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Rialáil Cumarsáide
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Communications Regulation

Response to Consultation and Decision on the management of Radio Spectrum Interference Complaints

Response to Consultation and Decision

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Additional Information

Approval

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1 Introduction

- 1 In December 2019, the Commission for Communications Regulation (“ComReg”), in Document 19/108, published its “Consultation on the management of Radio Spectrum Interference Complaints” (“the Consultation”)¹. ComReg sought views from interested parties on:
 - the proposed revised complaints classification
 - the proposed new target response time
 - any other comments in relation to the subject matter of the consultation.
- 2 The purpose of the Consultation was to set out ComReg’s proposals for the revision of the current Radio Frequency Interference (“RFI”) complaint classification process, in order for ComReg to respond to radio interference complaints in the most effective manner possible, bearing in mind ComReg’s limited resources. There has been a proliferation of wireless devices which have brought with them a greater complexity in their use of spectrum. The current process has not been reviewed for some time, ComReg believes that it is timely to review the current RFI complaint classification process. ComReg continuously seeks to further improve its processes to ensure it is better equipped to reflect today’s radio environment.
- 3 As the Consultation made clear, ComReg’s proposals were aimed at directing ComReg’s resources to areas where they are needed most, and where the impact of harmful interference has the greatest effect.
- 4 Nine interested parties responded to the Consultation (non-confidential versions of which are published alongside this paper – ComReg Document 20/62 S).
- 5 Respondents fall into several broad groupings, the first grouping being organisations which would have enjoyed Class 1 status in previous classification
 - Health Service Executive (HSE)
 - Irish Aviation Authority (IAA)
 - TETRA Ireland

The second group of respondents are network operators:

¹ <https://www.comreg.ie/publication/consultation-on-the-management-of-radio-spectrum-interference-complaints>

- eir
- Imagine
- Three
- 2RN

6 The final group of respondents were general interested parties:

- Butler Technologies Limited; and
- Irish Radio Transmitter Society (“IRTS”)

7 Within this Response to Consultation and Decision, ComReg has summarised key points from the nine responses received and has set out its assessment of those responses, and its final decision in respect of this matter.

8 This Response to Consultation and Decision is structured as follows:

- Chapter 2 – sets out the responses to submissions received to 19/108;
- Chapter 3 – sets out Next Steps;
- Annex 1 – contains the revised case prioritisation proposals as set out in Document 19/108; and
- Annex 2 contains the updated Case Reporting Requirements.

2 Response to Submissions Received to Document 19/108

2.1 Revised case Classification

Summary of ComReg's position set out in Document 19/108

- 9 In Chapter 3 of Document 19/108, ComReg set out its proposal for the revised RFI complaints classification system which would be based on three Case Types, A, B and C. The proposed new classification approach would endeavour to direct ComReg resources to the cases of harmful interference that have the greatest impact on the complainant's ability to provide services, as opposed to the current classification where it is typically focused on the identity of the complainant.

Views of Respondents

Respondents previously classified as Class 1

- 10 HSE, IAA and TETRA Ireland do not agree with ComReg's proposals for the revised RFI complaints classification system, as, in their view the proposals do not reflect the safety-of-life dimension of the services provided by them.
- 11 IAA and TETRA Ireland expressed the view that there should be a separate classification for complaints affecting emergency services and that multiple stations or number of users affected is not an indicator of scale.
- 12 TETRA Ireland submits that:
- (i). harmful interference has the potential to impact on end users' radio operations and should be investigated and treated as a priority by the system operator. Once identified as being outside of the system operator's control, it should be reported to ComReg for urgent attention and resolution;
 - (ii). the identity of the complainant is important for the categorisation of complaints and that its PPDR service should be treated with higher priority than non-PPDR services.
 - (iii). the identification of interference should be based on proactive monitoring of network management systems. When such monitoring finds that pre-agreed thresholds for interference levels are breached, this should be sufficient to be defined as harmful to end user operation. Waiting for complaints from users has the potential to disrupt on-going emergency service operations;

- (iv). while supportive of ComReg's comments that its resources should be directed where the impact of interference is greatest, it notes that poor or bad quality communications due to interference is as disruptive to emergency services as a complete loss of communications;
- (v). complaints affecting emergency services and public safety services should be divided into Type A (1) and Type A (2). Type A (1) would be escalated by phone to ComReg's Spectrum Intelligence and Investigations unit (SIU) with a 24 x 7 response being provided by ComReg. Type A (2) would be where a single transceiver and or base station is subject to harmful interference requiring a less urgent response and could be reported through the normal channels. The new classification would seem to more appropriately fit non-public safety operations and a different level of priority and investigation should be afforded to same.
- (vi). that ComReg clarify and define what it means by "reasonable steps" in its statement
"unless it is satisfied that the interference is "harmful", outside of the complainant's control and that all reasonable steps have been taken by the complainant to minimise the effect."
- (vii). that ComReg's information requirements should be agreed on a bilateral basis and must be reasonable.

13 IAA submits that:

- (i). it has invested in equipment and training to investigate cases of interference it receives to its equipment;
- (ii). it employs engineers who deal with interference cases on a regular basis, the majority of which are not reported to ComReg and resolved by the IAA;
- (iii). the new classification system does not reflect the operating environment of air traffic services and does not apply safety of life status to the air traffic services once a complaint of interference is lodged;
- (iv). an additional Type or amendment to Type A should be added that acknowledges that the air traffic control and air navigation services provided by IAA receive safety of life classification;
- (v). safety of life services should be defined appropriately to prevent delays in triage, as opposing views held by either party on whether interference is harmful could lead to further complications and delays in issue resolution;

- (vi). Type B is not measuring the impact of loss of service, citing emergency VHF channels which are only used in an emergency but are afforded greater protection within the band.

Responses from Network Operators

- 14 Network operators, namely eir, Imagine and Three expressed the view that the new proposal is an improvement on the current arrangement.
- 15 Three expresses the view that the proposed new classification system is better than the current one. It observes that in its view the majority of complaints submitted by mobile network operators would fall into the Class 2 definition under the current classification regime but they are in fact treated as Class 3 and 4. Three notes that this mismatch needs to be corrected as this leads to unrealistic expectations or inappropriate response times.
- 16 In its response eir:
 - (i). agrees that the revised classification system should focus on the impact of the harmful interference rather than the identity of the complainant;
 - (ii). submits that given ComReg's statement that Type A "would in essence be a combination of the current Class 1 and Class 2 complaints", it is unclear how ComReg will ensure that the bias in the current system will not be carried over into the new regime;
 - (iii). expresses concerns that the Type descriptors as drafted are too ambiguous and considers that Type A requires more precision, as it essentially defines the scheme.
 - (iv). notes that the loss of a single base station or sector in a mobile network could impact a substantial number of customers and queries what constitutes a "large number of users" for Type A cases. It proposed that 100 users be considered as a large number of users and asks that consideration be given to the size of the geographic area impacted;
 - (v). queries whether a fixed link, subject to interference, would fall within the description of "multiple stations" as a consequence of the fact that it has two transmitters;
 - (vi). queries what type of radio communications service would be exempt from a requirement to have multiple stations impacted simultaneously? Is it informed by number of users or the size of geographic area?
 - (vii). queries how a service that is severely degraded be dealt with in the new classification regime;

- (viii). has no objection to the definition for Type C, provided complainants are given the opportunity to address incomplete submissions before they are categorised as Type C.

17 2RN submits:

- (i). that the statement in paragraph 24 “For example, the mere association of certain organisations with “safety of life” may be artificially raising the importance of individual complaints” needs some qualification or should be deleted;
- (ii). that for Type A and B the term “and” should be removed between each clause to allow more flexibility in allocating categories, thereby allowing any three of the descriptions to be considered alone;
- (iii). that the word “multiple” be removed from the first clause to allow more flexibility in allocating a category, citing that interference to multiple TV or radio broadcast transmitters simultaneously is unlikely; and
- (iv). requests that a Broadcast TV interference example be included in Type B. Such an example will help differentiate legitimate broadcast interference complaints from Type C, broadcast reception issues. ComReg should treat reports of domestic TV problems as potential interference issues and not dismiss them without investigation.

18 In its response Imagine noted that *“being an FWA operator, Imagine does not suffer from the same volume or types of interference as for example a mobile operator would and in general does not have any situations that are “risk to life”*”.

19 Imagine note that “It does however have issues from time to time with interference in its liberalised 3.5GHz spectrum allocation but more often in its point to point links across all the frequencies it owns”.

20 Imagine further submit that it *“agree[s] with the re-classification of complaint types and their associated SLA as discussed in Chapter 3”*.

General interested parties

21 Butler Technologies observed that Type A complaints could potentially fall into complaints outsourced to them if a mobile operator experiences a major impact on multiple base stations

22 Butler Technologies seeks clarification on what constitutes the start date of a case if it, as an outsourced service provider, is not meeting a complainant’s field engineer.

ComReg’s Assessment and Final Position

- 23 ComReg notes the submissions of eir, Imagine and Three are generally supportive of the proposed new classification system.

Respondents previously classified as Class 1

- 24 Regarding TETRA Ireland's submissions set out in points (i) to (vii) in paragraph 12 above, ComReg will now address each point raised.

- (i). ComReg agrees with TETRA Ireland's view that suspected harmful interference should, in the first instance, be investigated and treated as a priority by the system operator prior to the case being reported to ComReg. However, it is for ComReg alone to determine and assign the level of priority it will afford to the case and its resolution. As set out in Document 19/108 the priority afforded to a case will be based on (a) the impact the interference is having on the ability of the operator to provide services and (b) be informed by information provided by the complainant. Furthermore, as set out in Document 19/108, the nature of radio spectrum interference is such that:

- it is often intermittent;
- that causes of interference can be from a legitimate source; and
- the resolution may require intervention by the complainant, that may take some time to put in place.

As such the resolution of an interference case can be complex, involve the complainant to play its part in the resolution and require several site visits.

- (ii). ComReg does not agree that the identity of the complainant should be a determining factor in how it classifies interference complaints. For example ComReg does not agree that a case of intermittent interference to a "safety of life" service where the operator has an alternative channel should be treated as a higher priority than a case of interference to, for example, a mobile service where there is a complete loss of all services in a densely populated area. As is made clear in the Consultation, ComReg must direct its limited resources to areas where they are needed most and where the impact of harmful interference has the greatest affect.

- (iii). ComReg agrees that to assist in the identification of interference, operators should conduct proactive monitoring of their network management systems. However, ComReg does not agree that instances of pre-agreed thresholds being breached should be sufficient to be defined as harmful interference, as ComReg does not consider these as clear unambiguous evidence of the presence of harmful interference. The breaching of thresholds could be due to other factors, for example, faulty equipment such as a front end amplifier or internal interference arising from a poorly configured network could also give rise to thresholds being breached. ComReg is of the view that service providers requesting that ComReg deploy staff for the purposes of the investigation of interference should submit clear evidence of the presence of an external interferer;
- (iv). ComReg acknowledges the potential disruption that can be caused by poor quality communications. Where a service provider considers that poor quality communications has a more significant impact on its ability to continue to provide services than a complete loss of service, then it is ComReg's firm view that the onus is on the service provider to submit any and all information and evidence of same during the reporting of the complaint to enable ComReg to assess the impact and classify the complaint accordingly.
- (v). ComReg does not agree with TETRA Ireland's alternative descriptors of Type A (1) and Type A (2), as they maintain the current emphasis on complainant's identity rather than the impact of interference, which is addressed in paragraph (ii) above. TETRA Ireland's submission in respect to ComReg's operating hours are addressed in paragraph 36 below.
- (vi). The nature of radio spectrum interference and the number of different wireless services being provided is such that it is not possible to give a precise definition of "reasonable steps" noting that reasonableness typically requires the exercise of judgement; fairness and sensibility, i.e. it will be impacted by circumstance. Depending on the service type being impacted, this will vary on a case by case basis. However, as a minimum, ComReg would expect that prior to submitting a complaint to ComReg, a service provider:
- has carried out a check of the affected base station(s) or installations to ensure that there is no fault in the installation or equipment that could be giving rise to the interference;
 - where possible, has switched to an alternative channel so that services can be maintained;
 - has, in respect of repeated instances of interference from the same or similar sources, proactively engaged with the relevant parties or consumers to avoid or minimise recurrence; and

has captured evidence of the interfering signal on a spectrum analyser.

- 25 ComReg welcomes the IAA's comments that it has invested in equipment and staff training to investigate cases of interference. ComReg notes the IAA's comment that the majority of cases of interference are not reported to ComReg, which might suggest many instances of interference do not necessarily reside with sources external to the IAA.
- 26 In relation to the IAA's submission regarding the need to maintain the existing status afforded to safety of life services, ComReg refers to its response in paragraph 24 above.
- 27 Regarding the IAA request for definitions of "*harmful interference*"² and "*safety of life*", ComReg notes that it has provided a definition of "harmful interference" in footnote 4 of the Consultation and for completeness has repeated it in a footnote to this document below.
- 28 As set out in the Consultation and again in this Response to Consultation, ComReg is moving away from a classification system based on **identity** to one based on **impact**, and as such does not see a requirement to provide a definition of "safety of life" for the revised classification system.
- 29 ComReg notes the IAA's submission that the impact of loss of service is not, in the IAA's view, being measured by proposed Type B. ComReg also notes that the IAA did not provide any proposal as to how this might be addressed by ComReg in either its descriptor of Type B or in the complaint reporting requirements. Notwithstanding, in order to capture as much information as possible when a complaint of interference is being made, ComReg has added an additional field into the complaint reporting form to facilitate complainants in providing any other information that they consider necessary to assist ComReg in the triage, classification and investigation of a complaint. ComReg is satisfied that this will enable complainants to provide enough information to enable it to assess the impact of loss of service and categorise the complaint appropriately.

² The Framework Regulations S.I 333 of 2011 define "*harmful interference*" as *interference which endangers the functioning of a radio navigation service or other safety services or which otherwise seriously degrades, obstructs or repeatedly interrupts a radio communications service operating in accordance with a requirement under the International Telecommunication Union Radio Regulations, a Regulation of the European Union or legislation giving effect to an act, or a provision of an act, adopted by an institution of the European Union relating to the provision of an electronic communications service, electronic communications network or an associated facility or the radio frequency spectrum or regulations made under the Act of 1926*

- 30 In regard to the comment by the IAA in respect of emergency VHF channels, it should be noted that it is the IAA and not ComReg that affords the emergency VHF channels “greater protection” and therefore it is not for ComReg to provide greater protection to these channels than would be afforded to other frequency bands and other services. The IAA should ensure that it can provide these channels with the “greater protection” that it has determined, for operational reasons, that these bands require.

Responses from Network Operators

- 31 In regard to eir’s submissions in (i) – (vii) above:

- ComReg has implemented a new complaint reporting protocol that all complainants must submit to ComReg before it will open a case for investigation. This reporting requirement enables ComReg to triage all complaints such that, based on the evidence provided by the complainant, it can make a determination as to the impact the interference is having on its continued provision of services and respond appropriately, taking into consideration all other open cases of interference. ComReg considers that these measures will ensure that all complainants are treated equitably under the new classification system.
- The Type descriptors are not intended to be strict definitions, as ComReg considers that over-precision in the Type descriptors would not take sufficient account of the different types of wireless services that are being provided in the State. ComReg notes that the number of transmitters is not always an indicator of scale. For example, the number of sites required to provide the State broadcasting services is considerably less than that required to provide a national mobile network. However, ComReg could envisage a scenario where either of these services could be classified as a Type A complaint and as such the Type descriptors need to be flexible enough for such a designation.
- ComReg agrees with eir’s submission that the loss of a single base station or sector could impact a substantial number of customers. However it does not agree that it is possible to put definitions in place for “a large number of users” or geographic area as a very small geographic area in an urban environment could potentially have considerably more users affected by harmful interference than a large area in a rural environment. ComReg is of the view that it is only by requiring complainants to submit a reasonable amount of relevant information can it assess the impact that harmful interference is having on a particular service and respond accordingly.

- Regarding eir's view in respect of Type C cases, ComReg notes that it has clearly set out on its website³ and in the Consultation what its minimum complaint reporting requirements are. ComReg has done this to ensure that all complainants can put the necessary processes and procedures in place to meet these reporting requirements. ComReg considers that for cases of harmful interference, where complainants are requesting ComReg's assistance, they should ensure that they can provide this information. ComReg further considers 2 working days as sufficient duration before a case is categorised as Type C.

32 In regard to points raised by 2RN in paragraph 17 ComReg observes:

- under the existing classification system certain organisations deemed to provide "safety of life" services would have been afforded Class 1 designation for *all* complaints received, even if the complainant did not provide ComReg with evidence of the presence of an external interferer or when the complainant had an alternative channel to switch services to. This resulted in preferential treatment for such services at the expense of other services, which may have experienced harmful interference, and which had a more significant impact on the service in question;
- ComReg is adopting a service-neutral approach to its revised complaint classification system. As such, its proposals for Type A and Type B classifications are worded for the purposes of allowing flexibility in allocating a Type to a complaint, thereby enabling *all* services to be designated as a Type A, B or C complaint which has not been the case heretofore. These descriptors are a general guide to how ComReg will triage complaints, and the supporting information provided by the complainant will ultimately be the determining factor in the Type allocated to the complaint.
- With regard to reports of interference to domestic TV service, ComReg has a clear procedure in place for such reports. Complainants are asked to submit a professional TV installers report if external radio interference is suspected. ComReg has, and will continue to, act on these reports, assuming of course that clear evidence of external interference is shown.

General interested parties

33 ComReg considers the submission made by Butler Technologies to be matters pertaining to the contract between ComReg and Butler Technologies and as such are not appropriate for comment by ComReg as part of this public consultation process.

³ <https://www.comreg.ie/industry/radio-spectrum/spectrum-compliance/radio-interference/>

ComReg's Final Position

- 34 Given the above, ComReg is of the view that the Type descriptors as set out in the Consultation provide sufficient flexibility to enable the possibility that all services could be designated as a Type A complaint and be afforded the associated response time. This has not been the case heretofore, where it was the identity of the complainant that determined the classification and associated response time to complaints.
- 35 ComReg has, based on submissions received, amended the complaint reporting form to ensure that complainants are afforded the opportunity to provide any additional information it considers necessary to assist in the triage and response of complaints. The revised form is set out in Annex 2 of this document.

2.2 New target response time

Summary of ComReg's position set out in Document 19/108

- 36 In Chapter 3 of the Consultation, ComReg set out its proposal for a new definition of response time, and the associated target response times for each complaint Type. Response time means the time taken, from receipt of all of the required information from the complainant, to ComReg being deployed into the field to investigate the cause of interference⁴.

Complaint Type	Response Time
Type A	Immediate ⁵
Type B	5 working Days
Type C	N/A

Table 1: Target Response Times

Views of Respondents

Respondents that previously were classified as Class 1;

- 37 The IAA, TETRA Ireland and the HSE do not agree with the proposed new response times as set out in Document 19/108. They express the view that normal business hours Monday to Friday is insufficient for public safety operations. They consider that ComReg should be providing a 24 hour, 7 days a week service.

⁴ This response time is on the basis that the complainant makes engineering staff available to assist ComReg or its agent on site. In the event that a complainant cancels or fails to attend a pre-arranged site visit, the period from cancellation or non-attendance, to ComReg or its agent's site visit will not be counted as part of the response time.

⁵ ComReg's hours of work are 9:00 am to 5.30 pm, Monday to Friday. ComReg staff do not operate on an "on call basis".

38 The IAA further submits that:

- ComReg working hours and proposed response times do not constitute “*effective immediate response time*”
- regarding the 5 day response time, it may take a complainant several days to ascertain if interference is caused internally or not. This may affect a complainant escalating a serious interference issue to ComReg for immediate attention;
- it triages its cases of interference and only escalates cases to ComReg where it deems it does not have the legal capacity to stop the interference and prevent it from occurring;
- believes there should be an early notification procedure to assist the triage process and give early warning to ComReg of a developing situation; and
- it is concerned that the time taken to triage could lead to delays in the issue being resolved.

39 TETRA Ireland submits that:

- ComReg should define “all the required information” and the steps to be taken by the service provider to provide the required information and that this should be pre-agreed on a bilateral basis for the interference categories; and
- there should be a mechanism for escalation by phone to ComReg for its proposed Type A (1) complaints with an immediate 24 x 7 response.

Network operator’s responses

40 eir, Three and Imagine all agree with ComReg’s proposed revised definition of response time, with eir noting that it is a significant improvement to the current regime and that it “*creates a stronger link to action being taken to actually investigate and remove harmful interference*”.

41 eir further submits that:

- the demarcation between Type A and B is too imprecise to enable it to comment on whether a 5-day response is sufficient for Type B and as such proposes that the response time metric should be reviewed 1 year after implementation;
- ComReg should set targets of 5 working days from site visit to resolve interference or to determine that another site visit is required; and

- ComReg should also establish service levels [agreements] for subsequent stages of the investigation to give comfort to complainants that the matter will be resolved in a timely manner and provide weekly updates in respect of open investigations.

42 Three agrees with ComReg's new reporting protocol and that the time begins when ComReg receives all of the supporting information, however expressed concerns that this could be a source of delay. Three "*suggest that for Class B complaints, ComReg should review each complaint and specify within 2 working days if further information is required.*"

General interested parties

43 IRTS agrees with the revised proposals around response time and notes that the complainant should confirm that the case is resolved before closing the matter out.

44 IRTS suggest that providing the Eircode as location should be acceptable by ComReg in the reporting process and any reoccurrence should permit the same case to be reopened.

45 Butler Technologies expressed concerns regarding meeting response times of Type A complaints due to staffing resources and geographical location.

ComReg's Assessment and Final Position

Respondents previously classified as Class 1

46 It should be noted from the outset and as set out in paragraph 35 of the Consultation, ComReg does not, and never has, operated on a 24 hour, 7 days a week basis. ComReg's approach to responding to complaints of radio frequency interference has always been on a 'best endeavours' basis, subject to priority assigned and staff availability and will continue to operate on this basis.

47 It is also important to note that ComReg is not reducing service, as suggested by the HSE, and will continue to provide assistance on matters of most priority while making best use of the finite resources available.

48 ComReg always welcomes early notification of developing situations from services providers and will continue to do so. However, informing ComReg of a developing situation is not a formal report of harmful interference and absent the provision of the necessary reporting requirements will not be treated as such by ComReg.

- 49 ComReg notes the IAA's comment that it may take several days for it to ascertain that interference is not being caused by itself or its equipment. ComReg observes that all service providers must eliminate the possibility that the interference it is experiencing is not being caused by itself or its equipment prior to informing ComReg. Such cases of interference do not constitute "harmful interference" as defined in the Consultation and again outlined in footnote 2 of this document. Such matters should not be reported to ComReg as it will not investigate instances of interference absent the necessary reporting requirements.
- 50 In order to avoid circumstances where internally generated interference is being reported to ComReg, ComReg has set out its minimum information requirements for the reporting of all interference complaints. The obligation is on the complainant to provide this information so that ComReg can respond appropriately. ComReg will not commence any interference investigation unless this information is provided. Delays on the provision of supporting information by complainants is a matter to be addressed by complainants and not ComReg. Service providers should ensure that they have sufficient resources to meet ComReg's reporting requirements.
- 51 This reporting requirement obliges complainants to conduct a minimal level of internal investigation prior to requesting ComReg's assistance. This ensures that interference arising from faulty equipment, poor installation and engineering practices are identified and eliminated by the service provider and to ensure that the interference is not generated as a result of the service provider's behaviour.
- 52 Absent this minimum information, ComReg cannot triage a complaint of interference. The triaging of complaints received is an essential part of the investigation process as it:
- Ensures that ComReg or its agents have sufficient knowledge of the interference matter at hand so that it can prioritise complaints and plan its response accordingly;
 - Ensures that ComReg or its agents have the correct instrumentation and equipment onsite during the investigation;
 - Assists the identification of the source of interference thereby speeding up resolution; and
 - Can eliminate the need to deploy staff onsite if the evidence provided by complainants suggests that the interference is not externally generated.
- 53 Consequently, all service providers must ensure that its staff are competent to detect and remove internally generated sources of interference.

Network operator's responses

- 54 ComReg notes and agrees with eir's submission that for Type B complaints, that the 5 day response time metric should be reviewed 1 year after implementation to assess its continued applicability.
- 55 In response to eir's statement that ComReg should establish service levels [agreements], it is not possible to provide this due to the nature of interference and the complexity around investigations and elimination. Every interference investigation is unique in nature, so it is not possible to put a definitive time on resolution.
- 56 ComReg has introduced a close out protocol for interference investigations as outlined in the Consultation, which confirm to complainants once an interference investigation is closed, outlining the interfering source and setting out any remedial action required by the complainant.
- 57 In respect to the submission by Three, ComReg notes that it has set out that operators need to ensure that they have the necessary processes and procedures in place to ensure that they can meet ComReg's reporting requirements. Complaints will only be classified if the reporting requirement are met. If, following the classification of a complaint ComReg considers that further information is required then ComReg agrees with the proposal by Three that complainants should be afforded 2 working days within which to submit the additional information. The process flow chart set out in Annex 1 has been amended accordingly to reflect this amendment.

General Interested Parties

- 58 ComReg considers the submission made by Butler Technologies to be matters pertaining to the contract between ComReg and Butler Technologies and as such not appropriate for comment by ComReg as part of this public consultation process.
- 59 In response to the IRTS regarding the re-opening of cases, ComReg would note that it will only close an interference complaint once the complainant has confirmed that the harmful interference has ceased. Should there be a further complaint of harmful interference at the same location this will be treated as a new case and not related to the previous case. However, any data from the previous case that ComReg considers relevant to new case can be referred to, should it be necessary. In relation to reporting of interference using Eircode's, ComReg will accept this as a means of identification of a location if easting and northing is not available.

ComReg's Final Position

60 ComReg's response to complaints of interference has always been on a best endeavours basis and will continue to be so. ComReg is of the view that the definition of response time and the associated target response time as set out in Table 1 above provides increased transparency in respect of the handling of interference complaint investigations. It should also incentivise genuine complainants to submit the required supporting information, thereby promoting valid cases of harmful interference as opposed to those that are undocumented or spurious, ultimately improving our efficiency and effectiveness to the benefit of all services providers.

61 ComReg will review the 5 working day response time for Type B complaints 12 months after implementation to consider its ongoing appropriateness.

2.3 Other matters raised by respondents

Views of Respondents

62 There were a number of other matters raised by respondents which are grouped in common themes and addressed below.

ComReg's Spectrum Intelligence and Investigations Operators Forum

63 Three, Imagine, IRTS and TETRA Ireland all welcome the opportunity to attend the Spectrum Intelligence & Investigations Forum. Three submits *"that the frequency of these meetings can be adjusted to suit workload and/or developments in the market"*.

64 TETRA Ireland submits *"that a separate forum should exist for PPDR and public safety operations as the current forum is not suited to non PPDR services."*

65 Imagine submit that: *"We welcome the SII Forum whereby there is regular feedback to the various industry segments on complaint performance and think this is an appropriate forum for regular updates on numbers of complaints by type and how the SLA's have been met"*.

66 The IRTS submit that they are *"pleased to note that ComReg intends setting up a SII Operators Forum and IRTS look forward to taking part in this Forum once its established."*

Provision of feedback to complainants

67 Both eir and Three request more feedback on interference complaints. Three quotes that they *“would like to receive feedback from ComReg on the generic nature of the sources of interference found, the type of device, the nature of the emission etc. This would help Three in turn to be more precise in the information provided to ComReg when an investigation is requested.”* Three would also like further information on the work being carried out by ComReg in conjunction with Customs and Excise *“to intercept non-compliant equipment from entering the market that is not necessarily visible to spectrum users”*.

68 *“eir believes that ComReg should be more transparent to the complainant when a case is resolved by providing feedback on the nature of the interference identified.”*

Other matters

1. TETRA suggests that ComReg provide “further details” on any current or future planned technologies being proposed for the Spectrum Monitoring Network and the timescales for its deployment.”
2. IAA submits that it is a designated operator of essential services (OES) by the state. Regulation 18 of the NIS Regulations imposes a mandatory obligation on all entities designated as OES. IAA further outline “18. (1) (a) An operator of essential services shall notify the CSIRT in accordance with paragraph (2) of any incident concerning it that has a significant impact on the continuity of an essential service provided by it in respect of which it is designated as an operator of essential services.”
3. The IAA further submits that:
 - *“Number of users affected is not a requirement to report in Annex: 1 Case Reporting Requirements”*.
4. The IRTS submits that it “believe[s] there should be a defined method for radio users and consumers to report devices suspected of not complying with relevant standards for the purposes of providing relevant information to the market surveillance team to allow them investigate compliance testing.”
5. The IRTS would like ComReg to acknowledge how receive only stations can be protected.
6. Three would like ComReg to consider further outsourcing.

ComReg’s Assessment and Final Position

ComReg's SII Operators Forum

- 69 ComReg notes the support from respondents in respect of the recently formed SII Operators Forum and looks forward to the continued active engagement of participants to ensure its success.
- 70 The SII Forum was established in 2019. The SII Forum aims to deepen engagement between ComReg and stakeholders by discussing topics of shared interest and future trends.
- 71 ComReg notes that the IRTS is a representative of amateur radio operators in Ireland and that it itself is not an Electronic Communications Service provider. Consequently, ComReg does not consider it necessary or appropriate for the IRTS to attend the SII Forum. Nevertheless, ComReg will continue to engage with the IRTS on a bi-lateral basis as it has always done.
- 72 ComReg notes that TETRA Ireland is the only provider to PPDR services in the State. As such it is unclear as to why it has requested a separate forum for PPDR services as these would simply be bi-lateral meetings between ComReg and TETRA Ireland which ComReg has always endeavoured to facilitate when requested.
- 73 ComReg notes that in its submission, Three did not specify whether it believes that more or less meetings of the SII Forum that may be required. ComReg is of the view that the current frequency of quarterly meetings of the SII Forum is sufficient but it will review this and amend as may be required based on input from participants.

Provision of feedback to complainants

- 74 In response to the request for more information on the nature and sources of interference, ComReg notes that in September 2019, it introduced a new close out protocol for all radio interference investigations. Further, and as set out in the Consultation, once an interference complaint has been resolved by ComReg or its agent the following steps will be taken:
- Contact will be made with the complainant outlining a summary of on-site findings, including the sources of the interference - this may include screenshots showing the absence of interference on the channel concerned. In cases where a prosecution may be likely to be taken the details of interference will not be disclosed.
 - An outline of any actions that must be taken by the complainant in order to remedy the situation will be given in an email; and

- An acknowledgement that the case has been closed will be sent to the complainant with the corresponding case number.

75 ComReg also observes that the annual Spectrum Intelligence & Investigations Annual Report⁶ provides a concise precis of all its activities including, information on its work with Customs & Excise, identification of sources of interference as well as its market surveillance activities.

76 In response to the IRTS, ComReg observes that, concerns relating to non-compliant devices can be reported to members of ComReg's SII Unit at interference@comreg.ie as such issues arise.

Other Matters

1. Regarding TETRA's suggestion for ComReg to provide details on current or future technologies being proposed around spectrum monitoring, ComReg does not consider this part of this consultation process or for disclosure to other parties.
2. The IAA has been designed an Operator of Essential Services (OES) under the Network and Information Systems Regulations 2018 (S.I. No. 360 of 2018) ("NIS Directive"). The NIS Directive provides that where an OES is also subject to the requirements of Regulations 23 and 24 of the European Communities (Electronic Communications Network and Services) (Framework) Regulations 2011, the NIS Regulations apply to the OES only in respect of any essential services provided by it.
3. ComReg has no role in relation to the NIS Directive, the enforcement of the NIS Directive, together with the obligations of an OES, is a matter for concern elsewhere. ComReg does however have a role in respect of Regulations 23 and 24 of the European Communities (Electronic Communications Network and Services) (Framework) Regulations 2011. ComReg ensures undertakings subject to Regulation 23 and 24 take appropriate technical and organisational measures to appropriately manage the risks posed to security of their networks and services. Furthermore, it is important to note that this Response to Consultation relates to ComReg's enforcement powers under the Wireless Telegraphy Act 1926 as amended.
4. ComReg has amended the case reporting requirement form to reflect the IAA's comment on the inconsistency between the proposal and the form in relation to number of users affected. As noted above, the amended form is provided in Annex 2 of this document.

⁶ <https://www.comreg.ie/publication/spectrum-intelligence-investigations-annual-report-2018-2019>

5. ComReg notes that receivers are exempt for individual licensing under the Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Receive Only Apparatus For Wireless Telegraphy) Order 2005⁷. This exemption order means that all receivers including receive only stations as may be operated by radio amateurs and individuals represented by the IRTS are not afforded protection from harmful interference.
6. ComReg considers that its current outsourcing arrangements in respect of radio interference investigations has been beneficial not just to ComReg but to its external stakeholders such as service providers. ComReg is of the view that, based on the number of cases of harmful interference being received and the time taken to action and resolve same that the current level of outsourcing is sufficient. However, this will be assessed on an ongoing basis and ComReg does not rule out additional outsourcing in the future.

⁷ Wireless Telegraphy Act (Exemption of receive only apparatus for wireless telegraphy) S.I. 197 of 2005.

3 Next Steps

- 77 ComReg has set out its position above in relation to its proposals for the management of radio spectrum interference cases and will implement these changes as set out in Chapter 3 of the Consultation, following publication of this response to consultation.
- 78 Annex 1 contains the revised case prioritisation process, which ComReg will now implement. For the convenience of stakeholders, ComReg will also publish the case prioritisation process on its website.
- 79 For ComReg's proposals to operate optimally, it follows that detailed and reliable information, in support of the complainant's case, is required. In this regard, ComReg recently introduced a revised RFI reporting protocol for all complainants. This protocol requires complainants to provide more focused and in-depth information to assist ComReg in its triage and prioritisation of complaints. For convenience, these obligatory information requirements in support of any RFI case are set out in Annex 2 of this document.
- 80 This protocol makes clear that ComReg is unable to investigate a report of RFI unless it is satisfied that the interference is 'harmful', outside of the complainant's control and that all reasonable steps have been taken by the complainant to minimise the effect.
- 81 Once a complainant is satisfied that the interference it is experiencing is, in its view, harmful, outside of its control and that the affected apparatus is functioning correctly, then a complaint can be submitted to interference@comreg.ie accompanied by the supporting material as outlined in Annex 2 for information.
- 82 ComReg acknowledges all complaints received to interference@comreg.ie on the day of receipt. Complaints received outside of work hours are acknowledged on the next working day.

Annex: 1 Case Prioritisation Process

The Commission for Communications Regulation (“ComReg”) hereby sets out its prioritisation process for the handling of radio frequency interference (“RFI”) complaints. ComReg reserves the right to divert from the prioritisation process set out below where necessary, and at its own discretion.

Type A cases

Type A category would generally be exceptional in nature. Typically, such cases would have a severe impact on an operator’s ability to continue to provide a radio communications service and may result in a complete loss of service to users.

Cases falling into this category would need to fit the following general description:

- Depending on the type of radio communications service being provided there would need to be multiple stations experiencing interference simultaneously; **and**
- The licensee would have no alternative back up channel to switch its service to **and**
- Large numbers of users would need to be experiencing loss of service.

Examples of Type A cases could include:

- Instances where multiple TV and radio broadcasting transmitters are experiencing harmful interference such that it is not possible to provide any service to a large number of users.
- Harmful interference to a number of base stations on a mobile network such that significant numbers of users are unable to use their mobile phones
- Aeronautical or emergency services are interfered with to such an extent that it is impossible for any communications service to be provided to the end user. This may result in the grounding or redirection of aircraft in the case of aeronautical interference.

Type B cases

Type B cases would typically have the following general description:

- Depending on the type of radio communications service being provided there would generally be one or two stations experiencing interference; **and**
- The licensee would have an alternative back-up channel to switch its service to; **and**

- Relatively small number of users would be experiencing loss or degradation of service.

Examples of Type B cases could include:

- Instances where a radio link is experiencing harmful interference such that it cannot operate as licensed;
- Harmful interference to a base station on a mobile network such that a single sector of the base station has to be turned off; and
- Harmful interference to a base station such that there is a degradation in the quality of service being provided to the end users.

Type C matters

Matters falling under Type C would typically be queries of the following types:

- Questions submitted to interference@comreg.ie that ComReg can respond to and address without recording as a formal complaint.
- Those cases of harmful interference submitted to interference@comreg.ie where, due to the nature of the service provided, the complainant is not entitled to any protection from harmful interference by ComReg or is outside of ComReg's remit.
- Those cases of harmful interference submitted to interference@comreg.ie where the complainant does not provide sufficient information for ComReg to be able to properly evaluate the complaint.

Examples of Type C cases would include:

- Reports of harmful interference to TV satellite receivers; and
- Reception issues to domestic TV.

Response times

The nature of radio spectrum interference is such that:

- it is often intermittent;
- the causes of interference can be from a legitimate source; and
- the resolution may require intervention by the complainant that may take some time to put in place.

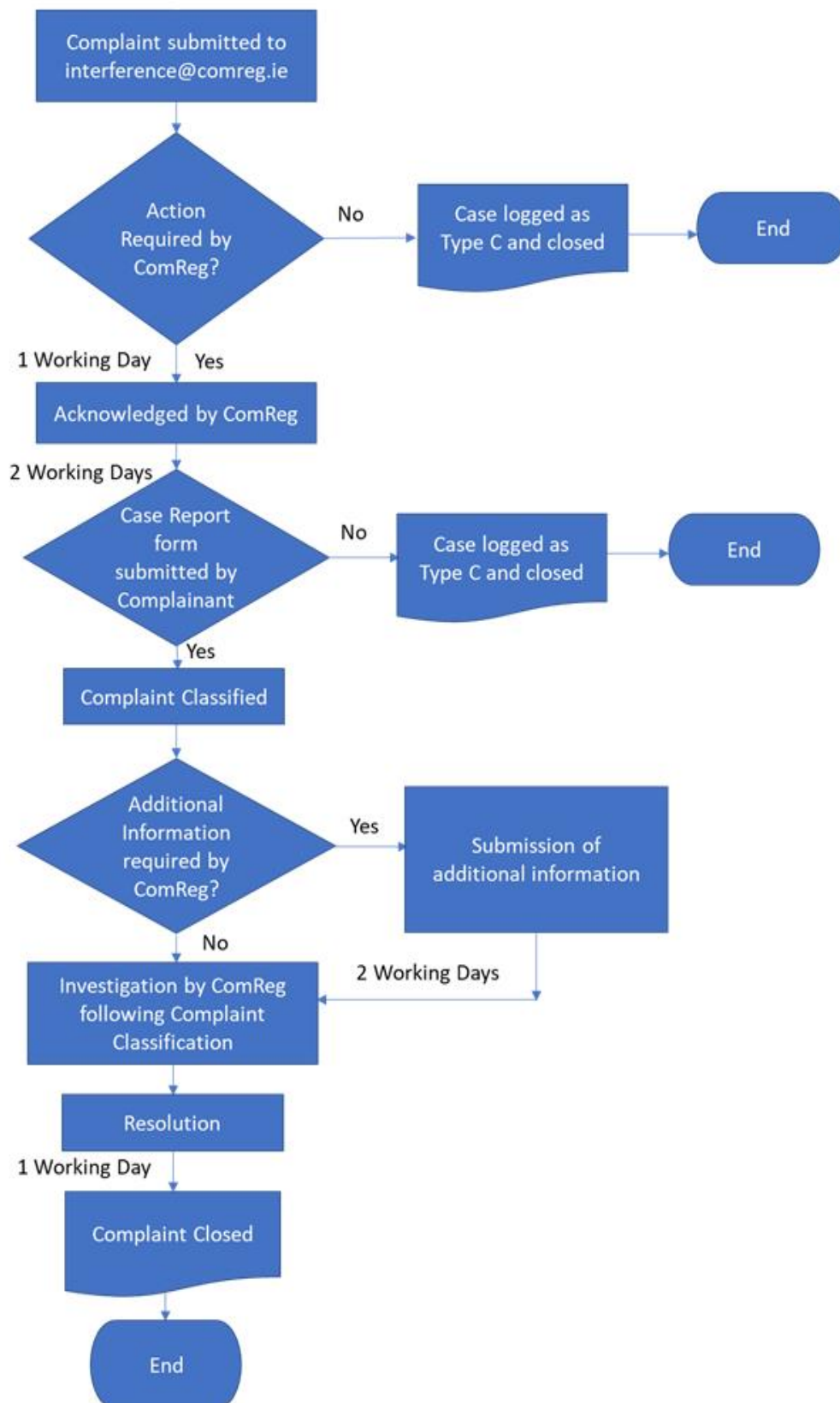
As such the detection and elimination of interference from a radio communications service can be complex and require several site visits before resolution. Consequently, it is not possible to set defined close out times for interference cases.

Response time means the time taken, from receipt of all the required information from the complainant, to ComReg, or its agents, being deployed into the field to investigate the cause of interference. This response time is on the basis that the complainant makes engineering staff available to assist ComReg or its agent on site. If a complainant cancels or fails to attend a pre-arranged site visit, the period from cancellation or non-attendance, to ComReg or its agent's site visit, along with the time required to reschedule a site visit, will not be counted as part of the response time.

It is important to note that ComReg's business hours are Monday to Friday 9.00am to 5.30pm. ComReg does not operate on a 24/7 basis and does not have an "on-call" team to respond to complaints outside of office hours. As such complaints received outside of office hours may not be responded to until the next working day.

Complaint Type	Response Time
Type A	Immediate
Type B	5 working Days
Type C	N/A

See below for a diagram of ComReg's case prioritisation procedure for RFI complaints.



Annex: 2 Case Reporting Requirements⁸

<u>NAME OF LICENSEE</u>	
<u>ADDRESS</u>	
<u>PHONE NUMBER</u>	
<u>EMAIL ADDRESS</u>	
<u>NAME OF PERSON REPORTING INTERFERENCE</u>	

CASE DETAILS

LICENCE NUMBER OF AFFECTED SERVICE	
DATE OF FIRST OCCURRENCE OF INTERFERENCE	
REGULARITY OF INTERFERENCE (Constant or Intermittent)	
FREQUENCY OF INTERFERING SIGNAL (MHz)	
MEASURED LEVEL (dBm)	
POLARISATION	
BANDWIDTH OF INTERFERING SIGNAL (MHz)	
LOCATION OF APPARATUS EXPERIENCING INTERFERENCE – EASTING AND NORTHING OR EIRCODE	
NUMBER OF BASE STATIONS EXPERIENCING INTERFERENCE (If multiple base stations are affected please provide the co-ordinates of the worst affect base station)	

⁸ All fields are mandatory. Incomplete forms will be returned.

HAS THE INTERFERENCE RESULTED IN A COMPLETE LOSS OF SERVICE?	
WHAT WORK HAS BEEN DONE BY YOU TO RULE OUT AN INTERNAL FAULT IN YOUR SYSTEM? PLEASE ATTACH DOCUMENTARY EVIDENCE TO SUPPORT THIS	
DO YOU SUSPECT THE SOURCE OF INTERFERENCE TO BE COMING FROM ANY SPECIFIC LOCATION OR SOURCE? IF YES WHAT PROACTIVE STEPS HAVE BEEN TAKEN BY YOU TO MITIGATE OR REMEDY SAME	
PLEASE PROVIDE A SCREENSHOT SHOWING THE INTERFERENCE HAPPENING IF YOU CANNOT PLEASE STATE WHY.	
NUMBER OF USERS AFFECTED (WHERE APPLICABLE)	
ANY OTHER RELEVANT INFORMATION	