

## **Guidelines for the Submission of Proposals Applying for the Wireless Internet of Things Licence**

**1 December 2017 (Issue 1)**

### **Section I – Introduction**

- 1.1 These Guidelines are issued under section 6D(2)(a) of the Telecommunications Ordinance (Cap. 106) (the “TO”), stipulating the manner in which the Communications Authority (the “CA”) will perform its function of processing applications for the Wireless Internet of Things (“WIoT”) Licence for the provision of WIoT service in Hong Kong based on wireless technologies operating in the 920 – 925 MHz band and/or other frequency bands on a shared and uncoordinated manner. These Guidelines are designed to assist interested parties in formulating their proposals, and should be read in conjunction with the relevant policy and regulatory documents hereafter referred to.
  - 1.2 All proposals applying for the WIoT Licence 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 The applicants should use their best endeavours to ensure that all information contained in their proposals and any other subsequent submissions and representations are correct and accurate in all respects, in reliance upon which the CA will consider the proposals.
  - 1.4 Proposals should be submitted under confidential cover and reach the CA at the following address. Please provide an electronic copy and two printed copies of the proposals. Alternatively, proposals may be submitted by email to: [wiot@ofca.gov.hk](mailto:wiot@ofca.gov.hk).
- Office of the Communications Authority  
29/F, Wu Chung House  
213 Queen’s Road East  
Wanchai  
Hong Kong  
(Attn.: Head, Regulatory 2)
- 1.5 Applicants will receive the acknowledgement of receipt of proposals. The CA may request the applicants to provide additional information to clarify or supplement the proposals submitted.

- 1.6 The CA reserves the right to disclose the names of the parties who have submitted proposals. All other information received will be treated in confidence. Where the CA proposes to disclose any information from the proposals and it considers that the disclosure would result in the release of sensitive information concerning business or commercial or financial affairs of the relevant parties, the CA will give the relevant parties 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 proposals 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 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. On 24 April 2007, the Government after public consultation announced the Radio Spectrum Policy Framework<sup>1</sup> 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 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, 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.

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<sup>1</sup> See <http://www.cedb.gov.hk/ccib/eng/legco/pdf/spectrum.pdf>.

## *Use of Numbers*

- 2.5 According to section 32F of the TO, the numbering plan of Hong Kong is administered by the CA. To ensure the efficient allocation and use of numbers and codes for telecommunications networks/services which meet the requirements of the telecommunications industry, the CA issues a “Code of Practice Relating to the Use of Numbers and Codes in the Hong Kong Numbering Plan”<sup>2</sup> for the purpose of providing guidance to the telecommunications network operators and service providers to whom the CA has delegated the administration of part of the numbering plan.

## *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 the “bottleneck” facilities. If commercial agreements could not be reached within a reasonable period and subject to passing the “public interest” tests specified in that provision, the CA may direct sharing of the “bottleneck” facilities 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.<sup>3</sup> Licensees are obliged to observe these specifications, where applicable, for the establishment and maintenance of their networks and for the provision of WIoT service. Applicants should refer to these specifications<sup>4</sup> before submitting their application proposals.

## *Publication of Tariff*

- 2.8 Pursuant to the licence condition of the WIoT Licence, a holder of WIoT Licence is obliged to publish tariffs and charge no more than the published tariffs for the service operated under its licence. The tariff of a service shall include not only all relevant service charges but also the

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<sup>2</sup> See <http://www.coms-auth.hk/filemanager/statement/en/upload/240/cop20131203e.pdf>.

<sup>3</sup> A full list of HKCA Specifications is available at [http://ofca.gov.hk/en/industry\\_focus/telecommunications/standards/hkca/index.html](http://ofca.gov.hk/en/industry_focus/telecommunications/standards/hkca/index.html).

<sup>4</sup> See [http://www.ofca.gov.hk/en/industry\\_focus/telecommunications/standards/hkca/radio\\_equipment\\_specifications/index.html](http://www.ofca.gov.hk/en/industry_focus/telecommunications/standards/hkca/radio_equipment_specifications/index.html).

terms and conditions on which the service is provided.

### ***Prohibition of Unfair Trade Practices***

- 2.9 Pursuant to the Trade Descriptions (Unfair Trade Practices) (Amendment) Ordinance 2012 (“TD(AO”) passed by the Legislative Council on 17 July 2012 and brought into operation on 19 July 2013, the Trade Descriptions Ordinance (Cap. 362) (“TDO”) has been amended to extend its coverage to prohibit traders of all sectors, including the telecommunications sector, from engaging in false trade descriptions in providing services and in specified unfair trade practices, namely misleading omissions, aggressive 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 amended TDO, with concurrent jurisdiction conferred on the CA to enforce the relevant provisions of the amended TDO in relation to the commercial practices of licensees under the Ordinance 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 study 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 new legislative provisions.<sup>5</sup>

### ***Prohibition of Anti-Competitive Practices***

- 2.12 The Competition Ordinance (Cap. 619) (“CO”) is a cross-sectoral competition law prohibiting anti-competitive conduct through three competition rules. The First Conduct Rule provides that an undertaking must not make or give effect to an agreement, engage in a concerted practice, or as a member of an association of undertakings, make or give effect to a decision of the association, if the object or effect of the agreement, concerted practice or decision is to prevent, restrict or distort competition in Hong Kong. The Second Conduct Rule provides that an undertaking that has a substantial degree of market power must

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<sup>5</sup> Available at [http://www.coms-auth.hk/en/policies\\_regulations/unfair\\_trade\\_practices/index.html](http://www.coms-auth.hk/en/policies_regulations/unfair_trade_practices/index.html).

not abuse that power by engaging in conduct that has as its object or effect the prevention, restriction or distortion of competition in Hong Kong.

- 2.13 Under the CO, the CA has concurrent jurisdiction with the Competition Commission (the “Commission”) to enforce the CO in respect of the conduct of certain undertakings operating in the broadcasting and telecommunications sectors. The CA and the Commission have signed a Memorandum of Understanding (“MoU”) to coordinate the performance of their functions under the CO. According to the MoU, for cases involving the telecommunications or broadcasting sectors and falling within the concurrent jurisdiction, the CA will ordinarily take the role of the lead authority, which will assume responsibility for exercising the relevant powers and functions conferred upon it under the CO. For matters involving issues that are partly within and partly outside the concurrent jurisdiction, the CA and the Commission will discuss and agree on how best to progress the matter on a case-by-case basis.
- 2.14 The CA and the Commission have jointly issued six guidelines<sup>6</sup> under the CO 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 exemptions.
- 2.15 For more information about the enforcement of the CO by the CA, please refer to the website of the CA.<sup>7</sup>

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<sup>6</sup> The guidelines are available at [http://www.coms-auth.hk/en/policies\\_regulations/competition/co/legislation\\_and\\_guidelines\\_issued\\_under\\_the\\_co/index.html](http://www.coms-auth.hk/en/policies_regulations/competition/co/legislation_and_guidelines_issued_under_the_co/index.html).

<sup>7</sup> [http://www.coms-auth.hk/en/policies\\_regulations/competition/co/index.html](http://www.coms-auth.hk/en/policies_regulations/competition/co/index.html).

## Section III – Licensing Arrangement

### *General*

- 3.1 A holder of the WIoT Licence shall be a company registered under the Companies Ordinance (Cap. 622) in Hong Kong. There will be no foreign ownership restriction on the WIoT Licensee. 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 website,<sup>8</sup> include the General Conditions ("GCs") and Special Conditions ("SCs"). The CA may also impose additional SCs where 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 authorizes 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 setting out the details 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.

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<sup>8</sup> Available at [http://www.coms-auth.hk/filemanager/common/licensing/sample\\_wiot\\_licence.pdf](http://www.coms-auth.hk/filemanager/common/licensing/sample_wiot_licence.pdf).

### ***Licence Fee***

3.6 The annual licence fee will include the following components (See **Annex A**):

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 Proposals

### *Application Procedures*

- 4.1 For an application for the new WIoT Licence, the applicant should submit full information specified in paragraphs 4.3 to 4.14 of this Section. Subject to 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 any application for renewal of WIoT Licence in view of the expiry of an 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 original licence. The application proposal for licence renewal 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. Basically, 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 Company Structure

- 4.3.1 Holders of the WIoT Licence must be registered in Hong Kong under the Companies Ordinance. The application proposal should contain details of the company intended to be the holder of the WIoT Licence 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) certified copies of Articles of Association of the company;
  - (d) details on the composition of the company's Board of Directors and key officers; and
  - (e) the organisational/management structure and staffing levels of the company and any principal contractors to be employed in constructing and maintaining the network.

#### 4.4 Financial Capability

- 4.4.1 If the applicant is an established company, the proposal should include copies of audited financial statements, including the auditor reports for the last three full years, together with the most recent interim results (if applicable).
- 4.4.2 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 financial statements, including the auditor reports for the last three full years, together with the most recent interim results, of the company's shareholding companies (if applicable).
- 4.4.3 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.
- 4.4.4 Proposals should include a detailed financial plan (with inflation assumptions) for the proposed service 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 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.

#### 4.5 Economic and Market Study

- 4.5.1 Proposals should include any economic and market study conducted on the potential demand for the forms of service being proposed to operate, the projected market share that the applicant will be able to acquire in the next five years with as much information as possible.

#### 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, 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 five years of operation;
- (c) the planned location of equipment to be installed;
- (d) the planned facilities and traffic management, signalling, metering and billing arrangements (where applicable) to be adopted; and
- (e) specifications of the radio transmitting/receiving equipment: (i) functional specifications; (ii) coding format; and (iii) others (e.g. Modulation and emission type,

Occupied bandwidth, Operating band, Transmitter power, Harmonics and spurious output level and Antenna characteristics).

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

4.6.2 Proposals should state clearly the exact frequency band to be used for the provision of the proposed service.

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 Description of the Proposed Service

4.7.1 The applicant should indicate the scope of service proposed to be operated under the WIoT Licence.

4.7.2 Proposals should include a detailed description of the service to be provided, the target users (including all end users of the service and the service providers making use of the service to serve their own customers) and customers, their intended coverage areas upon the commissioning of the facilities, the expected service launch date, the implementation schedule if the proposed service is to be introduced in phases and plans for the introduction of new service. Proposals should also include detailed description of the arrangements for offering wholesale and/or retail services, and an explanation on how the applicant is not primarily relying on wholesale services of other operators' infrastructure to roll out their network or to provide their service.

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

#### 4.8 Technical Support

4.8.1 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 responsible for the design, construction, day-to-day operation, maintenance of the facilities and the routine

maintenance schedule/procedure.

#### 4.9 Contingency Plan

4.9.1 To ensure sustainability of service delivery, the applicant should provide the contingency plan for its proposed service 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 service 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 service;
- (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.

#### 4.10 Previous Relevant Experience

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

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

#### 4.11 Implementation Plan

- 4.11.1 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 service.
  
- 4.12 Other Benefits to the Local Telecommunications Industry and Economy
  - 4.12.1 Proposals which can demonstrate that their implementation will offer significant benefits to Hong Kong, for example, employment, manufacturing and wider trading opportunities, introduction of innovation and improvements to the local telecommunications industry and promotion of Hong Kong as an international telecommunications centre will be given special consideration.
  
- 4.13 Other Information
  - 4.13.1 Applicants may submit any other information not specified above which they consider helpful to their applications.
  
- 4.14 Executive Summary
  - 4.14.1 Proposals should contain an Executive Summary summarising in a concise manner the significant and salient points of the proposals.

## **Section V - Broad Licensing Criteria**

- 5.1 The basis for assessment of proposals will be the information supplied by applicants according to the requirements set out in Section IV of this document. The CA reserves all rights not to accept application proposals which are substantially incomplete in this respect.
- 5.2 In considering any proposal applying for the WIoT Licence, the CA will consider the benefit of the proposed network to the community, more specifically the type of service 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. The other licensing criteria include the following -

### **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 support the networks and service proposed.

### **5.2.2 Financial Capability**

The applicant must possess sufficient financial capability to invest to the level proposed. The proposer must 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 service 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 the operation of external telecommunications facilities.

#### 5.2.5 Service Quality and Charges

The CA will consider more favourably proposals which offer a wider range of service and more innovative service at more competitive prices and better quality of service.

#### 5.2.6 Implementation Schedule

The CA expects the licensee to determine their rollout plan. However the applicant should demonstrate abilities to manage such plan and the necessary facilities - telecommunications sites.

#### 5.2.7 Quality of Proposal

The proposal should be concise, clearly presented with each aspect substantiated by well researched facts and comprehensive independent market survey would receive more favourable consideration by the CA.

#### 5.2.8 Benefit to the Local Telecommunications Industry, Customers in Hong Kong and the Economy as a Whole.

The CA will consider the benefits that the proposals will bring to the telecommunications industry and the community as a whole. These benefits will include the type of service proposed to be provided, the coverage areas, the level of investment for network infrastructure, creation of new job opportunities, bringing into Hong Kong new technological know-how and contribution to the local economy as a result of the investment.

### 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 the individual matter to which it considers appropriate in the

circumstances, after taking the relevant factors into account, and will decide each case on its own merits.

**Office of the Communications Authority**  
**1 December 2017**

**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 Authority, 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 1<sup>st</sup> to the 50<sup>th</sup> base station installed for the service:

\$1,000 per base station

(b) For the 51<sup>st</sup> to the 100<sup>th</sup> base station installed for the service:

\$500 per base station

(c) For the 101<sup>st</sup> 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

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