

TELECOMMUNICATIONS ORDINANCE
(Chapter 106)

WIRELESS INTERNET OF THINGS LICENCE

DATE OF ISSUE: 7 December 2017

VALIDITY PERIOD : 5 years unless extended by the Authority

DATE OF EXTENSION (if applicable) : 7 December 2022

PERIOD OF EXTENSION (if applicable) : five (5) years from 7 December 2022

Pixel Networks Limited

.....
of Rooms 05-15, 13A/F., South Tower, World Finance Centre, Harbour City, 17
Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong
.....

(the “licensee”) is licensed, subject to the following conditions set out in this licence
—

- (a) to provide a public telecommunications network service (the “service”), the scope of which is described in Schedule 1;
- (b) to establish and maintain a telecommunications network (the “network”) described in Schedule 2 to provide the service;
- (c) to possess and use the radiocommunications installations described in Schedule 3 to provide the service; and
- (d) to deal in, import and demonstrate, with a view to sale in the course of trade or business, such apparatus or material for radiocommunications as may be necessary to supply customers of the service.

GENERAL CONDITIONS

1. DEFINITIONS AND INTERPRETATION

- 1.1 In this licence, except as hereinafter provided or unless the context otherwise requires, words or expressions shall have the meanings assigned to them in the Telecommunications Ordinance (Cap. 106) (the “Ordinance”) and, as the case may be, the Interpretation and General Clauses Ordinance (Cap. 1). For the purposes of interpreting this licence, headings and titles shall be disregarded.
- 1.2 This licence shall not be construed as granting an exclusive right to the licensee to provide the service.
- 1.3 This licence replaces any licence or any exemption from licensing, however described, which the Authority may have granted to the licensee for providing the service.
- 1.4 The grant of this licence does not authorize the licensee to do anything which infringes any exclusive licence granted under the Ordinance or any exclusive right to operate and provide telecommunications networks, systems, installations or services granted under any other Ordinance.

2. TRANSFER

- 2.1 The licensee may, only with the prior written consent of the Authority and subject to such reasonable conditions as the Authority thinks fit, transfer this licence or any permission, right or benefit under this licence. In giving its consent the Authority will have regard to such matters as it thinks fit including but not limited to the effect which the transfer will have on market structure and the financial and technical competence and viability of the transferee.

3. INTERNATIONAL CONVENTIONS

- 3.1 The licensee shall at all times perform and observe the requirements of the Constitution and Convention of the International Telecommunication Union and the regulations and recommendations annexed to it, as are stated to be

applicable to Hong Kong, and any other international convention, agreement, protocol, understanding or the like to the extent that the instruments described in this General Condition 3.1 impose obligations on Hong Kong of which the Authority gives notice to the licensee, except to the extent that the Authority may in writing exempt the licensee from such compliance.

- 3.2 Where the Government has been consulted about or is involved in the preparation or negotiation of an international convention, agreement, protocol or understanding or the like or amendments thereto which are on the subject-matter of telecommunications or which relate to another subject-matter but which the Government anticipates could have a material impact on the provision of the service under this licence, the Government will, where practicable, provide the licensee with a reasonable opportunity to make a submission stating its views on the matter.

4. COMPLIANCE GENERALLY

- 4.1 The licensee shall comply with the Ordinance, regulations made under the Ordinance, licence conditions or any other instruments which may be issued by the Authority under the Ordinance.

5. PROVISION OF SERVICE

- 5.1 The licensee shall, subject to Schedule 1 to this licence and any special conditions of this licence relating to the provision of the service, at all times during the validity period of this licence operate, maintain and provide a good, efficient and continuous service in a manner satisfactory to the Authority. The Authority may, on application in writing by the licensee, exempt a part or parts of the service from the requirement of continuous provision.

6. CONFIDENTIALITY OF CUSTOMER INFORMATION

- 6.1 The licensee shall not disclose information of a customer except with the consent of the customer, which form of consent shall be approved by the Authority, except for the prevention or detection of crime or the apprehension or prosecution of offenders or except as may be authorized by or under any

law.

- 6.2 The licensee shall not use information provided by its customers or obtained in the course of provision of service to its customers other than for and in relation to the provision by the licensee of the service.

7. RECORDS AND PLANS OF NETWORK

- 7.1 The licensee shall keep records and plans (including overall network plans and cable route maps) of the telecommunications installation (including radiocommunications installation) and telecommunications nodes and exchanges, if any, provided under this licence and any other details concerning the network as may be reasonably required by the Authority, including but not limited to information from operational support systems, traffic flow information, and database information relating to the manner in which the network treats any communication (“network information”).
- 7.2 As required by the Authority, the licensee shall make the network information available, within reasonable time, to the Authority or to a person authorized in writing by the Authority for inspection for the Authority’s own purposes.

8. CONTROL OF INTERFERENCE AND OBSTRUCTION

- 8.1 The licensee shall take reasonable measures to install, maintain and operate the service and the network in such a manner as not to cause any harmful interference or physical obstruction to any lawful telecommunications service, or cause any physical obstruction to the installation, maintenance, operation, adjustment, repair, alteration, removal or replacement of the facilities of any lawful telecommunications or utility service provider.
- 8.2 The licensee shall take reasonable measures to ensure that the customers of the service do not cause harmful interference to lawful telecommunications services or utility services through use of the service.
- 8.3 The Authority may give such reasonable directions as it thinks fit to avoid harmful interference or physical obstruction referred to in General Condition 8.1. The licensee shall comply with the directions.

9. COMPLIANCE

- 9.1 If the licensee employs any person under contract for the purpose of the service, or for the installation, maintenance or operation of the network (a “contractor”), the licensee shall continue to be responsible for compliance with the conditions of this licence, and the performance thereof, by any contractor.

10. REQUIREMENTS OF RADIOCOMMUNICATIONS INSTALLATION

- 10.1 Each radiocommunications installation operated by or on behalf of the licensee shall be used only at the location and with emissions and at the frequencies and of the classes and characteristics specified in Schedule 3 to this licence and with such power and aerial characteristics as are specified in that Schedule in relation to the class and characteristics of the emission in use.
- 10.2 The apparatus comprised in each radiocommunications installation shall at all times comply with such technical standards as may be issued by the Authority.
- 10.3 The apparatus comprised in a radiocommunications installation shall be of a type approved by the Authority and shall be so designed, constructed, maintained and operated that its use shall not cause any interference to any radiocommunications.
- 10.4 A radiocommunications installation shall be operated only by the licensee or a person authorized by the licensee. The licensee shall not allow an unauthorized person to have access to the apparatus comprised in a radiocommunications installation. The licensee shall ensure that persons operating each radiocommunications installation shall at all times observe the conditions of this licence.
- 10.5 The licensee shall not make a change –
- (a) to any radiocommunications installation; or
 - (b) of the location of any radiocommunications installation,

without the prior written approval of the Authority.

- 10.6 If any telecommunications installation (including radiocommunications installation) crosses above or may fall or be blown onto any overhead power wire (including electric lighting and tramway wires) or power apparatus it shall be guarded to the reasonable satisfaction of the owner of the power wire or power apparatus concerned.

11. USE OF FREQUENCIES

- 11.1 The radiocommunications installation operated by or on behalf of the licensee shall only be operated on such frequencies as the Authority may assign.

12. SAFETY

- 12.1 The licensee shall take proper and adequate safety measures for the safeguarding of life and property in connection with all installations, equipment and apparatus operated or used, including safeguarding against exposure to any electrical or radiation hazard emanating from the installations, equipment or apparatus operated or used under this licence.
- 12.2 The licensee shall comply with the safety standards and specifications as may from time to time be prescribed by the Authority and any directions of the Authority in relation to any safety matter.

13. PROHIBITION OF CLAIMS AGAINST GOVERNMENT

- 13.1 The licensee shall have no claim against the Government in tort or in contract in respect of any disturbance or interruption to any part of the network due to works carried out by or on behalf of the Government which result in disturbance to the network.

14. INDEMNITY

- 14.1 The licensee shall indemnify the Government against any losses, claims,

charges, expenses, actions, damages or demands which the Government incurs or which may be made against the Government as a result of or in relation to the activities of the licensee or any employee, agent or contractor of the licensee in relation to the provision of the service or the installation, maintenance and operation of the network.

15. CONTRAVENTION BEYOND LICENSEE'S CONTROL

15.1 The licensee shall not be liable for any breach of this licence where it is able to demonstrate, to the reasonable satisfaction of the Authority, that the breach was caused by circumstances beyond its control and that it has taken all reasonable steps open to it to rectify that breach.

15.2 Where the circumstances referred to in General Condition 15.1 are such that there is an outage or interruption in the service affecting a significant number of the licensee's customers for a period of more than 7 days, the licensee shall provide the Authority with a full report in writing detailing the reasons for the breach and indicating when, or if, it will be able to continue to provide the service.

15.3 If the Authority is, after considering a report provided under General Condition 15.2, of the reasonable belief that the licensee would be able to provide the service within a reasonable period of time despite the circumstances outlined in that report, the Authority may direct that the licensee recommence the service within such reasonable period as the Authority may in writing direct. The licensee shall comply with such direction.

16. PUBLICATION OF LICENCE

16.1 The licensee, or the Authority, may at their discretion make the terms and conditions of this licence, including any specific conditions, publicly available in any manner they think fit.

17. PERIOD OF VALIDITY

- 17.1 This licence shall be valid for such period as determined by the Authority. Details of such period of validity shall be published by the Authority.

18. LICENCE FEES

- 18.1 The licensee shall pay the fees applicable to this licence as may from time to time be determined and published by the Authority.

SPECIAL CONDITIONS

1. COMPLIANCE WITH CODES OF PRACTICE

- 1.1. The licensee shall comply with such guidelines or codes of practices which may be issued by the Authority as in its opinion are suitable for the purpose of providing practical guidance on any particular aspect of any conditions of this licence.
- 1.2. Without limiting or affecting in any way the licensee's obligations under any other licence condition, the licensee shall comply with any code of practice or guideline which may be issued by the Authority from time to time for the purpose of providing practical guidance to the licensee in respect of –
 - (a) the provision of satisfactory service;
 - (b) the protection of customer information;
 - (c) the protection and promotion of the interests of consumers of telecommunications goods and services; and
 - (d) calling line identification and other calling line identification related services.
- 1.3. Before issuing any code of practice or guideline referred to in Special Condition 1.2, the Authority shall carry out such consultation as is reasonable in all the circumstances of the case.
- 1.4. Without limiting the generality of Special Condition 1.2(d), the code of practice or guideline issued under that Special Condition may require the licensee to validate the calling line identification against the authenticated customer in order to prevent fraud and spam.

2. NUMBERING PLAN

- 2.1. The licensee shall comply with the numbering plan made or approved by the Authority and any directions given by the Authority in respect of the numbering plan.
- 2.2. The licensee shall at the request of the Authority or otherwise consult the

Authority about the arrangements for the allocation and reallocation of numbers and codes within the numbering plan.

- 2.3 Where requested by the Authority, the licensee shall prepare and furnish to the Authority proposals for developing, adding to or replacing the numbering plan relating to the service.

3. REQUIREMENT TO FURNISH INFORMATION TO THE AUTHORITY

- 3.1 The licensee shall furnish to the Authority, in such manner and at such times as the Authority may request in writing, such information relating to the business run by the licensee under this licence, including financial, technical, and statistical information, accounts and other records, as the Authority may reasonably require in order to perform its functions under the Ordinance and this licence.
- 3.2 Subject to Special Condition 3.3 the Authority may use and disclose information to such persons as the Authority thinks fit.
- 3.3 Where the Authority proposes to disclose information obtained and the Authority considers that the disclosure would result in the release of information concerning the business or commercial or financial affairs of a licensee which disclosure would or could reasonably be expected to adversely affect the licensee's lawful business or commercial or financial affairs, the Authority will give the licensee a reasonable opportunity to make representations on the proposed disclosure before the Authority makes a final decision whether to disclose the information.

4. TARIFFS

- 4.1 The licensee shall publish and charge no more than the tariffs for the service operated under this licence. The tariffs shall include the terms, as defined under section 7F(2) of the Ordinance, for the provision of the service.
- 4.2 Publication of a tariff shall be effected by ~~(a)~~ publication in the website of the licensee on or before the date on which the tariff becomes effective;

~~(b) placing a copy of the tariff in a publicly accessible part of the principal~~

~~place of business and other business premises of the licensee as specified by the Authority; and~~

~~(e) supplying a copy of the relevant details to any person who may request it, at a charge no greater than is necessary to recover reasonable costs of making and supplying the copy.~~

- 4.3 The Authority may by direction in writing, for such period and on such conditions as the Authority may determine, direct that ~~either one or any combination of Special Conditions 4.2(a), (b), and (c), either completely or as to particular obligations imposed under them,~~ shall not apply to the licensee.

5. BILLING AND METERING ACCURACY

- 5.1 The licensee shall take all reasonable steps to ensure that any metering equipment and billing system used in connection with the service is accurate and reliable.
- 5.2 At the written request of the Authority or at regular intervals to be specified by the Authority, the licensee shall conduct tests on its metering equipment and billing system to assess its accuracy, reliability and conformity to the technical standards, if any, specified by the Authority. The licensee shall submit the test result to the Authority within 14 days after the date of the relevant test or such other longer period as the Authority may determine.
- 5.3 The licensee shall keep such records of any metering equipment and billing system in such form as may be specified by the Authority and shall supply such records to the Authority as soon as reasonably practical following a written request from the Authority.

6. PROVISION OF SERVICE

- 6.1 The licensee shall, unless approved otherwise by the Authority (and subject to Schedule 1 and any special conditions of this licence relating to the provision of the service) provide the service on its published terms and conditions and at the tariff published in accordance with Special Condition 4 (as applicable), on request of a customer which intends the service to be

available for its own use or a customer which intends to utilize the service to provide a lawful telecommunications service to third parties.

- 6.2 Subject to Schedule 1 and any special conditions relating to the provision of the service, the licensee shall comply with a customer request for the service as tariffed by the licensee in accordance with Special Condition 4 where the service can reasonably be provided by the licensee to the customer utilizing the licensee's network in place at the time of the request.

7. RECORDS AND PLANS OF THE NETWORK

- 7.1 The Authority may disclose the network information in accordance with section 7I(3) of the Ordinance.

- 7.2 The licensee shall, at the reasonable request of any other licensee under the Ordinance if so authorized by the Authority, give reasonable access to its network information for the facilitation of network planning, maintenance and reconfiguration required for the purposes of section 36AA of the Ordinance. The licensee shall be permitted to charge the requesting party so as to be fairly compensated for the reasonable relevant costs incurred in the provision of such network information.

- 7.3 Where the licensee and any other licensee that has requested access to the network information in accordance with Special Condition 7.2 are unable to agree what amounts to reasonable access (including confidentiality requirements and fair compensation for the reasonable relevant costs incurred) or a reasonable request, the matter at issue may be referred by either the licensee or the other licensee to the Authority for determination. The licensee shall pay to the Authority, as it may require, any costs or expenses incurred by the Authority, including, without limitation, staff costs and expenses, and the financing of liabilities paid out of the Office of the Communications Authority Trading Fund in respect of such a determination or determination process.

8. NETWORK LOCATION

- 8.1 The licensee shall keep accurate records of the location of the network installed under, in, over or upon any land.

- 8.2 The licensee shall mark or otherwise identify every wire laid or telecommunications installation installed by the licensee or any contractor on its behalf throughout the course of the wire, or at the location of the installation, so as to distinguish it from any other wire or telecommunications installation laid or installed in Hong Kong.
- 8.3 The licensee shall provide, at such intervals as the Authority may determine, distinguishable surface markers of the underground position of the network.

9. CHANGES TO THE NETWORK

- 9.1 For the purposes of this licence, a change in the network is a material change where the implementation of the change would result in the network no longer being in compliance with any relevant technical standard which the Authority has power to issue.
- 9.2 The licensee shall notify the Authority of any proposals for material changes to the network and provide it with such information as the Authority reasonably requires.
- 9.3 The licensee shall not, without the prior consent in writing of the Authority, make any material changes which might reasonably be anticipated by the licensee to affect –
- (a) any telecommunications service or installation connected to the network;
 - (b) a person producing or supplying telecommunications apparatus for connection to the network;
 - (c) a licensee under the Ordinance;
 - (d) a licensee under the Broadcasting Ordinance (Cap. 562); or
 - (e) a customer or a consumer of goods and services provided by any person or entity,

if the change is in the opinion of the Authority likely to require modifications

or replacements to, or cessation in the production or supply of any of the telecommunications apparatus involved, or if the proposed alteration would require substantial network reconfiguration or rerouting.

- 9.4 The licensee shall prepare and publish, after consultation with the Authority, its procedures for consulting with and giving notice to persons likely to be affected materially by changes to its network which are required to be notified in accordance with Special Condition 9.2 and any other changes required to be notified pursuant to any technical standard which the Authority has power to issue. Subject to the approval of the Authority, the notification procedures to each of the classes of persons likely to be affected under Special Condition 9.3 may differ having regard to the practicality and costs of notifying them.

10. WITHDRAWAL AND RETURN OF FREQUENCIES

- 10.1 Without prejudice to the generality of section 32H of the Ordinance, the Authority may by notice in writing withdraw any frequency previously assigned to the licensee if in the opinion of the Authority the licensee is not making efficient use of that frequency or in exceptional circumstances including where the public interest or international obligations of the Government so require, there is a serious breach of spectrum assignment conditions or serious interference between legitimate spectrum users has to be resolved or minimised.
- 10.2 The licensee may, subject to prior consent of and conditions specified by the Authority, return any frequency previously assigned to it.

11. CIRCUMSTANCES OUTSIDE LICENSEE'S CONTROL

- 11.1 For the avoidance of doubt, General Condition 15.1 of this licence shall apply to these special conditions and the Authority may at its discretion, and on such conditions as it thinks fit, extend any time period within which the obligations of the licensee under these special conditions may be met.
- 11.2 In exercising its discretion under Special Condition 11.1 with respect to any of the special conditions of this licence, the Authority shall take into account including, without limitation, whether circumstances are such that it would

be unreasonable to require compliance by the licensee with the relevant special condition.

12. INSURANCE

- 12.1 Throughout the currency of this licence, the licensee shall have and maintain a valid insurance policy with a reputable insurance company to cover its third party liabilities in respect of personal injury, death and damage to property, arising out of or in connection with the installation, maintenance and operation of the network or provision of the service. The amount of insurance shall be at least HK\$10,000,000 per occurrence or such sum as the Authority may notify in writing in future.

13. USE OF PUBLIC FACILITIES FOR PROVISION OF SERVICES

- 13.1 Without limiting or affecting in any way the licensee's obligations under any other condition of this licence, the licensee shall comply with any guidelines or codes of practice which may be issued by the Authority from time to time for the purpose of providing practical guidance to the licensee in respect of the use of Government facilities as well as facilities on Government property and unleased Government land for the provision of services under this licence.

14. LOCATION SERVICES

- 14.1 Without affecting the generality of General Condition 6, "information of a customer" referred to in General Condition 6.1 and "information provided by its customers or obtained in the course of provision of service to its customers" referred to in General Condition 6.2 shall include any information concerning the locations of customers obtained in the course of provision of the service.
- 14.2 Where the licensee provides services to customers using the information concerning the locations of the customers obtained in the course of provision of the service, the licensee shall ensure that –
- (a) no such services are provided without the prior consent of the relevant customers; and

- (b) the customers are capable of suspending the use of the information from time to time.

14.3 For the purpose of Special Condition 14, “customers” include all users of the service and “locations of customers” include the location of any equipment and device obtained and used by or supplied to any user of the service by the licensee, its agent or any person under contract or other arrangement with the licensee for the provision of the service under this licence. For the avoidance of doubt, the reference to the term “users” includes all end users of the service as well as service providers making use of the service to serve their own customers.

15. PROVISION OF INFORMATION TO CUSTOMERS

15.1 Without prejudice to the other terms and conditions of this licence, the licensee shall provide or make available the following information to the customers when the services are offered –

- (a) Name of the licensee;
- (b) Licence number of the licensee under this licence;
- (c) Customer service hotline number(s);
- (d) Where applicable, the access code(s) or number(s) (including any access password) used for obtaining the services;
- (e) Instructions on how to access the services;
- (f) The tariffs under which the services are offered; and
- (g) The duration or validity period of the services offered.

16. INTERPRETATION

16.1 Any reference to an ordinance or a regulation, whether the word is used by itself or as part of any title to an ordinance or a regulation, shall mean that ordinance or regulation for the time being in force as well as any modification

or substitution of that ordinance or regulation, in whole or in part, and all subsidiary legislation, regulations, directions, codes of practice and instruments made under that ordinance or regulation and for the time being in force.

16.2 The singular includes the plural and vice versa.

17. SERVICE CONTRACTS AND DISPUTE RESOLUTION

17.1 The licensee shall comply with all codes of practice issued by the Authority from time to time in respect of the requirements to apply in the contracting of telecommunications services to end users.

17.2 The contracting requirements referred to in Special Condition 17.1 may include the following –

- (a) the style, format and structure of service contract documentation;
- (b) the manner of entering into and terminating service contracts;
- (c) the information to be included in or in connection with service contracts and the performance of the services;
- (d) the submission of disputes between end users and the providers of telecommunications services to independent dispute resolution, pursuant to a scheme approved by the Authority; and
- (e) other terms and conditions or provisions for the protection of the interests of end users.

17.3 Before issuing any code of practice for the purposes of Special Condition 17.1, the Authority shall carry out such consultation as is reasonable in the circumstances.

18. SHARED USE OF FREQUENCIES

18.1 The use of the frequencies assigned as specified in paragraph 1 of Schedule 3 is shared with other users and applications in an uncoordinated manner. Therefore, the use of the frequencies is not protected from any interference caused by other telecommunications installations or radio

equipment operating in accordance with the provisions of the Ordinance, or regulations or orders made under the Ordinance.

19. DEMONSTRATION

- 19.1 The licensee shall conduct such demonstrations, trials and tests as and when required and in the manner stipulated by the Authority to demonstrate to the satisfaction of the Authority or the Authority's authorized representative its compliance with General Condition 8 and any other applicable licence condition.

SCHEDULE 1

SCOPE OF THE SERVICE

1. The service is 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 to enable automated data-only machine-to-machine type communications to and/or from such installations, apparatus, equipment and device in Hong Kong.
2. Nothing in this licence authorizes the licensee to provide:
 - (a) service which carries real-time voice communications; and
 - (b) any other service subject to licensing under a carrier licence, and under the Ordinance or any other ordinance.

SCHEDULE 2

DESCRIPTION OF NETWORK

All such telecommunications installations established, maintained, possessed or used whether owned by the licensee, leased, or otherwise acquired by the licensee for the purpose of providing the public telecommunications network services specified in Schedule 1.

SCHEDULE 3

TECHNICAL PARTICULARS OF RADIO STATIONS FOR THE PROVISION OF THE SERVICE

1. Frequency: Transmitting and receiving frequencies for each radiocommunications installation shall be within the following frequency bands. Details are contained in the listing incorporated into Schedule 3 in accordance with section 8(3) of the Telecommunications Regulations (Cap. 106A):

920 – 925 MHz

2. Technical Standard: For the radio interface using the transmitting frequencies employed by the radio stations, the licensee shall only use widely recognized standards as approved by the Authority. The licensee shall submit proof to the satisfaction of the Authority that the technical standard used complies with the requirement under this Schedule.

3. Location:) Details are contained in the
4. Class of emission:) listing incorporated into
5. Type of modulation:) Schedule 3 in accordance with
6. Maximum frequency tolerance:) section 8(3) of the
7. Maximum effective radiated power:) Telecommunications Regulations
8. Aerial characteristics:) (Cap.106A).

Remarks:

1. For the purpose of Schedule 3, the maximum permissible height of antenna above mean sea level shall be in compliance with the Hong Kong Airport (Control of Obstructions) Ordinance (Cap. 301).
2. The licensee shall comply with the standards and certification requirements as prescribed from time to time by the Authority under the Ordinance. The

licensee shall also comply with the “Code of Practice for the Protection of Workers and Members of Public Against Non-Ionizing Radiation Hazards from Radio Transmitting Equipment” issued and as revised from time to time by the Authority.

(Christine Chim)
for Communications Authority