 was proposed based on PIP 3/D02/08 targets and observed performance, translated into service availability targets.

460 In D02/08 the target LFI was set at 12.5 and the two days repair target is set at 80%. Along with the other repair targets this results in a national average repair rate of 1.7 days which gives a national service availability target of a maximum of 0.213 working days outage per line[84].

461 In PIP 3 the target LFI was set at 14.5 and the two day repair target is set at 82%, resulting in a national average repair rate of 1.6 days, which gives a service availability of a maximum of 0.236 working days outage per line [84].

462 The aforementioned clearly demonstrates the greater flexibility of service availability. eir has the flexibility to choose how best to balance preventative maintenance (investment) with operating expenditure (Opex).

463 Both ComReg and service providers recognise that the market within the NBP area is in transition and that there is a need to ensure that end-users are not are disadvantaged during this transition period.

464 Service availability targets actively encourage and incentivise commercial investment and innovation in new networks, by not requiring any unnecessary investment in current generation networks and without ultimately inhibiting the retirement of that network, where appropriate.

465 The national minimum service availability target sets the minimum service availability target to be achieved nationally. This provides eir with further flexibility within each of the sub-national areas, in how the national service availability target is achieved. The over achievement in one or more sub-national areas, may be off set against the under achievement in other sub-national area(s), provided always, that the minimum sub-national target is achieved within each of the three individual sub-national areas.

[84] For illustration only - Decimal places used are less than those set out in actual calculation specified in the Schedules to this Decision.

466 In this way, ComReg is ensuring that national performance targets are achieved, while ensuring that performance does not deteriorate further within the worst performing areas.

467 Having review the relevant submissions and as set out in Section 2, ComReg has decided to set the national service availability target at maximum of 0.237 working days outage per line (99.935%).

(ii) eir's claim - disproportionate Proposal - Continued Imposition of QoS

468 It is useful to understand the background to QoS, when considering eir's claim that it is disproportionate to continue to impose QoS.

469 ComReg Decision D02/08 considered eir's performance relating to a number of indicators of quality of service. These included (1) targets relating to installation times (2) the level of line faults and (3) the time needed to repair line faults. The rationale for setting binding performance targets in D02/08 was:

- the importance of the quality of service measures to consumer welfare; and
- the evidence of recent worsening of performance in some areas.

470 ComReg D02/08 set binding targets in respect of connections; fault occurrence and repair times. While some aspects of performance were satisfactory, ComReg believed that performance could be improved in a manner that would give considerable benefits to end-users. In particular, in respect of performance relating to fault occurrence and the time taken to repair faults. ComReg was of the view that any costs likely to be incurred by eir to achieve these targets, were not excessive and indeed, eir's poor performance may be related to past issues in not ensuring a high quality network.

471 Although set in 2008, the targets included a glide path for performance on fault occurrence from 15.5 faults per 100 lines in 2009 to 12.5 faults per 100 lines in 2012.

472 Since then a number of performance improvement programmes (PIP 1, PIP2 and- PIP 3) have been agreed with eir, with associated penalties as appropriate for year on year factors.

473 The measures that ComReg has put in place since 2008 to bring about improvements in eir's quality of service performance for USO clearly showed progress up to and including the performance period 2012/2013. However, performance for the period 2013/2014 did not display the same improvement trend. This lead to PIP3.

474 PIP 3 targets and penalties remained the same as those of PIP 2 except in respect of fault occurrence, and fault repairs, within two working days. The PIP 3 target for fault occurrence was reduced (higher allowed fault occurrence), and to compensate for this reduction, the target for fault repair, within two working days, was increased. In addition, eir undertook to ensure that any customer (wholesale and retail) were automatically refunded if they suffered service outage in excess of 10 working days.

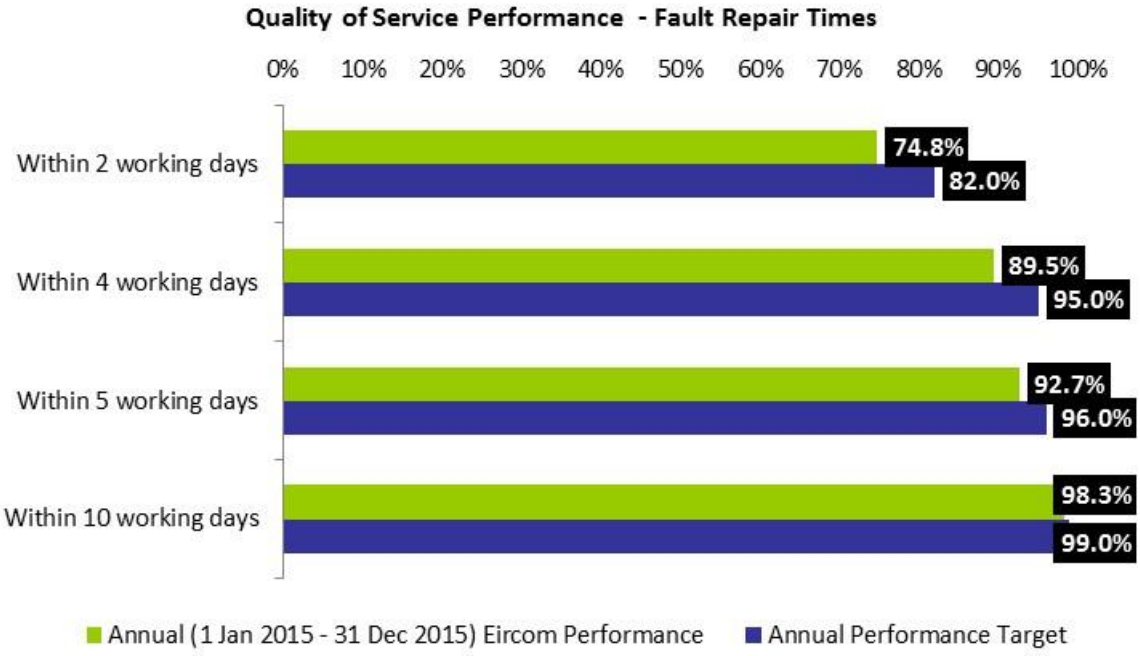

Figure 22 Quality of Service Performance - Fault Repair Times[85]

475 As outlined earlier, eir's likely behaviour in the absence of AFL USO QoS was assessed to determine whether eir had financial incentives to invest in its network to reduce the number of faults.

476 The following two scenarios (2015-2022) were considered in the Second TERA report :

[85] ComReg Information Notice 16/46, Provision of Universal Service by eir – Performance Data Q442015 and Annual (1 January 2015 to 31 December 2015).

- "Keep investing" scenario – eir keeps investing in the network in order to stabilise the level of faults and has a lower number of faults to repair. Estimated cost (without penalties) €✂M.

- "Stop investing" scenario- eir stops investing in the network, and the network keeps deteriorating. The number of faults to be repaired increases. Estimated cost of repair without penalties €✂M.

477 To quantify these scenarios the PIP 3 design assumptions were used. The Second TERA report concluded that eir, acting as a profit-maximising operator, in the short to medium term, would have incentives to reduce its investment in the network absent of any USO QoS (€✂M saving). In the longer term, the cost of repairing faults may exceed the "stop investment" scenario and the deterioration in the level of QoS would be significant.

478 TERA also conducted a geographical assessment of QoS levels and established that the fault levels, the time to repair faults, staff distribution per fault, and investment per fault, varied by each of the three geographic areas. It concluded that absent of AFL USO QoS, these trends would potentially increase.

479 The Second TERA report took account of the future evolution of the number of working lines and its PIP3 investments (based on eir's response to consultation) and by analysing QoS performances in each area concluded that:

- ✂
- ✂
- ✂

480 This report, also concluded that eir, acting as a profit maximising company, and absent of any AFL USO QoS, would have financial incentives not to invest significantly in the short to medium term to improve QoS, in particular NBP and eir only areas.

481 Section 7 of Consultation 16/31 considered TERA's counterfactual analysis, Consultation 15/89 and respondents' views and the Second TERA report.

482 The TERA reports analysed eir's past results with respect to compliance with specified QoS performance targets and also considered eir's future behaviour absent of AFL USO and AFL USO QoS, assuming it would act as a profit maximising operator. It also noted that deterioration in the level of QoS would likely be significant.

483 No new evidence has been provided to ComReg that suggests that its's views on TERA's counterfactual scenario is not valid.

484 In summary, it anticipated that absent of any AFL USO QoS targets, eir would be unlikely to have financial incentives to invest (capex/opex) in its network in the short to medium term in order to reduce the level of fault occurrence.

485 Because of this, there can be no assurance that uneconomic customers would be provided with basic telecommunications services, at an appropriate quality of service standard, under normal market conditions without AFL USO QoS being imposed.

486 This clearly demonstrates that there is a continued need for binding performance targets, given the continued importance of the quality of service measures to consumer welfare and the evidence of recent worsening of performance in the NBP area.

4.1.6.4 Service Availability – Level of Sub-National Targets - ComReg's Response

487 eir was the only respondent who specifically replied on level of sub-national service availability targets.

488 ComReg notes the views of eir, in respect of the level of the sub-national service availability target, and in particular the following:

(i) Proportionality.
(ii) Presentation of service availability.
(iii) Ability to target network repair resources.
(iv) Random weather events.
(v) Required investment.
(vi) Performance of the copper network.

489 ComReg now addresses each of these elements in turn.

(i) Proportionality

490 Previously in this section and in Section 2, ComReg has detailed its sound evidence base for the continued need for QoS.

491 This is further enforced by the Second TERA report which concluded that, in addition to setting national targets, setting geographically targeted QoS obligations would better protect customers in areas where QoS is currently poor and where there is a low level of competition.

492 This is clearly illustrated in 16/31, *Figure 9 Service Availability Calculations*, showing the significant sub-national variations in the LFI, and repair times.

✂

Figure 23 Consultation 16/31: Figure 9 Service Availability

493 The Second TERA report also concludes that in the absence of QoS obligations, some end-users may not receive an appropriate level of service.

494 It is critical that the overall current minimum quality of service levels are maintained, through the introduction of minimum sub-national service availability targets. These should ensure that performance, particularly in remote areas, such as NBP, does not deteriorate adversely affecting consumers.

495 The introduction of service availability now combines (1) the level of line faults (fault occurrence) and (2) the time needed to repair line faults (fault repair) into overall service availability targets.

496 Service availability, now provides eir with greater flexibility to balance the level of investment with the level of operating expenditure, to ensure that both the national and sub-national service availability targets are met, in light of the NBP and the commercial rollout of next generation networks.

497 In setting the sub-national service availability targets ComReg has taken into consideration the following:

- level of harm, absent of sub-national service availability targets.
- The likely impact of the sub-national targets.

498 In summary, ComReg considers that the sub-national quality of service targets are designed to be proportionate in this NBP transition period.

(ii) Presentation of Service Availability

499 In Consultation 16/31, Annex 3 defined the service availability formula and defined each of the variables within the formula.

500 The formula stipulates that All repairs "within x days" are calculated on the basis of working days, which is in line with eir's current repair measurement metric.

501 eir has claimed that the formula is mathematically incorrect, as the denominator used in the formula is calendar days (i.e. 365) as opposed to working days (i.e. 252).

502 ComReg notes that based on assumptions actual days (instead of working days) could be derived based on the speed of repair calculated using repair performance and the mid-point multiplier and in that case the divisor of 365 is appropriate.

503 However, the divisor is merely used to present quality of service performance and targets in an alternative manner and has no impact on the input metrics (fault occurrence or speed of repair) or the associated analysis or requirements being placed on eir.

504 ComReg is also of the view that the presentation of the target in working days outage per line per year is more meaningful for stakeholders.

505 Therefore, ComReg has decided to take the output of the calculation of fault occurrence and speed of repair as working days, and state the target in terms of a maximum of working days outage per line, without the requirement for any divisor.

506 This will ensure consistency with the existing USP's reporting capabilities and will avoid any changes to existing calculations.

507 Although the availability target is set out in the decision as annual maximum of working days outage per line, for convenience and comparability, where appropriate throughout this document ComReg has presented the target both ways.

(iii) Ability to Target Network Repair Resources

508 ComReg disagrees with eir's assertion that it is not possible for an efficient operator to target its network repair resources in one area more than another, as proposed by TERA.

509 eir's network maintenance teams are organised by regions, with each team being responsible for a given geographical area. Indeed, eir stated that: *"…open eir repair Field Force is organised by work stack areas. These work stack areas are build up to make a workload for a typical sized team. The boundaries are a grouping of exchanges. The field technician resources are assigned to the work stacks to meet the demand in the work stack. This then equalises service in each work stack."*

510 Although these teams can probably intervene in some other areas in exceptional circumstances, these teams work in their own area most of the time. The copper access network bottom–up model has been developed utilising this principle, based on engagement with eir.

511 It is clear that the number of staff could, for example, be adapted to the number of faults in the area (as opposed to the lines) to ensure greater similarity in QoS between areas, despite different prevailing conditions (e.g. percentage overhead, weather, line length etc.). It is therefore unclear as to why eir would not have the capability to target specific areas.

512 eir state that they have a mobile resource, which can be deployed to address areas where service levels are more weather impacted (i.e. storms and rural areas). ComReg is of the view that the mobile resource represents the minority of the overall repair teams. Where teams repair faults and where they are primarily based is highly correlated, with the exception of the mobile resource.

513 ComReg has also noted eir's practice in relation to certain exchanges identified by eir, where repairs are delayed as it has decided that; ✂.[86] Further information on this practice was provided to ComReg by eir in 2014.[87]

514 In summary, ComReg disagrees with eir's assertion that it is not possible for an efficient operator to target its network repair resources in one area more than another.

(iv) Random Weather Events

515 eir states that it has made the following assumptions when modelling the actual percentage availability that eir would actually have to be achieved on average in 4 out of 5 years in order to meet the targets proposed by TERA/ComReg for each of the three defined areas[88]:

1. that random extreme weather events will occur one in every four years
2. eir has to exceed the target 80% of the time, and at sufficient levels, to compensate for the 20% of time that the target is missed
3. Investment levels that achieve average availability performance equal to the targets will result in targets being missed in 1 of every 2 years.

516 ComReg is of the view that these assumptions are conservative and overstate the potential impact in terms of frequency of occurrence of faults and any associated investment. Random extreme weather events are, by their very nature, infrequent, and extreme, and should not occur 25% of the time.

517 Notwithstanding this, the TERA analysis used to derive the sub-national targets is based on a 5 year observed average (2009-2014). This 5 year average calculation and includes periods where eir has submitted force majeure[89] claims under the PIP agreements (i.e. are already incorporated into TERA's 5 year average sub-national calculation).

[86] 'Fault Repair' letter from eir; 19 September 2011.
[87] Provision of information with respect to USO provision 1 January 2013 to 31 December 2013
[88] For calculation purposes
[89] ✂

518 As outlined earlier at paragraph 348, eir was requested as part of a 13D Information Request to provide ComReg with any weather information it had at MDF level. eir responded to ComReg advising that it had no weather information available at MDF level.

519 ComReg notes that service availability targets are measured on an annual basis, and not on a cumulative basis. eir has explicitly stated in its written response to a 13D Information Request that it ✂.

520 eir was requested as part of a 13D Information Request to confirm to ComReg whether this modelling approach (adopted in its response to Consultation 16/31) is consistent with their PIP3 modelling. eir has confirmed that this approach has been used for a number of years.

521 ✂.

522 ✂.

523 Equally it would appear counter-intuitive to proactively and exclusively choose to invest in preventative maintenance where eir claim that there is on average, a 6 month time lag, from investment to network deployment. The more intuitive approach would be to minimise preventative maintenance and ensure sufficient resources are accessible, and in this way ensure that when faults that actually occur in the network, are dealt with and resolved quickly.

524 eir's model[90] has ✂ per annum copper network deterioration built in (i.e. continuous deterioration), which eir states TERA's analysis has omitted.

525 ComReg's revised Copper Access Model[91] underpins all wholesale copper access related products such as SB-WLR and LLU. These costs are currently recovered through wholesale prices for SB-WLR and LLU products.

526 It is therefore not appropriate to incorporate any further copper network deterioration as it would effectively be a double count of an investment cost (if included), which is already fully accounted for at the wholesale level.

527 Both TERA's analysis (Second report, Table 12) and ComReg's revised CAM[92] reflect all lines. Core network investment required to support copper lines is also already accounted for within ComReg's core network model (in respect of the maintenance of the current copper network). This is also recovered through the relevant wholesale prices. Similarly it is equally not appropriate for any core network investment cost which has been fully accounted for at the wholesale level.

528 For the reasons outlined in the TERA report and previously in this document including in Section 2, relevant criteria including the weather have been considered in deriving an appropriate sub-national service target. The level of the sub-national service availability target of maximum of 0.607 working days outage per line (99.834%) is now based on the 5 year (2009-2014) observed actual performance having regard to eir's model using its planned investment scenario. Therefore, according to eir's model the implementation of the sub-national service availability target should have no additional investment impact on eir.

(iv) Required Investment

529 eir's model details eir's planned investment in the repair/performance improvement in the copper network for the period FY 2016/17 – FY 2018/19 cumulatively is €✂M.[93].

[90] eir investment model 25th August 2016 "20160526_AFLUSO_QoS_Repaired.xlsx (Excel workings) provided to ComReg in response to Section 13D Information Request
[91] ComReg 16/39, "Pricing of Eir's Wholesale Fixed Access Services: Response to Consultation Document 15/67 and Final Decision" D03/16, 18/5/16 page 24. 2.44 and page 218, 12.17
[92] ComReg 16/39, "Pricing of Eir's Wholesale Fixed Access Services: Response to Consultation Document 15/67 and Final Decision" D03/16, 18/5/16 page 24. 2.44 and page 218, 12.17
[93] i.e. €✂M per annum.

530 The table below shows eir's expected network performance nationally and sub-nationally after three years with this level of investment each year.

✂

Figure 24 Investment – Planned (€✂M ✂- 3 years)

531 eir in its response to Consultation 16/31, estimates the additional investment requirement[94] to meet the service availability targets outlined in Consultation 16/31 is €✂M[95].

532 eir has calculated *"achievable speed of repair"* as already detailed, and eir has assumed that *the "achievable speed of repair"* targets will be achieved.

533 Paragraphs 175 - 185 fully detail ComReg's view on this aspect of eir's submission.

(v) Performance of the Copper Network

534 eir claim that during the NBP transition period, the QoS regime should be relaxed or removed, and that through the introduction of sub-national targets ComReg is imposing significant additional investment on eir to improve the performance of the copper network.

535 ComReg has addressed the proportionality of the sub-national targets at paragraphs 490 - 498 and the level of investment at paragraphs 529 - 534 .

536 ComReg now addresses the issue of the copper network.

537 The existing USO does not specify the technology to be used in providing voice services. Nor does it preclude the USP from meeting end-users requests for connection by sourcing a connection from a third party.

[94] Beyond eir's current planned investment ✂.
[95] Additional national investment ✂, and sub-national ✂.

538 eir appear to be under the misapprehension that the national and sub-national quality of service targets will require eir to invest extensively and exclusively in its copper network. ComReg has set service availability targets as opposed to LFI and fault repair time targets. This provides the necessary innovation and investment incentives to eir to accelerate any desired network deployment and/or replacement, with the mix of proactive and reactive maintenance being a commercial eir decision.

4.1.7 Service Availability Refunds – Respondents Views

539 Consultation 16/31 asked the following question as to whether end-users that have no service availability for > 10 days should be automatically refunded.

> Q18. Do you agree with the preliminary view that end-users that have service availability for > 10 days should be automatically refunded? Please provide reasons and evidence to support your view.

540 Sky stated that*: "…Sky's policy is to credit customers who have been without service and so consider it reasonable that eircom is required to adopt the same policy. However, it is important that any such refunding is not offset by eircom claiming a higher USO net costs against such costs. In failing to achieve 100% repairs in 10 days eircom is failing its USO targets and so it should not benefit from having the forgone revenue recovered through the net cost calculation and possible subsequent claim for a USF. ComReg needs to be mindful of such vagaries when assessing eircom's purported net USO costs as well"*.

541 BT stated that*: "…although most of our business deals would not be using USO type services, we would contract a compensation scheme linked to the nature of the service within a fixed term contract. We would be concerned if this USO change caused us to have to re-open fixed term business contracts that have been negotiated, sometimes over many months. Where business customers and in particular larger business customers are concerned, the negotiating strength is often held by the consumer. We consider further transparency as to how the 10 day outage is funded before an informed answer can be provided."*

542 ALTO stated that*: "…ALTO submits for business customers members could contract to a compensation scheme linked to the nature of the service within a fixed term contract. We would be concerned if this change caused us to have to re-open fixed term business contracts that have been negotiated, sometimes over many months. Where business customers and particularly larger customers are concerned, the negotiating strength is often held by the consumer (and such arrangements are often outside the scope of USO discussions)…..We would like to understand from ComReg who is paying the €10 charge? For example, is eir simply adding it onto their annual claim for onerous burden in which case the €10 is ineffective as an incentive on eir to maintain efficient network performance and which wastes considerable resource processing the payment to the end customer? We consider further transparency as to how the 10 day outage is funded before an informed answer can be provided."*

543 Vodafone stated that: *"…Vodafone would have concerns that for enterprise customers that such refund mechanisms may impact existing contracts – ComReg may need to detail how this provision would work and who would pay."*

544 eir stated that: *"…eir does not agree. The question asks respondents whether they agree with ComReg's preliminary view however nowhere in the consultation document has ComReg offered any reasoning as to its preliminary view……It is incumbent upon ComReg, in accordance with its obligation under Regulation 12(3) of the Framework Regulations 2011 "to give reasons for [a proposed measure], including information as to which of the Regulator's statutory powers give rise to the measure". … ComReg has provided on explanation as to why it believes it can be used to impose an obligation to provide refunds as a USO. Furthermore, and more importantly, ComReg despite its clear obligation to do so has offered no explanation whatsoever why such a new obligation to refund is necessary, and why it ought to be a universal service obligation……. ComReg appears to have given no consideration, and certainly shared none, of the implications of such an obligation on the cost of the provision of the universal service and the competitive disadvantage that such an obligation would bring on the USP."*

4.1.8 Service Availability Refunds - ComReg's Response

545 In Section 7 of Consultation 16/31 ComReg considered whether automatic refunds for service issues should be incorporated into the USP's terms and conditions.

546 Section 45 of the Communications Regulation Act 2002 prohibits undertakings from:

- charging for a service provided to a consumer which the consumer did not request; or
- charging for a service requested by a consumer but not supplied to the consumer.

547 Section 45 of the Act 2002 provides summary enforcement powers in relation to relevant offences and ComReg has therefore decided not to incorporate additional elements into the USP's terms and conditions at this time.

548 ComReg has successfully prosecuted breaches of section 45 by undertakings on several occasions in the recent past.

549 ComReg has decided, for the present, that automatic refunds for service issues will not form part of this Decision. Service Providers are reminded of their existing obligations under Section 45 of the Communications Regulation act 2002.

4.1.9 Connection Targets – Respondents Views

550 Consultation 16/31 asked the following question as to whether the connection targets that are in place are appropriate for sub-national targets.

> Q19. Do you agree with the preliminary view that the connection target levels that are in place are appropriate for sub-national targets? Please provide reasons and evidence to support your view.

551 The majority of respondents (BT, ALTO, Vodafone and Virgin Media) agreed with ComReg's preliminary view that the connection targets that are in place are appropriate for sub-national targets.

552 BT and ALTO stated that: *"…we agree with the ComReg preliminary view that the connection target levels that are in place are appropriate for the sub-national targets as there is only little variance across the regions."*

553 Virgin Media stated that: *"…in setting connection targets, ComReg should be mindful that onerous targets can have significant implications for the cost of the USO, and therefore on the impact on the market and on existing broadband customers. As reasonable approach therefore should be taken by ComReg when setting targets, which balances the customer impact against the cost burden associated with the specific target."*

554 Sky disagreed and stated that: *"…Sky considers that current connection targets are not ambitious enough. In the past 12-18 months eircom working together with industry has developed key new ordering types (e.g. Failed Provisioning (FP) and Combined Order (LNB) that has dramatically improved the manner in which appointments for connections are being done. Connections relying on appointments have therefore seen substantial productivity gains that ought to be reflected in the provisioning targets. ……..The efficiencies gained due to new order type development and outsourcing of its field force management has allowed eir to achieve significantly better than 80% for connections (excluding in-situ). Even in Q1 2015 when eircom's general performance was poor (e.g. repair timelines), it managed to achieve greater than 80% connections for in-situ lines. In Q2 it achieved in excess of 90%. Therefore it would seem reasonable to increase the 2 week target from 80% to at least 85%. ComReg ought to take account of eircom's most recent performance and developments in the market referred to above before simply rubber stamping outdated performance targets to be applied going forward.."*

555 eir also disagreed and stated that: "…*ComReg/ TERA have conducted no analysis of connection targets but conclude the existing targets continue to be fit for purpose. …ComReg is proposing to maintain a suite of QOS parameters on the basis of a USO obligation that is justified by a tiny proportion of end-users…….Without prejudice to eir's objections to the continuation of QOS parameters generally, we should also point out that some metrics are no longer reflective of eir's working practices and reporting systems. This applies in particular to connection targets for "By agreed date" orders which have become obsolete….. eir projects that agreed date orders will decline to low single figures or possibly zero by the end of 2016. As the volumes are now extremely low and continuing to decrease we consider them too low to justify a separate class of orders. If ComReg ultimately decided to maintain connection QOS measures despite our objection to these in principle, these orders should be included with other orders in the in-situ category "By Date of Request". Separately the measure for all QOS metrics for connections would need to be adjusted to align with other QOS measurements by calculating performance on the basis of working days as opposed to calendar days, for consistency and to avoid confusion both administratively and for end-users."*

4.1.10 Connection Targets - ComReg's Response

556 ComReg notes the views of respondents, in respect of whether the connection targets, in place are appropriate for sub-national targets, and in particular the following views:

- Current connection targets are not ambitious.
- Appropriate metrics.
- Measurement days.

557 ComReg now addresses each of these elements in turn.

Current connections are not ambitious

558 ComReg has decided that the current national connection targets are appropriate for sub-national targets.

559 From the perspective of end-users connection targets (national and sub-national) are important to ensure that they do not experience considerable delays in getting a telephone line and service connected.

560 Paragraph 238 - 241 provides an overview of eir's national connection performance, changes to eir's order types and the impact envisaged of the new reasonable access request criteria.

561 ComReg has decided therefore that it is appropriate to set the sub-national connection targets at the same level of the national connection targets, as the national connection targets are, on average, being overachieved. This will better protect end-users in areas where there is a low level of competition such as NBP and eir only areas.

4.1.11 Connection – Sub-National Targets – Respondents Views

562 Consultation 16/31 asked the following question with respect to connection targets at sub-national level:

> Q20. Do you agree with the preliminary view that the measurement of connection targets at sub-national level is appropriate? Please provide reasons and evidence to support your view.

563 The majority of respondents (Sky, BT, ALTO, Vodafone and Virgin Media) agreed with ComReg's preliminary view that the measurement of connection targets at the sub-national level is appropriate.

564 Sky stated that: *"…Sky consider it appropriate to measure connection targets on a sub-national basis for the reasons outlined by ComReg and for the same reasons it is appropriate with respect to fault repair."*

565 BT agreed with ComReg's preliminary view, and stated that:*"There is a lot of truth in the saying" what get measured gets done" hence if targets are being set they must be measured."*

566 Virgin Media stated that: *"…in setting connection targets, ComReg should be mindful that onerous targets can have significant implications for the cost of the USO, and therefore on the impact on the market and on existing broadband customers. As reasonable approach therefore should be taken by ComReg when setting targets, which balances the customer impact against the cost burden associated with the specific target."*

567 eir did not agree with ComReg's preliminary view and stated that:"…*The regional analysis is entirely flawed as highlighted above in our preceding responses."*

4.1.12 Connection – Sub-National Targets – ComReg's Response

568 ComReg notes the views of respondents, in respect of whether the measurement of connection targets at sub-national level is appropriate. Sky, BT, ALTO, Vodafone and Virgin Media agreed with ComReg's preliminary view that the measurement of connection targets at the sub-national level is appropriate.

569 eir disagreed on the basis that the regional analysis, upon which the sub-national areas are based is flawed.

570 ComReg addressed eir's comments by describing how the sub-national targets are set in accordance with the three areas defined in the TERA report; and how eir's concerns are already accounted for in ComReg's response to Q14.

571 In summary this analysis recognises that not all lines within an exchange areas would be in just one of these 3 areas. The map and table in section 3.2.3 of the first TERA report, provides a high level view of the coverage of the different network infrastructures in place in Ireland. The TERA analysis[96] explicitly notes that*: "… in reality not all lines within an exchange area would be in just one of the three areas, and note that manual mapping is not precise and therefore a 10% range is set instead of a unique figure."*

[96] TERA First Report*: "Forward looking review of future AFL element of USO in Ireland"* Report Ref 2015-22-DB-ComReg-Scope of USO.

572 ComReg considers that the TERA analysis provides the more accurate "big picture" using eir exchange areas to provide the necessary granularity. We accept that these areas may not 100% be homogenous, however they provide the best proxy. ComReg notes that while eir in its response disagreed that sub-national targets should be in accordance with the 3 areas defined in the TERA reports, eir did not propose any alternative method.

573 The Second TERA Report (section 5.2.1) considered sub-national targets and it found that the addition of sub-national targets provides greater certainty, and that more end-users will have a consistent experience of QoS.

574 ComReg therefore does not agree with eir's view and ComReg has decided that the measurement of connection targets at the sub-national level is appropriate.

4.1.13 Performance Measurement, Publishing and Audit – Respondents Views

575 Consultation 16/31 asked the following question in respect of the measurement publishing and auditing of performance figures.

> Q21. Do you agree with the preliminary view in respect of the measurement, publishing and auditing of the performance figures? Please provide reasons and evidence to support your view.

576 The majority of respondents (Sky, BT, ALTO, and Vodafone) agreed with ComReg's preliminary view in this respect.

577 Sky stated that: *"…Sky have no objection to continuing the current auditing and publishing process. However, as outlined above we consider that fault repair performance and line fault index targets should continue to apply and be reported on."*

578 BT and ALTO stated that *"…We agree with the ComReg preliminary view in respect of the measurement, publishing and auditing of the performance figures as the transparency allows others to view the numbers and test them against the performance being experienced*."

579 Virgin Media stated that: *"…when designing a performance measurement and auditing process, ComReg should be mindful that onerous processes can have significant implications for the cost of the USO, and therefore on the impact on the market and on existing broadband customers. As reasonable approach therefore should be taken by ComReg when setting targets, which balances the customer impact against the cost burden associated with each approach."*

580 eir stated that: *"…the following is without prejudice to eir's position that the performance obligations cannot be justified. If a performance regime is maintained the auditing of the figures may be considered. However as this is a cost imposed on the USP by virtue of it being designated USP the associated costs should be allowable for the purpose of calculating the net cost. ComReg must confirm this to be the case."*

4.1.14 Performance measurement, Publishing and Audit – ComReg's Response

581 ComReg has proposed no change to the current calculation, reporting and audit regime[97], save for the addition of the new service availability targets at both the sub-national and national levels: this will be derived from the fault occurrence and fault repairs metrics, as they are currently calculated and the addition of sub-national connection targets.

582 eir will continue to report audited data on a quarterly basis, 2 months after the quarter end. The data is to be submitted in written and electronic form (spreadsheet) and accompanied by an auditor's letter. In addition, additional data and metrics are also calculated and supplied and this will continue.

583 As this regime is one with which eir is familiar, ComReg is of the view that compliance in this respect should not be onerous on eir. In order for ComReg to determine compliance with the targets, ComReg need eir to provide it with accurate information, it is therefore necessary for eir to provide ComReg with reports on a regular basis. Furthermore the publication of ComReg's quarterly USO compliance reports gives transparency to end-users and industry.

[97] ComReg will make an adjustment to any calculations relevant to Q1 2017 to ensure that the variation from the usual 3-month Data Collection Period for Q1 to the 2-month Data Collection Period in Q1 of 2017 is appropriately reflected when assessing compliance against the Performance Targets for the Year.

584 In response to eir's comment regarding the cost of the audit, the provisions of Regulation 10(6) envisage that the cost will be paid for by the USP.

4.1.15 Commencement Date – Respondents Views

585 Consultation 16/31 asked the following question in respect of commencement date.

> Q22. Do you agree with the preliminary view that the performance targets should commence from 1 July 2016? Please provide reasons and evidence to support your view.

586 The majority of respondents (Sky, BT, ALTO, and Vodafone) agreed with ComReg's preliminary view.

587 BT and ALTO stated that: *"… Even if eir cannot automate these results initially, the data should be available and these sorts of figures could easily be generated manually until the automation is in place .i.e. we no longer accept the argument of months of delay due to the development as this is a post processing activity."*

588 Virgin Media stated that*: "…Virgin Media considers that the performance targets should not apply until after a new decision has been published by ComReg, and the application date should allow time for the USP to implement required system changes..."*

589 eir stated that*: "…As highlighted above it is eir's firm position that performance targets should not commence."*

4.1.16 Commencement Date - ComReg's Response

590 The performance targets specified in this Decision and associated reporting will commence from 2 February 2017[98].

[98] ComReg will make an adjustment to any calculations relevant to Q1 2017 to ensure that the variation from the usual 3-month Data Collection Period for Q1 to the 2-month Data Collection Period in Q1 of 2017 is appropriately reflected when assessing compliance against the Performance Targets for the Year.

591 There is no change to the current calculation methodology, save for the introduction of the new sub-national connection targets and the service availability targets both at national and sub-national levels. The performance metrics of fault occurrence and fault repair are already in place and the service availability metrics will be derived from those existing metrics, taking account of the new sub-national areas.[99]

592 Compliance with performance targets will be assessed on an annual basis. ComReg will publish USO performance data on a quarterly basis and the quarterly results will be an indication of performance towards the annual target.

4.1.17 Review of Performance Targets – Respondent's Views

593 Consultation 16/31 asked the following question in respect of a review of the performance targets.

> Q23. Do you agree with the preliminary view that the necessity for a review of the performance targets should be examined in 2 years? Please provide reasons and evidence to support your view.

594 The majority of respondents (BT, ALTO, and Vodafone) agreed with ComReg's preliminary view that the necessity for a review of the performance targets should be examined in 2 years. Sky and eir disagreed.

595 BT and ALTO agreed stating that: *"… In time we should be aware of whether the changes are working and hopefully the NBP will be in the deployment phase so that changes can be monitored more closely."*

596 Sky stated that:*"… if the performance targets are as unambitious as is currently outlined (i.e. less than or equal to that eircom was supposed to have achieved 4 years ago), then a review in 12 months would be appropriate. In particular, if ComReg decide to continue the Service Availability proposal it will be necessary to review how this is working before 2 years have passed."*

597 eir stated that: *"….As highlighted above it is eir's firm position that performance targets should not commence."*

[99] An increased number of decimal places will be used in the calculation

4.1.18 Review of Performance Targets - ComReg's Response

598 The rollout of the NBP and the deployment of alternative infrastructures may have an impact on QoS targets and it is likely that during the AFL USO designation period the impact of these deployments will begin to take effect. However, it is not possible at this time to accurately determine what the impact might be.

599 It is unlikely that the NBP rollout will have commenced the deployment of services at any significant level or that the impact will be so significant as to warrant a review by end 2017.

600 ComReg therefore does not agree with Sky's argument that a review of performance should take place within 12 months.

601 ComReg responded to eir's position that performance targets should not commence in ComReg's responses to Q15 and Q17.

4.1.19 Draft Impact Assessment – Proposed Options – Respondents Views

602 Consultation 16/31 asked the following question in respect of ComReg's draft assessment of the proposed options.

> Q33. Do you agree or disagree with our draft assessment of the impact of the proposed options? Please set out reasons for your answer.

603 Sky was the only respondent to comment specifically on the on the draft RIA in relation to the proposal to modify the existing QoS targets and to introduce a service availability target instead of separate LFI and fault repair targets, set out in Consultation 16/31

604 Sky considered that *"moving to a service availability target understates the risk to consumers across the entire country due to the investment flexibility it affords the USP."* In its view *"ComReg's proposed Service Availability target is heavily skewed in favour of affording shareholders flexibility at the expense of the consumer.* Furthermore Sky's view "*the proposed service availability targets are extremely lax on a sub-national basis. … 99.86% service availability target in a region where average repair times are equal to 1.6 days implies a line fault index of 31 per 100 lines. This outcome would reflect a very poor customer service level that does not appear to be acknowledged in the RIA. ComReg merely notes "In some areas end-users may experience more regular faults and longer repair times".*

605 According to Sky, this is a significant understatement of the actual risk associated with this level of relaxation of targets.

606 A number of the respondents commented generally on the draft RIA set out in Consultation 16/31. Virgin Media believed ComReg's RIA does not quantify the benefits or the costs and *"….considers that, given the scale of the impacts that arise from the proposed USO, a comprehensive quantitative assessment of the options by ComReg is required. Specific attention should be given to eir's claims relating to non-economic customers in economic areas"*.

607 In eir's view, ComReg failed to engage in a quantifiable assessment of the impacts which is inconsistent with the requirements of efficiency and objectivity.

4.1.20 Draft Impact Assessment – Proposed Options – ComReg's Response

608 As noted at section 9.3.10 of Decision D05/16, a decision on the introduction of revised performance targets was deferred pending further consideration of the views and specific issues raised by eir and other operators in relation to a proposed revised QoS regime.

609 Having allowed time to consider the submissions further, ComReg set out its final reasoning on the most appropriate form of QoS targets in Section 2, having addressed the specific issues raised by respondents in that regard.

610 In response to Sky's concerns, in this instance, ComReg's key statutory objective is to promote and protect the interests of end-users of the universal telecommunications service in the State. From the end-user perspective, the availability of at least a minimum quality (affordable) fixed voice service is absolutely essential in particular for more vulnerable users and to rural life.

611 This is an important consideration in terms of consumer welfare providing continuity and reliability of voice service, including uninterrupted access to emergency services, particularly at a time of transition to other new advanced networks and services.

612 ComReg concluded in Decision D05/16 that there is a continued need for an AFL USO in Ireland. Decision D05/16 maintained the status quo in respect of QoS performance targets by continuing the targets originally set out in ComReg Decision D02/08 for a defined period – the earlier of 31 December 2016 or the date upon which a further decision on quality of service is made by ComReg. Decision D02/08 provides important protections for end-users in terms of connection times, and repair times and fault occurrence.

613 As noted above, however, ComReg's concern was that eir, acting as a profit maximising company, and absent of any AFL USO QoS performance targets, would have financial incentives not to invest significantly in the short to medium term to improve QoS, in particular areas. The First TERA Report found that, while this is less likely in competitive areas where eir is likely to need to maintain or improve its QoS to be able to compete, in NBP areas or eir only areas the financial incentives for eir are much lower.

614 Consultation 16/31 noted the findings of TERA in this regard and further confirmed that *"[t]his is supported by an analysis of eir's QoS performance over the past few years*". Absent of any AFL USO QoS performance targets, deterioration in the level of QoS in relation to eir's ubiquitous network would likely be significant, especially in eir only and NBP areas. ComReg acknowledged that the observed divide in QoS performance between areas could worsen to the detriment of end users. Accordingly, ComReg considered that to completely remove the QoS targets would not be appropriate.

615 Notwithstanding, in fulfilling ComReg's statutory objective *inter alia* to ensure that all end-users have access to basic services that are of a specified quality, ComReg balanced these requirements with its duty to promote competition and efficient investment. On the one hand, the introduction of service availability targets allows eir greater flexibility to choose how best to balance preventative maintenance (investment) with operating expenditure (opex) necessary for timely repairs in different areas, including the NBP area. However, on setting the service availability targets there should be no deterioration in eir's current service availability nationally or sub-nationally.

616 Importantly, therefore service availability targets (as well as connection targets) set, at both the national and sub-national level, continue to protect end-users by ensuring at least a minimum service availability (which encompasses both connections and the time taken to repair faults when they occur in eir's network) for end-users in each area during the NBP transition period. Consumer welfare will be enhanced by the revised approach to QoS targets. It is envisaged that there would be no deterioration in eir's current service availability nationally or sub-nationally. It is furthermore envisaged that any expected higher fault rates would be compensated with speedier repairs.

617 On balance, ComReg considers this to be the most appropriate approach to setting AFL USO QoS at this time. It is a proportionate measure going no further than to ensure that AFL USO is being provided at an appropriate minimum quality while eir has the flexibility to balance investment levels and cost of repairs as it sees fit to meet the targets in light of the transition to new networks and as the NBP transition period commences.

618 In respect of other respondents' comments, ComReg has already addressed these submissions in Section 9 of Decision D05/16.

619 ComReg consider that it has taken due consideration in assessing and quantifying the potential impact on stakeholders and on competition arising from its proposals to modify QoS performance targets:

- ComReg's assessment has taken into account relevant market trends, both on the supply and demand side, possible competitive constraints and the potential impact if any of the Department's NBP initiative over the next 5 year period;[100]
- The expert report produced by TERA Consultants,[101] amongst other things, considers the AFL USO context in Ireland, studies the latest fixed access services market evolution,[102] assesses potential consequences of ceasing AFL USOs including QoS targets.
- In considering the counterfactual scenario for QoS, TERA quantifiably assess possible scenarios in relation to eir's investment strategies.

[100] Section 3 of Consultation15/89 and Section 3 of the First TERA Report (updated in Section 1 of the Second TERA Report).
[101] http://www.comreg.ie/_fileupload/publications/ComReg1589a.pdf.
[102] Section 3.3 to 3.5 and section 6 of Consultation15/89 and Section 3.2 of the First TERA Report (updated in Section 1 of the Second TERA Report).

- TERA conducted a detailed quantitative and qualitative analysis of eir's incentives to invest or not in its network to reduce line faults absent AFL USO QoS.[103] In doing so, TERA looked at the costs of removing or repairing faults together with eir's planned further investment. TERA further quantifiably assessed the potential different impacts that may emerge in various geographic locations, including on a static and dynamic basis.[104] The First TERA Report[105] estimated the number of customers that would likely be affected by the absence of AFL USO QoS in a worst case scenario;
- The Second TERA Report, considered the options for specifying the nature and structure of AFL QoS targets. This included a possible lapse or amendment of QoS targets (including setting geographically - averaged targets, a fair and reasonable level of faults, service availability targets, and national as well as sub national targets). An impact assessment of each option was conducted which took into account the potential impact on different stakeholders, contrasting the advantages and disadvantages of each option;[106]
- Since Decision D05/16, and taking into account the submissions, ComReg sought further clarification from eir on its submission in relation to the future design of QoS targets as well as the potential impact on eir (e.g. information on the future evolution on the number of working lines and its investment as agreed in the PIP 3 context); [107] and
- this Decision specifies the appropriate nature and structure of future QoS targets having allowed further consideration of the submissions to Consultations 15/89 and 16/31. This section addresses in detail the specific issues raised by respondents on various aspects of ComReg's QoS proposals.

620 ComReg consider having regard to its further analysis of the specific issues raised by respondents that its RIA in respect of an appropriate QoS regime post 2016 meet the principles of efficiency and objectivity, as well as, transparency, proportionality and non-discrimination. It is clear that ComReg's assessment of the impact of its proposals:

[103] Section 4.7 of the First TERA Report (updated in the Second TERA Report).
[104] Section 3.2 and 4.7.3 of the First TERA Report.
[105] Section 4.7 and Table 12: p85.
[106] Section 5 of Consultation 15/89, section 11 of Consultation 16/31 and; the Second TERA Report, section 1.2.3 and section 5.
[107] Through information provided to ComReg in response to Section 13D Information Request in relation to eir's model 25th August 2016 "20160526_AFLUSO_QoS_Repaired.xlsx (Excel workings).

- Have had regard to on all available evidence including submissions by respondents on the practical workings, including further 13D information obtained post 16/31;
- Rely on a detailed analysis (qualitative and quantitative) of the impact of ComReg's overall regulatory approach to delivering universal affordable telephone services with appropriate QoS, on stakeholders and on competition;
- Consider in detail the rapidly evolving nature of the telecommunications market. The design of the proposed AFL USO QoS takes due account of market trends and likely evolutions in the coming 5 years, including, the variety of conditions relating to competition and consumers that exist geographically; also the forthcoming rollout of NBP; and
- ComReg has decided to review the operation of the revised approach to QoS targets by 31 December 2018.

5. Final Regulatory Impact Assessment

5.1 Introduction

621 In Decision D05/16, ComReg determined that there was a continued need for the imposition of USO in respect of AFL and designated eir as the USP for the period 29 July 2016 to 30 June 2021.

622 With this Decision ComReg seeks to fulfil its statutory objective *inter alia* to ensure that the universal service is delivered at an acceptable quality. Decision D02/08 set performance targets for ensuring a minimum quality of service which Decision D05/16 continued on a time limited basis pending further review of submissions to Consultation 16/31. The counterfactual analysis indicated that, absent a USO, there is no guarantee that reasonable requests for access would be fulfilled to a sufficient standard of quality.

623 Since Decision D05/16 ComReg has further assessed, as set out in Section 4, the specific points raised on QoS in the submissions. ComReg had signalled during the consultation process its proposal to replace the existing QoS targets (as set out in D02/08 and continued for a period in Decision D05/16) with the following proposed broad measures in relation to QoS targets:

- Target of *service availability*, measured by combining the fault occurrence and fault repair metrics provided for in Decision D02/08, to be set at the national and sub-national levels;
- Connection targets, to be set at the national and sub-national levels; and
- Obligations for reporting, auditing and publication of QoS performance.

624 The analysis presented in this section represents the final regulatory impact assessment **("RIA")** which sets out ComReg's conclusions of the effect upon stakeholders, notably, end users, eir itself as the USP, plus other relevant stakeholders, of imposing QoS performance targets on eir, as the designated USP.

5.2 Background to draft RIAs on options for a QoS regime

625 The consultation process that led to Decision D05/16 set out draft RIAs, *inter alia,* on the need for AFL USO and; the potential need for, and scope of, any associated QoS targets.

626 The RIA is an overall analysis of the likely effect of proposed regulation or regulatory change on a range of stakeholders and on competition. Its purpose is to help identify regulatory options including whether regulation is actually necessary, to identify any possible negative effects which might result from imposing a regulatory obligation and to consider alternatives. ComReg set out in the consultation process its approach to conducting the draft RIAs and then conducted the draft RIAs having regard to its proposed approach on;

a) The need (or absence of the need) for AFL USO QoS performance targets in the State post 30 June 2016; and

b) An optimal approach to a QoS regime to ensure an appropriate minimum quality delivery of AFL USO services and of the various available options to ComReg.

627 ComReg's approach to the draft RIAs followed the RIA Guidelines (published in August 2007[108]) and takes into account the "Better Regulation" programme[109] and international best practice. Section 13(1) of the Act of 2002 required ComReg to comply with Ministerial Direction. In this regard, Ministerial Policy Direction 6 February 2003 requires, that, before deciding to impose regulatory obligations on undertakings, ComReg shall conduct a RIA in accordance with European and international best practice and in accordance with measures that may be adopted under the "Better Regulation" programme.

628 As part of the process in trying to select a preferred regulatory approach to this matter, ComReg set out its key policy issues and objectives, followed by an assessment of the relevant regulatory options and their respective impacts for consumers, service providers and competition.

[108] ComReg Document No. 07/56 and 07/56a.
[109] http://www/taoiseach.gov.ie/Publications/Publications_2011/Revised_RIA_Guidelines_June_2009.pdf.

629 Consultation 15/89,[110] considered in detail what might be the outcome if the QoS component of the AFL USO was removed (i.e. the counterfactual analysis). In this respect, ComReg assessed, in light of demand and supply trends,[111] the possible future scenarios including investment scenarios, relating to the QoS component of the AFL USO. ComReg also considered the potential different circumstances that may emerge in various geographic locations *inter alia* the deployment of NGA, FTTH networks, NBP developments and consumer demand changes.[112] This approach allowed ComReg to distinguish between possible outcomes, absent an AFL USO and associated QoS targets, in various geographical locations,[113] including locations with varied technological and competitive conditions.

630 Consultation 15/89 and the First TERA Report set out ComReg's preliminary view on why there was a continued need for some kind of AFL USO post 2015, including, QoS targets to protect consumer welfare. Absent QoS targets, it was likely that QoS would deteriorate, especially in "eir only" and "NBP" areas. This would negatively impact end-users and service providers relying on eir's network to deliver service.[114]

631 The purpose of the first draft RIA, as set out in Consultation 15/89, was to assess on a preliminary basis the likely impact upon stakeholders of the following options:

- Option 1 – "*Maintain an AFL USO obligation*" ; compared to
- Option 2 – "*Remove the AFL obligation*".

632 Subsequently, ComReg in Consultation 16/31, having regard to the respondents' views, further considered the evidence of whether or not a QoS regime was likely to remain necessary and appropriate. Such a requirement would be a means to safeguard and ensure during the transition to a fully completed NBP infrastructure, the provision of basic AFL services in the State at an acceptable quality standard. Consequently, ComReg consulted on an optimal form of QoS performance targets. The regulatory options ComReg considered were:

- Option 1 - "*To keep existing targets*"; compared to

[110] Consultation 15/89, section 5 and section 8 and the First TERA Report.
[111] For example, section 3.1 of the First TERA Report.
[112] For example, section 3.2 of the First TERA Report.
[113] As broadly defined in the First TERA Report, section 3.2.3.
[114] Section 4.7 and Table 12: p85 of the First TERA Report summarises conclusion of the likely impact of the scenario absent AFL USOs.

- Option 2 - "*To modify existing targets*".

633 Consultation 16/31 drilled down into the potential nature and structure of any future QoS obligations. ComReg's objective was to ensure that any design of the QoS component of AFL took account as relevant of the potential for consumer harm whilst also mindful of its objective in relation to promoting competition, innovation and efficient investment. In these respects, ComReg considered the following variants surrounding Option 2 and any modification of QoS performance targets:

- Impose service availability targets instead of separate fault occurrence (LFI) and fault repair targets;
- Impose service availability targets at national and sub national levels;
- The level of QoS target to be set; and
- Impose connection targets at national and sub national levels.

634 The purpose of the second draft RIA, as set out in Consultation 16/31, was to assess on a preliminary basis the likely impact upon stakeholders of imposing QoS performance targets on eir, as the designated USP. It was ComReg's preliminary view that it may be most appropriate for new QoS performance targets to replace the existing QoS performance targets set out in Decision D02/08.

635 ComReg invited comments from interested parties on the draft impact assessments and its underlying analysis, as set out in Consultations 15/89 and 16/31. A number of the respondents commented generally on the draft RIA set out in Consultation 16/31. ComReg has addressed these submissions in Decision D05/16, Section 9.2. However, as noted at section 9.3.10 of Decision D05/16, a decision on the introduction of any revised performance targets was deferred pending further consideration of the views and specific issues raised by eir and other operators in relation to ComReg's proposal to revise the QoS regime (if so decided).

5.3 Final RIA on most appropriate QoS targets

636 This RIA, set out herein, in conjunction with the rest of the analysis and reasoning set out,[115] represents the final RIA on the most appropriate QoS regime, and should be read together.

637 ComReg's aim in conducting its final RIA is to ensure that all QoS measures are appropriate, proportionate and justified. ComReg recalls that the purpose of the RIA is to establish whether regulation is actually necessary, to identify any possible negative effects which might result from imposing a regulatory obligation and to consider any alternatives. Consistent with the RIA Guidelines and, section 13(1) of the Act, ComReg's final RIA considers the effect of proposed regulation and regulatory change. Therefore, ComReg in conducting this final RIA takes full account of its obligations under the latter Regulations.

638 ComReg has carefully considered the specific issues raised on various aspects of its QoS proposals in Section 4 of this Decision. Only one respondent specifically commented on the draft RIA set out in Consultation 16/31 in relation to ComReg's proposal to revise the QoS regime. Their views and specific issues raised are addressed in section 4, at paragraphs 609 to 617. Also addressed at paragraphs 618 to 620 are more general comments regarding the draft RIAs.

639 Having regard to all available evidence collated during this consultation process, including, the further submissions by eir since Decision D05/16, the following sets out ComReg's final RIA in relation to the obligation to meet specified QoS performance targets for the delivery of AFL USO in the State from 2 February 2017. This final RIA expands on the draft impact assessments contained in Consultation 15/89 and 16/31 as to the need for, and the most appropriate scope of a QoS regime.[116] It updates the assessment of the impacts on different stakeholders and competition in order to assist ComReg making a decision as to its preferred approach to a QoS regime from 2 February 2017, consistent with the 5 steps set out in the RIA Guidelines for conducting a RIA as follows.

Step 1: Describe the Policy Issue and Identify the Objectives

640 Universal service is the principle that all citizens should be provided with a range of basic services at a specific quality and at an affordable price so that they are able to participate fully in society, irrespective of their location, social standing or income.

[115] In Consultations 15/89, and 16/31, the TERA reports and Decision D05/16.
[116] See for example, Consultation 16/31, paragraphs 654 to 656 and Table; p 129.

641 Among ComReg's objectives, as set out in section 12 of the Communications Regulation Act 2002 (as amended), is the promotion of the interests of users within the Community, in particular "*ensuring that all users have access to a universal service*" and "*addressing the needs of specific social groups, in particular disabled users*."

642 There are both social and economic grounds for the USO, including providing services to help vulnerable users and those in remote locations whom the market might otherwise not choose to serve. The USO is also focused on bringing benefits to those with low incomes who have difficulty in affording a telephone service as well as end-users with disabilities who need particular services or facilities.

643 The AFL USO is an important part of the regulatory framework, as it ensures that all end users can obtain access the universal service with acceptable quality. In order for the regulatory framework to function effectively and, in a way that benefits end users, it is vital that the actual performance of the USP in delivering AFL USO is satisfactory.

644 Subsequent to designating eir to deliver AFL USO, Regulation 10 of the Regulations ("*Quality of service of designated undertakings*") allows ComReg, if it considers it necessary, to specify requirements to be complied with by eir in relation to QoS performance metrics.[117]

645 One of the most important areas of USO relates to end-users being provided with a telephone service in a reasonable period of time. It is also vital that faults, which will inevitably occur, are limited in number and are repaired speedily. In preparing the Decision D05/16, ComReg considered it appropriate to continue the existing targets set in Decision D02/08 on a time limited basis pending further review of submissions received on QoS. As set out previously, Decision D02/08 performance targets provide important protections for end-users in terms of connection times, repair times and fault occurrence.

[117] Recital 17 of the Universal Service Directive provides that national regulatory authorities should be able to monitor achieved QoS for undertakings which have been designated as having universal service obligations. In relation to the QoS attained by such undertakings, national regulatory authorities should be able to take appropriate measures where they deem it necessary.

646 ComReg considers that the AFL USO needs to evolve with the changing digital environment, with technological and market developments, users' main interests may be shifting and broadband and mobile solutions, often in bundles, increasingly in demand. However, there remains a risk that left to the operation of market forces alone, access to services mandated by the Universal Services Directive may not be provided to everyone irrespective of location and at an appropriate quality, as demonstrated by the counterfactual analysis.

647 In the absence of AFL USO requirements, there is a risk that QoS would deteriorate especially in "eir only" and "NBP" areas. TERA's analysis highlights that there is a strong risk that eir would have financial incentives not to invest significantly in the short to medium term to reduce the number of faults. TERA's analysis furthermore highlights that eir may tend to favour even more areas with infrastructure based competition and ensure shorter repair in those areas.[118] Any significant difference in eir's behaviour between "market-driven infrastructure-based competition" and "eir only"/"NBP" areas, may result in an unacceptable deterioration of QoS within certain areas.

648 Thus, ComReg's objective for implementing a QoS regime is that eir will meet at least a minimum quality for access at a fixed location and fixed voice service. ComReg seeks to ensure that end-users do not experience considerable delays in getting their phone line connected, and/or ensuring that a line is not out of order for an unreasonable period of time. A disruption or lack of service can be a source of considerable inconvenience and upset for customers, in particular, for those who live alone, are elderly or vulnerable. The responses received on foot of Comreg's public consultation on these matters indicated that the majority of respondents are in favour of continuing to set legally binding QoS targets on eir as the USP for the delivery of appropriate minimum quality AFL USO services.

649 In pursuing the objective to protect end-users, ComReg is also mindful of the objective to safeguard competition and promote efficient investment in infrastructure, ultimately to the benefit of end users. eir's submission raised the issue of a potential future transition from its existing copper access network to a fibre access network(s) in the NBP intervention area. In this light, it is eir's view that a QoS regime is unnecessary and disproportionate. As set out in Sections 3 and 4, there are a number of considerations in this regard.

[118] The Second TERA Report, section 4.7.3.2, p80-81.

650 One consideration, having regard to eir's recent performance against previously existing QoS performance targets, is that during the NBP transition period it is imperative that minimum quality levels for AFL USO services are in place, particularly in remote areas, such as NBP so as to not adversely affect end-users. Another consideration is that the design of QoS targets would need to evolve as appropriate and align with end-users changing needs and general market developments, including the forthcoming rollout of NBP. In considering the imposition of any regulatory measures ComReg is bound, pursuant to section 12 of the Act and Regulation 8 of the Framework Regulations, by the principle of proportionality and technological neutrality. On balance, it is likely that a modified approach to QoS targets would, while protecting end-users, also give eir appropriate flexibility in how it achieves at least a minimum quality delivery of AFL USO services going forward, particularly in remote areas so as not to adversely affect consumers.

651 ComReg has taken into account, in acting in the pursuit of its objectives as set out in Section 12 of the Act of 2002, and Regulation 16 of the Framework Regulations, the importance of promoting efficiency, sustaining competition, promoting efficient investment and innovation whilst giving the maximum benefit to end-users, in particular, elderly users and users with special needs; as more particularly set out at Article 8 of Directive 2002/21/EC[119] and the Regulations, ComReg must ensure all reasonable, proportionate measures to promote the interests of citizens by ensuring that they have access to universal service at a suitable quality standard.

Step 2: Identify and Describe the Regulatory Options

652 During the consultation process that led to Decision D05/16, ComReg considered a range of regulatory options open to it to achieve the objectives set out above.

Requirement for AFL USO QoS targets

653 As part of the counterfactual scenario analysis, ComReg assessed whether to "*Maintain an AFL USO obligation*" (Option 1) compared to "*Remove the AFL obligation"* (Option 2), as set out in Consultation 15/89.[120]

[119] Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services, as amended ("Framework Directive').
[120] Consultation 15/89, section 5 and section 8 and the First TERA Report, section 4 including 4.7.

Option 1 – Maintain an AFL USO obligation and associated QoS

654 This Option 1 involved some intervention by ComReg in respect of AFL USO post 2015. In July 2014, ComReg Decision D10/14 designated eircom (now eir) as the USP for AFL for a period of 18 months. ComReg was at that time, on the basis of the analysis and reasoning set out in 14/48, of the preliminary view that following this 18 month period there would likely remain a requirement for AFL USO. Consequently, there was a likely requirement to designate a USP to deliver AFL USO over the short to medium term.

655 In light of ComReg 's role to ensure that consumers throughout the State receive AFL at an acceptable quality, Consultation 15/89 considered the impact of maintaining an AFL USO QoS targets on the USP throughout the State. This included a high level review of QoS which was maintained by Decision D02/08 performance targets.

656 The rationale for Option 1 was to ensure access to at least minimum quality AFL services regardless of geographic location. Should the market fail to meet end-user demand for basic services, without a USO, there is no guarantee that such standards will be in place to protect end-users. Therefore, an AFL USO designation, including an obligation to comply with QoS performance targets, could be important to protecting consumer welfare *inter alia* the targets ensure that end users, in particular, vulnerable users, who require access to the basic telephony at a fixed location do not experience considerable delays in getting a telephone line connected as well as ensuring that a line is not out of order for and unreasonable length of time.

657 ComReg noted that apart from AFL USO, there was no other mechanism, programme or scheme in place to ensure that AFL, as required by the Regulations, is provided to everyone that requires it at an acceptable quality and cannot obtain it under normal market conditions. Under this approach the USP would be required to comply with QoS targets to ensure that existing QoS in relation to the AFL service would at least not deteriorate in the NBP transition period.

Option 2 - Remove the AFL USO obligation and associated QoS

658 Under Option 2 there would be no designation of a USP to deliver AFL USO at a minimum quality, hence, the QoS targets associated with the designation would not be able to be applied if appropriate.

659 The rationale behind this approach was that if left to the operation of market forces alone, AFL of an acceptable quality is provided to everyone that requires it in the short to medium term. This approach would involve eir (currently the USP) freely deciding what an acceptable AFL QoS is in respect of AFL as well as deciding more generally when and how to invest in its network and services.

660 Under this approach, ComReg would recognise the potential different circumstances that may emerge in the various geographic locations which may impact the requirement or not for AFL USOs. Thus for example, where a new network is being deployed under the NBP, it may be economically inefficient and ultimately not in the interests of stakeholders for us to continue to require the maintenance of obligations relating to QoS performance targets throughout the State. In doing this, ComReg would consider eir's investment incentives, in particular, the balance of incentives to invest in its network to reduce the number of faults, ultimately to the benefit of end users.

Nature and structure of any future QoS targets

661 In light of the concerns in relation to protection of consumer welfare, and mindful of efficient investment incentives, ComReg considered at length the following options available to it with respect to the potential nature and structure of any future QoS obligations, as set out in Consultation 16/31.

Option 1 – To keep existing targets

662 This option would maintain the status quo (i.e. no change to the current policy), retaining the obligation on eir to comply with Decision D02/08 performance targets which are separately defined and set at the national level. This option serves as a benchmark against which all other options can be compared.

663 Decision D02/08 targets, although set in May 2008, included a glide path for performance on fault occurrence in 2009 to 2012. Since then a number of performance improvement programmes (PIPs) have been agreed with eir (which set out penalties against year on year developments). Performance in relation to these targets is published quarterly by ComReg.

664 A rationale for keeping existing targets set in Decision D02/08 would be recognition by ComReg that:

- A QoS regime remains necessary and appropriate to safeguard and ensure, during the transition to a fully completed NBP infrastructure, the provision of AFL in the State at an adequate level of QoS, based on ComReg's analysis in Consultation 15/89 and 16/31;

- Performance targets are important measures of consumer welfare and ensure that eir's performance in delivering AFL USO services, particularly in remote areas does not adversely affect consumers standard of service;
- With a cessation of QoS targets at this time there is a risk that eir would no longer continue investing in certain areas leading to a significant deterioration in service standards. The minimum quality delivered by eir should be at least maintained during the transition to a fully completed NBP infrastructure and result in an appropriate minimum quality delivery of AFL USO service across the country.
- ComReg's guiding principle is that consumers should not have a lesser quality of service while transitioning to new advanced networks; and
- These targets can be reasonably achieved by eir, as set out at paragraphs 165 to 235.

Option 2 – Modify existing targets

665 This option considers replacing targets set by Decision D02/08 with proposed new targets *inter alia* retaining connection targets while combining the existing fault occurrence and fault repair metrics to create a target of service availability. This option also considers setting the proposed service availability target as well as the connection targets at both national and sub-national levels. Under this option, the existing obligations consisting of auditing, reporting and publication would be to maintained, save for minimised changes for the addition of the service availability target aspects.

666 The rationale behind this approach recognises the potential different circumstances that may emerge in various geographic locations which may impact the requirement or not for QoS targets, including the setting of a level for any targets. It may be necessary and appropriate that the specification of QoS obligations evolve in light of the market and technological developments, as set out in the analysis in Consultation 15/89 and 16/31 and the TERA Reports.

667 This option considered how to balance investment incentives against the situation where existing QoS targets are set on a national basis, and eir can achieve its national target, while having large variations in performance in different areas by compensating for areas of underperformance with areas of over performance. ComReg's approach considers protecting end-users during any transition, notably, that AFL USO of an acceptable quality is delivered. In this respect, the design of any AFL USO needs to take into account the extent to which market forces alone might fail to deliver quality AFL for consumers. The option to set service availability and connection targets at the national and sub-national levels can provide greater certainty for end users and ensure that more have a consistent experience of QoS.

668 Further, provided that any future QoS targets have appropriate flexibility with respect to how QoS targets are achieved (thus, for example, ability of the USP to balance investment and cost of repairs or to choose optimum method for delivering AFL services), eir's reasonable concerns in relation to investment risk (it may no longer be appropriate, in eir's view, to continue investing in certain areas where new infrastructure is being or envisaged to be fully deployed, in particular NBP) should be addressed. A modified approach would aim to allow eir as the USP to have appropriate flexibility to balance investment costs against operational costs, in light of the NBP and the rollout of next generation networks on a commercial basis.

Step 3 and 4: Determine the Impacts on Stakeholders and Competition

669 Having regard to ComReg's objective to safeguard and ensure the provision of a minimum set of telecommunications services in the State with an acceptable quality, mindful of investment incentives and; that the complete withdrawal of the USO is not likely appropriate at this time, this final RIA updates in the Table(s) and below ComReg's assessment of the impact of regulatory options with respect to QoS aspects on different stakeholders and competition.

Requirement for AFL USO QoS targets

670 ComReg considered the continued need or, absence of the need for AFL USO QoS performance targets in the State having regard to the quantitative and qualitative analysis.

Option 1 – Maintain an AFL USO obligation

671 Having specific regard to the counterfactual analysis and, its reasoning to designate eir as USP for the provision of AFL USO, ComReg is of the view that there is likely a need for some form of QoS targets to continue to be in place in the short to medium term.

672 Performance targets are important measures of consumer welfare and ensure that eir's performance in delivering the AFL USO, particularly in remote areas does not adversely affect consumers' standard of service.

673 Ensuring that end-users in Ireland can access basic telecommunications services with acceptable quality brings benefits to those who might otherwise be at risk of isolation, for instance those with low incomes who may have difficulty in affording a telephone service, consumers with disabilities who need particular services or facilities, or those in rural or sparsely populated areas for whom the cost of gaining access to services might otherwise be prohibitive. If end users would not be served in a competitive market, they must still have access to basic services of specified quality which are considered to be essential for participation in society.

674 From the end-user perspective, the availability of at least a minimum quality fixed voice service is absolutely essential in particular for more vulnerable users and to rural life. This is an important consideration in terms of consumer welfare providing continuity and reliability of voice service, including uninterrupted access to emergency services, in transition to other new advanced networks and services.

675 While Decision D05/16 designates eir as the USP seeks to ensure that end-users have access to the universal service, additionally imposing QoS targets on eir will help to guarantee that reasonable requests for access are fulfilled to a sufficient standard of quality nationally and sub-nationally. In particular, it will help guarantee that actual performance of eir in delivering AFL USO is satisfactory – end-users will be provided with a telephone service in a reasonable period of time and that faults, which inevitably occur, will be limited in number and/or repaired speedily. Potentially all end-users gain from QoS targets but more likely end-users living in "eir only" or "NBP" areas (circa 50% active lines).[121]

[121] The First TERA Report, p 85 -86: Table 12.

676 Consumer welfare can be expected to be enhanced by maintaining in place the AFL USO designation and associated QoS targets, as measured amongst other things through the counterfactual analysis (i.e. an estimate of the change in consumer surplus as a result of a cessation of QoS targets). The obligation on eir to comply with QoS targets will help to ensure that existing QoS levels in relation to the AFL service would at least not deteriorate below overall current QoS levels during the NBP transition period.

677 However, eir submit that a QoS focus is inappropriate for end of life copper network. eir believe that a transition from copper to fibre is a basis for QoS targets to be removed or relaxed. ComReg's view is that during this transition period, there may be increased risk to consumers, given eir's incentives to allow its copper network to degrade. This is an important consideration given that the majority of fixed voice services, including AFL services, are based on copper (i.e. PSTN technology), however this is expected to change over time with migration to advanced networks and services providing for better quality of service performance.

678 As noted previously, eir has given an initial indication of its intention to transition its copper network to fibre. As the designed USP, however, it will need to provide end-users with an alternative method of connecting to the public telecommunications network and accessing voice services. Specifically, where copper-based products have been provided under a USO, and this is being withdrawn, then there will be a requirement that a suitable alternative product is offered and that the customer is not required to bear any significant cost in order to continue to avail of the service. ComReg regards a continuation of QoS targets as a means of ensuring at least a minimum performance from the USP delivering quality AFL USO services and, hence, achieving the objectives set out in Section 5.3, step 1. ComReg envisages that new advanced access technologies (e.g., rollout of fibre connections) will likely bring higher QoS to the benefit of end-users.

679 Additionally, there is likely an industry benefit from QoS targets as availability of AFL at an acceptable quality standard can ensure businesses are contactable by customers resulting in a positive impact on the reputation of the business and confidence that its customers will have in it. Indeed, eir as the USP may gain from improved consumer confidence in AFL services (e.g., fewer of faults, speedier repair times and/or installation times). End-users may have greater confidence in eir's network and may be more likely to remain eir customers and to use more its products. Essentially, revenues for eir would most likely be retained (from the calls made by end-users in addition to the line rental charges they pay) from delivery of AFL at an acceptable quality standard.

680 eir argues that, as the market evolves, the cost of continuing a QoS regime, is that it is forced to invest in its copper network or face persistent compliance issues regarding a QoS regime, and particularly in the NBP area and the 300k FTTH extension roll out area. ComReg carefully analysed this issue in section 4.

681 With respect to costs, ComReg considers that the above benefits likely to accrue to eir will offset, to a degree, any cost to eir of meeting AFL USO QoS targets. ComReg furthermore considers that the AFL USO which eir is required to provide pursuant to Decision D05/16 is technology neutral and does not mandate the provision of the AFL USO via eir's copper network – the USO designation is technology agnostic and eir can choose (i.e. it is in eir's control) the optimum method of provisioning access and service as well as direct its investment as it sees fit. Thus, for example, and contrary to eir's view, it does not have to maintain a national narrowband network to deliver AFL USO QoS. eir can use NGA or purchase wholesale from alternative infrastructure providers (including NBP) and associated services, where appropriate to deliver on its USO obligations.

682 Notwithstanding the potentially higher cost nature of roll out and maintenance of network roll-out in Ireland (in part attributed to matters such as the geography and rural population density of Ireland), the cost of fixed voice access for wholesale products is recovered through the CAM and, as Figure 25 illustrates, and reflected in the relatively high retail line rental prices and wholesale access charges that consumers and competing Other Alternative Operators are paying eir to provide these services.

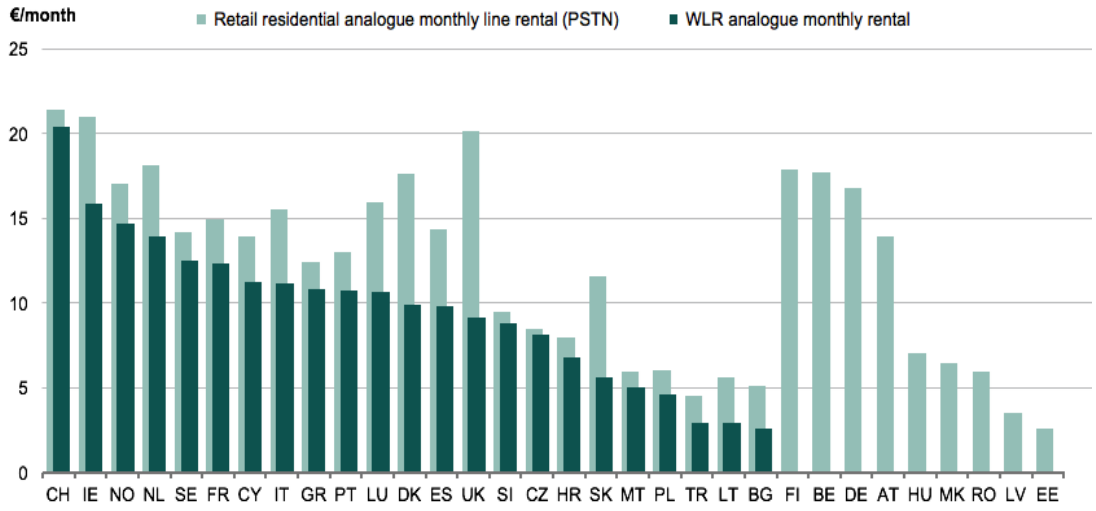

Figure 25 Monthly Tariffs : Source: Cullen International 2016

683 For the above reasons, ComReg considers that the overall net impact of mandatory QoS targets on eir should be positive so that overall consumers and industry significantly gain from the requirement to meet minimum QoS levels in relation to connection and services during the transition to other new advanced networks and services. As set out in Section 4 and below at paragraphs 703 - 708, ComReg is of the view that cost implications for eir would be proportionate with implementation of QoS targets for a period of two years.

Option 2 - Remove the AFL USO obligation

684 eir would benefit in the absence of a designation and any associated QoS targets. Thus, for example, eir would freely decide what an acceptable AFL QoS is in respect of AFL and decide more generally when and how to invest in its network and services.

685 In this respect, eir would be unlikely to have financial incentives to invest significantly in its network in the short to medium term to reduce the number of faults and/or to allocate sufficient resources need to repair them. The TERA analysis outlined that the savings for eir generated by the "stop investing scenario" could be significant compared to the "keep investing scenario" (€[redacted]m saving). In the context of ceased USO QoS targets, any potential costs in terms of compliance with the existing QoS targets would also be removed. eir would have complete freedom to address the level of fault occurrence and repairs without having regarding to service availability.

686 However, the cost of removing ALF USO QoS targets at this time is that, as compared to the current situation, there is no guarantee that universal services envisaged by the Directive would be provided at sufficient quality, thus there is a real risk of detriment to end-users.

687 Specifically, it is the loss of a service that is expected to function that is one of the main sources of consumer harm. Businesses expect their phone to work and make plans on the basis of this expectation, thus a removal of this service could be very costly to their business and reputation, particularly where they need frequent contact with their customers. Also, particularly vulnerable or aged consumers may find the loss of a communications system upon which they were relying for contact with their support networks extremely damaging.

688 Having regard to the assessment of current market developments as well as eir's performance and investment with respect to QoS, as set out in in the Consultations and the TERA Reports, ComReg's concern with current performance is that eir's incentives to maintain an adequate level of QoS are significantly different across the country. eir would have incentives to reduce investment in the network and in terms of its connection and repair efforts absent any QoS targets. Deterioration past a minimum level of QoS in relation to eir's ubiquitous network would likely be significant, and consumer welfare would suffer as a result and, in particular, "NBP"/"eir only" areas.

689 This deterioration would negatively impact end users who pay fixed home phone telephony charges (retail residential monthly line rental). The amounts charged for same in Ireland are currently among the highest in the EU, as illustrated by Figure 25 Importantly, it would also affect competing Other Alternative Operators relying on eir's network (that is eir's wholesale inputs, SB-WLR or ULMP) who pay monthly wholesale line rental (SB-WLR). Again the Irish SB-WLR charges are currently as illustrated by Figure 25 among the highest in the EU.

690 According to eir, ComReg's rationale for imposing QoS targets is flawed in a number of respects which lead to conclusions and targets that are not sufficiently based on fact or logic and should be discarded. Having regard to section 4 where ComReg addresses in detail the specific points raised in eir's submission on QoS aspects, ComReg considers that, on balance, to completely remove the QoS targets would not meet the objectives set out above, and hence it would unlikely be the most appropriate approach in respect of consumer welfare at this time.

Nature and structure of QoS obligations

691 In Consultation 15/89 and 16/31 ComReg reviewed the need for and, scope of, AFL USO QoS targets and what might be considered optimal targets for the USP bearing in mind its recent performance in these areas alongside evolution in the market, on the supply as well as demand side.

Option 1 – To keep existing (Decision D02/08) targets

692 As set out above, a range of benefits are likely to accrue to end-users and industry with implementation of targets. Decision D02/08 performance targets provide important protections for end-users. In the context of transitioning to NBP and other advanced networks, to keep D02/08 targets in place without any modification would likely:

- Continue to guarantee that reasonable requests for access would be fulfilled to a sufficient standard of quality;
- Help to ensure that current levels of quality in relation to separate measures relating to the AFL service would be sustained or at least not deteriorate in the NBP transition period; and
- Act as a means of helping to ensure the potential for continued and sustained improvements in the USP performance delivering quality AFL USO services.

693 Notwithstanding that overall, ComReg is of the view that setting QoS targets is likely to be significantly beneficial to end-users. Many respondents raised arguments in support of this. The potential cost of continuing with Decision D02/08 targets relative to alternative options is that the later targets are set nationally, however as demonstrated by the TERA analysis fault occurrence and fault repair time are very heterogeneous throughout the State.

694 The targets in Decision D02/08 are national targets and eir is able to differentiate its performance in respect of QoS in different geographic areas. ComReg's analysis of QoS performances in different geographic areas[122] highlighted that the level of LFI is very different geographically; ✂ . This creates potentially a widening disparity in performance across the country which can negatively impact consumers in areas where competition is yet insufficient and, hence, eir has less incentives to address quality issues.

695 eir's performance is significantly better in competitive areas while much weaker in "eir only" and "NBP" areas. Observing the USP's current QoS performance, it would seem that the most important area for addressing fault occurrence and related targets is the "NBP" areas. Thus, for example, in "NBP" areas, a fault occurs every ✂, with a ✂ probability of this fault being repaired after 4 days. Over 5 years, an average customer in "NBP" areas would have no service during ✂. Over 5 years, an average customer in "eir only" areas would have no service for ✂. Over 5 years and average customer in "market driven, infrastructure based competition" areas would have no service ✂. Without AFL USO QoS, it cannot be excluded that these trends would further increase.

696 With the D02/08 targets, eir can direct its investment to more competitive areas (competitive pressures will often mean that operators have an incentive to invest in order to improve or maintain quality of service as a failure to do so could lead to a loss of business). This may mean that it could be to the detriment of those end-users in most need of sustained or improved AFL QoS, who often will not have the option of switching providers. That is, an observed divide between "market-driven infrastructure-based competition" and "eir only"/"NBP" areas in terms of QoS could worsen.

697 Having specific regard to the analysis set out in Section 4, ComReg's response to eir as to the cost of continuing a with QoS regime in the near future, is set out at paragraphs 681 to 683 above and at paragraphs 703 to 708 below.

[122] The First TERA Report, section 4.7, pages 76-83 and updated in the Second TERA Report, section 5.

Option 2 – Modify existing targets

698 ComReg considered the option whether to "modify existing targets" having regard to TERA's analysis which presented options on variants surrounding Option 2 and an impact assessment of each option, comparing the potential advantages and disadvantages of the option.[123]

699

1. Proposed introduction of a new target of 'service availability' instead of separate LFI and fault repair targets

700 Having taken into account respondents views and, on the basis of ComReg's final reasoned position set out in Sections 3 and 4 (including ComReg's response to question 15 through to question 17), ComReg considers that introduction of the target of service availability will bring a range of benefits to end-users and industry, as discussed in the previous sub-sections. In summary, it will continue to ensure end-users are protected from the risk that QoS would significantly deteriorate and, in particular in "eir only" and "NBP" areas. This measure should ensure, at a minimum, that faults are repaired in a timely manner. ComReg considers that in end-user interests that it is imperative that eir compensates for any expected higher fault rates with speedier repairs.

701 Compared to the current situation of separate LFI and fault repair targets, the target of service availability can also bring benefits to eir, a greater flexibility to achieve the targets. Notably, it allows eir (i.e. it is in eir's control) to make efficient investment decisions. Thus, for example, either by eir choosing to invest in reducing the number of faults (CAPEX) or, by ensuring that time to repair is short with overall similar levels of service availability to the end-user (preventative maintenance or OPEX). Combining the targets together means that if fault occurrence performance deteriorates (i.e. there are more faults) then eir can address this issue to meet the performance targets by repairing the faults quicker. Equally, if fault levels improve, particularly with the rollout of fibre, then eir's repair performance would not be as critical in meeting the targets.

[123] The Second TERA Report section 5.2.

702 With respect to potential costs, contrary to Sky's and ALTO's submission, ComReg considers that the target of service availability (and the level at which it is set nationally and sub-nationally) can help ensure end-user welfare is protected inter alia end users should continue to get the level of QoS they are currently experiencing irrespective of geographic location. This approach is supported by the introduction of sub-national targets as an additional protection particularly in non-competitive areas, as set out further below. ComReg is of the view therefore that a service availability approach does not result in an understatement of the actual risk to consumers in respect of continued delivery of appropriate minimum quality of AFL USO services, particularly in non-competitive areas.

703 Additionally, eir made detailed submissions in response to Consultation 16/31 in relation to the costs of the proposed QoS regime. According to eir, the combination of the previously separate targets presents a façade of flexibility as in reality it is forced to invest or face an exponential increase in line faults. ComReg has carefully analysed these concerns in section 4. On this basis, including its response to questions 15 through to 17 (at paragraphs 385 - 538), ComReg considers that any costs associated with QoS performance targets would likely be mitigated by, amongst other things, the following factors and hence should not be overly burdensome on eir.

704 eir will have full flexibility to balance investment and repair expenditure as it considers appropriate to meet the service availability targets. Essentially, eir can make commercial decisions about whether and where to commit CAPEX on proactive maintenance of its network and/or whether and where to commit OPEX on reactive maintenance. Thus for example, the service availability targets allow eir to choose whether to invest to prevent faults by either rolling out new technology or maintain existing network connections or by carrying out repairs of line faults more quickly instead of investing in preventative maintenance.

705 Moreover, ComReg has not mandated the provision of AFL USO via eir's copper network – the USO designation is technology agnostic. However, eir is of the view that the proposed QoS regime is biased to the degree of imposing a copper solution with the effect of forcing eir to prolong the copper network, with an escalating fault rate, the choice of inefficiently high staff numbers or highly inefficient network investment. It is noted that eir can improve its performance by improving repair times (especially in the NBP area and eir-only areas) and as a consequence of its announced plans to roll out additional fibre connections in rural areas – neither factor being taken into account in eir's model.

706 Combining the targets of LFI and fault repair together means that if fault occurrence performance deteriorates (i.e. there are more faults) then eir can address this issue to meet the performance targets by repairing the faults quicker. Equally, if fault levels improve, particularly with the rollout of fibre, then eir's repair performance would not be as critical in meeting the targets. The more intuitive, efficient and effective approach during this transition period may be to minimise preventative maintenance and ensure sufficient resources are accessible to ensure that when faults that occur in the network, they are dealt with and resolved quickly. It is considered possible for an efficient operator to target its network repair resources in one area more than another, as proposed by TERA.

707 For these reasons, the introduction of service availability does not in ComReg's view, force eir to invest extensively and exclusively in their copper network. This approach should provide innovation and investment incentives for eir to accelerate any of its desired network deployment and/or replacement.

708 ComReg through the proposed introduction of the services availability targets seeks to balance the interests of end-users with promoting efficient investment. On balance, the net impact of the service availability target is likely to be positive overall bringing benefits to end-users and industry irrespective of geographic location. Also, because eir has flexibility in how it can achieve the proposed QoS targets which may not require additional effort by eir in terms of investment, any cost implications on eir would likely be proportionate, as set out in ComReg's final reasoned position in Section 3 and 4.

2. Proposal to set service availability target(s) at national and sub-national or area levels[124]

710 Having regard to the quantifiable assessment set out in the TERA reports that QoS levels, and eir's financial incentives to invest in this respect, are heterogeneous across the country, ComReg is of the view that it is likely necessary and proportionate to set availability targets at a sub-national level as well as nationally. This approach will protect end-users by ensuring that the amount of time that services are not working (either because of a line fault or a delayed repair) is more consistent across all of the State and at least do not fall below a minimum standard in all specified areas. On the basis of the final reasoned position on this matter (Section 3 and Section 4, paragraphs 165 - 235, ComReg considers that with QoS performance targets set to an appropriate level, there should be no deterioration in eir's current minimum service availability nationally or sub-nationally. Therefore, end-users in particular in "NBP"/"eir only" areas can benefit from a minimum standard as well as the potential for improved service availability which is envisaged going forward in transition to NBP and other advanced networks.

711 This measure should ensure that end-users in areas with less competition and, potentially experiencing lower levels of QoS, will not be significantly negatively affected in terms of QoS going forward. It should mitigate the risk that national QoS obligations alone are likely insufficient to ensure an appropriate QoS in all areas because:

- Large geographic disparities currently exist in terms of meeting QoS;
- Such disparities are likely to widen in the future; and
- Evidence demonstrates insufficient minimum QoS is experienced in certain specific areas currently.

712 In addition, this measure can also be expected to enhance the welfare of service providers that rely on eir's network for the delivery of services with sufficient quality, as set out in earlier sub-sections.

[124] The Second TERA Report, section 5.2.3.

713 Setting minimum service availability targets both at the national and sub-national level also provides during the transition period maximum flexibility to eir in how it will achieve these targets, as set out at paragraphs 703 to 708. It ensures that national targets can be maintained (end-users do not experience a lesser service than currently) where sub-national targets are relaxed compared to national targets. The USP has further flexibility within each of the sub-national areas, in how the national service availability target is achieved. The over achievement in one or more sub-national areas, may be off set against the under achievement in other sub-national area(s), provided always, that the minimum sub-national target is achieved within each of the three individual sub-national areas.

714 With respect to costs, ComReg notes that Sky believes that any relaxation of QoS (through the introduction of service availability instead of separate targets for LFI and repair times) would be a retrograde step to the detriment of consumers. ComReg has outlined at paragraph 686 - 696 the detriment to end-users of the move to service availability targets without simultaneously introducing sub-national targets. Thus, for example, TERA's analysis highlighted that while AFL USO QoS targets set on a national basis enabled eir to achieve its national targets, there can be large variations in performance in different geographies by compensating for areas of underperformance with areas of over performance.

715 In this light, ComReg considers that the simultaneous introduction of national and sub-national service availability targets will continue to protect end-users in all specified areas. It should help ensure that quality of service performance does not deteriorate below what ComReg regards as the minimum nationally and across the areas in the State. In this respect, the same sub-national target has been set for all areas and at a level based on the worst performing sub-national area with a view to protecting all end-users in terms of a minimum acceptable quality service. This should ensure that performance particularly in rural areas, does not adversely affect end users.

716 It is critical that the overall general minimum current quality of service targets (service availability) do not deteriorate further and this is assisted through the introduction of sub-national service availability targets. This additional protection should ensure that performance, particularly in remote areas, such as the NBP area, does not deteriorate, so as to not adversely affect end-users.

717 However, in eir's view, the cost of minimum service availability targets set nationally and sub-nationally is that, ComReg would in effect be imposing additional investment costs on eir to improve the performance of the legacy copper network specifically in rural/NBP areas. In this respect, eir submits[125] that the introduction of service availability targets, set nationally at 99.94% and sub-nationally at 99.86%, would require an additional investment, an additional ✂ over three years to meet the national target and sub-national targets respectively. In Section 4, ComReg considers eir submissions on the potential regulatory and cost implications for eir of achieving these proposed service availability levels, nationally as well as sub-nationally.

718 As set out above, ComReg's seeks to construct QoS targets to protect consumer welfare while allow eir maximum flexibility during the NBP transition period. The approach outlined in this respect provides eir with the flexibility to lessen its unplanned investment. Importantly, eir can choose (i.e. it is in eir's control) the optimum method of provisioning access and service as well as direct its investment as it sees fit.

719 Notwithstanding this, having regard to eir's model[126] suggest that both the national and sub-national targets would be met with eir's own planned investment i.e. ✂ capital over three years, and hence it would seem at no significant incremental cost incurred by eir.

720 ComReg considers that both the national and sub-national targets can be reasonably achieved by eir, as set out at paragraphs 66 - 67 and paragraphs 165 to 235. Thus, for example, the actual service availability achieved within:

- the "market driven infrastructure-based competition" area was ✂ exceeding the sub-national service availability target of maximum of 0.607 working days outage per line (99.834%).
- the eir only areas was ✂ exceeding the sub-national service availability; and

[125] See eir's Rresponse to Consultation 16/31, p 33.
[126] A model which uses eir's current planned investment scenario, and eir's yearly projected fault occurrence with its "achievable speed of repair" to calculate yearly projected national and sub-national availability.

- the "NBP" area was ✂ which is also meets the sub-national service availability target.

721 Further, ComReg at paragraphs 230 - 235 (see ComReg's responses to Q13, Q15, Q17) is of the view that eir's scenario model approach underestimates eir's achievable performance because, among other things, eir's model fails to incorporate repair time scenarios other than the "achievable speed of repair"; it relates to capital investment only (eir does not take into account the flexibility regarding OPEX as allowed for in ComReg's proposed approach to setting appropriate QoS targets) and; is confined to the copper network with the result that eir's model does not take into consideration possible performance improvements as a result of eir's own fibre deployment strategy and the associated migration of customers, including its significant planned rural FTTH deployment. Consequently, eir's approach appears to overstate the potential level of investment required to achieve the proposed minimum national and sub-national targets.

722 Overall, comparing cost and benefits with respect to the level of QoS targets set, ComReg has carefully considered all the relevant factors and available information, and believes that the level of QoS targets proposed to be set to be reasonable and proportionate. Importantly, during the transition period the achievement of these targets by eir will help ensure that performance, particularly in remote areas, does not deteriorate, adversely affecting end-users. ComReg's final reasoned position as set out in section 4 on setting appropriate targets for eir clearly demonstrates the greater flexibility provided by service availability compared to individual LFI and repair time targets. Consequently, based on the reasoning set out above, the introduction of minimum service availability targets should not result in significant incremental cost incurred by eir, Therefore, the measures are likely proportionate and no more burdensome than necessary on eir when delivering AFL at an acceptable minimum QoS.

1. Impose connection targets at national and sub national levels

723 For the reasons set out in paragraphs 84, 236 - 246 and 247 - 256, ComReg is of the view at this time that the current connection targets should be maintained (with the exception of the agreed date), though sub-national targets should introduced. This will benefit end-users who should experience reasonable and fair connection times irrespective of geographic location.

724 Both national and sub-national connection[127] targets are set at the same targets which compared to the current situation is likely not to require additional effort by eir in terms of investment.

725 Overall, ComReg is of the view that the modifications of targets outlined above are unlikely to result in a disproportionate cost burden, based on eir's own model and relative to the benefits to end-users and the industry in the transition period. The benefits to consumers are likely to be significant. In contrast, if these obligations were removed no such benefits would follow to the detriment of the consumers and potentially inconsistent with the Regulations.

[127] In-situ and new connections.

Requirement for AFL USO QoS targets

Updated Options	Impact on Industry		Impact on End-user	
	Costs	Benefits	Costs	Benefits
Option 1 **Maintain AFL USO including QoS**	USP may incur costs for the provision of AFL USO at an acceptable quality. These costs may depend on the specification of QoS. Regardless of who the USP(s) is/are, where a net cost is claimed and an unfair burden is determined, providers of electronic communications network/services may be required to contribute to a fund. The duration of the obligation may impact on the costs, with a shorter duration potentially resulting in lower costs.	Provision of AFL USO at an acceptable quality benefits all operators in terms of end user demand and satisfaction around the service. Avoids non availability of AFL which can have a detrimental effect on businesses, as being non contactable by customers can seriously affect the reputation of the business and confidence that its customers will have in it.		Ensure that end-users do not experience considerable delays in getting phone line connected; it will ensure that a line is not out of order for an unreasonable period of time. Benefits consumers with sufficient QoS in transition to new advanced networks and services, current QoS should not be less while it is envisaged QoS will improve going forward with the completion of advanced networks. Ensure that performance particularly in remote areas does not adversely affect consumer's standard of service.
Option 2 **Remove AFL USO including QoS**	eir has incentives to reduce its investment absent QoS to the detriment of operators delivering services to end users over eir's network .	New technology and NBP likely to result in higher QoS eir would freely decide what an acceptable AFL QoS is in respect of AFL and decide more generally when and how to invest in its network and services	AFL USO will not be delivered to all end-users with an acceptable quality, deterioration in the level of QoS would likely be significant to their detriment.	New technology and NBP likely to result in higher QoS going forward. End-users in MDIBCA may experience improved QoS if competition intensifies

Updated Options	Impact on Industry		Impact on End-user	
	Costs	**Benefits**	**Costs**	**Benefits**
	eir's incentives differ across the country and these disparities in performance could increase inter alia: • Eir may favour MDIBCA and ensure shorter repair times in these areas. • Despite a higher level of fault occurrence in areas with limited competition Eir may also invest more in MDIBCA compared to the number of faults	eir's incentives to maintain QoS differ across the country and it will have flexibility as to its planned investment and/cost of repair: • in MDIBCA there are incentives to improve/maintain QoS in order to compete • If Eir does not win the NBP bid, it will likely need to maintain/improve QoS in NBP in order to compete for as long as possible. No net cost incurred due to the delivery of AFL USO at a sufficient QoS level, hence no claim as a result of AFL USO QoS to the benefit of the industry including the USP.	eir's incentives differ across the country and the disparities in performance would likely increase. Potentially all end-users would be negatively impacted with a lower QoS, more so for those in NBP or Eir only areas (circa 50% lines) where currently there are no alternatives. End users may be forced to migrate, churn more quickly onto other advanced networks alternative where available.	If Eir does not win the NBP bid, it will likely need to maintain/improve QoS in NBP in order to compete for as long as possible.

Nature and Structure of QoS targets

Updated Options	Impact on Industry		Impact on End-user	
	Costs	Benefits	Costs	Benefits
Option 1 **Keep existing targets**	A net cost may result which can be claimed. Industry required to contribute to a fund if net cost found to be an unfair burden Limited flexibility to the USP as to how and where to invest compared to alternative options Fault occurrence levels vary significantly throughout the country	Simpler to implement and monitor as existing process for monitoring targets have been in place for a number of years. New technology and NBP likely to result in higher QoS	Given existing targets are national targets some end-users may experience more regular faults and longer repair times than others Fault occurrence levels vary significantly throughout the country LFI varies substantially across three areas (MDIBCA, Eir only areas, NBP areas) – however somewhat explained by technical differences.	End-user guaranteed USP will be required to achieve minimum QoS (repair times and fault occurrence targets) Ensures no excessive fault occurrence or repair times experienced
Option 2 **Modify existing targets**	A net cost may arise which can be claimed. However due to flexibility of the measure, likely to result in lower net cost than under current regime;	Service availability target gives USP flexibility to make decisions in terms of efficient investment	In some areas, end-users may experience more regular faults and longer repair times Sub-national areas defined based on groups of MDFs with same competitive environment	End-users benefit from at least no deterioration in eir's current minimum service availability nationally or sub-nationally

Updated Options	Impact on Industry		Impact on End-user	
	Costs	**Benefits**	**Costs**	**Benefits**
- Service Availability targets (combined fault occurrence and repair targets) - introduce geographically de-averaged targets as well as national level targets	Industry required to contribute to a fund if net cost found to be an unfair burden	Service Availability target gives more flexibility to the USP to choose between investing to reduce fault occurrence or improving repair time eir can decide whether to invest to prevent faults by either rolling out new technology or maintain existing network connections or by carrying out repairs more quickly instead of investing in preventative maintenance Less variation in Fault occurrence levels throughout the country, and eir can compensate for any expected higher fault rates with speedier repairs	Targets set to ensure end-users a minimum level of QoS Could allow for extreme situation with regular faults but short repair time or the opposite.	Ensures that end-users in areas with less competition will not be significantly negatively affected in terms of QoS going forward eir can compensate for any expected higher fault rates with speedier repairs Sub-national targets would mean end-users may benefit from a minimum service. Sub-national targets protect end-users and ensure the service quality is appropriate End-users should continue to get the level of QoS they are currently experiencing and, all end-users experience reasonable and fair connection times, irrespective of geographic location

Step 5: Assess the Impacts and Choose the Best Option

726 ComReg's conclusion on the most optimal regulatory approach in respect of a QoS regime is set out below having:

- considered the respondents' views to Consultations 15/89 and 16/31 including on the draft RIAs;
- addressed comments made by respondents in respect of the specific questions on QoS aspects (Section 4) and their comments on the draft RIA (Section 4, ComReg's response to Q33); and
- updated ComReg's analysis and assumptions to take into account information provided by eir in response to information requests.[128]

AFL USO QoS is necessary and justified

727 Having regard to ComReg's objectives set out in Section 5.3, ComReg considered the option to remove AFL USO QoS, which would involve leaving access to services mandated by the Universal Services Directive to market forces alone and eir freely deciding the quality of that service.

728 Having considered past performance by eir relating the indicators of quality of service, the counterfactual analysis and market developments generally, ComReg does not believe that at this time there can be complete assurance that AFL USO services would, without any QoS in place, be delivered at an appropriate quality throughout the State.

[128] eir investment model 25th August 2016 "20160526_AFLUSO_QoS_Repaired.xlsx (Excel workings) provided to ComReg in response to Section 13D Information Request

729 ComReg finds that absent any AFL USO QoS targets, eir acting as a profit maximising operator, would have incentives to reduce its investment in networks and services in the short to medium, and hence would not likely maintain an adequate level of QoS.[129] Further, there is an observed divide between "markets driven infrastructure based competition", and "eir only" and "NBP" areas with respect to an adequate minimum level of QoS.[130] Consequently, there is a risk that QoS would significantly deteriorate in particular, in "eir only" and/or "NBP" areas, increasing geographic disparity in terms of QoS. This would negatively impact end-users as well as service providers relying on eir's network to deliver service.[131]

730 ComReg is of the view that any costs incurred in respect of a QoS obligation would, on balance, be outweighed by the benefits to consumers and hence the complete removal of all the targets at this time is not appropriate.

731 Accordingly, maintaining an AFL USO QoS is the preferred option (Option 1, Consultation 15/89). Imposing AFL USO QoS is necessary and proportionate weighted against the objectives to be achieved by doing so. ComReg believes that maintaining AFL USO including QoS targets is necessary and entirely justified to protect end users who eir, as the USP, is reasonably required to provide with a connection of suitable quality. It will lead, at a minimum, to a minimum QoS (service availability and connections) for end-users and it can be envisaged that QoS will improve going forward with the rollout of advanced networks, including, NBP. The responses received on foot of ComReg's Consultations on these matters indicated that the vast majority of respondents were in favour of maintaining on eir binding QoS targets.

The nature and structure of future QoS targets is appropriate and proportionate

732 In light of the consumer protection concerns, notably, that during the NBP transition period there may an increased risk to consumers, given eir's incentive to allow its copper network to degrade, ComReg's view is that to completely remove the QoS targets is not appropriate at this time.

[129] Consultation 15/89 including, the counterfactual assessment in the First TERA Report.
[130] Section 5.4 of the First TERA Report.
[131] Section 4.7 and Table 12: p85 of the First TERA Report.

733 With a view to on the one hand protecting consumer welfare while on the other hand mindful of efficient investment incentives, ComReg has reviewed the future form of the AFL USO QoS targets and whether to "keep existing targets" (Option 1) compared to "modify existing targets" (Option 2).

734 It is vital that the actual performance of the USP in delivering AFL USO is satisfactory. Therefore, obligations in respect of QoS, which eir as the USP was obliged to comply with, are set out in Decision D02/08 consisting of national obligations for installation times, level of line faults and time to repair. Decision D02/08 included a glide path for performance on fault occurrence inter alia moving from 15.5 faults per 100 lines in 2009 to 12.5 faults per 100 lines in 2012. Subsequent to Decision D02/08 a number of PIPs have been agreed with the USP. PIP 3 set the target fault rate occurrence (LFI) at 14.5 at the national level.

735 ComReg also notes that by applying the national service availability target set out in this Decision to eir's annual 2015 performance metrics for fault occurrence (LFI) and Fault Repairs eir's 2015 performance levels would be within 0.022 working days outage per line of meeting these new national availability targets,[132] [133], even though eir's repair metrics for 2015 fell short of eir's "*achievable speed of repair*"[134] used in its submission to consultation ComReg 16/31[135].

736 As set out at paragraph 692, Decision D02/08 performance targets provide important protections for end-users. By continuing the targets originally set out in ComReg Decision D02/08, end-users continue to benefit, having the ability to access AFL at an acceptable quality standard. This is an important consideration in the context of transitioning to NBP and other advanced networks, and where, absent AFL USO QoS targets, it is likely that quality would deteriorate, particularly in certain areas.

[132] 13.4 (Fault Occurrence/LFI)/100 * 1.93 (speed of repair performance).
[133] For illustration only -- Decimal places used are less than those set out in actual calculation specified in the Schedules to this Decision.
[134] eir submitted a national achievable speed of repair of ✂.
[135] eir would have likely achieved the new national availability target if it had met its *"achievable speed of repair".*

737 Notwithstanding that the rational for Option 1, keeping Decision D02/08 QoS targets in place, set out at paragraphs 671 - 679 and paragraphs 692 and Having specific regard to the analysis set out in Section 4, ComReg's response to eir as to the cost of continuing a with QoS regime in the near future, is set out at paragraphs 681 to 683 above and at paragraphs 703 to 708 below., ComReg observes a divide in QoS performance between geographic areas which could worsen. As set out at paragraphs 695 - 696, eir's performance is significantly better in competitive areas while much weaker in "eir only" and "NBP" areas. Thus, national QoS obligations alone are likely insufficient to ensure an appropriate QoS in all areas.

738 Moreover, ComReg recognises that the ECS market will change significantly in the future including as a result of the NBP. The design of AFL USO QoS needs to take into account market trends and likely evolutions in the coming 5 years, notably, the deployment of FTTH networks, the development of the NBP and adoption of VOIP etc. In light of ComReg's final analysis and reasoning, it is considered necessary and appropriate that the nature and structure of any future QoS obligations evolve.

739 To this end, ComReg considers in light of NBP and the roll out of next generation networks on a commercial basis that modification of existing targets (option 2) which gives due consideration to efficient investment would seem the most preferred approach.

740 The new service availability targets are designed to promote efficient investment and innovation in new networks, without requiring any unnecessary investment in the current generation networks. In this respect, targets of service availability would not require eir to invest extensively and exclusively in their copper network, and by giving eir greater freedom to decide commercially the balance between of proactive and reactive maintenance, while achieving the service availability targets, it should help provide innovation and investment incentives for eir to accelerate any desired network deployment and/or replacement. Moreover, the USO designation is technology agnostic and eir can direct its investment as it sees fit.

741 Consequently, the quality delivered by the USP should be at least maintained (in terms of service availability and connections) and result in a minimum appropriate standard of service across the country. Going forward, ComReg's guiding principle is that consumers should not have a less than minimum quality of service while transitioning to advanced networks.

742 The consultations and this Decision incorporate a full and objective assessment of the various regulatory options available to guarantee that universal services envisaged by the Directive and the Regulations would be provided with a sufficient quality standard. As part of this assessment, ComReg undertakes a detailed analysis of the market and technological developments and their likely evolutions and an impact assessment of regulatory options for addressing identifiable consumer protection concerns. This final RIA should, therefore, be read in conjunction with the consultation and this Decision as a whole.

5.4 Conclusion

743 ComReg has designated eir as the USP for the period 29 July 2016 to 30 June 2021. Thus, its role is to ensure that consumers throughout the State receive AFL USO at an acceptable quality.

744 Having considered the impacts on stakeholders and competition, it is ComReg's position that the evidence (including the recent performance by eir in relation to QoS targets, the counterfactual analysis and market developments generally) does not support a complete withdrawal of AFL USO QoS targets at this time.

745 ComReg's final reasoned position on QoS aspects, as set out above, and in light of the NBP and the roll out of next generation networks on a commercial basis, is to replace D02/08 targets with what ComReg considers would be most appropriate QoS targets on eir for the next two years *inter alia*: retaining connection targets while combining fault occurrence and fault repair metrics to create an single new service availability target; setting the availability and connection targets at both national and sub-national levels; maintaining existing obligations consisting of auditing, reporting and publication, save for minimised changes for the addition of the service availability target aspects.

746 Thus, ComReg considers that Option 2 (i.e. "modification of existing targets") represents the most justified, reasonable and proportionate of the available regulatory approaches. It seeks to balance the end-user impact with any cost burden on eir as the USP and enhances its flexibility.

747 Overall, the modification of D02/08 targets considers how to balance investment incentives against the situation where the USO QoS targets are set on a national basis, and eir can achieve its national target, while having large variations in performance in different areas by compensating for areas of underperformance with areas of over performance. ComReg's approach considers protecting end-users during transition, notably, that AFL USO of an acceptable quality is delivered.

748 Localised next generation network deployments, while far from ubiquitous, may have an impact on the overall quality of service level within that area. Localised deployments, may result in improvements in overall AFL USO QoS, since quality of the localised network, particularly fibre, and its associated fault incident rate, are likely to be significantly better than the existing networks.

749 In recognition of this, the period for applying QoS targets will be of shorter duration compared to the AFL USO Designation period, to 30 June 2021. This approach is reflective of the more dynamic nature and the potential impact of QoS targets. This measure will help ensure that any service and/or network changes potentially impacting QoS elements are identified and reviewed in a timely manner. This should ensure that the QoS targets continue to evolve and align with ComReg's policy objectives, as relevant.

750 ComReg considers that replacement of targets (Decision D02/08) with new QoS targets is the preferred regulatory approach. It will help to ensure that AFL USO QoS levels are appropriate for the predominant current generation network, having regard to the deployment of next generation networks, both commercially and as a result of NBP. This will best achieve the objectives of protecting consumer welfare while promoting effective competition and efficient investment.

6. Decision Instrument

1. STATUTORY FUNCTIONS AND POWERS

1.1. This Decision and Decision Instrument is made by the Commission for Communications Regulation ("ComReg") for the purposes of imposing obligations, requirements, specifications and Performance Targets relating to quality of service for the provision by eir of its universal service obligations in respect of the services referred to in Regulation 3 of the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 (the "**Universal Service Regulations**").

1.2. This Decision and Decision Instrument is made:

a. pursuant to and having regard to the functions and objectives of ComReg set out in sections 10 and 12 of the Communications Regulation Act 2002 (as amended) (the "**Act**") and Regulations 12 and 16 of the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (the "**Framework Regulations**");

b. pursuant to the functions and powers conferred upon ComReg under and by virtue of Regulations 3, 7 and 10 of the Universal Service Regulations;

c. having regard to Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) (the "Framework Directive") (as amended), and Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive) (as amended);

d. having, pursuant to section 13 of the Act, complied with the Ministerial Policy Directions where applicable;

e. having had regard to the views of interested parties, including those expressed pursuant to the public consultations carried out in accordance with Regulation 26 of the Universal Service Regulations and Regulation 12 of the Framework Regulations, in response to ComReg Document

No. 15/89 "*Universal Service Obligation - Provision of access at a fixed location*" and ComReg Document No. 16/31 "*Universal Service Obligation - Provision of access at a fixed Location*";

f. having had regard to the matters set out in ComReg Decision D05/16 "*Universal Service Requirements - Provision of access at a fixed location (AFL USO)*"; and

g. having had regard to the analysis and reasoning set out in and ComReg Decision 03/17, Document No.17/10 (which shall, where the context admits or requires, be construed together with this Decision Instrument).

2. DEFINITIONS AND INTERPRETATION

2.1. The following words and phrases shall have the following meanings, unless the context otherwise requires:

"Access Line" means a Connection from the NTP to the entry point or to the local switch or remote concentrator, whichever is nearer; which is in many cases the main distribution frame (MDF) or optical distribution frame (ODF);

"Act" means the Communications Regulation Act 2002 (as amended);

"Agreed Date" means the date that a Customer has requested and that eir and a Customer have agreed for the completion of a Valid Service Order;

"All Connections" means the sum of In-Situ Connections and All Other Connections;

"All Other Connections" means Lines that are not In-Situ Connections and are not Connections with an Agreed Date and includes, without limitation, new build and pre-cabled Connections;

"ComReg" means the Commission for Communications Regulation, established by Part 2 of the Communications Regulation Act 2002;

"Connection" means a connection to the public communications network within the meaning of Regulation 3 (1) of the Universal Service Regulations and provided pursuant to a reasonable request as set out in ComReg Decision D05/16;

"Connection Performance Targets" means the quality of service performance targets specified by ComReg in respect of Connections in relation to eir's

universal service obligations for the provision of access at a fixed location, as set out in Section 4.3 of this Decision Instrument;

"Customer" means a "subscriber" within the meaning of Regulation 2 of the Framework Regulations or the Customer's representative, and in the case of requests for Connection, means an "End-User";

"Data" means any information, data, calculations, figures or metrics relevant to eir's performance, as further specified in Schedule 1 of this Decision Instrument;

"Data Collection Period" means the quarterly period in respect of which ComReg collects Data from eir. There are four Data Collection Periods in each Year, the timing of which is set out in Schedule 3(A);

"Day" means a calendar day;

"Decision Instrument" means this Decision Instrument and its Schedules ComReg Document 17/10a hereto, which is made pursuant to, *inter alia,* Regulation 10 of the Universal Service Regulations;

"**D03/17**" means the Decision and Decision Instrument issued by ComReg on 2 February 2017, entitled "*Universal Service Requirements – Provision of Access at a Fixed Location (AFL) – Quality of Service (QoS)"*;

"Effective Date" means the date this Decision Instrument becomes operative and fully effective as specified in Section 12.1 of this Decision Instrument;

"eir" means Eircom Limited and its subsidiaries and any related companies, and any undertaking which it owns or controls or any undertaking which owns or controls Eircom Limited, its successors and assigns and including agents, contractors or sub-contractors of any of the latter. For the purposes of this Decision Instrument the terms "subsidiary" and "related company" shall have the meanings ascribed to them in the Companies Act 2014;

"End-User" has the same meaning as it has in Regulation 2 of the Framework Regulations;

"Electronically Enabled" means that the activation of a Line can be carried out remotely, through systems configuration, without the need for physical intervention;

"Exchange Fault" means a Fault which is attributable to an exchange or core Network issue (and for the avoidance of doubt, excludes Line Faults, Other Faults, Faults due to Vandalism and Faults due to Third Party Damage);

"Fault" means an incident of disrupted or degraded Network service;

"Fault due to Vandalism" means a Fault that has occurred due to Vandalism;

"Fault due to Third Party Damage" means a Fault that has occurred due to Third Party Damage;

"Fault Occurrence" is a measurement of the rate at which Faults occur and may refer to either the "**LFI**" ratio and / or the "**Total Faults**" ratio specified in Schedule 1;

"Fault Repair" means the repair of a Valid Fault resulting in the restoration of the Network to normal working order;

"Fault Repair Time" means the duration from the occurrence of a Valid Fault to the occurrence of Fault Repair;

"Fibre Network" means an electronic communications network which is used to provide public telephony services; it supports the transfer between NTPs of speech communication and also other forms of communication, such as facsimile and data;

"Hour" means 60 minutes;

"In-Situ Connection" means a Connection via an Electronically Enabled Line, excluding Connections with an Agreed Date**;**

"**Independent Audit Report"** means a report prepared by an independent auditor pursuant to Regulation 10 (6) of the Universal Services Regulations, in respect of the Data provided by eir to ComReg in accordance with Section 6 of this Decision Instrument;

"Line" means an Access Line which is providing a Network to a Customer;

"Line Fault" means a Fault which is attributable to a Line (and for the avoidance of doubt, excludes Exchange Faults, Other Faults, Faults due to Vandalism and Faults due to Third Party Damage);

"LFI" means the number of Line Faults per 100 Lines;

"MDF" means main distribution frame;

"Ministerial Policy Directions" means the policy directions made by Dermot Ahern TD, the then Minister for Communications, Marine and Natural Resources, pursuant to Section 13 of the Act, dated 21 February 2003 and 26 March 2004;

"Month" means a calendar month;

"National Area" means all the MDF areas (or as the case may be, ODF areas) within the State as specified by the table in Schedule 2(A), or the sum of the Sub-National Areas;

"National Service Availability Target" means the performance target eir must achieve for service availability in respect of the National Area, as set out in Section 4.4 of this Decision Instrument and calculated by reference to Schedule 1;

"Network" means any electronic communications network which eir uses to fulfil its universal service obligations, including the Public Switched Telephone Network or Fibre Network;

"NTP" means the network termination point, which is the physical point at which a Customer is provided with access to a public communications network; in the case of networks involving switching or routing, the NTP is identified by means of a specific network address, which may be linked to a Customer number or name;

"ODF" means optical distribution frame;

"Other Fault" means a Fault which lies within the Network, excluding a Line Fault, Exchange Fault, Fault due to Vandalism, or Fault due to Third Party Damage;

"Performance Targets" mean the Service Availability Targets and / or the Connection Performance Targets specified by ComReg in relation to eir's universal service obligations for the provision of access at a fixed location, as set out in Section 4 of this Decision Instrument;

"Public Switched Telephone Network" or "PSTN" means an electronic communications switched network which is used to provide publicly available telephone services; it supports the transfer between NTPs of speech communications and also other forms of communications, such as facsimile and data;

"Schedules" refers to Schedule 1 ("*USO Quality of Service - Calculation Methodologies*"), Schedule 2 ("*National and Sub-National Areas*") and Schedule 3 ("*Reports to ComReg*") of this Decision Instrument.

"Service Availability Targets" refers to both the National Service Availability Target and the Sub-National Service Availability Target, as set out in Section 4.4 of this Decision Instrument and calculated by reference to Schedule 1;

"State" means Ireland;

"Sub-National Area" means a collection of MDF areas (or as the case may be, ODF areas) within the State as specified by the tables in Schedule 2(B);

"Sub-National Service Availability Target" means the performance target eir must achieve for service availability in respect of each Sub-National Area, as set out in Section 4.4 of this Decision Instrument and calculated by reference to Schedule 1;

"Third Party" means any person other than eir;

"Third Party Damage" means unintentional damage to or destruction of the Network caused by a Third Party;

"Total Faults" means the sum of Line Faults plus Exchange Faults, plus Faults due to Vandalism, plus Faults due to Third Party Damage plus Other Faults;

"USO" means universal service obligation;

"Universal Service Regulations" means the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011;

"**User**" has the same meaning as it has in Regulation 2 of the Framework Regulations;

"Valid Fault" means any Fault within the Network experienced by a Customer, which cannot be attributed to components outside the Network;

"Valid Service Order" means an order by a Customer for a Line at a specified address (whether made orally, or in writing, including by any electronic means, or in any other acceptable form), that is not later deemed invalid;

"Vandalism" means intentional damage to or destruction of the Network caused by a Third Party, or theft by a Third Party;

"Working Day" means 8 Working Hours;

Working Days Outage per Line" means the average number of Working Days that a Line is without Network service, calculated by reference to Schedule 1;

"Working Hour" means 60 minutes duration between 09:00 – 17:00, from Monday – Friday (excluding Saturday, Sunday and public holidays);

"Week" means 7 consecutive Days;

"Year" means an annual period; save for the first Year of application of this Decision D03/17 is from the Effective Date to 31 December 2017. For the avoidance of doubt, the second Year is from 1 January 2018 to 31 December 2018.

2.2. References to "Decision Instrument", "Schedule", "Section", and "Decision" mean respectively: references to this Decision Instrument, Schedule ComReg Document 17/10a, sections of this Decision Instrument, and ComReg Decision D03/17.

2.3. References to European Union legislation or to Irish primary or secondary legislation shall be construed as references to that legislation as amended from time to time.

2.4. Other terms, words, or phrases used in this Decision Instrument shall have the same meaning as they have in the Framework Regulations and the Universal Service Regulations, unless the context otherwise admits or requires.

2.5. Words in the singular form shall be construed to include the plural and vice versa, unless the context otherwise admits or requires.

2.6. Examples shall not be construed to limit, expressly or by implication, the matters they illustrate.

3. SCOPE AND APPLICATION

3.1. This Decision Instrument is binding upon eir and does as follows:

3.1.1. specifies and imposes Connection Performance Targets in respect of the National Area and the Sub-National Areas, in respect of eir's provision of universal service at a fixed location;

3.1.2. specifies and imposes Service Availability Targets in respect of the National Area and the Sub-National Areas based on a combination of the Fault Occurrence and Fault Repair metrics, in respect of eir's provision of universal service at a fixed location;

3.1.3. describes the methodology which eir shall use for the purposes of collecting, calculating, publishing and reporting on Data and / or Performance Targets; and

3.1.4. describes the methodology and calculations which ComReg shall use for the purposes of monitoring and assessing compliance by eir with the Performance Targets.

4. OBLIGATIONS ON EIR WITH RESPECT TO QUALITY OF SERVICE PERFORMANCE TARGETS

4.1. eir shall fully comply with each of the Performance Targets specified in this Section and with the calculation methodologies described in Schedule 1 (*USO Quality of Service -Calculation Methodologies*) of this Decision Instrument.

4.2. ComReg may amend or revise the Performance Targets and / or the Schedules from time to time as it deems appropriate, and in so doing, ComReg shall have regard to the views of interested parties.

4.3. Connections

4.3.1. eir is required to achieve and fully comply with the following Connection Performance Targets in respect of the National Area and in respect of the individual Sub-National Areas as specified in Schedule 2, for each Year:

In-Situ Connections:

a. 80% of all In-Situ Connections shall be completed within 24 Hours of request.

b. 99.8% of all In-Situ Connections shall be completed within 2 Weeks of request.

c. 100% of all In-Situ Connections shall be completed within 2 Months of request.

All Other Connections:

a. 80% of All Other Connections shall be completed within 2 Weeks of request.

b. 85% of All Other Connections shall be completed within 4 Weeks of request.

c. 90% of All Other Connections shall be completed within 8 Weeks of request.

d. 95% of All Other Connections shall be completed within 13 Weeks of request.

e. 100% of All Other Connections shall be completed within 26 Weeks of request.

4.4. Service Availability

4.4.1. eir is required to achieve and fully comply with the following Service Availability Targets in respect of the National Area and the individual Sub-National Areas, as specified in Schedule 2, for each Year:

a. National Service Availability Target of 0.237 maximum Working Days Outage per Line;

b. Sub-National Service Availability Target of 0.607 maximum Working Days Outage per Line.

5. PERFORMANCE MEASUREMENT

5.1. eir's performance against the Performance Targets shall be assessed based on the calculation methodologies set out at Schedule 1 and by reference to the MDF areas (or ODF areas, as the case may be) specified in Schedule 2.

5.2. ComReg shall monitor compliance with the Performance Targets by reference to the Independent Audited Reports of Data received from eir on a quarterly basis and shall use such Data to calculate eir's compliance with the Performance Targets for each Year.

5.3. ComReg may publish Data relating to eir's performance on its website from time to time, either in the form of an information notice (usually entitled "Provision of

Universal Service by eir – Performance Data") or otherwise, as ComReg deems appropriate.

6. REPORTING AND AUDITING OBLIGATIONS

6.1. Pursuant to Regulation 10 (1), 10 (3), 10 (4) and 10 (6) of the Universal Service Regulations eir shall comply with the following reporting and auditing obligations:

6.1.1. eir shall submit Data to ComReg for each Data Collection Period in written and electronic form (spread sheet), no later than two Months from the end of each Data Collection Period, in accordance with the timing set out in Schedule 3(A);

6.1.2. eir shall ensure that Data submitted to ComReg further to Section 6.1.1 is in all respects complete, accurate and free from error and is in the format set out at Schedule 3(B);

6.1.3. eir shall arrange for an Independent Audit Report of the Data to be prepared for each Data Collection Period, at eir's own cost, and shall submit it to ComReg together with a cover letter from the independent auditor who prepared the Independent Audit Report, prior to eir publishing such Data.

7. AMENDMENT TO SCHEDULES

7.1. eir shall not, without receipt of prior written approval from ComReg, implement any amendment to:

7.1.1. The methodology for collecting, measuring, calculating or reporting on the Data specified in Schedule 1; or

7.1.2. The classification of MDFs (or as the case may be, ODFs) within the National Area and / or the Sub-National Areas, specified in Schedule 2; or

7.1.3. The timing and format of reporting specified in Schedule 3 hereto.

7.2. In respect of any request for amendment(s) to Schedules 1, 2 or 3 by eir, the following provisions shall apply:

7.2.1. eir shall notify ComReg in writing of its request and shall, at the same time, also furnish ComReg with a detailed written submission outlining the basis for its request, all relevant facts and the likely effect of the proposed amendment(s);

7.2.2. ComReg may request eir to provide it with further information in order to fully consider eir's request, and may specify a timeline for receipt of such information; and

7.2.3. Following receipt of eir's request, its written submission and, where applicable, any further information requested, ComReg shall consider the appropriateness of the proposed amendment(s) and shall communicate to eir within a reasonable period whether, or to what extent, it approves or refuses its request for amendment(s).

7.3. ComReg shall, subject to any confidentiality requirements, publish any amendment(s) to Schedules 1, 2 or 3 (either following a request from eir or pursuant to Section 4.2 above) on its website.

8. STATUTORY POWERS NOT AFFECTED

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

9. MAINTENANCE OF OBLIGATIONS

9.1. Unless expressly stated otherwise in this Decision Instrument, all obligations and requirements contained in decision notices and directions made by ComReg applying to eir and in force immediately prior to the Effective Date shall continue in force and eir shall comply with same.

10. CONFLICT

10.1. 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 eir's obligations now set out herein, this Decision Instrument shall prevail, unless otherwise indicated by ComReg.

11. SEVERANCE

11.1. If any Section, Schedule, or portion thereof contained in this Decision Instrument is found to be invalid or prohibited by the Constitution, by any other law or judged by a court to be unlawful, void or unenforceable, then that Section, Schedule, or portion thereof shall, to the extent required, be severed from this Decision Instrument, and rendered ineffective, but as far as possible without modifying the remaining Sections, or portions thereof and shall not in any way affect the validity or enforcement of this Decision Instrument or other decision instruments.

12. EFFECTIVE DATE AND DURATION

12.1. This Decision, Decision Instrument and its Schedules are operative and fully effective from 2 February 2017 and shall remain in full force and effect until 31 December 2018, unless otherwise specified by ComReg.

JEREMY GODFREY

CHAIRPERSON

THE COMMISSION FOR COMMUNICATIONS REGULATION

THE 1st DAY OF FEBRUARY 2017