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FILED ELECTRONICALLY AND VIA COURIER

November 16, 2011

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street
PO Box 2319, 27th Floor
Toronto, ON
M4P 1E4

Helen T Newland

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DIRECT 416-863-4471

Dear Ms. Walli:

**RE: Application by Canadian Distributed
 Antenna Systems Coalition ("CANDAS");
 Board File No.: EB-2011-0120**

We represent CANDAS in connection with its application to the Board regarding access to the power poles of licensed electricity distributors for the purpose of attaching wireless telecommunications equipment ("**Application**").

CANDAS is filing the Responses to Undertakings given at the Technical Conference held on November 4, 2011. In the Response to Undertaking JTC1.3, where we have provided a reference to CANDAS' prior responses to interrogatories, we have used the following protocol, consistent with the protocol established in our October 26, 2011 filing: *e.g.*, CANDAS (THESL) 1 would be a reference to CANDAS' response to THESL interrogatory number 1 on CANDAS' Application and Written Evidence.

CANDAS will file two paper copies of the above-noted evidence as soon as possible.

Yours very truly,

(signed) H.T. Newland

HTN/ko

Encls.

cc: All Intervenors

Undertaking JTC1.1

To provide documentation, if any, in relation to the field surveys performed by engineers to determine that there are not enough Bell Canada poles and not enough evenly distributed poles to provide coverage in the City of Toronto as proposed by DAScom.

Response:

The field engineering surveys performed in the City of Toronto were not documented. However, the personnel who surveyed the structures available for purposes of attaching the wireline cabling and wireless node components of the proposed Toronto DAS network reported the following observations with regard to Bell Canada poles:

- A large proportion of Bell Canada poles were located in backyard easements, and therefore, were not suitable for the placement of wireless nodes and not readily accessible for placement of the optical fibre required to provide connectivity between the wireless nodes and the network hub; and
- Relative to electricity distribution poles, there were fewer Bell Canada poles and they were less evenly distributed. These considerations made Bell Canada poles unsuitable as an alternative source of support structures for the proposed Toronto DAS network.

Undertaking JTC1.2

To produce the city ordinance making available City of Chicago property for communication attachments.

Response:

See attached Schedule JTC1.2.

Municipal Code of Chicago

CHAPTER 10-29

WIRES, PIPES, CABLES AND CONDUITS ON, UNDER OR OVER PUBLIC PROPERTY

10-29-010 Definitions.

10-29-020 Permit required for installation.

10-29-030 Conditions for granting permit.

10-29-040 Permit fee.

10-29-050 Effect of chapter on franchises and permit requirements.

10-29-060 Commissioner authorized to establish additional regulations.

10-29-070 Violation – Penalty.

10-29-010 Definitions.

“City conduit” shall mean city owned conduits suitable for electrical or communications purposes located in the public way or in city light poles or alley poles.

“City light poles” shall mean city owned light poles including but not limited to light poles which support traffic signalization equipment referred to as “traffic signal poles”, ordinary light poles and alley poles.

“Commissioner” shall mean the commissioner of transportation.

“Executive director” shall mean the executive director of emergency management and communications.

“Public property” shall mean property owned or controlled by the city other than the public way, including, but not limited to city light poles and conduit.

“Wire” shall mean and shall be deemed to include, but not be limited to antennas and peripheral transmitters, receivers, repeaters, converters, amplifiers, connectors, fiber optic cables, power supplies and other related electrical or communications equipment and wiring, but shall not include any wire subject to Chapter 4-280 of the Municipal Code of Chicago.

(Added Coun. J. 4-13-94, p. 48633; Amend Coun. J. 12-7-05, p. 64870, § 1.9; Amend Coun. J. 12-14-05, p. 66662, § 1)

10-29-020 Permit required for installation.

No person or entity shall install any wire, pipe, cable or conduit on, under or over the surface of any public way or public property without first having obtained a permit issued by the department of transportation after consultation with the office of emergency management and communications. Applications and permits shall be in such form and shall require such plans and specifications as prescribed by the commissioner. This chapter shall not apply to the installation or maintenance of telecommunications equipment on, over or under the public way by telecommunications providers as provided in Chapter 10-30, but shall apply to the use of public property by private users.

(Added Coun. J. 4-13-94, p. 48633; Amend Coun. J. 10-1-97, p. 53280; Amend Coun. J. 12-7-05, p. 64870, § 1.9; Amend Coun. J. 12-14-05, p. 66662, § 1; Amend Coun. J. 11-19-08, p. 47220, Art. IX, § 1; Amend Coun. J. 1-13-10, p. 83228, § 2)

10-29-030 Conditions for granting permit.

A permit shall be issued only if the commissioner determines that granting the permit and allowing the installation or maintenance of wire, pipe, cable or conduit would: 1) not endanger public health or safety; 2) be consistent with the sound maintenance and administration of the public way or public property; 3) not constitute undue physical or visual obstruction of the public way or public property; and 4) not overburden the limited capacity of the space on, under or over the surface of the public way or public property. In addition, a permit shall be issued only if all applicable fees have been paid, all applicable agreements have been executed pursuant to Section 10-29-040, and the applicant provides such surety, insurance and indemnification as the city may require.

(Added Coun. J. 4-13-94, p. 48633)

10-29-040 Permit fee.

(a) For a permit for the installation or maintenance of wire, cable, pipe or conduit on, under or over the surface of the public way, the applicable fee shall provide for recovery of the city's actual costs or reasonably foreseeable estimate of the city's costs for maintaining and regulating the public way in a manner consistent with the public welfare and suitable for the use of the applicant. Such costs shall include, but not be limited to, the city's cost of inspection, regulation, maintenance, administration and repair. The commissioner shall have the authority to determine the applicable permit fee.

(b) Notwithstanding subsection (a) of this section, a permit may be issued for the installation or maintenance of wire, cable, pipe or conduit on, under, or over the surface of the public way or public property without payment of the appropriate fee provided for in subsection (a) if: (1) the applicant voluntarily enters into an agreement with the city providing for such use; or (2) the commissioner requires the applicant to enter into an agreement with the city providing

for such use because the commissioner determines that the proposed use is likely to preclude other persons from using the space, would physically or visually interfere with or obstruct the public way or public property, or because the space is on, over or under public property, over which the city may exercise proprietary powers. The terms of such agreements shall include appropriate compensation to the city and such surety, insurance and indemnification provisions as the city may require. All agreements shall be subject to the approval of the city council and subject to the approval of the corporation counsel as to form and legality; provided that, except as set forth below, no approval by the city council shall be required for the permitting of wires on or inside of available city light poles (including, subject to the conditions set forth in Section 10-29-060, traffic signal poles) pursuant to regulations issued under Section 10-29-060 for periods not exceeding 20 years (including renewals, which shall contain such conditions as the commissioner shall apply on a competitively neutral basis) and providing for use fees or permit fees in 2005 and 2006 of not less than (i) \$1,500.00 per year for each permitted use of each city light pole which is not a traffic signal pole and (ii) \$3,000.00 per year for use of each traffic signal pole, in each case of (i) and (ii) adjusted upward in each year commencing on January 1, 2007 for the greater of (x) the CPI Adjustment (as defined below) over a one-year period from a base year of 2006 or (y) a five percent per year increase from the preceding year; provided further that the commissioner may by regulation adjust use fees or permit fees to account for market conditions, but in no event (except as set forth below) shall use fees or permit fees ever be less than the specified amount per year for each category of pole, as applicable, used on an annualized basis. Beginning on the tenth anniversary of the effective date of this ordinance, such fee may be adjusted to add a revenue component or make other reasonable adjustments which are not in excess of prevailing municipal rates; provided that notice of such proposed adjustments is sent to all affected permittees at least one year prior to the implementation date of such adjustments. Such use fees or permit fees shall be applied on a pro rata basis for partial years, may be adjusted to account for multiple attachments to a single city light pole, or size of equipment, or the amount of use of the city light pole and may be established on a calendar year or other 12-month basis as the commissioner shall determine in regulations. Such regulations may provide for in-kind compensation for a municipal use. The commissioner may by regulation make adjustments to use fees, establish discounts for advance payments and determine the appropriate application of the proceeds of such payments, and set limits on length or extent of use or set forth other conditions to the extent deemed necessary, with the advice of the corporation counsel, to comply with financing or other regulatory restrictions or to reasonably account for the value of in-kind compensation.

For purposes of this Section 10-29-040, "CPI Adjustment" means the percentage increase in the United States Department of Labor, Bureau of Labor Statistics Consumer Price Index for the Chicago- Naperville-Joliet Metropolitan Statistical Area. Notwithstanding the foregoing, implementation of and pricing for any wi-fi or wi-max system using city light poles or any other city property shall require city council approval.

(Added Coun. J. 4-13-94, p. 48633; Amend Coun. J. 12-14-05, p. 66662, § 1; Amend Coun. J. 11-19-08, p. 47220, Art. IX, § 1)

The provisions of this chapter shall not affect any franchise or similar agreement or permits governing the installation or maintenance of wire, pipe, cable or conduit on, under or over the surface of the public way or public property which may be in effect as of the effective date of this ordinance. Upon expiration of any such franchise or other agreement, the provisions of this chapter shall apply. This chapter shall not affect any requirements for permits which the commissioner may otherwise require or which may be applicable under the provisions of this Code.

(Added Coun. J. 4-13-94, p. 48633)

10-29-060 Commissioner authorized to establish additional regulations.

The commissioner are authorized to establish rules and regulations as shall be necessary to further the purposes of this chapter and to ensure that access to, use or occupancy of space on, under or over the public way or public property be conducted and maintained in a safe and efficient manner consistent with the provisions of this Code, in a manner so as to not physically or visually interfere with or obstruct the public way or public property, or in a manner which does not overburden the limited capacity of the space. In regard to the use of city light poles, such regulations shall be established after consultation with the executive director, the city's chief information officer, and the commissioner of streets and sanitation, and shall be drafted and administered on a competitively neutral and nondiscriminatory basis. Such regulations shall additionally take into account, in furtherance of the factors set forth in Section 10-29-030, on a per location basis: (i) public safety and structural limitations, (ii) compatibility of wires, including antennas and other peripheral equipment with the proposed use of city light poles or other city property, (iii) interference with or prevention of current or reasonably anticipated city projects, operations or infrastructure, including communications and information services provided or sponsored by the city, (iv) adequacy of electric service and efficient use of scarce physical space, including potential collocation, (v) regulatory restrictions on the use of such facilities by private parties, (vi) the existence of commercially reasonable alternatives to the use of city light poles (such as existing private utility and telecommunications poles) and (vii) material aesthetic considerations. Preference shall be given to the use of city alley roles over ordinary light poles or traffic signal poles and preference shall be given to ordinary light poles over traffic signal poles. Such regulations shall not extend to the use of city airport property by private users. Notwithstanding the foregoing, such regulations specifically may allow for the use of traffic signal poles on a case-by-case basis if such use does not preclude the city from either undertaking its own telecommunications or information projects or permitting similar projects for the benefit of the public even if conducted or operated by third parties. The regulations may permit the replacement of city light poles through private donations of similar poles which more readily permit the internal placement of wires so long as such replacement roles and the construction thereof do not require the expenditure of city funds, meet city specifications and regulatory requirements, do not violate any financing requirements and are dedicated to, and become the property of the city after completion. The commissioner is authorized to accept any such replacement poles and to issue permits for the use of such replacement poles consistent with the purposes and limitations set forth in this chapter. The regulations may also permit the use of available city conduit for wires in the immediate vicinity of or contained within such city light poles for the limited purpose of connection with electric sources of power and communication networks if such connection will avoid construction in and deterioration of the city's public

ways; provided that such use of city conduits will be limited to the purposes set forth above, shall be at the prevailing rates of compensation for such use as determined by the commissioner, shall not require the expenditure of city funds, do not violate any city financing requirements, shall meet city specifications and regulatory requirements and such wires shall become city property after termination of the related permit following default or abandonment. At least 20 days prior to the issuance of any permit for installation of equipment or wires owned by a private party on city light poles, notice shall be given by the commissioner or the executive director to the alderman in whose ward such light poles are located.

(Added Coun. J. 4-13-94, p. 48633; Amend Coun. J. 12-7-05, p. 64870, § 1.9; Amend Coun. J. 12-14-05, p. 66662, § 1; Amend Coun. J. 11-19-08, p. 47220, Art. IX, § 1)

10-29-070 Violation – Penalty.

Permit fees authorized by this chapter shall constitute a debt due and owing the city. Any person violating this chapter shall be subject to permit revocation and shall also be subject to a fine of not less than \$500.00 and not more than \$2,000.00 for each offense. Each day that such violation continues shall be considered a separate offense. In addition, any wire, pipe, cable or conduit installed, operated or maintained in violation of this chapter may be removed by the city at the owner's or operator's expense.

(Added Coun. J. 4-13-94, p. 48633)

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Undertaking JTC1.3

To provide a response or refusal to answer the following cited questions: (THESL)–1(d), (e), (f), 7(a), 13, 50 and 51(j) and (CEA)–14, 19, 33, 50, 52, and 60.

Response:

See revised responses for:

- CANDAS(THESL)1(f)
- CANDAS(THESL)7(a)
- CANDAS(THESL)13
- CANDAS(THESL)51(c)
- CANDAS(CEA)19(a)
- CANDAS(CEA)50(a)
- CANDAS(CEA)52

CANDAS maintains its objections to the remaining interrogatories identified by THESL, except for THESL-51(j), for which there is no record.

I. Application¹

Questions:

1. *Reference: p. 4 and 21, paras. 2.8, 2.9 and 7.10*

At p. 2.8, CANDAS states that: “Moreover, Canadian carriers who require access to power poles to enable their wireless networks are now effectively precluded from entering the market. This is either because they are unable to obtain pole access at all, or because the terms and conditions of such access are completely indeterminate or subject to such uncertainties as to preclude the requisite capital investments. If left unchecked, the ability of electricity distributors to use their monopoly power to unduly discriminate among Canadian carriers by unilaterally deciding who may have access to regulated assets and who may not, will materially and adversely affect the development of a competitive wireless industry in Ontario.” (emphasis added)

Later, paragraph 7.10, CANDAS states that “As a result of the continuing delays in permit processing and the uncertainty as to when the Toronto DAS Network would be 100 percent completed, Public Mobile decided to launch its new Toronto service using “temporary” Macro Cell Sites. Accordingly, Public Mobile, ExteNet and DAScom agreed to terminate arrangements for the committed use of the Toronto DAS Network by Public Mobile. Although Public Mobile is still interested in utilizing DAS technology for portions of its network in Toronto, it will not commit to do so unless and until it receives credible assurances, including assurances that THESL will grant timely and long-term pole access for node and fibre attachments.”

- (a) Please describe in greater detail all of the other alternatives available to Canadian carriers - such as Public Mobile - to the Toronto DAS Network solution proposed by ExteNet and DAScom.
- (b) From the evidence of CANDAS, it appears that Public Mobile is currently using a “Macro Cell Site” alternative to the Toronto DAS Network. Please provide particulars on how a Macro Cell Site approach can be used to provide service to Canadian carriers.
- (c) Who are the vendors from whom Canadian carriers - such as Public Mobile - that can purchase “Macro Cell Site” service? Rogers? Bell? Telus? American Tower? Crown Castle? Please identify any others.

¹ As filed April 21, 2011.

- (d) What is the total cost being paid by Public Mobile for use of the Macro Cell Site alternative for coverage in the exact service area that is proposed to be covered by the Toronto DAS Network?
- (e) What is the difference in total cost between Public Mobile's "Macro Cell Site" alternative currently being used by Public Mobile and the forecasted costs of the Toronto DAS Network proposed by ExteNet and DAScom?
- (f) Please specify and provide the relevant particulars regarding Public Mobile's likely use of a DAS network, how many nodes it would require within its current business planning period, where those nodes would be located, and what proportion of its traffic volumes would be handled through such a network.

Responses:

- (a) The Application and the written evidence in the record contain sufficient detail as to the limited alternatives available to wireless carriers and demonstrate that such alternatives are not the equivalent of a DAS network solution. To the extent that this Interrogatory seeks greater detail about a specific network project or a particular carrier network, the information requested is not relevant to the issues raised by the Application. Moreover, production of this information would be unduly onerous relative to its probative value, if any.
- (b) See response to THESL 1(a).
- (c) See response to THESL 1(a).
- (d) The information requested is not relevant to the issues raised by the Application.
- (e) The information requested is not relevant to the issues raised by the Application.
- (f) The information requested is not relevant to the issues raised by the Application. Public Mobile does not have the information required to answer this interrogatory in relation to the City of Toronto. As a result of DAScom's inability to attach the wireline cabling required to provide network connectivity to the installed wireless nodes on THESL's poles, the contract between Public Mobile and ExteNet Canada was terminated. DAScom's inability to attach the wireline cabling required to provide wireline connectivity to and from the installed wireless nodes was the direct result of THESL's failure to process Cogeco's wireline attachment applications in a timely fashion.

As a further consequence and as stated in the evidence of Mr. Brian O'Shaughnessy at p.8, Q.12, Public Mobile abandoned its plans to use distributed antenna system (DAS) technology and redesigned its network based on macrocell technology. The ability of Public Mobile or of any other mobile wireless carrier to rely on innovative, smaller-cell, mobile wireless deployment technologies of their choosing in Toronto to achieve blanket outdoor coverage, will depend on the outcome of this proceeding.

Questions:

7. *Reference, p. 12, para. 5.2*

CANDAS states that "The wireless and wireline components of a DAS network are equally essential to the operation of the network. One cannot function without the other. The antennas and radio units must be proximate to and interconnected with the fibre optic cabling which, as with other wireline systems, is most effectively deployed by aerial suspension from support structures in public rights-of-way or established utility easements. Therefore, it makes sense - economically, environmentally and operationally - to attach wireless equipment on the same support structures from which the fibre optic cabling is suspended."

- (a) Please identify, and provide the relevant particulars regarding, within CANDAS' targeted geographic market in Toronto, the location of fibre optic facilities (placed by any party including CANDAS) that could be used to support wireless antenna systems, whether DAS or traditional macro site based systems.
- (b) Please provide the relevant particulars in support of the statement that "it makes sense - economically, environmentally and operationally - to attach wireless equipment on the same support structures from which the fibre optic cabling is suspended", including all reports, analyses, studies, working papers, memoranda, correspondence, and other documents.
- (c) Please provide particulars in support of the statement that "antennas and radio units must be proximate to and interconnected with the fibre optic cabling", including all reports, analyses, studies, working papers, memoranda, correspondence, and other documents that demonstrate fibre optic cable is required to support DAS and that copper, coaxial or wireless applications are insufficient or inferior.
- (d) Regarding the response to (c), please also provide the minimum, average and maximum bandwidth requirements for each of the last 12 months for each node which is currently deployed for use by CANDAS, whether in Toronto, Montreal, New York, San Francisco, Las Vegas, Boston, providence or elsewhere.

Responses:

- (a) The question posed asks for a catalog (particulars and location) of fibre optic facilities that "could be used to support wireless antenna systems." The question appears to misconstrue the referenced statement, which addressed the need for support structures capable of supporting both wireless and wireline

DAS components simultaneously and in close proximity to one another. For this reason, except as otherwise heretofore disclosed in connection with the proposed Toronto DAS network, CANDAS has not identified any and all fibre optic facilities that could be used to support wireless antenna systems in general, and doing so would be unduly onerous relative to its probative value, if any. Moreover, the information requested is not relevant to the issues raised by the Application; moreover, production of this information would be unduly onerous relative to its probative value, if any, in this proceeding. THESL and its counsel have confirmed that this proceeding does not involve any question about the applicability of the CCTA Order with respect to Canadian carriers' access to distribution assets for wireline attachments such as the fibre cabling components of a wireless network. Thus, the location and particulars of all available fibre optic facilities with potential utility in such a network cannot logically be relevant to the issues in this proceeding.

- (b) CANDAS believes the quoted statement is adequately supported by the Application, including the context from which it is taken, and the Written Evidence filed in this proceeding. However, further support for the statement can be found in the observation that locating the remote radio components on the same poles that support the fibre optic cabling used to connect these units back to the central hub facilities of the DAS network is sensible from an economic, environmental and operational perspective because doing so reduces the cost, environmental disruption and signal loss that would result from having to extend the fibre from the pole line to which it is attached, over or under the public ways, to a point of interconnection with other infrastructure located at a distance from the pole line.
- (c) CANDAS provides the following additional support for the quoted statement. In a typical DAS network, the distance from the central hub to the several node sites connected to it can range from 1 km up to 20 km. The desirability of fibre optic cable for connecting the central hub with each of the node sites is evidenced by the fact that DAS network equipment is virtually all made to interconnect the hub facilities with the nodes using optical fibre and not other types of cabling which lack the signal transport capacities, capabilities and characteristics needed to effectively support a DAS network over the foregoing distances. All DAS network equipment is based on fibre transport. More particularly, the reasons that fibre is required for DAS network applications include (i) its long distance capabilities/low loss characteristics (ii) support for high bandwidth communications and (iii) isolation from/ resistance to interference from other wireless or RF sources.

The following table illustrates why copper wires, coaxial cables and wireless applications are not suitable for the interconnection of nodes with hub facilities in DAS network applications:

	Network Requirement	Fiber Specification	Copper Specification CAT7a (high performing cable)	Coax Specification (LMR 1700) Dia. 42.42mm (large cable)	Wireless (over the air = RF or MW/mmW)
Distance & Loss	20km	0.4dB/km 25 km	0.1 km	49dB/km 0.2 km	< 3km
Frequency band support	700-2200MHz	n/a	0-1000MHz	DC - 6GHz	700-2200MHz if off-air
Bandwidth support	Dedicated fiber or 1.228Gbits up to 3.3Gbit/s ADC & OBSAI/CPRI	>10Gbit/s	<10Gbit/s	<100Mbit/s	1.228Gbit/s if mmw in 70-80GHz range not approved yet in Canada.
RF Isolation	Required	Comply	Comply	Comply	Partly comply. Extremely carefull planning specifically in dense metropolitan areas to avoid interference.

**) Cat 7A Cable – Supports 10G Base-T standard for bandwidths up to 10 Gbps over a maximum distance of 100 meters. In addition to this, they can also support 40 Gbps bandwidth for around 50 meters and 100 Gbps bandwidth for around 15 meters. They support frequencies in the range of 0-1000 Mhz.*

<http://www.excitingip.com/847/know-your-cat-5-6-7-unshielded-twisted-pair-utp-network-cables/>

***) LMR 1700 cable: <http://timesmicrowave.com/products/lmr/downloads/40-43.pdf>*

In sum, (i) copper would not be able to support the distances nor the bandwidth requirements for outdoor DAS; (ii) coaxial cable would not support the distance nor the bandwidth requirements for outdoor DAS; and (iii) wireless would not be able to support the distances, the bandwidth requirements or RF isolation requirements for outdoor DAS.

- (d) The bandwidth requirements for the nodes of the Montreal DAS Network being utilized by Public Mobile and for the Toronto DAS Network as designed are: 1.228 to 3.3Gbit/s/node (CPRI).

CANDAS notes that no nodes are deployed by or for the use of any of the members of CANDAS in any locations other than Toronto and Montreal. Any additional information on this matter is not relevant to the issues raised by the Application; moreover, production of this information would be unduly onerous relative to its probative value, if any.

Questions:

13. Reference: p. 16, para. 6.6

CANDAS states that without access to existing power and lighting poles upon commercially reasonable terms and conditions, neither the Toronto DAS Network, nor any other DAS network deployment in Toronto, would be economically or technically feasible.

- (a) Please provide coverage characteristics, broadband capabilities monthly/annual costs, and/or per subscriber costs of DAS to traditional wireless macro site based systems.
- (b) Please provide any other particulars in support of this statement, including all reports, analyses, studies, working papers, memoranda, correspondence, and other documents.

Responses:

- (a) ~~The information requested is not relevant to the issues raised by the Application; moreover, production of this information would be unduly onerous relative to its probative value, if any. See the report prepared by LCC International, Inc. on behalf of the CEA and the Reply Evidence of Tormod Larsen filed 11 October 2011, viz. Table 1 – Uses and Limitations of Wireless Access Technologies.~~
- (b) ~~The information requested is not relevant to the issues raised by the Application; moreover, latter part of this interrogatory pertaining to costs, and/or per subscriber costs of DAS technology to “macro site” technology appears to ask for the expenses of operating a DAS network relative to the expenses associated with operating a macrocell network. The question is overly broad and seeks information that is not relevant to the issues raised by the Application. Moreover, CANDAS does not possess this information and production of this information would be unduly onerous relative to its probative value, if any.~~
- (b) See paragraphs 4.1 to 4.6 of the Reply Evidence of Tormod Larsen filed 11 October 2011, Table 2 - Wireline and Wireless Network Architecture, and Appendix A to the Reply Evidence of Tormod Larsen, entitled “Wireline and DAS Network Architectures.”

Questions:

51. *Reference: p. 9, Q. 12*

Mr. O'Shaughnessy states that "The loss of the Toronto DAS network opportunity, delayed Public Mobile's Toronto market launch by six months (to May 2010), resulting in a related loss of market share."

- (a) Please provide the particulars that describe "the loss of market share" referred to here, including all reports, analyses, studies, working papers, memoranda, correspondence, and other documents.
- (b) Please provide Public Mobile's current market share in Toronto and/or the market relevant to Mr. O'Shaughnessy's statement.
- (c) Absent completion of the Toronto DAS Network, is it Public Mobile's intention to withdraw from the Toronto wireless market?
- (d) If the answer to (c) is yes, please provide the particulars in support of this position, including all reports, analyses, studies, working papers, memoranda, correspondence, and other documents.

Responses:

- (a) The information requested is not relevant, particularly since Public Mobile does not seek to recover its losses in this proceeding.
- (b) The information requested is not relevant, particularly since Public Mobile does not seek to recover its losses in this proceeding.
- (c) ~~A determination has not yet been made.~~ Public Mobile has no intention of withdrawing from the market for public mobile wireless services in Toronto.
- (d) N/A

Questions:

19. Public Mobile's use of Macro-Cell Sites is noted at paragraph 7.10, page 21 of the application.
- (a) Please confirm that Public Mobile is currently using Macro Cell Sites to serve its customers.
 - (b) What is the difference in total cost between Public Mobile's "Macro Cell Site" alternative currently being used by Public Mobile and the forecasted costs of the Toronto DAS Network proposed by ExteNet and DAScom?
 - (c) What is the total cost being paid by Public Mobile for use of the Macro Cell Site in the exact service area that is proposed to be covered by the Toronto DAS Network?

Responses:

- (a) ~~The information requested is not relevant to the issues raised in the Application.~~
Public Mobile is currently using macrocell technology to provide service in Toronto.
- (b) ~~The information requested is not relevant to the issues raised in the Application.~~
Moreover, CANDAS does not possess the information required to respond to this interrogatory and production of this information would be unduly onerous relative to its probative value, if any.
- (c) The information requested is not relevant to the issues raised in the Application.

Questions:

50. At question 8, page 11 of Larsen's evidence, Larsen describes examples of initial DAS deployments in Canada.
- (a) Please indicate if it is likely that BCTel (now Telus) and Rogers describe these installations as DAS networks?
 - (b) Were these installations installed only on electric utility poles?
 - (c) What are the pole attachment rates and the methodology for access to Montreal's street light poles?

Responses:

- (a) ~~The information requested is not relevant to the issues raised by the Application. Moreover,~~ CANDAS is not aware of how Telus and Rogers think, but these networks consist of a BTS hub, a fiber optic network and nodes sites as described in the CANDAS Application.
- (b) See responses to Staff 9.1 and 9.2.
- (c) This information requested pertaining to rates in respect of the Montreal DAS Network is not relevant to the issues raised by the Application. Neither CANDAS nor any other party is requesting, in this proceeding, that the Board review and vary the current Board approved rate. As to the question regarding the methodology for pole access in respect of the Montreal DAS Network, see response to Staff 9.5.

Questions:

52. At question 9, page 13 of Larsen's evidence, he states that "[t]he estimated impact on construction costs could exceed \$200,000/node site" if utility poles cannot be used for the DAS network.
- (a) Please provide all the underlying assumptions to support this cost estimate.
 - (b) Please provide a breakdown of the major cost components of this estimate.
 - (c) Please identify how often this trade-off is assessed in actual projects, with examples.
 - (d) Please provide evidence to support the contention of the report that if node costs are \$200,000 per node, the Toronto DAS network would be "economically unfeasible". In particular, please provide all recurring revenue and expense projections from multiple users of the installed network over the 15 year attachment period.

Responses:

- (a) See response to THESL 35(a).
- (b) See response to THESL 35(a).
- (c) See response to THESL 35(d).
- (d) The information requested is not relevant to the issues raised by the Application. Moreover, CANDAS does not possess the information required to respond to this interrogatory, and production of this information would be unduly onerous relative to its probative value, if any. CANDAS should not be required to provide a detailed business plan in order to get the same pole access that is offered to wireline attachers.