

ICT 2021 – 1 – Determination
Internet Exchange Points (IXP)
Regulatory Framework



**UTILITY REGULATION AND COMPETITION OFFICE
THE CAYMAN ISLANDS**



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1. Background

1. The Utility Regulation and Competition Office (**'OfReg'** or the **'Office'**) is the independent regulator established by *section 4 of the Utility Regulation and Competition Law (2019 Revision)* (the **'URC Law'**) for the electricity, information and communications technology (**'ICT'**), water, wastewater and fuels sectors in the Cayman Islands. The Office also regulates the use of electromagnetic spectrum and manages the .ky Internet domain.
2. The Office's functions also include regulating the interconnection of ICT networks, regulating the quality of service offered by ICT service providers in the Cayman Islands, promoting innovation and facilitating investment in the Cayman Islands, promoting and maintaining an efficient, economic and harmonized utilisation of ICT infrastructure and ensuring the continuity of critical national infrastructure ICT infrastructure.
3. The purpose of the Consultation¹ (**Annex 1**) to which this Determination relates, was to propose the regulatory model and other considerations necessary to achieve the objectives set out in a Cabinet Directive² aimed at keeping all internet traffic within the jurisdiction, where the source and destination are both local.
4. Additionally, beyond the aim to keep local traffic local, the Consultation considered the practical benefits of allowing Internet Exchange Point (**'IXP'**) operators to own or operate domestic or international fibre optic cable networks, landing stations and to lease access to the related fibre. In particular, the Consultation set out the Office's intended regulatory framework which may be used to licence and regulate IXPs in the Cayman Islands.
5. The Consultation was launched on 11th November 2020. Initial responses were due by 24th November 2020. Replies to comments were due by 4th December 2020, that date being the date that the consultation was closed.
6. In presenting its proposals in the form of a draft determination as part of the Consultation, the Office solicited the input from industry and public on its proposals. Having received several responses, the Office has reviewed

¹ (ICT 2020 –1– Consultation – Internet Exchange Points (IXP) Regulatory Framework)

² <https://gazettes.gov.ky/portal/pls/portal/docs/1/12980585.PDF>

UTILITY REGULATION AND COMPETITION (INFORMATION AND COMMUNICATIONS TECHNOLOGY) DIRECTIONS, 2020. Supplement No. 1 published with Legislation Gazette No. 48 dated 1st July, 2020.

- responses as discussed at Part 3 below, giving due consideration to all comments prior to issuing the final Determination herein. In doing so, the Office has either maintained, amended or clarified its proposals and gives reason for doing so.
7. At the present time, there are six entities issued with *Type 9 – Internet Service Provider* (**'ISP'**) ICT service licences by the Office to provide Internet services in the Cayman Islands: Cable and Wireless (Cayman Islands) Limited, trading as Flow (**'Flow'**), Digicel Cayman Ltd (**'Digicel'**), Infinity Broadband Ltd doing business as C3 (**'C3'**), and WestTel Ltd, trading as Logic (**'Logic'**), the Government of the Cayman Islands (**'CIG'**), and United Telecommunications Services Ltd. (**'Unitel'**).
 8. The first four of these entities actively provide ISP services to the general public, which include in particular access to the Internet via subsea cable facilities between the Cayman Islands and the United States. It is through this connection to the Internet in the United States that the customers of an ISP in the Cayman Islands communicate with and access the Internet-based services and applications provided by the customers of the other ISPs in the Cayman Islands. There are currently no IXPs in the Cayman Islands and no direct interconnection or peering between ISPs. In effect, the ISPs in the Cayman Islands connect their networks indirectly via the Internet and depend upon facilities between the Cayman Islands and the United States and in the United States to connect their networks in the Cayman Islands
 9. An alternative to this arrangement would be to establish connections within the Cayman Islands between and among the ISPs. ISPs could connect separately on a bilateral basis similar to how fixed and mobile voice networks in the Cayman Islands are currently interconnected, or they could connect to each other at a common location called an 'Internet Exchange Point' or **'IXP'** There is no evidence that any of the ISPs connect to each other in either of these two ways at this time.
 10. Between June 2016 and February 2017, the Office hosted industry working group meetings with ISPs to discuss the implementation of an IXP. The discussions lead to agreement and acceptance of a set of high-level principles to be used to govern the operations of the IXP. Notwithstanding this, the ISPs were unable to come to agreement to establishing an IXP.
 11. The Office considered that the principals were generally still applicable but proposed an updated version for inclusion in the framework discussed in the consultation and amended in this determination.

2. Legal Framework

12. In developing the preceding consultation as well as drafting this determination, the Office is guided by its statutory remit as set out in the URC Law and ICT Law, each where applicable.

Utility Regulation and Competition Law

13. *Section 6 of the URC Law sets out the principal functions of OfReg which include in particular:*

14. *Section 6 of the URC Law sets out the principal functions of the Office. Of particular relevance to this consultation are the following:*

*(1)(b) to promote appropriate effective and fair competition;
(c) to protect the short and long term interests of consumers in relation to utility services and in so doing –*

(i) supervise, monitor, and regulate any sectoral provider, in accordance with this Law, the regulations and sectoral legislation and any general policies made by Cabinet in writing;

(ii) ensure that utility services are satisfactory and efficient and that charges imposed in respect of utility services are reasonable and reflect efficient costs of providing the services; and

(iii) publish information, reports and other documents relating to utility services; and

(d) to promote innovation and facilitate economic and national development.

(2) In performing its functions and exercising its powers under this or any other Law, the Office may –

(d) make administrative determinations, decisions, orders and regulations; [...]

(f) establish external advisory panels and take appropriate actions to foster industry self-regulation and co-regulation; [...]

- (o) conduct research and studies into any matter or technology which may be relevant to its functions and publish its findings, if appropriate;*
- (p) assign resources and implement initiatives designed to enable the introduction of new and innovative technologies and systems in the markets and sectors for which it has responsibility; [...]*
- (dd) conduct public consultations; [...]*
- (hh) take any other action, not expressly prohibited by Law, that is necessary and proper to perform its duties under this Law and sectoral legislation;*

(3) Without prejudice to subsection (1) or (2), the Office has power to carry on any activity which appears to it to be requisite, advantageous or convenient for or in connection with the performance of its functions or the exercise of its powers under this or any other Law.

15. Section 7 of the URC Law sets out the Office's duty to consult on matters that impact the rights or obligations of a licensee.
16. Pursuant to section 62 of the URC Law, OfReg has a particular duty to promote innovation and facilitate investment in the economy of the Cayman Islands:

62. The Office shall have a duty to promote innovation within the sectors for which it has responsibility with a view to contributing to national economic competitiveness and development, and in doing so it may –

- (a) through its policies actively facilitate the development and introduction of relevant innovative technologies into the national economy; [...]*
- (e) take such other initiatives as it considers to be consistent with its mandate to contribute to national development and economic growth.*

Information and Communications Technology Law, 2019 Revision

17. The specific functions and powers of OfReg in respect of the ICT sector in particular are set out in the ICT Law.
18. Under **section 9** of the ICT Law, OfReg is required, among others:

3 (a) to promote competition in the provision of ICT services and ICT networks where it is reasonable or necessary to do so;

- [...]
(h) to promote and maintain an efficient, economic and harmonised utilisation of ICT infrastructure; [...]
19. *Section 23(2) states that the Office, by notice published in the Gazette, shall specify the ICT services and ICT networks that are required to be licensed.*
20. *On 20th November 2017, after consultation, the Office published a regulatory Notice in the Gazette. The Gazette, which is still in force, stated that the following Networks and Services require a licence from the Office:*
- *Internet Exchange Point (IXP)*
 - *Internet Peering Service Provider*
21. *Section 65 of the ICT Law in its subsections state, among other things, that:*
- (1) Subject to this section, a licensee that operates a public ICT network shall not refuse, obstruct or in any way impede another licensee in the making of any interconnection with its ICT network or the sharing of any infrastructure and shall, in accordance with this section, ensure that the interconnection or infrastructure sharing provided is made at technically feasible physical points. [...]*
22. *“Interconnection” is defined in **section 2** of the ICT Law to mean: the physical or logical connection of public ICT networks of different ICT network providers.*
- (5) Any interconnection or infrastructure sharing provided by a licensee under this section shall be provided at reasonable rates, terms and conditions which are not less favourable than those provided to -*
- (a) any non-affiliated supplier;*
 - (b) any subsidiary or affiliate of the licensee; or*
 - (c) any other part of the licensee’s own business.*
- (6) Without prejudice to subsection (5), the Office shall prescribe the cost and pricing standards and other guidelines on which the reasonableness of the rates, terms and conditions of the interconnections will be determined.*
23. *Section 66 of the ICT Law states, among other things, that:*

- (1) Interconnection or infrastructure sharing agreements between licensees shall be in writing, and copies of each agreement shall be submitted to the Office within seven days of that agreement having been signed. [...]*
- (5) Where parties cannot agree upon interconnection or infrastructure sharing rates, the Office may impose such rates.*

24. Section 69 of the ICT Law states, among other things, that:

- (2) The Office, in order to promote an efficient, economic and harmonised utilisation of infrastructure, may- [...]*

(b) inquire into and require modification of any agreement or arrangements entered into between a licensee and another person or licensee which has the effect of limiting either the efficient and harmonised utilisation of infrastructure or the promotion of competition in the provision of ICT services or ICT networks.

25. Section 72 of the ICT Law states as follows:

- (1) ICT service providers and ICT network providers shall use reasonable endeavours to ensure that their ICT services and ICT networks are –*

- (a) reliable;*
(aa) where practicable, directly interconnected with each of the other ICT network providers' networks;
(b) provided with due care and skill; and
(c) rendered in accordance with the standards reasonably expected of a competent provider of those ICT services and ICT networks.

Information and Communications Technology Authority (Interconnection and Infrastructure Sharing) Regulations, 2003

26. Regulation 6 states in part:

The following general principles shall apply to the provision of interconnection and infrastructure sharing services – [...]

(c) interconnection and infrastructure sharing services shall be provided by the responder to the requester at reasonable rates, on terms and conditions which are no less favourable than those provided by the responder to itself, any non-affiliated licensee or any subsidiary or affiliate of the responder and shall be of no less favourable quality than that

provided by the responder to itself, any non-affiliated licensee or any subsidiary or affiliate of the responder;

(d) interconnection and infrastructure sharing rates shall be determined in a transparent manner; [...]

(f) costs and tariffs shall be sufficiently unbundled so that the requestor shall be obliged to pay the responder only for the network elements or infrastructure sharing services that it requires; [...]

(j) interconnection and infrastructure sharing services shall be provided in a manner that –
(i) maximises the use of public ICT networks and infrastructure;
(ii) minimises the potential for negative environmental impacts; and
(iii) enables the development of competition in the provision of public ICT networks and public ICT services in a timely and economic manner;

(k) interconnection and infrastructure sharing services shall be provided by the responder to the requester at any technically feasible point on terms and conditions that are just, reasonable and non-discriminatory and in accordance with an interconnection or infrastructure sharing agreement between the two parties;

27. *Regulation 12 states that a responder shall offer interconnection services at any technically feasible point of its public ICT network, upon request by a requester.*

28. It is the position of the Office that in consideration of the above provisions specifically and the other applicable provisions contained in the URC and ICT Laws generally, the Office retains the right to establish a regulatory framework which sets out the interconnection and infrastructure sharing rights and obligations relating to the establishment of services and networks relating to an Internet Exchange Point.

3. Comments Received and Office Responses

29. The Office received responses to the Consultation and Draft Determination from, Cable and Wireless Cayman Islands (**'Flow'**), Digicel Cayman Limited (**'Digicel'**) and "Salt Wireless (**'Salt'**). A summary of the responses and the Office's considerations are as follows.

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30. **OfReg Question 1: Do you agree that the IXPs established in the Cayman Islands should operate in a manner consistent with the 10 Basic Principles set out in APPENDIX 2 of this Consultation?**
31. **Flow's response to Question 1:** *The 10 Basic Principles specified in Appendix 2 of the Consultation Document are verbatim to the 10 "guiding principles" previously agreed to by the industry in 2016. Our position on these principles is unchanged, and we have no material objections to them at this time.*
32. **OfReg's Response:** OfReg notes Flow's response acknowledging the 10 "guiding principles" as agreed during the working session previously held with industry and intimates that they do not object to them at this time.
33. **Salt's response to Question 1:** Yes
34. **OfReg's Response:** OfReg notes Salt's response in agreement to Question 1.
35. **Digicel's response to Question 1:** *Digicel agrees subject to the OfReg following the proper procedure and to lawfully appoint an IXP service provider in Cayman. Digicel also welcomes further details and consultation before agreeing to final details as it relates the basic principles.*
36. *It is also expected that while the IXP will be a licensed service provider, similar restrictions shall apply to it as with ISPs, and IXP shall therefore be precluded from entering the market as an ISP, whether now or at any time in future, even under circumstance where an IXP no longer provides services in Cayman, it must be disallowed from being able to provide ISP services to Cayman.*
37. **OfReg's Response:** OfReg notes that Digicel is in general agreement with the 10 "guiding principles", however, there are some caveats to their agreement. Digicel considers that a further consultation on the IXP is required as evident in their belief that OfReg has not followed an open, objective and transparent process. OfReg believes that the process of consulting is open, objective and transparent. It allows for all parties to have equal opportunity to inform the process of establishing the IXP. Digicel's expectation that an IXP is restricted from directly competing with ISP is not unreasonable and is addressed by the limitation restricting an ISP from obtaining an IXP licence and vice versa. That the restriction would extend to limit a once licensed IXP from participating in the ICT space into the future, even after surrendering its IXP licence would seem unreasonable and disproportionate. Consideration is given for limitations to be placed on

- the IXP in the interests of maintaining a competitive market and in consideration of a peering obligation being made on the ISPs.
38. **OfReg Question 2: Do you agree that all persons who hold Type 9 – Internet Service Provider ('ISP') ICT service licences must connect their ISP services networks to at least one common licensed IXP in the Cayman Islands and must be obligated to exchange Local IP traffic, whether on a bilateral or multilateral basis?**
 39. **Flow's response to Question 2:** *If an IXP is to provide the benefits enumerated by the Office in paragraphs 18-22 of the Consultation Document, then we believe local interconnection to a common IXP by each ISP is necessary. Therefore, we agree that all persons or entities that hold Type 9 licenses should be required to interconnect to a common IXP for the transmission of ISP traffic that is local to the Cayman Islands.*
 40. **OfReg's Response:** OfReg notes Flow's comments in agreement with question 2.
 41. **Salt's response to Question 2:** Yes
 42. **OfReg's Response:** OfReg notes Salt's response in agreement to question 2.
 43. **Digicel's response to Question 2:** *We do not agree that ISPs should be mandated to send traffic through an IXP.*
 44. *An IXP's services should be optional or an alternative in cases where ISPs are either unable to procure cheaper services, or require connection to the IXP for resilience purposes. Mandating the connection to a particular IXP is likely to result in an opposite effect of what the OfReg hopes to achieve under its Basic Principles (Appendix 2). This is due to some ISPs having existing fibre networks and therefore being mandated to connect and pass traffic is likely to put other ISPs, including Digicel, at a competitive disadvantage. Basic Principle 5 under appendix 2 refers.*
 45. **OfReg's Response:** Interconnection is an established practice in the ICT sector and one could hardly argue that it is anticompetitive or onerous. Licensees are in the business of telecommunication services and it is reasonable to expect that they would treat the requirement to peer as any other requirement to interconnect. It is expected that the costs for peering will be cost-based and transparent. Given the potential existing colocation facilities are already well served by fibre optic facilities, it is expected that

connectivity would be reasonably easy. This notwithstanding the fact that all ISPs currently have ubiquitous fibre rollout obligations.

46. Notwithstanding the above, the Office accepts that an obligation for ISPs to peer between and among themselves for the purpose of exchanging local IP traffic is distinguishable from an obligation to connect to each other at a common IXP for the same purpose.
47. As stated, the purpose of the Consultation (and ultimately this Determination) is to establish the regulatory model for an IXP and other considerations necessary to achieve the objectives set out in a Cabinet Directive aimed at keeping all local internet traffic within the jurisdiction, where the source and destination are both local- two aims. Accordingly, the Office considers that the appropriate obligation should be that all ISP licensees must at a minimum peer between and among themselves for the purpose of exchanging local IP traffic. As a means to meeting the obligation, ISPs may choose to connect at a common IXP.
48. ***OfReg Question 3: Do you agree that, persons other than ISPs should not be restricted from connecting to and providing services at an IXP, subject to compliance with such relevant laws, regulations, rules or reasonable terms and conditions as may be established by the operator of the IXP for such non-ISP connections?***
49. ***Flow's response to Question 3: We believe that all requests for access by non-ISP entities to a local IXP should be treated fairly and in a non-discriminatory manner. However, we also believe that access by a non-ISP to a local IXP should be contingent upon compliance to an equal set of obligations and standards. This includes equal requirements for cost recovery, security and resiliency, and compliance with local laws, regulations, applicable payments to government and/or regulators. We also wish to make clear that the IXP should not be used for through-traffic that is transiting the IXP. Therefore, we agree that access to an IXP by non-ISP entities should be allowed, but we do not believe the IXP should provide transit. So long as access to the IXP is provided in a fair, non-discriminatory manner that does no harm to competition--and the entities granted access are held to the same high standards and obligations—we support this proposal.***
50. **OfReg's Response:** OfReg notes Flow's response in general agreement with the position proposed in question 3. It is reasonable that all parties connecting at the IXP would be treated equally before the law. The general conditions of the existing licence framework would establish such standards, terms and obligations applicable to an IXP as it does for all other ICT license types. Any multilateral or bilateral peering agreements beyond

- the required peering for the purpose of keeping all locally generated and destined traffic local would be necessarily treated as a commercial matter between the parties. It is important that all parties understand and agree to the value proposition of an IXP to allow for access to such facilities as Content Delivery Networks and hosting at the IXP. These considerations are typically discussed and agreed in the process agreeing the model and services to be offered at the IXP.
51. **Salt's response to Question 3: Yes**
 52. **OfReg's Response:** OfReg notes Salt's response to question 3.
 53. **Digicel's response to Question 3:** *Digicel has no objections subject to receiving specific examples of this happening in practice. Further, such non-ISP connections must be mandated to adhere to local laws, frameworks and policies issued by the OfReg, and importantly, must meet the relevant conditions and secure a licence to operate.*
 54. *While Digicel is not opposed to non-ISP connections connecting into the IXP, given that only local traffic can transit through the IXP, Digicel welcomes information that would assist with its understanding of how OfReg plans to reconcile a situation where internet-bound traffic from such entities need to transit out of Cayman.*
 55. *Digicel requests the following of the IXP:*
 - a. *Any entity joining an internet exchange (IXP) should at minimum have:*
 - b. *A license to operate as an IXP service provider*
 - c. *Hold a provider independent AS number and public IP range*
 - d. *Follow and obey all the rules and regulations imposed on telecoms providers either in terms of standard legislation and/or regulation*
 - e. *Follow all network standards on security, protection and what is considered best practice within the IXP*
 - f. *In general, an IXP should not be used to circumvent the requirement to purchase internet access services from licensed operators – anyone seeking to drive commercial gain should not be granted membership or should have membership revoked.*
 - g. *No AS can use another provider's BGP routes beyond the IX for international termination of traffic under any circumstances.*
 56. *Finally, there would need to be transparency and governance processes, which takes into consideration serious and reasonable concerns or comments, which recommends amendments to be made to any framework*

- or policy, where necessary. IXPs should undergo the same level of scrutiny as operators in Cayman.*
57. *Digicel welcomes a continued consultation process in this regard.*
58. **OfReg's Response:** OfReg notes Digicel's response to question 3. As a licensed entity the IXP would be bound by such terms and obligations imposed on it under its licence.
59. Given that the IXP must have an Autonomous System Number ("ASN"), it would necessarily require an internet backbone connection for the purposes of its own internet activities. It is anticipated that such connectivity would be purchased wholesale from an existing ISP. Any non-ISP party connecting at the IXP would require internet connections for which purpose they would be required to purchase such connections from the local ISPs.
60. ***OfReg Question 4: Do you agree that the operator of an IXP must establish an advisory board consisting of representatives of each of the ISPs, and must give effect to the greatest extent practicable to the consensus of that board on any matters relating to the exchange of local Internet traffic, provided, however, that the operator of the IXP may submit for the Office's review and approval alternative methods of determining the consensus of the ISPs on matters relating to the exchange of local Internet traffic?***
61. **Flow's response to Question 4:** *We have no objections to requiring all IXPs to establish an advisory board as recommended and specified by the Office in the Consultation Document.*
62. **OfReg's Response:** OfReg notes that Flow does not object to the establishment of a board made up of representatives of the ISPs as proposed. This is really a matter of the business and governance model that is licensed and operated.
63. **Salt's Response to Question 4:** *No objection*
64. **OfReg's Response:** OfReg note Salt's response of no objection.
65. **Digicel's response to Question 4:** *Digicel in principle agrees to the establishment of an advisory board, and recommends that where one is established, it shall be a requirement that its composition be made up of representatives of each ISP. This however is a matter of governance and compliance, and cannot be agreed generally, unless further consulted upon with greater details provided.*

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66. *It would also be necessary that an independent person is appointed to negotiate these governance and compliance board documents. Further comments are reserved by Digicel until such time these details are made available.*
67. *Digicel, however, sees no merit in the OfReg getting involved as the alternative for determining consensus of the ISPs and with the establishment of a board, and the expertise that would be compounded as a result across the industry. Equally, Digicel requires that any legislation on blocking sites, etc. must be followed by all members of the IXP.*
68. **OfReg's Response:** OfReg notes Digicel's response of agreement in principle. It is fair to say that such a board would be considered and structured based on the business and governance model. This is an area of discussion that might benefit from further consultation.
69. It is however unreasonable to suggest that if such a model befitting the appointment of a board is necessary that there is no merit in OfReg being present to represent government and public interest as the IXP would be considered critical national infrastructure with national security implications.
70. ***OfReg Question 5: Do you agree that 'Local IP Traffic' should be determined to mean 'Internet traffic which originates in the Cayman Islands on a network operated by an ISP and terminates in the Cayman Islands on a network operated by another ISP, irrespective of whether the networks in question are fixed wireline, fixed wireless or mobile wireless networks.'?***
71. **Flow's response to OfReg Question 5:** *We agree with the proposed definition of 'Local IP Traffic' as IP/Internet traffic that originates in the Cayman Islands on one ISP network and terminates in the Cayman Islands on a separate ISP network. We also agree that the requirements to interconnect to a common IXP and transmit Local IP Traffic should be applicable to all ISPs, irrespective of whether they operate a fixed wireline, fixed wireless or mobile wireless network.*
72. **OfReg's Response:** OfReg notes Flow's agreement to question 5.
73. **Salt's response to Question 5:** Yes
74. **OfReg's Response:** OfReg notes Salt's agreement to question 5.
75. **Digicel's response to Question 5:** *Digicel agrees to the definition/wording as set out by OfReg and we add that this is not a way of securing free*

transit/peering to protect against cost causation to other members. We look forward to the final definition and wording around the same.

76. **OfReg's Response:** OfReg notes Digicel's agreement in principle to question 5 and further notes that Digicel is desirous of the inclusion of wording which would seek to restrict free peering or transit traffic. While this is not an unreasonable expectation, it should not form part of the basic definition of 'Local IP Traffic'. To address Digicel's concerns, for the avoidance of doubt, the Office expects that other than the mandatory peering obligation to keep local traffic local, any other peering arrangements between the parties would be on a mutually agreed commercial basis either bilaterally or multilaterally. Any transit agreements would also need to be mutually agreed. If there would be any carveout to this it would potentially be limited to e-government services which would be consulted on at the appropriate time.
77. ***OfReg Question 6: Do you agree that the IXP must be located in premises which are not owned or operated by an ISP or by an affiliate of an ISP. That ISPs must connect to the IXP equipment at Layer 2 of the ISO OSI stack; and that the IXP shall not access, interrupt or otherwise use the ISP's traffic for any purpose other than what is minimally necessary to facilitate delivery of IXP service?***
78. ***Flow's response to OfReg Question 6: We believe that IXPs should be independent from connecting ISPs and non-ISPs content providers, and we agree that the stipulations set forth in this question (Ofreg Question 6) are sufficient to maintain an IXP's independence and integrity.***
79. **OfReg's Response:** OfReg notes Flow's agreement to question 6. IXPs are generally owned and operated neutrally in respect to all members and non-members. ISPs are known to have strong feelings on the subject of neutrality. The important point is that ownership and management of the IXP should remain neutral. Partnerships between potential IXP operators and an ISP shall on presumption be considered to violate the neutrality principle. It is generally accepted that IXPs would refrain from carrying out activity that may compete with member business activities or opportunities. Where neutrality or competitive conflicts occur, it could result in behaviour that threatens the successful operation of the IXP.
80. It is worth noting that not all locations will meet the needs of an IXP, therefore some flexibility will be necessary to agree on a suitable location. Priority should be given to suitable available space, environmental control, reliable power supply, access to terrestrial infrastructure, high-site for wireless connectivity and security.

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81. **Salt's response to Question 6:** Yes
82. **OfReg's Response:** OfReg notes Salt's agreement to question 6.
83. **Digicel's response to Question 6:** *Digicel has no immediate concerns or objections to this suggestion. With that being said, it is expected therefore that an IXP shall not provide services whether as an ISP or any other ICT services in direct or indirect competition with any operator or provider in Cayman. Equally, any member must maintain the same peering policies as the rest of the IXP members.*
84. **OfReg's Response:** OfReg notes Digicel's response in tacit agreement with question 6. Also, see further comments in response to Flow's response above.
85. **OfReg Question 7: Do you agree that;**
1. ***the operator of the IXP shall charge ISPs cost-based fees for connection to and use of the IXP for exchange of Local IP Traffic;***
 2. ***the ISPs shall be responsible for procuring, at their own expense, the necessary facilities to connect to the IXP;***
 3. ***the operator of the IXP may not make access to the IXP contingent upon the use of the services or facilities of any particular network or service provider; and***
 4. ***the ISPs may not charge each other for the exchange of local Internet traffic across the IXP?***
86. **Flow's response to OfReg Question 7:** *We agree with each of the four stipulations set forth in this question (Ofreg Question 7). We wish to clarify that transparency must be provided to ISPs regarding an IXP's calculation of cost-based fees, and ISPs be allowed to evaluate and challenge those calculations, as necessary. Finally, we agree that ISPs should be held responsible for securing access to a common IXP and exchange Local IP Traffic amongst each other on a bill-and-keep basis.*
87. **OfReg's Response:** OfReg notes Flow's response in agreement with question 7.
88. **Salt's response to Question 7:** (7-1) YES, (7-2) YES, (7-3) YES, (7-4) YES
89. **OfReg's Response:** OfReg notes Salt's response in agreement with question 7.

90. **Digicel's response to Question 7:** *Digicel, in response to question 7(2), is of the view that as not all ISPs have the ability to seamlessly provide connectivity into and IXP, it would be advantageous to, and benefit only those ISPs that presently have their own existing fibre network in Cayman. The OfReg should therefore consider whether some form of subsidy should apply to those ISPs that are unable to connect without incurring significant costs if mandated to connect. Alternatively, the IXPs cost based fees should be tiered in a manner that takes this concern into consideration and factors the charging of fees commensurate to the costs ISPs are likely to incur in connecting to the IXP. This would otherwise result in a costly exercise for some ISPs to the greater detriment of the ISP, where the same expense may be deployed into infrastructure upgrade or enhancing services to its customers.*
91. *Digicel, in principle, agrees with the statement as set out under question 7(3). Connection to an IXP should not be dependent on any other operators' facilities. This may however mean that the OfReg and IXP would need to provide other alternatives to ISPs to enable access.*
92. *Digicel agrees with the statement under question 7(4), that ISPs should not charge each other for the exchange of local internet traffic across the IXP.*
93. **OfReg's Response:** OfReg notes Digicel's response mostly in agreement with question 7. Given that our licensees are telecommunications service providers with various obligations to rollout networks and services, it does not seem that it would be unreasonable or onerous to expect a licensee to self-supply connectivity to the IXP where necessary. ISPs would be free to choose their transport solution as they do now for any of their other services offered in the market. The restriction not allowing the IXP to mandate a particular licensee's facilities would not only run counter to the neutrality principle but also run the risk of creating an unfair competitive advantage of the licensee with whom they would have partnered for such bundling.
94. **OfReg Question 8:** *Do you agree that, IXPs should be allowed to obtain necessary licences to operate International Cable Landing Stations (ICLS) and that persons licensed and operating Type D2 International Fibre Optic Networks and Type 11a Provision of Dark Fibre Services, or otherwise authorised to operate a ICLS, must provide International Fibre cross-connects and ICLS co-location to IXPs?*
95. **Flow's response to OfReg Question 8:** *We do not understand several of the stipulations set forth in this question (Ofreg Question 8) or discussed in Section C.6 of the Consultation Document. Based on what we can understand, we do not agree that it is necessary or appropriate for an IXP*

- to collocate in an ICLS, nor do we believe it is warranted to establish new regulations to achieve this outcome.
96. *First, the discussion in Section C.6 makes several declarative statements that we believe require explanation and substantiation. For instance, in the opening paragraph of the section (par. 71), Ofreg declares that IXP co-location in an ICLS “would enrich the universe of potential IXP members,” and in the subsequent paragraph (par. 72), Ofreg declares that direct access to an ICLS is “an important factor for ISPs success in accessing Content Delivery Networks to facilitate the provision of internet service locally.” Both declarations are used to support Ofreg’s co-location proposal but are not explained or substantiated. Ofreg does not enumerate how an IXP co-location arrangement would impact, let alone enrich, the peering experience of operators connected to that IXP, nor does Ofreg explain why direct access to an ICLS is important for an ISPs success. It is interesting that a leading ISP in the Cayman Islands and Flow’s primary competitor is not co-located in or have direct access to a Flow ICLS, nor has this ISP requested such access from Flow.*
97. *Second, but for this opaque discussion in Section C.6, nowhere else in the Consultation Document does Ofreg support or intimate how CLS collocation is relevant to an IXP’s operations. To the contrary, the entirety of the discussion up to this point intentionally excludes international transmission from the IXP proposal. The schematic diagram describing the IXP proposal (Diagram 3) does not attribute any international transmission facility or ICLS collocation to the IXP, and the stated purpose of the IXP is to avoid utilizing international transmission and ICLS resources; i.e., the IXP is intended to enable ISPs to keep local IP traffic (with an origin and terminus in the Cayman Islands) from leaving the country and unnecessarily utilizing international transmission facilities.*
98. *Third, even if international transmission is somehow within the IXP’s remit, it is also unclear what private or public purpose is achieved by ensuring that an IXP self-provide international transmission facilities and services. If an IXP were to require international transmission, there already exist diverse and redundant international transport options available to the IXP that it could purchase on a wholesale-discount basis from any existing ICT Licensee. It is unclear why this available supply of international transmission services is insufficient or inferior to self-supply by an IXP.*
99. *Fourth, the requirement that an IXP co-locate on the premises of an interconnecting ISP would appear to directly contradict a separate requirement that IXPs be “physically located in a space independent of any of the competing ISPs,” in order to instil “confidence in the IXP.”*

100. *Fifth, should ICLS co-location or a direct connection to submarine cables (“without third-party intermediation”) somehow be deemed necessary, it is important to note that these opportunities already exist under The Interconnection and Infrastructure Sharing Regulations. The IIS Regulations already include detailed instructions to Licensees on the requirements for sharing infrastructure with other Licensees. They have been in place for over 15 years, since Liberalization in 2003. And they are widely understood and extensively utilized by Licensees to secure ICT infrastructure.*
101. *Sixth, as the owner of ICLS in the Cayman Islands, Flow already offers in-span connections directly to the submarine capacity in its stations and has made clear it will provide co-location within an ICLS to any Licensed operator where space is available and appropriate security exists. Where available space and/or appropriate security do not already exist, Flow has indicated it is willing to evaluate constructing a secure co-location facility, so long as the costs of this evaluation, construction and security are borne by the requesting party.*
102. *For all of these reasons, we object to Ofreg’s proposal to mandate IXP co-location within ICLS.*
103. **OfReg’s Response:** OfReg notes the strength of the arguments put forward by Flow in opposition with the intent to allow IXPs to co-locate in cable landing stations. While we believe that there is merit in our desire to refine the terms of operation for cable landing stations that would allow for greater investment to facilitate robust local ICT development, acknowledging that IXPs and cable landing stations are natural partners, we recognise that the inclusion of this initiative here with the objective of establishing an IXP over complicates to matter. We therefore consider it appropriate to remove this element and defer it to a future exercise that would seek to address what solution best accords with the country’s goals for cable landing stations.
104. **Salt’s response to Question 8:** Yes
105. **OfReg’s Response:** OfReg notes Salt’s response in agreement with question 8.
106. **Digicel’s response to Questions 8:** *It is Digicel’s respectful view that IXPs should not be permitted to obtain licences to operate international Cable Landing Stations.*
107. *IXPs must be restricted to services relating to the transit of local-based traffic from within its facility. If the OfReg is seriously considering this as an*

- option, Digicel expects that a further detail will be provided and that a formal engagement process, in the form of a Consultation will be commenced in order to allow the industry to review any suggestions or recommendations by the OfReg, and importantly its reasoned basis for arriving at such a recommendation.*
108. **OfReg's Response:** See response at paragraph 103 above.
109. Additionally, any future discussion on the ability of IXPs to operate Cable Landing Stations or co-locate at landing stations will require the Office to set out what its objective and rationale for changes to how cable landing stations will be considered and position this in a consultation. Until such time, all such matters relating to co-location will be dealt with under the interconnection and infrastructure sharing regulations. Any desire to establish and operate cable landing station networks and services will be considered at that time upon receipt of application.
110. **OfReg Question 9: Do you agree that,**
- a. IXP licensees should pay their share of Regulatory Fees;***
 - b. IXP licensees should be exempt from paying Royalty Fees for services related to the exchange of Local IP Traffic;***
 - c. The Application Fee for grant of Type 16 Internet Peering Service licence should be \$1,500.00; and***
 - d. No application fee should be applied to applications for Type G IXP network licence applications?***
111. **Flow response to Ofreg Question 9:** *We disagree with stipulations (a) and (c) and agree with stipulations (b) and (d) to this question (Ofreg Question 9).*
112. *If the IXP's function and purpose is limited to providing a common peering point for local Internet traffic to Licensed ISPs and the costs of the IXP's creation and operation are to be funded directly from the connection payments by ISPs to the IXP, then any duty or fee (Regulatory and Royalty) paid by the IXP is in effect an additional fee or duty assessed to the funding ISPs. Licensed ISPs already pay an excessive amount in duties and fees and adding to this burden will only exacerbate that problem.*
113. *With regard to an IXP paying a Regulatory Fee (stipulation a), as this fee is assessed on a proportionate basis, this would in effect result in connecting ISPs paying a disproportionate share of the Regulatory Fee, relative to other (non-ISP) ICT Licensees. Therefore, Ofreg should not impose a Regulatory Fee on IXPs, but if it does impose a Regulatory Fee on IXPs, then*

- connecting ISPs should be allowed to deduct the payments they make to the IXP from their Regulatory Fee.*
114. **OfReg's Response:** OfReg notes Flow's response to question 9 in agreement with stipulations (b) and (d) and disagreement with stipulations (a) and (c). OfReg notes that Regulatory Fees charged by the Office are established to meet its needs for funding its activities in carrying out its statutory obligations. While there is a strong argument to be made in justification of the fees charged and noting that a Royalty fee is collected by the Office on behalf of the Government, it is noted that Flow feels that this could be prohibitive to the successful operation of an IXP as it is being seen as a double charge to the ISPs.
115. What the Office proposes here in relation to Regulatory fees, is just a reiteration of the policy that obtains, and which licensees are expected to exercise. An IXP being a service provider of ISPs would necessarily need to be licensed and regulated on an equal basis to all other ICT licensees as they themselves have argued elsewhere in this consultation. The current policy related to regulatory fees as set out in the Licence Fees for Long-term ICT Licensee (2013)³ states:
116. *Payments made by an ICT Licensee to another domestic ICT Licensee for wholesale, interconnection and access to and sharing of infrastructure services may be deducted by the Licensee making such payments from its turnover. The ICT Licensee providing wholesale, interconnection and access to or sharing of infrastructure services will report such payments [...]*
117. **Salt's response to Question 9:** (9-a) YES, (9-b) YES, (9-c) YES, (9-d) No, *there should be an application fee as it is an additional designation.*
118. **OfReg's Response:** OfReg notes Salt's response in agreement with question 9 stipulations (a, b and c) and disagreement with stipulation (d). Salt believes that there should be an application fee for Type G IXP Network licence as it is currently a separate designation in the Section 23(2) Regulatory Notice. While it is correct that the Service and Network licences are separate designations, it is because the current regulatory framework distinguishes between service and network licence types. As mentioned in the Consultation, for an IXP to operate within the Islands, it is required to obtain both a Type G IXP network licence and a Type 16 peering service licence. However, upon reflection, the Office does not consider it necessary to apply an application fee for considering grant of Type G licence as it would naturally form part of the Type 16 application consideration.

³ <https://www.ofreg.ky/upimages/commonfiles/15198955611417429851ICTAG1-LicenceFeesforLong-termLicences.pdf>

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119. **Digicel's response to Question 9:** *Digicel agrees in principle.*
120. **OfReg's Response:** OfReg notes Digicel's response of agreement in principle to question 9.
121. **OfReg's further response in general:** Given that the Cayman Islands Government has charged OfReg with imposing an obligation on ISPs to keep local IP traffic within the jurisdiction for the purpose of safeguarding the ICT industry, the Office does not believe that the government desired that an IXP would be liable to pay Royalty Fees for services relating to the exchange of local IP traffic, particularly, where the operating model is a cost-based model. Therefore, the Office considers it reasonable to exempt the IXPs from paying Royalty Fees.
122. **OfReg Question 10: Do you agree with the proposed Draft IXP Regulatory Framework? If not, why?**
123. **Flow's response to OfReg Question 10:** *Please see our response to Ofreg Questions 1-9, above.*
124. **OfReg's Response:** OfReg notes Flow's response to question 10 that their answers to the previous questions represent their position on the consultation.
125. **Salt's response to Question 10:** *Yes*
126. **OfReg's Response:** OfReg notes Salt's response in agreement to question 10.
127. **Digicel's response to Question 10:** *Comments to the proposed Draft IXP Regulatory Framework are set out separately below.*
128. **Digicel's response to Section F Draft Determination:** *The Draft Determinations set out by the OfReg under paragraph 109, while acknowledged, seems to suggest the OfReg has already made up its mind that these Determinations are necessary and shall be in place in Cayman.*
129. **OfReg's Response:** The Draft Determinations simply sets out such preponderance as has been given to the matter by OfReg at this time and to include this in a draft determination provides better detail which serves to inform the industry as to what OfReg considers applicable for establishing an IXP. It is by no means an indication of a fait accompli. The consultation process is open, objective and transparent. A necessary legal requirement of the consultation process is a Draft Determination to be issued and considered by the industry.

130. **Digicel's response to Appendix 3 – Draft IXP Regulatory Framework:** *Under framework 3.3.1 the OfReg should consider including for reference how the applications will be evaluated and how it seeks to define “merit” in this regard. Presently, this is unclear and may be open to interpretation and future disputes.*
131. *Pursuant to framework 3.3.4, the OfReg expects to only consider applications for grant of IXP licence from companies registered in Cayman. This however may extend to those applicants that have only recently registered in Cayman in order to meet this criterion, including those that register for this specific purpose. It is not clear if certain other conditions will be attached to this framework, for example, whether the IXP is ordinarily resident in Cayman, or for a certain period prior to applying was deemed to have been ordinarily resident in Cayman, or more importantly what steps will be taken by OfReg to evaluate the company, its history, its abilities/capabilities or even its parent and control structure. It is recommended these are included in the framework.*
132. *For the avoidance of any doubt, Digicel remain of the view and agrees that the Cayman Islands would benefit from the establishment of an ISP Peering Point, and if the Country and Government is committed to the development of an IPX as a National Asset Digicel is willing to work together with OfReg, other ISP's and The Government to achieve its goals. However, we request this consultation process continue and draft determinations, regulations and policies be finalized after extensive consideration of ISPs concerns and comments.*
133. **OfReg's Response:** Merit being the quality of being particularly good or worthy of grant of licence, will be decided (as all ICT licence applicants are) in accordance with the “*Procedure for the grant of a licence*” as set out at section 26 of the ICT Law and where applicable with consideration to other laws in the Cayman Islands.

4. Determination

134. Having considered all of the submissions made by the respondents to the Consultation and Draft Determinations set out in the related *ICT 2020-1- Consultation IXP Regulatory Framework*, the Office determines the following:
1. That IXPs established in the Cayman Islands shall operate in a manner consistent with the 10 Basic Principles set out in APPENDIX 2 of the Consultation and included at Annex 2 part 3.1 of this Determination, subject to the following amendment:

- a. That the wording of the second principle *“All ISP’s will work together to establish a peering point for local IP traffic.”*, be substituted with *“All ISP members will work together to establish and maintain peering for Local IP Traffic.”*
2. That all persons who hold Internet Service Provider (‘ISP’) ICT service licences shall by this Determination be obligated to peer between and among themselves for the purpose of exchanging local traffic so that such traffic remains within the Cayman Islands. As a means to meeting the obligation, ISPs may choose to connect at a common IXP. This Obligation shall come into force 60 days after the date that this Determination is issued and may be extended at the sole discretion of the Office.
3. That non-ISPs shall not be restricted from connecting to and providing services at an IXP, subject to compliance with such relevant laws, regulations, rules or reasonable terms and conditions as may be established by the operator of the IXP for such non-ISP connections. All non-ISP parties are required to purchase any needed wholesale service from an existing ISP. Any non-ISP party connecting at the IXP would require internet connections for which purpose they would be required to purchase such connections from the local ISPs.
4. That the operator of an IXP must establish an advisory board consisting of representatives of each of the member ISPs and must give effect to the greatest extent practicable to the consensus of that board on any matters relating to the exchange of local Internet traffic, provided, however, that the operator of the IXP may submit for the Office’s review and approval alternative methods of determining the consensus of the ISPs on matters relating to the exchange of local Internet traffic.
5. That, ‘Local IP Traffic’ is determined to mean *‘Internet traffic which originates in the Cayman Islands on a network operated by an ISP and terminates in the Cayman Islands on a network operated by another ISP, irrespective of whether the networks in question are fixed wireline, fixed wireless or mobile networks.’*
6. That IXPs must be located in premises which are not owned or operated by an ISP or by an affiliate of an ISP. That ISPs must connect to the IXP equipment at Layer 2 of the ISO OSI stack; and the IXP shall not access, interrupt or otherwise use the ISP’s traffic

for any purpose other than what is minimally necessary to facilitate delivery of IXP service.

- a. That where ISP's choose to peer between and among themselves for the benefit meeting the obligation to keep Local IP Traffic local, ISP's shall peer their networks at Layer 2 of the ISO OSI stack; and neither party shall directly or indirectly access, interrupt or otherwise use another ISP's traffic for any purpose other than what is minimally necessary to facilitate peering of Local IP Traffic.
- b. That in all cases, ISPs and IXP Service Providers alike shall make every effort to mitigate single points of failure in the Local IP Traffic peering network. The performance of which will be the subject of related interconnection/infrastructure or service agreements. The Office may necessarily establish standards and regulations under its authority in the interest of protection of critical national infrastructure or to define appropriate quality of service standards.

7. That:

- a. the operator of the IXP shall charge ISPs cost-based fees for connection to and use of the IXP for exchange of Local IP Traffic;
- b. the ISPs shall be responsible for procuring, at their own expense, the necessary facilities to connect to the IXP;
- c. the operator of the IXP may not make access to the IXP contingent upon the use of the services or facilities of any particular network or service provider; and
- d. the ISPs may not charge each other for the exchange of local Internet traffic across the IXP

8. That the Office's proposal to allow IXPs to obtain necessary licences to operate International Cable Landing Stations (ICLS), be deferred to a future exercise that would seek to address what solution best accords with the country's goals for cable landing stations.

9. That:

- a. IXP licensees shall pay their share of Regulatory Fees. ISPs may deduct from their fees as per established Licence Fee Policy any amounts paid to an IXP for interconnection and access to and sharing of infrastructure;
- b. IXP licensees shall be exempt from paying Royalty Fees for services related to the exchange of Local IP Traffic;

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- c. The Application Fee for grant of Type 16 Internet Peering Service licence shall be \$1,500.00, and
 - d. Type G IXP network licence will not be considered without application for Type 16 service licence. Therefore, no application fee will be applied to Type G applications.
10. That the Final IXP Regulatory Framework as amended and set out at Annex 2, shall apply to IXP services provided in the Cayman Islands. The Framework shall come into force seven days following the issuance of this determination.
- a. Amendments include:
 - 1. At part 3.6.5, wording now expands on the original expectation to establish redundancy and resiliency in the IXPs Network
 - 2. At part 3.6.6, wording replaces obligation to define and implement a disaster preparedness plan, with the obligation to develop and implement business continuity and disaster recovery plans.



Annex 1

ICT 2020 -1- Consultation – IXP Regulatory framework

Annex 2

Final IXP Regulatory Framework



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1. Introduction

- 1.1. Pursuant to Utility Regulation and Competition Law (2019 Revision) (URC Law) and the Information and Communications Technology Law (2019 Revision) (the '**ICT Law**') the telecommunications sector must be regulated by the Utility Regulation and Competition office ("Office" or "OfReg") to, among other objectives, promote appropriate effective and fair competition in the communications markets, protect the short and long term interests of consumers and ensure creation of favourable atmosphere to for promotion of innovation and facilitation of development. Additionally, the regulatory activities must focus on promoting and maintaining an efficient, economic and harmonized utilisation of ICT infrastructure as well as protecting critical national infrastructure.
- 1.2. In exercise of the powers conferred by section 12(1) of the URC Law, the Cabinet issued a Direction to the Office – the 'Utility Regulation and Competition (Information and Communications Technology) Directions, 2020'. As part of the Directions, the Office was tasked to, among other things:
 - 1.2.1. Take measures to ensure local internet communication remains onshore including the facilitation of establishment of ICT peering point for the exchange of local IP traffic between service providers and to take necessary steps to ensure that the exchange of local traffic is a condition in licences of service providers.
- 1.3. The Cayman Islands' Information and Communications Technology (ICT) sector is undergoing rapid change. Implementation of this Regulatory Framework on Internet Exchange Points is focused on fulfilling the mandate to keep local internet traffic within jurisdiction and improve customer experience from internet usage in the country but is also designed to support the Office's broader sector objectives to facilitate the development of a world-class communications ecosystem for the Cayman Islands, to increase the attractiveness of the Islands for investment in digital innovation and development.

2. Definitions

- 2.1. The terms and expressions defined in the URC and ICT Laws and Regulations shall have the same meaning in the present Regulatory Framework.

2.2. In addition, the following terms and expressions shall have the meaning assigned to them hereunder except where the context in this Regulatory Framework otherwise requires:

- 2.2.1. 'Internet Exchange Points' ("IXP") shall mean the physical infrastructure in the Cayman Islands through which, Internet Service Providers and other entities (such as content delivery networks, content providers, enterprises and others as defined by the Office) connect their networks and exchange internet traffic but does not include private exchange through direct bilateral arrangements or communication between autonomous systems.
- 2.2.2. 'Internet Exchange Point Services' or 'IXP Services' shall mean services offered by the IXPs. These services may include but shall not be limited to provision of Ethernet switch(es) for the purposes of peering or transit among IXP Members, supporting network operations centres for monitoring and fault detection, guaranteed service level agreements, internet security services and other services as deemed appropriate. IXPs, unless authorised through a separate process, shall not offer any service or operate any network that requires specific license, registration or authorisation from the Office.
- 2.2.3. 'IXP Members' shall mean participants at any IXP who can benefit from services of the IXP, including but not limited to peering and/or transit arrangements in line with the IXP policies. These Members shall include Internet Service Providers but may also include other ICT Network or ICT Service licensee.
- 2.2.4. 'IXP Service Provider' shall mean any entity issued a license by the Office to provide Internet Exchange Point Services in the Cayman Islands and owns or exercises direct control of an Internet Exchange Point.
- 2.2.5. 'Infringing Content' shall mean content that infringes an existing intellectual property right.
- 2.2.6. 'Local IP traffic' shall mean Internet traffic which originates in the Cayman Islands on a network operated by an ISP and terminates in the Cayman Islands on a network operated by another ISP, irrespective of whether the networks in question are, fixed wireline, fixed wireless or mobile networks.
- 2.2.7. 'Peering Policy' shall mean rules defined by any IXP Service Provider regarding connecting and sharing of internet traffic by IXP Members at an identified location. These rules may include but are not limited to,

ports used for peering, any requirement for mandatory peering or traffic exchange by members.

2.2.8. 'Unlawful Content' shall mean content that is unlawful or prohibited under the laws of the Cayman Islands.

3. Regulatory Framework

3.1. Basic Principles

3.1.1. All Internet Exchange Points in the Cayman Islands shall operate in a manner consistent with the following IXP Basic Principles:

1. The Cayman Islands would benefit from the establishment of an Internet Exchange Point (IXP).
2. All ISP members will work together to establish and maintain peering for Local IP Traffic.
3. The Internet Exchange Point or IXP, will be hosted by a neutral party.
4. Shared Costs – The IXP shall be operated as a non-profit service, prices shall be cost-based, and all costs associated with the IXP will be shared by the parties equally.
5. No party shall be advantaged or disadvantaged by the practises, contracts, policies, or pricing of the IXP.
6. Transparency – To the extent possible, the operations of the IXP will be transparent to the parties, barring commercially sensitive information.
7. Layer 2 – To enhance privacy and speed, the IXP will connect the parties together at Layer 2 of the International Organization of Standardization, Open System Interconnection stack- (“ISO OSI stack”).
8. Keep It Simple – the parties will strive to embrace simplicity in all aspects of the IXP.
9. Licensing – The IXP will be a licensed service of the Office and therefore be subject to regulatory oversight and be provided facility for dispute resolution among the parties.

10. Consensus – The IXP will be driven by consensus views of the parties in its operations, policies, and practices.

3.2. Scope

3.2.1. The provisions of this Regulatory Framework shall apply with regard to any IXP Services provided in the Cayman Islands.

3.2.2. The licensing obligation under this Regulatory Framework shall apply to any entity engaged or proposing to engage in IXP Services in the Cayman Islands.

3.3. IXP Licensing and Fees

3.3.1. Applications for licence will be evaluated on their merits having regard to the information provided by the applicant and to the broad licensing criteria outlined in “Part III – Licensing” of the ICT Law.

3.3.2. Applicants should use their best endeavours to ensure that all information contained in their applications and any other subsequent submissions and representations are correct and accurate in all respect, in reliance upon which the Office will consider the applications. The Office reserves the right not to accept applications which are incomplete.

3.3.3. Any entity that seeks to offer IXP Services in the Cayman Islands must apply to the Office for grant of licence to operate as an IXP Service Provider.

3.3.4. The Office will only consider applications for grant of IXP licence from companies registered in the Cayman Islands.

3.3.5. The fee for application for grant of licence to operate an IXP, is \$1,500.00 and is to be submitted along with the relevant IXP application.

3.3.6. The information to be provided for the above registration, the form to be used, and the applicable procedure and time limits shall be as prescribed by the Office. All applicants for grant of IXP Service licence shall follow the licensing procedure and submit all required documents in accordance with Annex 1 of this Regulatory Framework.

3.3.7. The licence for the provision of IXP Services shall not be used for provision of other services for which a licence or authorisation of any kind by the Office is required. An IXP Service Provider shall apply

separately for any license in accordance with the Office established procedures.

- 3.3.8. No IXP Service Provider, shareholder in an IXP nor affiliate shall be granted licence or authorisation to operate as an Internet Service Provider (ISP) or Reseller of Internet Service.
- 3.3.9. In cases where an IXP Service Provider obtains a licence to offer other ICT services, all revenue earned from the non-IXP Service shall be clearly indicated in all financial reporting.
- 3.3.10. Under no circumstances shall an IXP licence be used as reason for non-payment of fees as per the conditions of other licence(s) held by the IXP Service Provider.
- 3.3.11. Provision of IXP Services relating to the exchange of Local IP Traffic shall be delivered on a not-for-profit basis. IXP Service Providers shall only charge Members cost-based fees for exchange of Local IP Traffic.
- 3.3.12. IXP Service Providers shall not be required to pay Royalty Fees for provision of services relating to the exchange of Local IP Traffic.

3.4. IXP Participation

- 3.4.1. Every IXP Service Provider shall define and publish its membership policy and make it available to the public.
- 3.4.2. Every IXP Service Provider shall allow all ISPs licensed by the Office to connect to the IXP for the purpose of exchanging Local IP Traffic and in order to do so, acquire and have in place the necessary infrastructure to facilitate such exchange.
 - 3.4.2.1. If an IXP Service Provider decides that it is unable or that it is inappropriate to allow an ISP to connect to its infrastructure, the IXP Service Provider must notify the Office within seven days of such decision with reasons. Notwithstanding any decision of an IXP Service Provider, the Office reserves the right to mandate acceptance of ISP Members by exercise of its relevant authority in Law.
- 3.4.3. No IXP Service Provider shall make access to the IXP contingent upon the use of the services or facilities of any particular network or service provider.

3.5. IXP Ownership and Shareholding

3.5.1. IXP Service Provider licences will not be issued to any ISP or Reseller of Internet service licensee, nor to any shareholder, affiliate, director or person having a link to such licensees, where in the opinion of the Office such link does not align with the third (3) Basic Principle.

3.5.2. IXP Service Provider licence will not be issued to an entity that:

- a. is not Caymanian controlled;
- b. has less than sixty per cent (60%) beneficial ownership by Caymanians; and
- c. has less than sixty per cent (60%) of its directors as Caymanians.

3.6. IXP Operations

3.6.1. An IXP Service Provider shall establish an advisory board consisting of representatives of each of its ISP Members, and must give effect to the greatest extent practicable to the consensus of that board on any matters relating to the exchange of local Internet traffic, provided, however, that the operator of the IXP may submit for the Office's review and approval alternative methods of determining the consensus of the ISPs on matters relating to the exchange of local Internet traffic.

3.6.2. All infrastructure, management and other personnel of the IXP shall be located in Cayman Islands.

3.6.3. In further fulfilment of Basic Principle 3, IXPs must be located in premises which are not owned or operated by an ISPs or Resellers of Internet service or by a shareholder, affiliate or director of such licensee.

3.6.4. IXP infrastructure shall be located in premises that meet or exceed minimum Cayman Islands building code standards for category 4 hurricane wind ratings and minimum seismic event ratings. The premises shall have multiple independent back-up power supplies, fire suppression and environmental controls, access to terrestrial communications infrastructure and in any case cannot be located on a ground level floor.

3.6.5. IXP Service Providers shall make every effort to mitigate single points of failure in the IXP network; provide high-availability and a high grade of service to their Members. The performance of which will be the subject of the IXPs service agreements. The Office may

necessarily establish standards and regulations under its authority in the interest of protection of critical national infrastructure or to define appropriate quality of service standards.

- 3.6.6. IXP Service Providers shall develop and implement a business continuity plan and a disaster recovery plan for all IXP operations and services to ensure continuity of service.
- 3.6.7. IXP Service Providers are not restricted from offering other services as long as;
 - a. those services do not interfere with the exchange of internet traffic;
 - b. the IXP Service Provider does not make access to the IXP contingent upon the use of any other services or facilities; or
 - c. those services are offered or made possible by unauthorised access to Members internet traffic.
- 3.6.8. An IXP Service Provider shall define its Peering Policy, including rules regarding traffic exchange, and make it available to the public. This Peering Policy shall apply to every IXP Member without any discrimination to Members or prospective Member.
- 3.6.9. Notwithstanding 3.6.8, IXP Service Provider must connect ISPs to the infrastructure equipment at Layer 2 of the ISO OSI stack; and the IXP shall not access, interrupt or otherwise use the ISP's traffic for any purpose other than what is minimally necessary to facilitate delivery of IXP service.
- 3.6.10. ISPs shall be responsible for procuring, at their own expense, the necessary facilities to connect to the IXP.
- 3.6.11. Every IXP Service Provider shall define the technical requirements and statistics that show the value of the provided services. The provider shall be liable for the accuracy of the shared information.
- 3.6.12. Every IXP Provider shall define its pricing policy, provide a copy to the Office and also make it available to the public.
- 3.6.13. Notwithstanding any pricing policy established by the IXP Service Provider, the IXP shall charge ISPs and non-ISP Members cost-based fees only, for connection to and use of the IXP for exchange of Local IP Traffic.
- 3.6.14. The Office shall have the right to develop specific quality of service standards for IXP Providers, if it considers it necessary to do so.

- 3.6.15. IXP Providers shall notify the Office and any other authorised entity, without undue delay, if it becomes aware of any cyber or other threats to its infrastructure or its Member's infrastructure. For this part, an authorised entity includes the relevant Member.
- 3.6.16. IXP Service Providers shall refer any third parties complaining against Unlawful Content or Infringing Content on any IXP Member's network to the competent authorities in the Cayman Islands and also notify the Office.
- 3.6.17. IXP Service Providers shall report financial, technical, governance or any other information with the Office as required in its licence.

3.7. The Office's Powers

- 3.7.1. Any violation of the provisions of this IXP Regulatory Framework shall be subject to the actions and penalties that the Office may take or impose under URC and ICT Laws, relevant Regulations or licence conditions but without prejudice to any penalties that may be imposed under any other applicable law in the Cayman Islands.
- 3.7.2. Unless otherwise specified in this Framework, mentioned provisions shall be mandatory and not subject to any modification through contractual agreement.
- 3.7.3. This Framework can be amended from time to time at the discretion of the Office.
- 3.7.4. The Office may issue guidelines, model IXP contracts or clauses, policies, guides, recommendations or other texts aimed at:
- 3.7.4.1. Clarifying any aspect of this Framework;
 - 3.7.4.2. Providing guidance to IXP Service Providers, Members and the public in general on any aspect of IXP operation;
 - 3.7.4.3. Establishing the Framework by setting out implementation provisions.

3.8. Coming into Force of the Framework

- 3.8.1. Subject to the provisions of paragraph 3.8.2 below, this Framework shall be considered to be in force seven calendar days after its publication in the form of a final determination on the Office's website.

3.8.2. An IXP or prospective IXP Service Provider's obligation or opportunity to apply to the Office pursuant to Part 3.3 above, shall come into force seven calendar days after the present Regulatory Framework's entry into force. Notwithstanding this, eligible parties may apply for a licence upon the coming into force of the Framework.

IXP Regulatory Framework

Annex 1: Application Criteria

The prescribed application form to be submitted in support of grant of IXP Service Provider licence will include but not be limited to the following requirements:

1. Payment of the full application fee of \$1,500.00.
2. That the relevant application form, be completed in full and signed by an authorised representative of the Applicant.
3. Provision of the management and operational structure of the applicant.
4. Provision of certified copy of a valid company registration and certified Register of Members.
5. Provision of details of the applicant's members shareholding or interest in other ICT Licensees.
6. Provision of details of the applicant's parent, subsidiary or affiliate's ICT operations in the Cayman Islands or any other jurisdiction.
7. Provision of details of technical experience and competency necessary to fulfil the expectations of an IXP Service licence.
8. Provision of description of services to be provided at the IXP.
9. Provision of details of the applicant's IXP and other ICT related operations in any other jurisdiction.
10. Provision of proof available Capital Expenditure and Operational Expenditure as necessary to establish and operate and IXP.

END