

Guidelines for Submission of Applications for Wireless Internet of Things Licence

29 June 2021 (Issue 2)

Section I – Introduction

- 1.1 These Guidelines are issued under section 6D(2)(a) of the Telecommunications Ordinance (Cap. 106) (“TO”). They indicate the manner in which the Communications Authority (“CA”) proposes to perform its function of determining applications for the Wireless Internet of Things (“WIoT”) Licence for the provision of WIoT services in Hong Kong based on wireless technologies operating in the 920 – 925 MHz band and/or, where available, other frequency bands on a shared and uncoordinated manner. These Guidelines should be read in conjunction with the relevant CA Statements, and other policies and regulatory documents hereafter referred to.
- 1.2 All applications received will be evaluated on their merits having regard to the information provided as required in Section IV and to the broad licensing criteria outlined in Section V of these Guidelines.
- 1.3 Applicants should ensure that all information contained in their applications and any other subsequent submissions and representations are correct and accurate in all respects, in reliance upon which the CA will consider the applications. The CA may cancel, withdraw or suspend the WIoT Licence granted if any information submitted by the applicant is false or misleading.
- 1.4 Applications should be **submitted in English, in triplicate** under confidential cover and reach the Office of the Communications Authority (“OFCA”) at the following address. An electronic copy of the application form and the supporting documents should also be provided and sent to the following email address –

Office of the Communications Authority
29/F, Wu Chung House
213 Queen’s Road East
Wanchai
Hong Kong
(Attn.: Head, Regulatory 2)
Email: wiot@ofca.gov.hk

Alternatively, applications can be made by using the online application platform. The web-based application form can be found at https://www.ofca.gov.hk/en/electronic_services/licence/index.html.

- 1.5 Applicants will receive the acknowledgement of receipt of applications. The CA may request the applicants to provide additional information to clarify or supplement their applications submitted.
- 1.6 The CA reserves the right to disclose the names of the parties who have submitted applications. All other information received will be treated in confidence. Where the CA proposes to disclose any information in the applications which may be considered as commercially sensitive information, the CA will give the applicant an opportunity to make representations on the proposed disclosure before the CA makes a final decision on whether or not to disclose the information.
- 1.7 Nothing in these Guidelines should be taken to bind the CA on the granting of any licence, the terms of any licence to be granted, or any particular course of action in relation to the handling of applications received. The CA reserves the right not to accept any application submitted.

Section II – The Regulatory Framework under the WIoT Licence

Introduction

- 2.1 The WIoT Licence has been created for the establishment, maintenance and operation of wireless networks and systems for the provision of WIoT service in Hong Kong based on wireless technologies operating in the 920 – 925 MHz band and/or, where available, other frequency bands on a shared and uncoordinated basis. The WIoT service refers to a wireless data communications service for automated data-only machine-to-machine type communications to and/or from radiocommunications installations, apparatus, equipment and device, but does not include any service which carries real-time voice communications, and any other service subject to licensing under a carrier licence, and under the TO or any other ordinance.

Shared Use of Radio Spectrum

- 2.2 According to section 32H of the TO, the CA is empowered to allocate and manage frequencies and bands of frequencies in all parts of the radio spectrum used in Hong Kong. In April 2007, the Government promulgated the Radio Spectrum Policy Framework¹ for the management of radio spectrum in Hong Kong. As set out in the Radio Spectrum Policy Framework, there is no legitimate expectation that there will be any right of renewal or right of first refusal of any licence or spectrum assignment upon the expiry of a licence or spectrum assignment.
- 2.3 The use of the frequency bands as authorised under the WIoT Licence is shared with other applications in an uncoordinated manner and is not protected from any interference caused by other lawful telecommunications installations or radio equipment. It is also incumbent upon the WIoT licensees (“Licensees”) to ensure that there will be no harmful interference to existing users operating in the same frequency band.
- 2.4 Since the use of the concerned frequency band as authorised under the WIoT Licence is on a shared and uncoordinated basis, the Licensees shall conduct demonstrations, trials and tests as and when required and in the manner stipulated by the CA to ensure that there will be no harmful interference to other users operating in the same frequency band.

¹ See <https://www.cedb.gov.hk/assets/resources/ccib/policies/spectrum.pdf>.

Use of Numbers

- 2.5 Pursuant to section 32F of the TO, the CA has issued the “*Numbering Plan for Telecommunications Services in Hong Kong*” (“Hong Kong Numbering Plan”)². A Licensee is entitled to apply for allocation of telecommunications numbers and codes in the Hong Kong Numbering Plan for provision of telecommunications service in accordance with the relevant guidelines and codes of practices issued by the CA³.

Sharing of Use of Facilities

- 2.6 The sharing of “bottleneck” facilities is governed by section 36AA of the TO. The CA encourages commercial agreements for the sharing of “bottleneck” facilities. If commercial agreements could not be reached within a reasonable period and subject to passing the “public interest” test specified in the section, the CA may direct sharing of the “bottleneck” facilities concerned and determine the terms and conditions for such sharing.

Technical Standards

- 2.7 Pursuant to section 32D of the TO, the CA may from time to time prescribe standards and specifications of telecommunications networks, systems, installations, customer equipment and services, etc.⁴ Licensees are obliged to observe these specifications, where applicable, for the establishment and maintenance of their networks and provision of WIoT service. Applicants should refer to these specifications⁵ before submitting their applications.

² The Hong Kong Numbering Plan is available at:
https://www.ofca.gov.hk/filemanager/ofca/en/content_311/no_plan.pdf.

³ The code of practice relating to the use of numbers and codes in the Hong Kong Numbering Plan is available at https://www.coms-auth.hk/filemanager/statement/en/upload/385/cop-numbering_e.pdf.

⁴ A full list of HKCA Specifications is available at
https://www.ofca.gov.hk/en/industry_focus/standards/tel_standards/hkca/index.html.

⁵ See
https://www.ofca.gov.hk/en/industry_focus/standards/tel_standards/hkca/radio_equipment_specifications/index.html.

Publication of Tariff

- 2.8 Pursuant to the licence condition of the WIoT Licence, Licensees are obliged to publish tariffs and charge no more than the published tariffs for the services operated under their licences. The tariff of a service shall include not only all relevant service charges but also the terms and conditions on which the service is provided. To provide guidance to Licensees on publication of tariffs, OFCA has issued the “*Guidelines on Publication of Tariff*”⁶.

Prohibition of Unfair Trade Practices

- 2.9 The Trade Descriptions Ordinance (Cap. 362) (“TDO”) prohibits traders of all sectors, including the telecommunications sector, from engaging in false trade descriptions of goods and/or services and in specified unfair trade practices, namely misleading omissions, aggressive commercial practices, bait advertising, bait and switch, and wrongly accepting payment.
- 2.10 In addition to criminal prosecutions, a civil compliance-based mechanism has been introduced. The enforcement agency may, as an alternative to criminal prosecution, accept an undertaking from a trader, whom the enforcement agency believes has engaged in a prohibited unfair trade practice, to stop that practice, or where necessary, seek an injunction from the court for the purpose.
- 2.11 The Customs and Excise Department (“C&ED”) is the principal agency for enforcing the TDO, with concurrent jurisdiction conferred on the CA to enforce the relevant provisions of the TDO in relation to the commercial practices of licensees under the TO and the Broadcasting Ordinance (Cap. 562) (“BO”) that are directly connected with the provision of a telecommunications or broadcasting service under the respective ordinances. Applicants should refer to the relevant enforcement guidelines which state the manner in which the C&ED and the CA would exercise their enforcement powers and provide guidance on the operation of the relevant provisions in the TDO⁷.

⁶ The guidelines about publication of tariff are available at:
<https://www.coms-auth.hk/filemanager/statement/en/upload/539/gn202008.pdf>.

⁷ Available at
https://www.coms-auth.hk/en/policies_regulations/other/unfair_trade_practices/index.html.

Prohibition of Anti-Competitive Practices

- 2.12 The Competition Ordinance (Cap. 619) (“CO”) provides for general prohibitions of three types of anti-competitive conduct (described as the first conduct rule, the second conduct rule and the merger rule, collectively referred to as the ‘competition rules’ in the CO). The first conduct rule prohibits anti-competitive agreements, decisions and concerted practices. The second conduct rule prohibits an undertaking that has a substantial degree of market power from abusing that power. The merger rule prohibits anti-competitive mergers. The first and second conduct rules apply to all sectors, including the telecommunications sector, in Hong Kong. At present, the merger rule applies only to a merger involving one or more undertakings that hold a carrier licence under the TO or, directly or indirectly, control an undertaking that holds such a licence.
- 2.13 Under the CO, the CA is conferred concurrent jurisdiction with the Competition Commission to investigate and bring enforcement proceedings to the Competition Tribunal in relation to the conduct of telecommunications and broadcasting operators. The CA and the Competition Commission have signed a Memorandum of Understanding (“MoU”) to coordinate the performance of their functions over which they have concurrent jurisdiction. According to the MoU, the CA will ordinarily take the role of lead authority on matters which fall within the concurrent jurisdiction. Where a matter involves issues that are partly within the concurrent jurisdiction and issues that are partly outside the concurrent jurisdiction, the CA and the Competition Commission will discuss and agree how best to progress the matter case by case.
- 2.14 The CA and the Competition Commission have jointly issued under the CO six sets of guidelines describing how they expect to interpret and give effect to the three competition rules, and explaining the procedures for handling complaints, conducting investigations and considering applications for exclusions and exemptions⁸.
- 2.15 Apart from the CO, section 7Q of the TO prohibits exploitative conduct of a dominant licensee. The CA has investigative as well as adjudicative power in enforcing section 7Q. Decisions made by the CA under section 7Q will be subject to appeal to the Telecommunications (Competition Provisions) Appeal Board.

⁸ The full sets of Competition Guidelines are available at: https://www.coms-auth.hk/en/policies_regulations/other/competition/co/legislation_and_guidelines_issued_under_the_co/index.html.

Section III – Licensing Arrangement

General

- 3.1 A Licensee shall be a company registered under the Companies Ordinance (Cap. 622) in Hong Kong. There is no foreign ownership restriction. In line with the full liberalisation policy in telecommunications services, the CA in general has not pre-set a limit on the number of WIoT Licences to be issued.

Period of Validity of the WIoT Licence

- 3.2 The WIoT Licence shall be valid for five years from the day on which it is issued, and, subject to the discretion of the CA, may be extended for a further period of up to five years.

Licence Conditions

- 3.3 Licence conditions of the WIoT Licence, as given in the sample WIoT Licence published on the CA's website⁹, include the General Conditions and Special Conditions ("SCs"). The CA may also impose additional SCs specific to each Licensee as may be appropriate.

Scope of Service

- 3.4 The scope of service under the WIoT Licence includes a wireless data communications service provided through radiocommunications installations, apparatus, equipment and device operating at the frequencies and using technical parameters specified in Schedule 3 of the WIoT Licence to enable automated data-only machine-to-machine type communications to and/or from such installations, apparatus, equipment and device in Hong Kong. Nothing in the WIoT Licence authorises the Licensee to provide service which carries real-time voice communications, and any other service subject to licensing under a carrier licence, and under the TO or any other ordinance.
- 3.5 A WIoT Licence contains a number of schedules dealing with the description of the licensed service, the licensed network, the technical particulars of radio stations and the frequency spectrum used for the provision of the licensed service, where applicable.

⁹ Available at https://www.coms-auth.hk/filemanager/common/licensing/sample_wiot_licence.pdf.

Licence Fee

3.6 The annual licence fee includes the following components (See the **Annex**) -

3.6.1 A fixed fee of \$100,000.

3.6.2 A fee of \$200 for each 100 WIoT devices or less used by customers of the service, i.e. \$2 each.

3.6.3 A fee of \$1,000 each for the 1st to the 50th base station, \$500 each for the 51st to the 100th base station and \$100 each for the 101st and thereafter base station installed for the service.

Section IV – Information to be Provided in Submitting the Application

Application Procedures under Different Scenarios

- 4.1 For an application for a new WIoT Licence, the applicant should submit the full information specified in paragraphs 4.3 to 4.11 of this Section. Subject to the applicant satisfying the relevant licensing criteria set by the CA (see Section V), the CA will consider granting a WIoT Licence to the applicant.
- 4.2 For an application for extension of WIoT Licence in view of the expiry of the existing one, the Licensee should submit an application at least one year prior to the expiry of the WIoT Licence, to the CA for continuing to operate the service specified under the scope of the existing licence. The application for licence extension should include full details as required for an application for a new WIoT Licence. It should be noted that subject to the discretion of the CA, the WIoT Licence may be extended for a further period of up to five years. In general, the CA will examine the application according to the similar criteria as for granting a WIoT Licence to a new applicant.

Application Proposal

- 4.3 Scope of Proposed Services
 - 4.3.1 Proposals should contain an Executive Summary summarising in a concise manner the salient points of the services proposed to be provided under the WIoT Licence.
 - 4.3.2 The applicant should specify the scope of services proposed to be provided under the WIoT Licence.
 - 4.3.3 Proposals should include a detailed description of all services to be provided, target users (including all end users of the services and the service providers making use of the services to serve their own customers) and customers, intended coverage areas upon the commissioning of the facilities, expected service launch date, implementation schedule if the proposed services are to be introduced in phases and plans for the introduction of new services. Proposals should also include detailed description of the arrangements for offering wholesale and/or retail services to the public, and an explanation on how the applicant is not primarily relying on wholesale services of other operators' infrastructure to roll out its network or to provide its services.

4.3.4 Successful applicants should be committed to the provision of the proposed services in Hong Kong as detailed in their proposals, submissions and representations.

4.4 Company Structure

4.4.1 Licensees must be registered in Hong Kong under the Companies Ordinance (Cap. 622). The application proposal should contain details of the company intended to be the Licensee under application, including -

- (a) photocopies of the Certificate of Incorporation and the Business Registration Certificate of the company;
- (b) detailed information on corporate and shareholding structure including relationships with holding or related companies;
- (c) documents that it filed to the Companies Registry showing the authorised, issued and paid-up share capital, such as a copy of Articles of Association of the company or equivalent documents(s); and
- (d) details on the composition of the company's Board of Directors and key officers.

4.5 Financial Capability

4.5.1 If the applicant is an established company, the proposal should include copies of audited annual financial statements, including the auditor reports for each of the last three full financial years, together with the most recent interim results (if applicable).

4.5.2 If the applicant is a newly-formed company, the proposal should include -

- (a) the directors' certificate of the amount of issued and paid-up share capital;
- (b) bankers' confirmation of the amount of its deposits and/or available credit facilities; and
- (c) copies of audited annual financial statements, including the auditor reports for each of the last three full financial years, together with the most recent interim results, of each of the company's shareholders that is an established company (if applicable).

- 4.5.3 If the applicant is being financed by its holding company, a supporting letter from its holding company together with documentary evidence to demonstrate the financial capacity of its holding company is required.
- 4.5.4 Proposals should include a detailed financial plan (with inflation assumptions) for the proposed services and network for the first five years of operation including -
- (a) a breakdown of the planned capital expenditure (“CAPEX”) and of working capital requirements for the first five years of operation;
 - (b) projected profit and loss account including details of revenue, fixed and variable costs, balance sheet and budgeted cash flow statements, showing the amount of capital to be invested on an annual basis for the first five years;
 - (c) method of depreciation of assets;
 - (d) projected volume of business and market share for the first five years of operation;
 - (e) the forecast internal rate of return and payback period of the project;
 - (f) details of proposed financing structure, debt equity ratio of the project, credit facilities, repayment terms and schedule for loans and bonds, timing or injection of funding, and the level of shareholders’ support to satisfy the CA that the applicant has sound financial backing to carry out the project; and
 - (g) sensitivity tests on the business plan showing the worst case scenario (the worst case being one beyond which the company would not wish to invest) and a scenario in which the projected revenue level falls to 80% of the basic assumptions, details of contingency financial arrangements, balance sheet, profit and loss account, cash flow statements, capital investment plan, internal rate of return and payback period of the project.

4.6 Technical Details of the Facilities

- 4.6.1 Proposals should give a detailed description of the proposed facilities. This description should cover -

- (a) technical configuration including network infrastructure and components with the aid of diagram, the technology to be employed, the likely choice of equipment, system design, capacity, how the network and its ancillary equipment and facilities are planned to meet the proposed capacity, connectivity to destinations outside Hong Kong, if applicable, and other technological characteristics;
- (b) the facilities upon launch of service and the facilities expansion plan for the first five years of operation;
- (c) the planned location(s) of equipment to be installed;
- (d) the planned facilities and traffic management, signalling, metering and billing arrangements (where applicable) to be adopted; and
- (e) specification(s) to which the equipment would comply with. The specification(s) should be widely recognised standard(s) covering functional specification(s), modulation, transmitting power, out-of-band and spurious emissions, antenna characteristics, etc., where applicable.

Proposals should illustrate how the proposed facilities are designed and implemented to ensure provision of good, efficient and continuous services.

- 4.6.2 Proposals should state clearly the exact frequency band to be used for the provision of the proposed services.
- 4.6.3 Proposals should give full technical details, such as test report, measurement results, etc., providing an evaluation on the compatibility of the proposed facilities to use the concerned frequency band on a shared and uncoordinated manner, with a view to demonstrating that there will be no harmful interference to existing users operating in the frequency band under 4.6.2.

4.7 Technical Support

- 4.7.1 Proposals should include details of technical support facilities and maintenance centres which the applicants have or intend to set up in Hong Kong, including a description of the technical personnel including key management/engineering personnel, staffing levels and any principal contractors responsible for the design, construction, day-to-day operation, maintenance of the facilities and the routine maintenance schedule/procedure.

4.8 Contingency Plan

4.8.1 To ensure sustainability of service delivery, the applicant should provide the contingency plan for its proposed services in response to major breakdown or network/service outage. It should include -

- (a) a brief description of the contingency plan and arrangement;
- (b) the designed level of resilience in terms of percentage of affected services recovered and the time within which the recovery will be completed;
- (c) the amount of backup capacity (relative to the capacity level required for normal operation) and the spare resources such as backhaul equipment for contingency connection;
- (d) prior and post arrangements for re-allocating resources, re-routing the affected traffic and acquisition of additional bandwidth to recover the affected services;
- (e) internal procedures for monitoring and reporting critical network outage, composition of the team responsible for handling the major incidents and the responsibility of the respective major team members; and
- (f) brief description of the action and procedures to (i) assess the impact of major incident; and (ii) disseminate the information to the management, OFCA and the customers.

4.9 Previous Relevant Experience

4.9.1 Details on the technical knowhow and any previous experience of the applicant, its shareholders and key personnel in establishing and running the proposed telecommunications networks and services, as well as information on the current status of these networks and services, should be given.

4.9.2 Information should also be provided on the applicant and its shareholders' experience in running other relevant businesses in Hong Kong and/or other places.

4.10 Implementation Plan

4.10.1 Proposals should include an implementation plan, giving the key milestones of implementation for the first three years starting

from the date of grant of the licence including where applicable (a) the network planning, (b) placing of order for equipment, (c) delivery of equipment, (d) acquisition of sites, (e) construction of equipment buildings/rooms, (f) installation of equipment and (g) testing. The applicant will be required to adhere to this plan if a licence is subsequently granted. The CA wishes to see early availability of the proposed services.

4.11 Other Information

- 4.11.1 Applicants may submit any other information not specified above which they consider helpful to their applications.

Section V - Broad Licensing Criteria

- 5.1 The basis for assessment of applications will be the information supplied by applicants in accordance with the requirements set out in Section IV of these Guidelines. The CA reserves all rights not to accept applications which are substantially incomplete in this respect.
- 5.2 In considering the grant of a WIoT Licence, the CA will consider the benefit of the proposed network to the community, specifically with reference to the type of services to be offered and the intended coverage areas, the reasonableness of the business plan and the applicant's financial capability to fulfil the CAPEX requirement. Detailed licensing criteria include -

5.2.1 Business Plan

The CA will examine the reasonableness of the business plan including in particular whether estimates of the market and market shares are reasonable and whether the proposed CAPEX would be sufficient to support the networks and services proposed.

5.2.2 Financial Capability

The applicant must possess sufficient financial capability to invest to the level proposed and demonstrate that each consortium partner, as appropriate, is financially sound. The applicant must satisfy the CA that it has sufficient financial backing, either by its own capital, the capital of its shareholders or loan capital to carry out the project. The applicant must have sound and detailed business plans with contingency measures to face unexpected down-turn in the business and the worst case scenario.

5.2.3 Technical Soundness and a Satisfactory Quality of Service

The proposed network must be technically sound, compatible with the local environment and be capable of delivering the services proposed to give a satisfactory quality of service. In particular, the quality of service should be satisfactory in the expected climatic conditions in Hong Kong. Any radio frequency spectrum requirements must be compatible with spectrum allocation plans in Hong Kong and the proposed system must use spectrum efficiently and avoid any interference to existing users using the same frequency band.

5.2.4 Proven Managerial and Technical Expertise

The applicant must possess proven managerial and technical expertise to operate a satisfactory service, market the service in Hong Kong and provide satisfactory customer support. The CA will consider the knowledge of the applicant or the consortium partners, as appropriate, about the local environment and/or their experience in running other relevant businesses in Hong Kong and/or other places.

5.2.5 Service Quality and Charges

The CA will consider more favourably applications which offer a wider range of services and more innovative services at competitive prices and with a good quality of service.

5.2.6 Implementation Schedule

The CA expects the applicant to determine its rollout plan. However the applicant should demonstrate its ability to manage such plan and the necessary facilities.

5.2.7 Quality of Application Proposal

The CA will consider more favourably application proposals that are concise and clearly presented with each aspect substantiated.

- 5.3 The licensing criteria set out in these Guidelines are not intended to be a definitive list of criteria. While evaluating whether the criteria have been satisfied, the CA is entitled to determine the weight it will give to each individual matter as it considers appropriate in the circumstances, after taking into account the relevant factors, and will decide each case based on its own merits.

Fee Schedule of WIoT Licence

Period of Validity

The licence shall be valid for five years from the day on which it is issued, and, subject to the discretion of the CA, may be extended for a further period of up to five years.

Fees

The annual licence fee payable on the issue and on anniversary of the issue of the licence in each year while the licence remains in force shall be the sum of -

1. Fixed Fee

A fee of \$100,000

2. Base Station Fee

- (a) For the 1st to the 50th base station installed for the service -
\$1,000 per base station
- (b) For the 51st to the 100th base station installed for the service -
\$500 per base station
- (c) For the 101st base station installed for the service and any additional
base stations -
\$100 per base station

3. Wireless Internet of Things (“WIoT”) Device Fee

A fee of \$200 for each 100 WIoT devices or less used by customers of the service
