Measures of Quality of Telecommunications Services in the Channel Islands

Consultation paper

CONTENTS

1. Introduction

Ensuring that telecommunications services provided to consumers are of an appropriate quality is an important function of telecommunications regulators. In the telecommunications industry, consumers' purchasing decisions are driven by both price and quality. However, information about quality of the services being provided can be difficult for consumers to obtain.

In both Jersey and Guernsey, whilst there is competition in the mobile and, to a lesser extent, retail broadband markets, the fixed-line market is still dominated by the incumbent providers; namely JT (Jersey) Limited (***JT***) in Jersey and Cable & Wireless Guernsey Limited (***CWG***) in the Bailiwick of Guernsey.

Generally, dominant providers have fewer incentives than parties in a competitive market to maintain high quality of service. Where dominant operators have their prices capped by a regulator, there is a risk that quality of service could be allowed to deteriorate as an alternative to price increases. However, good quality, transparent and published information on performance can provide an incentive for improvement. Regulators therefore often require telecommunications operators to report their delivery performance so as to inform consumer choice, improve consumers' ability to assess the value for money of the services they are buying and ensure quality of service is maintained or improved.

In the Channel Islands, CICRA (the Channel Island Competition and Regulatory Authorities) regulates the telecommunications sector. CICRA comprises the Jersey Competition Regulatory Authority (***JCRA***) and the Guernsey Competition and Regulatory Authority (***GCRA***), and all references in this document to CICRA should therefore be read as references to each of the JCRA and the GCRA, unless the context otherwise requires.

Whilst CICRA has considered quality of service in relation to the provision of postal services, less focus has been placed on this in the telecommunications sector (although some operators set themselves targets in respect of certain quality of service measures as part of the consumer codes made pursuant to conditions in their telecommunications licences).

Telecoms operators in the Channel Islands collect quality of service data which they use for their own internal management purposes. The data currently collected is listed in Annex 1 of this consultation paper. At present, there is no consistency between the data collected or between the target levels and it is not possible to compare and contrast the operators' performance, or performance by a single operator between its Jersey and Guernsey operations. In addition, compensation payments for failure to deliver service between operators also vary.

CICRA's duties under the respective enabling legislation require that it must, among other objectives, further the interests of consumers and the economic well-being of the Channel Islands. CICRA believes that a joint approach to regulating telecommunications quality of service will best enable these duties to be met, and this consultation paper represents a proposal to develop a common set of quality performance measures.

In particular, this consultation considers whether telecommunications operators should be required to report their performance in respect of certain quality of service measures, whether targets should be set for those measures and whether penalties or compensation should be paid if any such targets are not met.

2. Definitions

Supply time for initial connection: The duration from the instant of a service order being received by a service provider to the instant a working service is made available for use.

Faults rate per access line: A fault report is a report of disrupted or degraded service that is made by a customer and is attributable to the network of the service provider or any interconnected public network, and that is not found to be invalid.

Faults repair time: The duration from the instant a fault has been notified by the customer to the published point of contact of the service provider to the instant when the service has been restored to normal working order.

Unsuccessful call ratio: The ratio of unsuccessful calls to the total number of call attempts in a specified time period. An unsuccessful call is a call attempt to a valid number, properly dialled following dial tone, where neither called party busy tone, nor ringing tone, nor answer signal, is recognised on the access line of the calling user within 30 seconds from the instant when the address information required for setting up a call is received by the network.

Call set-up time: The call set-up time is the period starting when the address information required for setting up a call is received by the network (e.g. recognised on the calling user's access line) and finishing when the calling party busy tone or ringing tone or answer signal is received by the calling party (e.g. recognised on the calling user's access line).

Response times for operator services: The duration from the instant when the address information required for setting up a call is received by the calling party (e.g. recognised on the calling user's access line) to the instant the human operator answers the calling user to provide the service requested. Services provided wholly automatically, e.g. by voice response systems, are excluded.

Response time for directory enquiry services: The duration from the instant when the address information required for setting up a call is received by the network (e.g. recognised on the calling user's access line) to the instant the human operator or an equivalent voice-activated response system answers the calling user to provide the number information requested.

Proportion of card and coin operated public pay-telephones in working order: The proportion of public pay-telephones in full working order, i.e. the user is able to make use of the services advertised as normally available.

Bill correctness complaints: The proportion of bills resulting in a customer complaining about the correctness of a given bill. A bill correctness complaint is an

expression of dissatisfaction with a bill received from a customer. A bill correctness complaint should not be confused with a billing query (a request for information) or with a fault report.

3. Responding to the consultation and next steps

Questions on which CICRA seeks views are marked in red throughout this consultation document.

Interested parties are invited to submit comments to CICRA in writing or by email on the matters set out in this paper to either of the following addresses:

Guernsey Competition and Regulatory Authority Suites B1 & B2 Hirzel Court St Peter Port Guernsey GY1 2NH Email: info@cicra.gg	Jersey Competition Regulatory Authority 2nd Floor, Salisbury House 1-9 Union Street St Helier Jersey JE2 3RF Email: info@cicra.je

All comments should be clearly marked "Consultation on Measures of the Quality of Telecommunications Services in the Channel Islands" and should arrive by 9.00 am on **Monday 13 May 2013**.

In line with CICRA's consultation policy, responses to the consultation will be made available on the CICRA website. Any material that is confidential should be put in a separate annex and clearly marked as such so that it may be kept confidential. CICRA regrets that it is not in a position to respond individually to the responses to this consultation.

Subject to the responses to this consultation, CICRA will consider whether to issue directions to telecommunications operators in respect of quality of service measurement by the end of the second quarter of 2013.

4. Consultation Questions

Q1.   Respondents are invited to comment on the above statements and state whether the above provides a sufficient justification for the proposal to monitor and target telecoms quality of service across the Channel Islands.

On the assumption that monitoring and targeting telecoms quality of service is justified, to what extent do you believe that CICRA should limit introducing quality of service targets to fixed-line operators or should they be extended to mobile and broadband services as well?

Q2.   Respondents are invited to comment on the above section. In particular, comments are sought on which form of measurement is most appropriate: the KQI method, live testing, conducting consumer surveys, a combination of all three, or some other forms of measurement?

Q3.   Respondents are invited to comment on the:

- Frequency of reporting;
- The method or presentation; and
- The inclusion or otherwise of comparable data

Q4.   Respondents are invited to comment on the above section. In particular, comments are sought on whether the proposed quality of service targets are reasonable and also whether the telecoms operators should be required to be publish the results.

Q5.   Respondents are invited to comment on the above section. In particular, comments are sought on whether compensation payments or publication of complaints data are appropriate and reasonable remedies.

5. Legislative and Licensing Background

The legislative basis for this consultation is provided in Jersey by the *Competition Regulatory Authority (Jersey) Law* 2001 and the *Telecommunications (Jersey) Law* 2002. In Guernsey, the applicable legislation is *The Regulation of Utilities (Bailiwick of Guernsey) Law*, 2001, *The Guernsey Competition and Regulatory Authority Ordinance*, 2012 and *The Telecommunications (Bailiwick of Guernsey) Law*, 2001. Any decision resulting from this consultation will be based on the relevant laws and duties of both the GCRA and the JCRA.

The relevant obligations of the dominant operators in Jersey and Guernsey – JT and CWG – are contained in their licence conditions as well as in primary legislation. Condition 17.8 of JT's licence states:

"The Licensee shall comply with any direction issued by the JCRA from time to time, regarding any other quality of service indicators and measurement methods for Telecommunications Services and shall, as and when required, supply to the JCRA in a form specified by the Authority, the results of its measurements of actual performance against quality of service indicators and measurements is specified, and the JCRA may publish or require publication of such information as it considers appropriate."

Both JT's Class III licence and the Class II licences issued to other telecommunications operators in Jersey place an obligation on them to set out their minimum service levels in respect of each category of telecommunication services they offer, any exceptions to these, and the compensation or refunds they offer where service levels are not met. Each Class II and Class III licensee is also required to publish an appropriate code of practice (**Consumer Code**) for the resolution of customer disputes, including the non-payment of bills and disconnection of service.

In Guernsey, the licence of CWG (previously Guernsey Telecoms Ltd) provides, in Condition 16.8, that:

The Licensee shall comply with any directions issued by the [Authority] from time to time, regarding any other quality of service indicators and measurement methods for Telecommunications Services and shall, as and when required, supply to the [Authority] in a form specified by [it], the results of its measurements of actual performance against any quality of service indicators and measurements so specified and the [Authority] may publish or require publication of such information as [it] considers appropriate.

6. Purpose and benefits of Quality of Service Monitoring

According to a recommendation published by the International Telecommunications Union (**ITU**), quality of service in the telecommunications sector is defined as "the collective effect of service performance, which determines the degree of satisfaction of a user of the service"[1]. It consists of a set of parameters that pertain to the traffic performance of the network, but in addition to this, it also includes other parameters defined in the recommendation, such as:

- Service support performance;
- Service operability performance;
- Serviceability performance; and
- Service security performance.

Quality standards in the telecommunications sector generally include, but are not limited to, requirements related to service availability access delay, call completion rates, fault incidence and time to repair, dial tone delays and other faults that occur during the call.

Many other jurisdictions have quality of service targets implemented by their national telecommunications regulators. Some examples are referenced in Annex 2 of this consultation paper.

The adoption of quality of service measurements and targets in the telecommunications sector in the Channel Islands could have a number of potential benefits:

- **Captive customers** – Unlike mobile customers, fixed-line customers currently have very little choice other than to use the incumbent fixed-line providers, namely JT or CWG. Without quality of service regulation, monopoly telecommunications operators could reduce their service and their costs to maximise their profits in the same way as they have incentives to increase prices when unchecked. Even once wholesale fixed-line products such as Wholesale Line Rental are available, JT and CWG are likely to remain the operators of each Island's fixed-line networks that will serve the vast majority of residential customers.

- **Quality information** – By contrast, in the more competitive mobile and broadband markets, customers are generally not 'captive', as they can switch providers if they are not satisfied with the quality of service. However, if customers are choosing a new service provider, having access to reliable quality of service information might better inform them about their choice of provider. Such quality of service data might include mobile coverage and broadband speeds, for example. Individual customers

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1 ITU-T Recommendation E.800

find it difficult to assess the quality of the service provided as they only experience a small sample of the products provided by telecommunications operators. Having an external, trustworthy, independent source of information might better enable customers to assess the characteristics of the services that they purchase.

- **Uniform service provision** – For non-competitive fixed-line services, both JT and CWG have an obligation to provide the same levels of service across their network. Without checks on quality of service, there is no ability on the part of the regulator (or the general public) to assess whether service quality is consistent.

- **Management incentives** – Publishing information about competitors' activities in fixed, mobile and broadband services should provide powerful incentives for providers to improve their service offers. A quality of service system, which is run independently, where results are available publicly and are comparable between operators might encourage them to sharpen their operational and customer-facing activities.

In addition, quality of service measurements and targets could also help to:

- focus telecoms operators to deliver high quality services to their customers;
- provide regulators with a means of assessing the performance of licensees - for example, by comparing them with other licensees;
- alert regulators to issues of concern to customers or on which they may need to develop new policies; and
- provide reassurance to telecom customers that the service they receive is of a certain standard.

Q1.   Respondents are invited to comment on the above statements and state whether the above provides a sufficient justification for the proposal to monitor and target telecoms quality of service across the Channel Islands.

On the assumption that monitoring and targeting telecoms quality of service is justified, to what extent do you believe that CICRA should limit introducing quality of service targets to fixed-line operators or should they be extended to mobile and broadband services as well?

7. Features of a Quality of Service Measurement System

Theory of quality of service measurements

Like all services, telecommunications services have a quality component and a price component. In theory, the price component should relate closely to the quality component. In telecommunications markets, as indeed with other markets such as post, electricity and water, this may not always be true. As such, telecommunications service providers have the ability to increase profits by lowering quality of service, hence uncoupling the price component from the quality component.

Designing a system to monitor service quality and analysing the results is central to an effective quality of service regime. Issues that need to be considered include factors such as:

a) The relationship of quality of service to its costs and its value to the consumer;
b) The identification of areas to be covered;
c) The identification of information sources;
d) The establishment of a balance between outcomes (i.e. quality of service parameters), outputs (i.e. quality of service measurements) and inputs (measured quality of service performance submitted by service providers);
e) The establishment of criteria for reliability, verifiability and comparability of available information;
f) An assessment of the costs of providing and processing the information; and
g) The identification of performance indicators that are to be made available for public disclosure.

A system of measurement and targets for quality of service including in the telecoms sector, needs to have certain features, which are usually and generically summarised by the SMART acronym (Specific, Measurable, Actionable, Relevant and Timely). A quality measurement system implemented in the telecoms sector would draw on SMART principles. Quality measures would be:

h) controllable by the telecoms operator concerned;
i) relevant to customers;
j) measurable and independently measured;
k) comparable – which is why CICRA is proposing to use the same measures in Jersey and Guernsey;
l) produced on a regular basis e.g. six monthly or annually; and
m) enforceable.

Targets

Targets depend on the quality measures that are put in place. Determining targets is a regulator's responsibility because of the possible positive correlation between costs and targets: for a given level of efficiency, higher targets imply higher costs. Targets may act against the interests of consumers if they force telecoms operators to offer, for instance, a 'gold-plated' service that costs more to customers than they consider it is worth and where customers would be more satisfied with a cheaper service of lower quality.

In competitive telecommunications markets, such as mobile and broadband, customers can choose the best price-quality combination for their needs. However, this is not the case in the fixed telecoms markets in the Channel Islands, and even after the development of wholesale markets, JT and CWG will remain, at least initially, the main operators of the fixed-line networks.

8. How should Quality of Service be measured?

CICRA is seeking views on how quality of service should be measured.

Quality of service in the telecoms sector is generally measured and reported in three ways:

a) <u>Key quality indicators (KQIs)</u>. These indicators (patterned after key performance indicators) gauge quality of service and make the results comparable across time periods and carriers. Many National Regulatory Authorities, usually after a series of public consultations, have introduced sets of indicators for different services, depending on the scope of regulation, definitions, measurement guidelines and expected levels of quality. The sets vary and can relate to both customer service and technological issues. Unsuccessful call ratios, supply times for initial connection, response times for operator services and bill accuracy are among the most popular indicators.

To make it less prone to measurement biases, the KQIs require data to be gathered during a specified, recurrent period, not just a one-time sample.
The method has been adopted in many countries, and international bodies, including the European Communication Standardization Institute and the European Commission, have endorsed it.

b) <u>Live testing</u>. Another way of measuring quality of service is live testing. Both regulators and operators use it irregularly and, because of its costs, it can only cover a representative sample of services and end-users. Some countries – e.g. France, Turkey, the United Kingdom, Latvia and India - have used this method to measure the quality of mobile services or Internet connections.

In measuring mobile telephony, the live tests may be performed with the help of a custom vehicle with dedicated equipment, antennas or other facilities capable of gathering quality of service data. In car testing, the vehicle must adhere to a specified route, usually covering the biggest cities and most crowded travel routes. For broadband connection tests, access to customers' lines is essential. For example, Ofcom performed such live testing in the United Kingdom in 2008 and 2009 to verify the quality of the broadband network. Dedicated facilities with special software were placed on the access lines of around 1,600 consumers and data was collected for a three-month period.

The goal of this method is to present data regarding the quality of a given service at a particular moment in time over a specified period.

c) <u>Consumer survey</u>. Another method of measuring quality of service is performing consumer surveys. This method can effectively pinpoint the weakest elements of service quality, giving operators effective feedback, while allowing customers to

compare opinions about various operators. It can also be a useful addition to the indicator-based method of measurement. Contrasting those two sets of data can determine whether a weakness identified by consumers also falls among the low-levels of relevant indicator data. If not, proper verification of both activities can be performed.

For example, the Telecom Regulatory Agency of India performs this type of joint measurement for 23 regions to ensure the validity of quality of service data. Customer surveys are used also in Germany.

In principle, all three testing methods could be of value for measuring quality of services in the telecoms sector in the Channel Islands.

Q2.   Respondents are invited to comment on the above section. In particular, comments are sought on which form of measurement is most appropriate: the KQI method, live testing, conducting consumer surveys, a combination of all three, or some other forms of measurement?

Publication of quality of service data

CICRA is seeking views on the frequency, presentation and inclusion of comparative data for quality of service data.

CICRA has reviewed the approach to telecoms quality of service monitoring in a number of other jurisdictions. The frequency of quality of service data publication and reporting varies across countries: quarterly, twice-yearly, annually or only at the request of the relevant national regulator. The most popular method of presenting quality of service data is by publishing it on the relevant telecommunications providers' individual websites. However, operators will typically publish only their own data, without comparing it to their competitors' results. This makes comparing different carriers difficult for customers, who are forced to search for the information across multiple websites.

In CICRA's view, quality of service reports should ideally be up-to-date, presenting the most recent results in a manner that customers can access and understand. The information should be precise, concise, and indicate the time period in which data was collected. Periodic regulatory reports can make quality of service information more widely available. Usually, these reports present data for all operators over recurrent periods of time. They enable customers to compare quality differences more easily among several service providers.

Q3. Respondents are invited to comment on the:

- *Frequency of reporting;*
- *The method or presentation; and*
- *The inclusion or otherwise of comparable data*

9. CICRA'S Proposed Quality of Service Measurements

CICRA is seeking views about the measurements and targets that should be put in place.

In fixed services, our research and experience suggests that customers are most concerned about matters such as initial provisioning connection times, fault rates, billing accuracy and fault repair times.

In mobile voice services, customers mostly care about the degree of coverage of the mobile operator's network; in particular whether the coverage includes the places where they live and work. Some operators publish so-called 'heat maps', showing the strength of signal for each area that they cover, which helps consumers make informed choices when they are deciding whether or not to switch their service providers.

Other factors that matter to mobile customers are supply time for connection, unsuccessful call ratios, billing accuracy and the latency effect, which is the short period of delay, usually measured in milliseconds, between when a person speaks into the phone compared to when it is heard. In some cases, the latency effect can be quite noticeable and interrupts the smooth flow of conversations.

In mobile and fixed broadband, consumers care about factors such as:

- upload and download speeds and how these may vary by time of day[2;]
- quality of web browsing;
- contention ratios;
- the time to download files;
- information on lost connections; and
- latency - this seems to be more of an issue in mobile broadband than fixed broadband. It affects those who regularly use the internet to make voice calls and those engaged in on-line gaming.

CICRA has compared and contrasted the quality of service measurements that other telecommunications regulators require telecommunications operators to collect. Unfortunately, there is no definitive guide to what might be considered as best practice, as there appears to be no consistency between what regulators require their operators to collect. The other jurisdictions in respect of which we have been able to collect useful benchmark information include a number of European Union Member States (specifically UK, France, Germany, Ireland and Spain), India, Lebanon, United Arab Emirates and Australia.

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2 For example, JT offers speeds between 2Mbps (megabits per second) and 40Mbps based on a data usage plan, whilst CWG offers unlimited services between 2Mbps and 20Mbps.

CICRA has therefore considered what core KQIs would be important to consumers in each of the three markets: fixed, mobile and broadband.

CICRA's provisional view as to appropriate KQIs for telecoms in the Channel Islands is set out below. In determining appropriate target levels, we noted the existing target levels already set and compared them to the targets set for the same KQIs in other countries. For each KQI, we have sought to take the average target, and for those Channel Island operators who already monitor such data, the targets proposed do not differ materially from those currently in use.

CICRA believes that its regulatory tools need to include a system of quality measurement and targeting for the services that are provided to customers for certain defined services:

Fixed Telecommunications Services	
QoS Network Performance	**Proposed Target Level**
Supply time to initial connection	90% within 3 working days and 100% within 7 working days
Fault rate per access line	< 1 fault per 100 subscribers per month
Unsuccessful call ratio	<1% Local at busy hour <2% UK and international at busy hour
Call set up time	<2 seconds local and UK calls at busy hour <5 seconds for international calls at busy hour
Response times for operator services	90% within 60 seconds
Response times for directory enquiry services	90% within 60 seconds
Fault rate per access line	<1 failure per 100 lines per month
Billing accuracy	<2 complaints per 1,000 bills
Fault repair time	90% within 24 hours

Mobile Telecommunications Services	
QoS Network Performance	**Proposed Target Level**
Network coverage (heat maps)	Publish heat maps
Latency effect	Calls with latency of less than 200 milliseconds: < 1% local at busy hour <2% UK and international at busy hour
Supply Time for Connection	On demand for pre-paid and within 3 hours for post-paid
Call Set Up Time (Post dialling delay to ring tone)	< 5 seconds local at busy hour <7 seconds for and international busy hour
Unsuccessful Call Ratio (% of call attempts)	< 1% local and national at busy hour <2% international at busy hour

Dropped calls per Cell	1 dropped call per 100 calls per Cell at busy hour
Congestion Factor	5% of all Cells at busy hour
Average time to Respond to Customer Calls	90% of calls in less than 15 seconds
SMS Mobile Originated/Terminated Delivered	99% delivered within 2 minutes
Average time to respond to customer calls	90% of calls in < 15 seconds
Fault repair time	95% within 24 hours
Billing accuracy	<3 complaints per 1,000 bills

Broadband Wireless[3] and Fixed Services	
QoS Network Performance	Proposed Target Level
Available network upload and download speeds	To be published at various times of the day
Service availability	>99%
Supply time for connection	90% within 3 working days and 100% within 7 working days
Fault repair time	95% within 24 hours
Successful data transmission	Download attempts should be more than 95% and upload attempts should be more than 95%
Average Throughput for Packet data	>90% of the subscribed speed
Latency	< 150ms for Audio; < 250ms for Data; <75ms for Data (interactive)
Drop rate	1%

CICRA recognises that in certain criteria of network performance, it will not be possible for customers to determine whether or not the service that they receive has indeed been delivered within the prescribed targets. For example, a mobile customer will not be aware of the degree of the congestion factor or how many dropped calls exist per cell. The same applies for fixed lines, in respect of call set-up times and fault rates per access lines. For these indicators, it may be more appropriate for the operators to have systems in place that monitor these criteria and publish the results on say an annual basis.

Some regulators require certain other mobile and broadband indicators to be measured, such as SMS mobile originated/terminated/delivered, PDP context activation success rate, round trip delay and jitter.

Q4. Respondents are invited to comment on the above section. In particular, comments are sought on whether the proposed quality of service targets are reasonable and also whether the telecoms operators should be required to be publish the results.

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3 (<2048 bit/s)

10. Sanctions for failures to meet quality of service targets

CICRA seeks views on the best way of dealing with any failures by telecommunications providers to meet quality of service targets.

We believe that there are two main options available:

- Compensation
- Publish telecoms complaints

a) Compensation

CICRA's provisional view is that in some circumstances, telecoms operators should be required to pay compensation, either to individual customers who suffer particular quality of service failures, or to the customer base as a whole, where quality of service failures affect its entire network and are not referable to individual customers.

The existing compensation schemes operated by the Licensees are generally published on their websites under Service Level Agreements or Codes of Practice.

For failure to meet internal targets, JT, CWG and Airtel offer the following compensation to their affected customers:

JT Targets and Compensation Payments	
Provision of fixed line service	Aim to connect new telephone lines which do not require an engineering visit to customer premises within 4 working days
	If an engineer has to visit the premises, target time to complete the installation is 10 days
	Compensation payable if JT is late in installing a service is £10 for every working day that delivery target is missed, up to a maximum payment equivalent to the full installation charge for the order.
Provision of mobile services	Aim to complete all requests within 1 working day.
	Failure to meet the target will result in compensation of £10 for every working day, up to a maximum payment equivalent to the full installation charge for the order.
Repair of fixed service	Aim is to repair all service-affecting faults on standard telephone lines for all customers within 15 working hours of the fault being reported.
	Failure to meet the target results in a 50% reduction of a standard month's service rental and is increased by 20% for each subsequent full working day that they miss the target, up to a maximum of 1 month's full rental.

CWG Targets for Provisioning and Repair	
Fixed lines	
Broadband provision	Within 15 working days of receiving the application
Fixed provision	Within 10 working days of receiving the application
Broadband repair	By end of the next working day
Fixed repair	Within 3 working days

Should the above targets for provisioning or repair not be met, then in accordance with C&W's Code of Practice, the customer can register a formal complaint and may be entitled to claim compensation. Compensation is not payable where C&W has breached its targets due to circumstances outside C&W's reasonable control.

CWG Targets for formal complaint resolution and compensation payments	
Fixed lines	
Billing	Within 20 working days of receiving the complaint
Repair	Within 15 working days of receiving the complaint
Installation	Within 15 working days of receiving the complaint
Miscellaneous	Within 20 working days of receiving the complaint
Mobile	
Billing	Within 20 working days of receiving the complaint
Network Quality/Coverage	Within 15 working days of receiving the complaint
Roaming	Within 20 working days of receiving the complaint
Miscellaneous	Within 20 working days of receiving the complaint
For failing to meet any of the above compensation targets, the standard compensation formula C&W offer is one month's rental for every full working day that C&W default on their delivery targets for installing and maintaining services. The daily rate is paid for every day that compensation is due, to a maximum amount of 12 months' line rental or £100, whichever is lowest.	

Airtel-Vodafone Targets and Compensation Payments	
Failure to Resolve a Customer issue	Failure to resolve a customer issue within two days or failure to provide a committed resolution plan within 5 days, a customer will receive bonus airtime for each day that the resolution/commitment overruns
Service Availability	If Service Availability falls below the Licence threshold for any three month period, bonus airtime/top up for all subscribers/users will be applied at the end of each quarter.

CICRA is minded to propose that compensation payments should be increased incrementally if targets are not met within a reasonable period. So for example, if a fixed line which requires an engineer's visit is not installed by the operator within 10 working days, the proposal would involve a 'ratcheting-up' effect, whereby the daily compensation payments double after 20 days and treble after 30 days etc. This ensures

that the operators have the greatest incentive to address the most serious quality of service failures.

b) Publish telecoms complaints

Ofcom requires the UK telecoms operators to submit the full details of customer complaints, separated into three categories: fixed line telephony, fixed broadband and mobile telephony. Ofcom says it receives about 350 telecoms complaints a day from consumers and such complaints are likely to be made where a consumer has been unable to resolve an issue with their provider to their satisfaction. Ofcom keeps a record of such complaints by service and by communications provider and believe that such information is useful to consumers in published format, amongst other things for those considering a new service provider. As such, in 2011, Ofcom started to develop and publish complaints data on a quarterly basis, including only those operators that have 4% or more market share. Ofcom's research suggests that over a fifth of consumers in each market would be likely to use information comparing complaints. In addition, publication of provider-specific complaints data may act as an incentive for providers to improve their performance. Ofcom argues that similar information is already available to guide consumers in a number of other sectors, such as financial services, water and energy. In addition, the JCRA also requires Jersey Post to submit summary complaints information, which it has done for several years.

CICRA itself regularly receives a number of complaints from telecoms customers, particularly around issues of mobile roaming charges (bill shock), contract periods and broadband fibre costs. However, we believe that there may be many customers whose complaints never reach the regulator. CICRA is of the view that it should adopt a similar approach to Ofcom, but require the telecoms operators to provide a summary of such information, in the same way as Jersey Post. Publishing such data will not only encourage the providers to reduce the number of complaints they receive, but will also help consumers make more informed decisions about which provider offers the best service.

1) JT

JT collects statistics on a weekly basis via its internal Dashboard system (see table below). The data is collated at a network level for the Channel Islands as a whole and there is currently no breakdown between Jersey and Guernsey.

Mobile	Target	Actual (wk 9-15 Nov 12)
% Successful Calls (collected for 2G and 3G)	n/a	99.30%
% Dropped Calls (collected for 2G and 3G)	n/a	0.70%
% Successful SMS	n/a	97.62%
% Successful PDP (presented data packets)	n/a	100%

Fixed	Target	Actual (wk 9-15 Nov 12)
% Successful Calls	n/a	97.50%

Call Centre	Target	Actual (wk 9-15 Nov 12)
% of calls answered within target	80% of consumer in 40 seconds	63.80% in 60 seconds
	80% of business in 20 seconds	90.44% in 60 seconds

Faults per week	Target	Actual (wk 9-15 Nov 12)
Fixed	n/a	1161
Mobile	n/a	388

Works Orders	Target	Actual (12 wk avg to 15 Nov 12)
Total number of works orders raised per week	n/a	3025
Total number of works orders completed per week	n/a	2901

Compensation

If JT is late in installing the service, JT customers may claim compensation of £10 for every working day that JT has missed its specified delivery date, for both mobile and fixed services.

Repairs of fixed service are to be completed within 15 working hours of the fault being reported.

Compensation available for failure to keep to the target time is 50% of a standard month's service rental which can be increased by a further 20% for each subsequent full working day that they miss their target, up to a maximum of 1 month's rental.

2) CWG

Call Centre Performance – currently collate basic measures (e.g., time to respond to calls).

Complaints – CWG employs a dedicated Customer Advocacy Manager and measure performance in terms of:

- Acknowledgement back to customer
- Resolution timescales as published in the Consumer Code of Practice
- Internal reporting monthly of official & non-official complaints number, nature & root cause analysis for continual improvement program

Customer satisfaction and operational statistics:

CWG reports monthly to their internal stakeholders (including group HQ) on a range of operational and customer experience metrics:

- Fixed & broadband provisioning times
- Mobile provisioning time
- Guernsey fixed & broadband repair times
- Jersey broadband repair times working days
  (SureDial is not measured as it has a very small customer base in Jersey)
- Mobile calls and SMS – completion rates; dropped calls, etc.
- Mobile handset repairs – not measured

3) Airtel

Airtel provided CICRA with the following target information. We note that it appears that actual performance data is not collated on a regular basis.

Technology	KPI (Key Performance Indicator)	Target
2G	Radio Network Availability	>99.9%
3G	Radio Network Availability	>99.9%
2G/3G	Switch Network Availability	>99.97%
2G/3G	SMS Success Rate	>97%
2G	Radio Network Utilisation	<90%
3G	Channel Element Utilisation	<90%
2G/3G	Internet Bandwidth Utilisation	<90%
2G/3G	Voice Call Success Rate	>95%

2G	SDCCH Blocking	<0.50%
2G	SDCCH Drop Call Rate	<1.7%
2G	TCH Assignment Success Rate	>98%
2G	TCH Blocking	<0.5%
2G	TCH Drop Rate	<3%
2G	PDP Context Activation Success Rate	>99%
3G	RRC Setup Complete (%)	>98%
3G	RRC Access Complete (%)	>98%
3G	RRC Drop Ratio (%)	<2%
3G	RAB Access (%), CS	>98%
3G	RAB Access (%), PS	>98%
3G	RAB Drop Ratio (%), CS	<2%
3G	RAB Drop Ratio (%), PS	<5%

Technology	KPI (Key Performance Indicator)	Target
Call Centre	Service Level i.e. Ratio of Calls Answered to Offered	>95%
Call Centre	FTR (First Time Resolution) i.e. Ratio of On Spot Resolutions to Calls Answered	>80%
CRM	Call Backs / Close Loop with customers with in SLA	>95%

4) Newtel

Newtel has not been able to supply CICRA with any quality of service data.

ANNEX 2
Comparative Quality of Service Measurements by Other Regulators

CICRA has reviewed the quality of service measurements implemented by other telecoms regulatory authorities, including OFCOM, the Commission for Communications Regulation – Ireland (COMREG), the European Commission, the New Zealand Commerce Commission, the UAE Telecommunications Regulatory Authority and the Telecommunications Regulatory Authority of India (TRAI).

General observations

NRAs worldwide require telecommunication operators to measure quality of service for four separate services: fixed-line telephony, universal service, mobile telephony and Internet.

Fixed-line telephony is often a crucial element to verify in terms of quality of service as a part of national and international telecommunication systems. In almost every country we investigated, fixed-line telephony operators are required to measure and publish quality of service data.

Universal service is a package of basic services (usually in fixed-line telephony) that a licensed operator should be able to provide to every citizen at a reasonable price within a satisfactory level of quality. In all but three cases we studied, universal service providers are required by regulatory authorities to report on their quality of service and publish it, for example, on their website or in sales locations. Failing to meet minimal standards can lead to fines.

How are countries regulating quality of service in telecom? Which services are regulated, how is quality measured, and who conducts the measurement?

Mobile telephony and Internet connections. A few countries, including Italy, Latvia and India, have introduced minimum quality requirements in these areas. The standards can help provide higher quality of service throughout next-generation networks, mobile communications and digital technologies.

Regardless of service type, all operators in a country or area usually have to verify service quality. However, there are examples (France, Canada and, until recently, the United Kingdom) in which operators are limited to establishing required income levels, time in business, number of access lines or subscribers, and time of switched calls.

Figure 1

How countries are measuring quality of service

	United Kingdom	France	Germany	Austria	Italy	Netherlands	Belgium	Denmark	Portugal	Finland	Latvia	Czech Republic	Slovakia	Romania	Switzerland	Turkey	United States	Canada	India	Singapore
Types of services under QoS regulation																				
Universal service	●	●	●	●	●	●	●	●	●			●	●	●	●	●			●	●
Fixed-line telephony		●	●		●		●					●	●		●		●	●	●	●	●
Mobile telephony					●		●					●	●			●			●	●
Internet					●		●					●		●					●	●
Parties measuring QoS																				
Operators	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Regulatory agencies		●									●									
Third party	●				●											●				
Frequency of publication of QoS data																				
Quarterly reports		●				●			●	●				●		●		●	●	●
Half-year reports	●				●		●								●					
Annual reports		●	●	●	●			●			●	●				●	●			

Source: A.T. Kearney analysis

Source: AT Kearney, *Telecommunication: Measuring Quality of Service*

OFCOM – United Kingdom

OFCOM does not direct or require UK telecommunications providers to meet particular levels of quality of service. That decision followed research it undertook in 2009 in fixed-line, mobile, broadband and pay TV sectors, which concluded that generally, customers were content with the levels of service that they received. Moreover, Ofcom reasons that in competitive markets, customers have a choice if they wish to switch their service providers.

The 2009 consumer research into the experiences of consumers who had recently contacted their provider with a customer service query, provided the following insights:

1. The majority of those customers were satisfied with broadband (60%), landline (58%) and mobile (69%) services;
2. Across fixed-line, mobile and broadband, less than 25% of respondents stated that they would value information about customer service and that it would be important to them when choosing a service provider;
3. Technical aspects of suppliers' performance accounted for substantial numbers of contacts with communications providers, especially in the broadband sector.

Key provider differences in each sector are:

1. **Landline**: Sky achieves the highest levels of satisfaction, while TalkTalk is rated below average. Satisfaction with Sky and BT has improved since 2009.

2. **Broadband**: Coming from behind the other providers in 2009, Orange now achieves the highest customer satisfaction level, while overall satisfaction with TalkTalk is below the market average.
3. **Mobile**: Improvement for T-Mobile and Orange since 2009, although no one provider dominates.

Enquiries about connection speeds generated most contacts to Internet Service Providers (ISPs) (42%). The most popular reason for contact in the landline and mobile sectors was customers wanting to change their package or service, 28% and 38% respectively. Lack of coverage/reception was the second most important reason for contact in the mobile sector (31%) and poor line quality second in the landline sector (23%).

OFCOM concluded that there is no case indicating consumer harm or level of concern such that intervention to provide customer service quality of service information would be appropriate. Instead, OFCOM's focus is on issues on network performance. The 2009 study illustrates that not all consumers are satisfied with the level of customer service they have received. Customer service may well be a more important consideration for such consumers than for others, and relevant information could therefore help them to choose another provider.

Following the 2009 research, in 2010, OFCOM introduced a Voluntary Code of Practice for ISPs. The objective is to increase the overall standard of information on broadband speeds and other relevant metrics that should be made available to consumers at point of sale to help them make more informed choices in relation to products offered in the broadband market.

OFCOM does however provide information on their website about mobile coverage, which the mobile operators provide on a voluntary basis.

Comreg - Ireland

The Commission for Communications Regulation (Comreg) in Ireland is responsible for the regulation of the electronic communications sector in accordance with national and EU legislation. Eircom is the national Universal Service Provider which has responsibility for providing the Universal Service Obligation. In May 2008, Comreg set Eircom performance targets in respect of connections, fault repairs and fault occurrence. For the period 2011/2012, Eircom achieved its targets in relation to connections, fault occurrence and certain fault repair targets. However, it did not achieve its targets for fault repair times and as a result, Eircom was fined €525,000 by Comreg arising from its failure to achieve the relevant targets. For the period 2012-14, the USO quality of service improvement programme was as follows:

Target Description	Annual Target	Annual Financial Penalty
Connections within 24 hours of request	80%	€5,000 per 0.1% deviation below target
Fault repairs completed by agreed date	95%	€5,000 per 0.1% deviation below target
Maximum fault rate of line faults per 100 lines	13.1 (30 June 2013) 12.8 (30 June 2014)	€1,000,000

European Commission

In 2009, the EC adopted in 2009 the revised Telecoms Framework, the purpose of which is to direct National Regulatory Authorities (*NRAs*) on adopting certain standards and targets in the telecoms market. The establishment of QoS parameters, definitions and performance assessment by NRAs of undertakings designated with a Universal Service Obligation (*USO*), is based on the European Telecommunications Standard Institute guide (*ETSI*) EG201769 Quality of Service Parameters (Annex III of the Universal Services Directive). The ETSI document contains a series of harmonised definitions and measurement methodologies applicable to a range of user perceivable QoS parameters attributable to standard voice telephony service.

In fixed telephony, the ETSI guide requires operators to publish annual QoS information on the following:

- Supply time for initial connection
- Fault rate per access line
- Fault repair time
- Response time for operator services
- Response time for directory enquiry services
- Proportion of coin and card operated public pay telephones in working order
- Bill correction complaints

In mobile telephony, the ETSI guide requires operators to publish annual QoS information on the following:

- Fault rate per access line
- Fault repair time
- Response time for operator services
- Response time for directory enquiry services
- Bill correction complaints

In broadband, rather than requiring NRAs to publish QoS information, the EU actually sets QoS targets through the strategy Digital Agenda for Europe (*DAE*). The purpose of the DAE is to help digital technologies, including the internet, to deliver sustainable economic growth. It aims to achieve this by setting a target of 95% of all EU households having access to basic (144Kbps to 2Mbps) broadband connections by 2013.

To date, 22 Member States have national broadband plans and the remainder are in the process of drafting their plans. Eight Member States have already achieved full coverage for basic broadband services and a further 17 have set a corresponding quantitative target, or are about to do so. Specifically, CICRA benchmarked the QoS actual results published by the largest best-performing operators in fixed, mobile and broadband in France, Germany and Spain, and the proposed targets set out in section 7 of this paper reflect these results.

The DAE also sets the targets that by 2020, all EU households should have access to at least 30Mbps and that 50% of all subscriptions should be of at least 100 Mbps.

The EU also directs the NRAs on mobile number portability to conduct porting within one working day of a customer's request.

Whilst there does not appear to be EU directives issued in respect of consumer complaints and tariff transparency, a number of Member States, including the UK, France, Netherlands, Greece, Ireland and Belgium, have introduced improved rules and procedures for dealing with consumer complaints.

The consultancy firm, Cullen International, provides benchmarking information on telecommunications consumer protection across six EU Member States, namely the UK, Sweden, Netherlands, France, Italy and Germany. The results of their benchmarking analysis is summarised as follows:

	Imposed by regulation	Voluntary Publication	Not published
Net neutrality	All Member States		
Traffic management in fixed broadband networks	UK, Italy	Spain, Netherlands, Germany, Sweden	
Service quality indicators regulation – USP	UK, NL, Spain, Germany, Italy		
Service quality indicators regulation – fixed voice telephony providers	Spain, France, Italy		UK, Netherlands, Sweden
Access and choice for disabled end users	France		
Presentation of tariffs & service features	Italy, Netherlands	France	Spain, UK, Germany, Sweden
Advertised and actual broadband speed (fixed)	Spain, Italy	UK, Sweden	Germany, France
Advertised and actual broadband speed (mobile)	Spain	UK	Germany, France, Sweden, Italy, Netherlands
Mobile number portability – tariff transparency	Germany, Netherlands, Italy	UK, France, Spain, Sweden	
Advertised and cost of premium rate services	France, Germany, Italy	UK	Spain, Sweden
Advertised and cost of premium SMS	Spain, France, Germany, Sweden	Italy	Netherlands

Germany, France and Spain

CICRA reviewed the 2012 QoS publishable results from SFR, Orange, Bougues (France)[4], fixed and mobile operators (Germany)[5] and Telefonica, Vodafone, BT (Spain). Set out below are the QoS results for each of the key performance indicators.

Fixed Network Services	
QoS Network Performance	**Benchmark Level /Average**
Supply time to initial connection	95% within 15-40 working days and 50% within 5-14 days.
Fault rate per access line	<0.5 fault per 100 subscribers per month
Unsuccessful call ratio	<0.5%
Call set up time	1.5-3.0 secs
Response times for operator services	80-90% within 6 seconds
Response times for directory enquiry services	90% within 15 seconds
Fault rate per access line	<1 failure per 100 lines per month
Billing accuracy	2-3 complaints per 1,000 bills
Fault repair time	95% within 24 hours

Mobile Telecommunications Services	
QoS Network Performance	**Benchmark Level/Average**
Supply time for connection	On demand for pre-paid and within 3 hours for post paid
Call setup time (post dialling delay to ring tone)	Range 3.0-5.5 seconds for local/national calls <7 seconds for international calls
Unsuccessful call ratio (% of call attempts)	<1% local/national at busy hour <2% international at busy hour
Dropped calls per cell	Range of 1-3 calls per 100 calls per cell at busy hour
Congestion factor	5% of all cells at busy hour
SMS mobile originated/terminated delivered	95%-99% delivered within 2 minutes[6]
Average time to respond to customer calls	90% of calls in less than 15 seconds
Fault repair time	95% within 24 hours
Billing accuracy	<3 complaints per 1,000 bills

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4 Source: www.arcep.fr – Qualite de service: etat des lieux et perspectives

5 Source: Indicateurs mesures lors de l'enquete 2011 de Focus Infocom (www.chip.de). This is an independent monitoring agency that regularly monitors the QoS performance of German based operators in the mobile, fixed and broadband markets and summarises all the results.

6 In France, SMS's must be delivered within 2 minutes, otherwise they are considered to be non-delivered. SFR and Bouygues – 99.2% of all SMS's are received in less than 30 seconds.

Wireless Data Services (<2048 bit/s)	
QoS Network Performance	**Benchmark Level Range/Average**
Service availability	>99.0% (France 99.6%, Spain 99.7%)
Supply time for connection	90% completed on agreed day
Fault repair time	95% within 24 hours
Successful data transmission	Download attempts (95%-98%) Upload attempts (95%-98%)
Average throughput for packet data	>90% of the subscribed speed
Latency	<150ms for Audio; <250ms for Data; >75ms for Data (interactive)
PDP context activation success rate	>95%
Ratio of packet loss	<5% packet loss
Drop rate	0.7%-0.8%

Malta

In 2004, the Malta Communications Authority (*MCA*) published its Consultative Paper with the title: Measuring Authorised Operator Quality of Service Performance. The scope of the document was to seek the views of interested parties and service providers regarding the publication of periodical reports enabling the public to assess the performance of authorised service providers.

The MCA concluded from its consultation that requiring detailed QoS information requirements often resulted in expensive setups for both National Regulatory Authorities and the service providers to manage such processes. As such, MCA is of the view that it is fundamentally important that the information collected, analysed and published is reasonable and meaningful to the consumer and to the industry in general.

During the consultation process, the MCA assessed the current quality of service provided by the operators in the business segments addressed in the consultation document. It transpired that the overall quality of service standards within the identified parameters was satisfactory and compares well with other European countries. In this respect, the MCA decided to limit the obligation to publish quality of service performance measurements solely to the authorised service provider designated with a Universal Service Obligation.

In the event that quality of service standards are not being achieved by the operators providing electronic communications services in the market, the MCA reserves the right to require any Electronic Communications Service provider to publish comparable and up-to-date information in the future.

The MCA also reserves the right to independently audit the results in the event that these are published for public consumption.

Telecom Regulatory Authority of India (TRAI)

The TRAI is one of the few national regulatory authorities to have undertaken an extensive review of quality of service in its telecommunications sector. Its review,

undertaken in 2005 and implemented in 2009, requires Indian telecoms operators to report on various quality of service parameters, including:

Fixed Network Services	
QoS Network Performance	**Target Level**
Availability of telephone exchange	100% in 7 days
Fault incidence	< 3 faults per 100 subscribers per month 90% of all faults are repaired by the next working day and 100% repaired within 3 working days.
Mean time to repair faults	<8 hours
Call completion rate within a local network	>55%
Billing complaints	< 0.1% of bills should be disputed over a billing cycle 100% of all billing complaints resolved within 4 weeks

Mobile Telecommunications Services	
QoS Network Performance	**Target Level**
Call set-up success rate	>95%
Call drop rate	<2%
Connection with good voice quality	95% with a Frame Error Rate of 4%
Signal strength	In-door >=-75dBm; In-vehicle >=-85dBm Outdoor in City >=-95dBm
Point of Interconnection Congestion	<0.5%
Billing complaints	< 0.1% of bills should be disputed over a billing cycle 100% of all billing complaints resolved within 4 weeks

Republic of Lebanon Telecommunications Authority

The Telecommunications Regulatory Authority of Lebanon introduced in March 2009 the following service level targets for Lebanese telecommunications operators.

Fixed Network Services	
QoS Network Performance	**Target Level**
Availability of telephone Exchange	>99.99%
Call Set Up Time (Post dialling delay to ring tone)	< 3 seconds national at busy hour < 8 seconds for international busy hour
Billing accuracy	< 3 complaints per 1000 bills
Unsuccessful Call Ratio (% of call attempts)	< 1% On-Net National at busy hour <2% International at busy hour
Supply time for Connection	90% within 3 working days
Fault Rate per Access Line	< 3 failures per 100 lines per month
Fault Repair Time	95% within 72 hours
Reasoned Time for Operator Services	90% within 15 seconds

Mobile Telecommunications Services	
QoS Network Performance	**Target Level**
Supply Time for Connection	On demand for pre-paid and within 3 hours for post paid
Call Set Up Time (Post dialling delay to ring tone)	< 5 seconds On-net national at busy hour <10 seconds for On-net international busy hour
Unsuccessful Call Ratio (% of call attempts)	< 1% On-Net National at busy hour <2% International at busy hour
Dropped calls per Cell	1 dropped call per 100 calls per Cell at busy hour
Congestion Factor	5% of all Cells at busy hour
SMS Mobile Originated/Terminated Delivered	95% Delivered within 24 hours
Average response time customer Calls	85% of calls in less than 35 seconds
Billing accuracy	< 3 complaints per 1,000 bills
Unsuccessful Call Ratio (% of call attempts)	< 1% On-Net National at busy hour <2% International at busy hour
Fault Repair Time	95% within 72 hours

Wireless Data Services (<2048 bit/s)	
QoS Network Performance	**Target Level**
Service availability	>99.00%
Supply time for connection	90% completed on agreed day
Fault repair time	95% within 24 hours
Ratio of packet Loss	<5% Packet loss
Round trip delay	<95 milliseconds (ms) for national reference <250 milliseconds for international reference
Jitter	<50 milliseconds

United Arab Emirates Telecommunications Regulatory Authority (TRA)

For the two mobile operators in the UAE, the TRA annually measures and publishes the following quality of service parameters:

- Call Completion Success Rate;
- Service Coverage;
- Voice Quality; and
- Call Drop Rate.
- Packet Data Performance (Throughput).

New Zealand Commerce Commission

The Commerce Commission independently measures the quality of broadband on an annual basis by providing data on average through-put speeds achieved by internet

users, using a system of delivering large content files such as operating system updates from a distributed system of servers typically located at ISPs.

Australia Communications and Media Authority (ACMA)

Australia has a Customer Service Guarantee (GSC) made by law and incorporated in their telecommunications act. The CSG sets minimum performance standards for basic services in order to protect residential and small business customers from poor telephone service. Under the CSG Standard, service providers are required to meet performance standards and provide users with financial compensation if the same are not met. CSG Standard specifies timeframes for connection to specified services, report of faults and attendance of appointments by service providers. In 2005, the dominant operator Telstra exceeded 4% of service supply times, 9% of fault repair times and 6% of appointment times with average compensation payments of AUD58, AUD25 and AUD14 respectively.

ACMA publishes the Quarterly Telecommunications Performance Data every quarter which reports on telephone companies' compliance, in percentage terms, against the Customer Service Guarantee requirements. In October 2006, the ACMA issued regulations on basic set of standards that the Australian telecommunications universal service provider, Telstra, must provide in fulfilling its obligations of the USO. The regulations covered the following:

- The USP must provide at least once every 2 years written information about performance standards of specified services;
- Connection times;
- Charges payable by the customer;
- Estimated period of supply of the service;
- Rectification of faults within 2 working days within an urban centre of >10,000 people;
- Daily compensation of A$14.52 is paid to domestic customers and A$24.20 for business customers for failure to meet connection times or rectify faults.

ACMA applies exemptions for extreme weather conditions.