

Telecommunications Regulatory Affairs Advisory Committee

Provision of Location Information of Callers for Emergency Service by Telecommunications Operators

PURPOSE

This paper seeks Members' comments on the proposal to require telecommunications operators to provide location information of callers making emergency calls.

BACKGROUND

Licence Conditions on Emergency Call Service

2. Relevant licence conditions are set out in the Unified Carrier Licence ("UCL") and the Services-based Operator ("SBO") Licence in respect of emergency call service for compliance by the licensees. In gist, licensees are required to provide a public emergency call service by means of which any member of the public may, at any time and without incurring any additional charge, by means of compatible apparatus connected to the network of the licensees, communicate as quickly as practicable with the Hong Kong Police Emergency Centre ("Emergency Centre") to report an emergency. The Police will in turn transfer the calls to relevant emergency service agencies such as Fire Services Department ("FSD") and Hospital Authority for further handling. Extracts of relevant licence conditions in respect of emergency call service related are at **Annex A**.

Location Information of Callers Making Emergency Calls

3. Currently, location information of callers using the fixed network of PCCW-HKT Telephone Limited and Hong Kong Telecommunications

(HKT) Limited can be provided and made available automatically to the Emergency Centre and FSD at a cost during the time when callers make emergency calls. Other fixed and mobile operators have been providing location information of callers to the emergency service agencies on an ad-hoc, voluntary and non-real time basis.

4. In respect of Internet Protocol (“IP”) telephony service, users who are assigned telephone numbers may have access to the service and make calls at any location within (or even outside) Hong Kong where mobile or fixed broadband connection is available. Given the nomadic nature of IP telephony service, service providers are required under their respective licences to provide the most up-to-date location information of customers making emergency calls free of charge to the Emergency Centre. Service providers should also provide a mechanism so that the customers can update their location information, and should remind the customers to update their location information whenever they change the location from which the service is used.

NEED FOR LOCATION INFORMATION OF CALLERS MAKING EMERGENCY CALLS

5. The telecommunications market landscape in Hong Kong has undergone significant changes over the past decades. With the popularity of mobile phones, the number of mobile users is currently about six times of that of fixed network users, resulting in an increasing number of emergency calls made by mobile users rather than fixed network users. According to the Police, there is an average of 180 000 emergency calls each month. In 2018, the ratio of calls made by mobile users and fixed network users was 8:2.

6. Since the existing licence conditions do not require the provision of the most up-to-date location information of mobile or fixed network callers making emergency calls, the Police and relevant emergency service agencies have been experiencing difficulty in taking prompt actions for search and rescue, as well as handling of time-critical incidents. At present, the Police and emergency services agencies will make enquiries with the mobile network operators to check the caller’s location where necessary. This ad-hoc

arrangement is not commensurate with the requirement of being responsive to a life-and-death rescue operation.

7. According to the emergency service agencies, provision of accurate and instant caller location will facilitate search and rescue operations, including but not limited to –

(a) Hiking activities

The Police regularly receive calls from hikers who may not be able to clearly describe their geographical locations.

(b) Missing persons at risk cases

Missing person cases involving minors, elderly persons, or mentally incapacitated persons are also high risk cases. These missing persons may encounter difficulties in describing their accurate geographical locations even if they can dial 999.

(c) Members of public requiring immediate medical assistance

At times, heavily sick persons without companion may encounter difficulties in describing their locations.

(d) Persons in a panic

Victims of serious crimes and those involved in or who witnessed tragedies may not be able to accurately describe their locations due to either the imminent threat posed to them or the shock caused by the incidents.

8. The mobile phone penetration rate will continue to increase. The current ratio of 8:2 for mobile callers and fixed network callers will continue to be on the rise and more 999 callers will use mobile networks to make their calls. If the locations of these mobile calls cannot be automatically reported along with the emergency calls, valuable time will be wasted in locating the callers. The situation is highly unacceptable for life-and-death cases in a modern city such as Hong Kong, especially when the technology is readily available.

9. Taking into account overseas developments (see **Annex B**), the Police and FSD consider that there is a genuine need for **all mobile and fixed operators** to provide them with up-to-date location information of callers who make emergency calls promptly and free-of-charge to ensure efficient and effective provision of emergency services. It is particularly useful when emergency callers are unable to provide their locations in remote areas without any obvious landmark. Identification of emergency caller's location will facilitate efficient and effective deployment of resources of emergency service agencies for case handling or rescue operations.

PROPOSED IMPLEMENTATION

10. Technical solutions to address the above need are available today. Taking into account the practical difficulties encountered by the Police and other emergency service agencies in providing time-critical emergency services to the public such as those related to search and rescue, OFCA agrees that there is a case to require operators to, on an on-going basis, provide location information of callers making emergency calls. OFCA therefore proposes that suitable amendments be introduced to the special licence condition relating to emergency service to require operators to provide, to the extent technically feasible and practicable, location information of callers making emergency calls at the time when the call is made, free of charge to the Police, FSD and other relevant emergency service agencies. The new provision is proposed to be included in the licence conditions when a new licence is issued and upon renewal of an existing licence.

11. As for the details of the technical solutions to be deployed and other implementation arrangements, OFCA, the Police and FSD will further discuss with the industry with a view to developing detailed requirements and arrangements for implementation by telecommunications operators.

NEXT STEP

12. Taking into account the feedback from the industry, OFCA will take forward the proposal and make recommendation on the matter to the CA

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**Office of the Communications Authority
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Annex A

Licence Conditions in respect of Emergency Call Service

Licence Type	Licence Conditions
<p>Special Condition (“SC”) 12 of UCLs (Licence No. 002, 004, 008 and 018)</p>	<p>12. EMERGENCY SERVICE</p> <p>12.1 Where the licensee provides the services described in Schedule 7, the licensee shall provide a public emergency service by means of which any member of the public may, at any time and without incurring any charge, by means of compatible apparatus connected to the network of the licensees, communicate as quickly as practicable with the Hong Kong Police Emergency Centre or other entities as directed by the Authority to report an emergency.</p> <p>12.2 The licensee shall not charge for the use of the public emergency services described in Special Condition 12.1.</p> <p>12.3 Unless otherwise directed by the Authority, emergency messages sent by a person using compatible apparatus connected to the network of the licensee shall be treated by the licensee on an equal basis irrespective of whether or not such apparatus has been registered as that of a customer of the licensee.</p> <p>12.4 Where the licensee provides a public emergency service pursuant to Special Condition 12.1 and the location of the customer making the call is potentially nomadic, the licensee shall in such manner as may be specified by the Authority maintain the most up-to-date location information of customers and provide free of charge to the Police Force, the Fire Services Department and other relevant Government agencies handling the emergency</p>

	<p>service the relevant information relating to the location of a customer calling the emergency service described in Special Condition 12.1 for the sole purpose of responding to that call and (as appropriate) identification that the location of the customer making the call is potentially nomadic. Unless otherwise directed by the Authority, the licensee shall provide a mechanism whereby the customers can update their location information and remind the customers to update their location information whenever they change the location from which the service is used.</p> <p>12.5 Where the licensee provides a Short Message Service, the public emergency service referred to under Special Conditions 12.1, 12.2 and 12.4 shall include the Short Message Service.</p>
<p>SC 12 of other UCLs</p>	<p>12. EMERGENCY CALL SERVICE</p> <p>12.1 Where the licensee provides the services described in Schedule 7, the licensee shall provide a public emergency call service by means of which any member of the public may, at any time and without incurring any charge, by means of compatible apparatus connected to the network of the licensees, communicate as quickly as practicable with the Hong Kong Police Emergency Centre or other entities as directed by the Authority to report an emergency.</p> <p>12.2 The licensee shall not charge for the use of the public emergency services described in Special Condition 12.1.</p> <p>12.3 Unless otherwise directed by the Authority, emergency messages sent by a person using compatible apparatus connected to the network of the licensee shall be treated by the licensee on an equal basis irrespective of whether or not such apparatus has been registered as that of a customer of the licensee.</p>

	<p>12.4 Where the licensee provides a public emergency call service pursuant to Special Condition 12.1 and the location of the customer making the call is potentially nomadic, the licensee shall in such manner as may be specified by the Authority maintain the most up-to-date location information of customers and provide free of charge to the Police Force, the Fire Services Department and other relevant Government agencies handling the emergency call service the relevant information relating to the location of a customer calling the emergency service described in Special Condition 12.1 for the sole purpose of responding to that call and (as appropriate) identification that the location of the customer making the call is potentially nomadic. Unless otherwise directed by the Authority, the licensee shall provide a mechanism whereby the customers can update their location information and remind the customers to update their location information whenever they change the location from which the service is used.</p>
<p>SC 21 of SBO Licence</p>	<p>21. EMERGENCY CALL SERVICE</p> <p>21.1 Where the customers to the service are assigned with numbers from the numbering plan of Hong Kong as stipulated in Special Condition 2.1, the licensee shall provide a public emergency call service by means of which any member of the public may, at any time and without incurring any charge, by means of compatible apparatus connected to the system, communicate as quickly as practicable with the Hong Kong Police Emergency Centre or other entity as directed by the Authority to report an emergency.</p> <p>21.2 Where the licensee provides a public emergency call service pursuant to Special Condition 21.1 and the location of the customer making the call is potentially</p>

	<p>nomadic, the licensee shall in such manner as may be specified by the Authority maintain the most up-to-date location information of customers and provide free of charge, to the Hong Kong Police Emergency Centre or other entity referred to in Special Condition 21.1, the relevant information relating to the location of a customer calling the emergency service described in Special Condition 21.1 for the sole purpose of responding to that call and (as appropriate) identification that the location of the customer making the call is potentially nomadic. The licensee shall provide a mechanism whereby the customers can update their location information and remind the customers to update their location information whenever they change the location from which the service is used.</p> <p>21.3 The Authority may grant exemption to the licensee for any particular obligations imposed under Special Condition 21.1. The licensee shall comply with any conditions which may be specified by the Authority or any guideline which may be issued by the Authority for such exemption.</p> <p>21.4 Where the licensee is exempted by the Authority from the provision of a public emergency call service pursuant to Special Condition 21.1 for any particular group of customers, it shall clearly indicate the non-provision of the public emergency call service to that group of customers in all promotion, marketing or advertising materials offering service to the customers and obtain their explicit consent on the non-provision of the public emergency call service before providing service to them.</p>
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Annex B

**Regulatory Requirements of Overseas Economies in respect of the
Provision of Emergency Call Location Information**

The United Kingdom

Under Article 26 of Directive 2002/22/EC of the European Parliament and of the Council¹, Member States shall ensure that all end users of an electronic communications service for originating national calls to a number or numbers in a national telephone numbering plan are able to call the emergency services free of charge and without having to use any means of payment, by using the single European emergency call number “112” and any national emergency call number specified by Member States. The Office of Communications implemented the abovementioned obligation by way of General Condition (“GC”) A3 of the “General Conditions of Entitlement”² –

- (a) Under GC A3.4, Regulated Providers must ensure that all End-Users can access Emergency Organisations by using the emergency call numbers “112” and “999” at no charge;
- (b) GC A3.5 requires that Regulated Providers shall, to the extent technically feasible, make accurate and reliable Caller Location Information available for all calls to the emergency call numbers “112” and “999”, at no charge to the Emergency Organisations handling those calls, at the time the call is answered by those organisations; and
- (c) GC A3.6(b) sets out that where a Regulated Provider provides a Mobile Communications Service, the Caller Location Information must include, at least, the Cell Identification of the cell from which the call is being made and, where available, an indication of the radius of coverage of the cell. In exceptional circumstances, where the Cell Identification is temporarily

¹ See <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002L0022:20091219:EN:PDF>.

² See https://www.ofcom.org.uk/_data/assets/pdf_file/0021/112692/Consolidated-General-Conditions.pdf.

unavailable for technical reasons, the Caller Location Information must include the Zone Code.

The United States (“US”)

2. In the US, 911 and Enhanced 911 services were implemented under the Wireless Communications and Public Safety Act of 1999 (“911 Act”) for the purpose of improving public safety by encouraging and facilitating the prompt deployment of a nationwide, seamless communications infrastructure for emergency services. One of the provisions of the 911 Act directs the Federal Communications Commission (“FCC”) to make 911 the universal emergency number for all telephone services³. While most traditional wireline 911 systems would automatically report to the relevant government agencies handling the emergency call service the telephone numbers and locations of calls, the FCC also promulgated some rules applicable to wireless service providers⁴ –

- (a) the FCC’s basic 911 rules require wireless service providers to transmit all 911 calls to the relevant government agencies handling the emergency call service, regardless of whether the caller subscribes to the providers’ service or not;
- (b) Phase I Enhanced 911 (E911) rules require wireless service providers to provide the relevant government agencies handling the emergency call service with the telephone number of the originator of a wireless 911 call and the location of the cell site or base station transmitting the call; and
- (c) Phase II E911 rules require wireless service providers to provide the latitude and longitude of callers to the relevant government agencies handling the emergency call service. This information must be accurate to within 50 to 300 metres depending upon the type of location technology used.

³ See <https://www.fcc.gov/general/9-1-1-and-e9-1-1-services>.

⁴ See <https://www.fcc.gov/consumers/guides/911-wireless-services>.

Australia

3. The Telecommunications (Emergency Call Service) Amendment Determination 2011 (No. 1) requires mobile carriers to provide emergency service agencies with the most precise mobile phone location information available for emergency calls made from mobile phones, in situations where a caller is unable to verbally report their location⁵.

Singapore

4. Pursuant to the licence conditions of facilities-based operator (“FBO”) licences granted by the Info-communications Media Development Authority, licensees in general shall ensure that any person through customer premises or mobile equipment connected to the telecommunications networks may at any time and without charge, contact the relevant police service (namely 999 or its substitute number), the fire and ambulance services (namely 995 or its substitute number) and any other national emergency services which the relevant minister may from time to time designate, for the purpose of notifying them of any emergency. FBO licensees also have a general obligation to co-operate with the relevant government ministries, departments, statutory boards or official agencies in all possible ways for the provision of national security and emergency services⁶.

⁵ See <https://www.acma.gov.au/Industry/Telco/Carriers-and-service-providers/Emergency-call-service/new-rules-for-locating-mobile-calls-to-triple-zero>.

⁶ See <https://www.imda.gov.sg/-/media/imda/files/regulation-licensing-and-consultations/licensing/licensees/fbo/singtelm.pdf?la=en>.