



Procurement and Contracting Services
30 Victoria Street
Gatineau, Quebec K1A 0M6

REQUEST FOR PROPOSAL AMENDMENT

The Request for Proposal is hereby amended; unless otherwise indicated, all other terms and conditions of the Request for Proposal remain the same.

RFP Amendment No. 2	RFP Amendment Date: June 15, 2018
Office of the Chief Electoral Officer File No. ECAT-RFP-17-0001	
Title: Metropolitan Area Network (MAN) Services	
Request for Proposal Closing Date: June 19, 2018 at 2:00PM (Gatineau time)	
ENQUIRIES – address enquiries to the Contracting Authority: Office of the Chief Electoral Officer of Canada Procurement and Contracting Services 30 Victoria Street Gatineau, Quebec K1A 0M6 proposition-proposal@elections.ca	
Attention: Ashley Tran	Tel No. 819-939-1469

Part 1. Interpretation

- 1.1** Elections Canada hereby amends in accordance with this amendment the Request for Proposal for Metropolitan Area Network (MAN) Services bearing number ECAT-RFP-17-0001 and dated May 18, 2018 (the “RFP”). This amendment hereby forms part of the RFP.
- 1.2** Unless defined herein or unless the context otherwise requires, all of the words and phrases defined in the RFP and used in this amendment shall have the same meanings assigned to them in the RFP.

Part 2. Questions and Answers

The following question(s) have been asked in response to the Request for Proposal and Elections Canada hereby answers as follows:

2.1 Question No. 5

Question: Mandatory Requirement M4 requires bidders to demonstrate the extent of the overall experience of their two proposed key resources in building, deploying and operating enterprise grade Layer 2 networking services where each client has 500+ employees. Bidders are instructed to provide “one completed Project Reference Form”. A single project reference will not be sufficient to demonstrate the key resources’ experience gained during the five years prior to the closing date of the RFP. A resume from each resource detailing project experience would be more appropriate to substantiate this requirement. Please confirm that Elections Canada will accept a resume from each of the two proposed resources (in lieu of a single completed Project Reference form) to demonstrate their respective experience.

Answer: Please fill in the Project Reference Form as requested, and supplement the information by providing resource resumes if deemed necessary to meet the requirement. Make reference to the location of the resume in the proposal within the Project Reference Form.

2.2 Question No. 6

Question: Annex A, SOW Section 5.2, item f) requires the Contractor to “Apply traffic shaping only to the ingress PE port onto the EVC.” Layer-2 is a point-to-point circuit. Traffic shaping is a Layer-3 functionality. As such please delete Annex A, SOW Section 5.2, item f).

Answer: The change is acceptable. As such, the Request for Proposal is amended in accordance with Section 3.1 of this amendment.

2.3 Question No. 7

Question: Annex A, SOW Section 5.2, item c) requires the Contractor “to apply labels to PE routers only”. We assume Elections is referring to the labels the Contractor places on the PE device. Please confirm.

Answer: Yes, we are referring to the Contractor’s labels.

2.4 Question No. 8

Question: Annex A, SOW, Section 5 Layer 2 Network Services and Section 21 Service Credits. It is obvious by the Service Credits defined by Elections that service availability is imperative. This seems to contradict the design requirements where only a single circuit has diversity. There are elements, outside of the Contractor’s control that could affect the Service (e.g. cable cuts) that would affect Elections’ service if there is no diverse path thus making the service credits punitive. As such, we respectfully request the requirements be amended to add diversity to all routes as follows:

i. 5.1. EC Unmanaged Sites

As further stipulated below, the Contractor must provide connectivity, bandwidth and Layer 2 network services to the following locations:

Building Address (Physical Location)	Dedicated Ethernet Bandwidth Required
440 Coventry, Ottawa ON	100 Mbps (primary and diversity)
150 Tunney’s Pasture Drive, Ottawa ON	100 Mbps (primary and diversity)
30 Victoria, Gatineau QC	1000 Mbps (primary and diversity)
350 King Edward, Ottawa ON	1000 Mbps (primary, diversity and remote sites)

Table 1 – EC Unmanaged Sites

ii. Annex B – please amend as follows and revise the financial evaluation formulae:

Service Item	Site Address (Existing SDP)	Connect Site (Existing SDP)	Initial NAP Bandwidth	Firm Monthly Price (FMP) for Initial Bandwidth	Incremental Firm Monthly Price (FMP) for 100 Mbps of bandwidth	Incremental Firm Monthly Price (FMP) for 1000 Mbps of bandwidth	One-time Firm Implementation Price
1	350 King	30 Victoria	1000Mbps	\$0.00	N/A	\$0.00	\$0.00

	Edward Ave. (KED)	St., Gatineau (ECHQ)					
2	350 King Edward Ave. (KED)	30 Victoria St., Gatineau (ECHQ)	1000Mbps	\$0.00	N/A	\$0.00	\$0.00
3	350 King Edward Ave. (KED)	150 Tunney's Pasture Driveway & 440 Coventry Rd.	1000Mbps	\$0.00	N/A	\$0.00	\$0.00
4	350 King Edward Ave. (KED)	150 Tunney's Pasture Driveway & 440 Coventry Rd.	1000Mbps	\$0.00	N/A	\$0.00	\$0.00
5	440 Coventry Rd.	350 King Edward Ave. (KED)	100Mbps	\$0.00	\$0.00	N/A	\$0.00
6	440 Coventry Rd.	350 King Edward Ave. (KED)	100Mbps	\$0.00	\$0.00	N/A	\$0.00
Optional Service							
7	350 King Edward Ave. (KED)	440 Coventry Rd.	100Mbps	\$0.00	\$0.00	N/A	\$0.00
8	350 King Edward Ave. (KED)	440 Coventry Rd.	100Mbps	\$0.00	\$0.00	N/A	\$0.00
Service Items	Initial 3 Year Contract Term Price (36 months)	Additional Bandwidth for GE (Event) Price (12 months)	Option Period 1 Price (12 months)	Option Period 2 Price (12 months)	One-time Firm Implementation Price		
Items 1 to 6	\$0.00	N/A	\$0.00	\$0.00	\$0.00		
Items 1 and 2 incremental 1000Mbps	N/A	\$0.00	N/A	N/A	N/A		
Item 5 incremental 200Mbps	N/A	\$0.00	N/A	N/A	N/A		
Total	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		

Total Evaluated Price	\$0.00
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Answer: Elections Canada will not change its requirement.

2.5 Question No. 9

Question: Annex A, SOW, Section 7.1 Network Performance, Reliability and Stability

Service Levels

A Service Provider would not be able to adhere to the requested service levels as the requirements identified in this section are not applicable to a Layer 2 type of architecture/service. Therefore, please remove section 7 from the SOW in its entirety.

Answer: Elections Canada will not change its requirement.

2.6 Question No. 10

Question: Annex A, SOW, Section 7.1 c). In order to allow Bidder's to assess the effort associated with verifying the metrics, please amend the requirement as follows:
"The Contractor must verify these metrics with appropriate test equipment at EC's request **2 times every year.**"

Answer: The proposed change is acceptable. As such, the Request for Proposal is amended in accordance with Section 3.1 of this amendment.

2.7 Question No. 11

Question: Annex A, SOW, Section 19.1 g) currently states: "*label of all Contractor Equipment and cables at each SDP using a naming convention specified by EC; and*".

As this naming convention is currently unknown, please revise this requirement to read:
"g) label of all Contractor Equipment and cables at each SDP using a naming convention **mutually agreed upon by the Contractor and EC**; and".

Answer: The proposed change is acceptable. As such, the Request for Proposal is amended in accordance with Section 3.1 of this amendment.

2.8 Question No. 12

Question: It is our understanding that B2B is not required by Elections Canada. Please confirm.

Answer: That is correct. Confirmed.

Part 3. Amendments

3.1 Amendment to Annex A of Part 6

The Request for Proposal is hereby amended by deleting Annex A – Statement of Work (SOW) in its entirety and replacing it with the attached Annex A – Statement of Work (SOW) (Revised on June 15, 2018).



Metropolitan Area Network Services

Statement of Work (SOW)

(Revised on June 15, 2018)

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PART I – INTERPRETATION

1. Appendices

The following appendices are attached to and form an integral part of this SOW:

- a) Appendix A – Definitions

2. EC Mandate

EC, headed by the CEO, an agent of Parliament, is an independent, non-partisan agency with unique organizational features that reports directly to Parliament. EC exercises general direction and supervision over the conduct of elections and referendums at the federal level. Its mandate is to:

- a) be prepared to conduct a federal general election, by-election or referendum;
- b) administer the political financing provisions of the CEA;
- c) monitor compliance with electoral legislation;
- d) conduct public information campaigns on voter registration, voting and becoming a candidate;
- e) conduct education programs for students on the electoral process;
- f) provide support to the independent commissions in charge of adjusting the boundaries of federal electoral districts following each decennial census;
- g) carry out studies on alternative voting methods and, with the approval of parliamentarians, test alternative voting processes for future use during electoral events; and
- h) provide assistance and cooperation in electoral matters to electoral agencies in other countries or to international organizations.

3. Objective

EC requires a Contractor to provide on-going unmanaged Metropolitan Area Network (MAN) services to Elections Canada as further described in Part II – Unmanaged Metropolitan Area Network (MAN).

3.1. Current EC Metropolitan Area Network (MAN) Services

This subsection “Current EC Metropolitan Area Network (MAN) Services” provides a description of current EC MAN Services provisioned through various EC and SSC contracts. At the time of

writing, this is the current configuration of EC MAN Services; however, this configuration is subject to change.

EC has high speed MAN (Metropolitan Area Network) Services between buildings in the NCR. The current topology consists of a star topology with the EC King Edward Datacentre (KED) acting as the hub and other locations, listed below, as edge nodes in a Layer 2 unmanaged MAN.

- a) 30 Victoria St., Gatineau
- b) 150 Tunney's Pasture Ave., Ottawa
- c) 440 Coventry Rd, Ottawa

Figure 1 below depicts the existing MAN configuration.

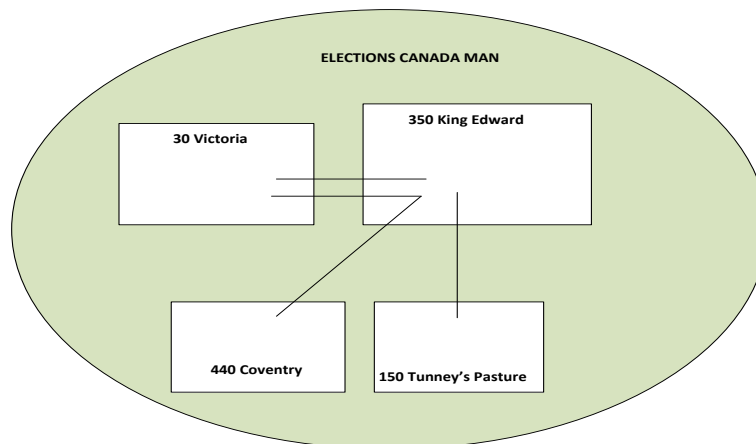


Figure 1 - Elections Canada Logical MAN

In addition to the MAN links described above, the EC Wide Area Network (WAN) also includes the existing links specified below:

- a) A primary 80 Mbps link to SSC (SMS) for Internet access
- b) A secondary 5 Mbps link to SSC (SMS) for Internet access
- c) Dual 50 Mbps MPLS links to a Bell datacentre at 8100 Warden Avenue, Markham
- d) Dual 200 Mbps MPLS links to an IBM datacentre at 3600 Steeles Avenue East, Markham
- e) Hundreds of Internet based IPSEC VPNs to connect field offices over public wireless services (3G/LTE) and Digital Subscriber Line services

The current networking and operational environments at 30 Victoria and KED have grown organically over several years. They have successfully served to deliver numerous electoral events including the 42nd General Election. The legacy systems, servers and WAN Demarcation are housed at KED providing the core of EC Services. The current MAN environments are

provided by a Rogers Fibre MAN services and by Virtual Route and Forwarding (VRF) services in the Bell Multiprotocol Label Switching (MPLS) cloud.

30 Victoria houses two Cisco 6509E that are connected over two diverse circuits to two 6509E Cisco core switches at KED providing a redundant virtual switching service (VSS) configuration. These links provide an aggregate of 2 Gbps active-active connectivity between ECHQ and the network core at KED. Each EC telecom closet at 30 Victoria has two 3750 Cisco access switches for redundancy (six switches per floor). Floors 1, 9, 10, 11, 12 and 13 use Cisco 3750 switches to supply Local Area Network (LAN) connectivity for end-user devices and network services such as Power over Ethernet (PoE), which are required to support any Unified communication, VoIP or wireless network infrastructure.

PART II – UNMANAGED METROPOLITAN AREA NETWORK (MAN)

4. Overview of VPLS Requirements to Remote Sites

4.1. KED

4.1.1. The Contractor must provide VPLS Layer 2 service from the 30 Victoria CE ASR (Aggregation Service Router) to the KED CE ASR (Aggregate Service Router). The Contractor must provide Ethernet Virtual Private Line (EVPL) dedicated point-to-multipoint type connections between 30 Victoria and KED and Remote Layer 2 User Network Interface (UNI) connections from KED to 150 Tunney's Pasture and 440 Coventry sites. This standard Ethernet offering must deliver basic Ethernet service on a dedicated Ethernet port with the option to multiplex Ethernet Virtual Circuits (EVCs) to remote sites onto a dedicated Ethernet port. These EVCs must be handed off as 802.1q VLANs. EVC speeds are rate limited by bandwidth chosen as stipulated in the Services below at the ingress of both PE routers. Figure 2 below is an architecture overview of EC Ethernet Virtual Private Line Ethernet Services.

4.1.2. At the request of the Technical Authority, the Contractor must provide a second diverse redundant Remote Layer 2 User Network Interface (UNI) connection from KED to the 440 Coventry site.

4.1.3. In addition to the MAN configuration requirement described throughout this Statement of Work, Elections Canada anticipates additional office locations in the NCR requiring Remote Layer 2 connectivity. Although the full extent of the requirement cannot be fully assessed at the time of contract award, EC hereby reserves the right at its sole discretion, to obtain these additional connections through a contract amendment.

4.2. NCR

Ethernet network services between EC facilities in the NCR are currently interconnected over a high-speed network in a spoke and hub configuration where the hub is EC's Data Centre located at 350 King Edward. Currently, only one link between 30 Victoria to 350 King Edward will require diversity. The Contractor must maintain this configuration within their solution for EC MAN services.

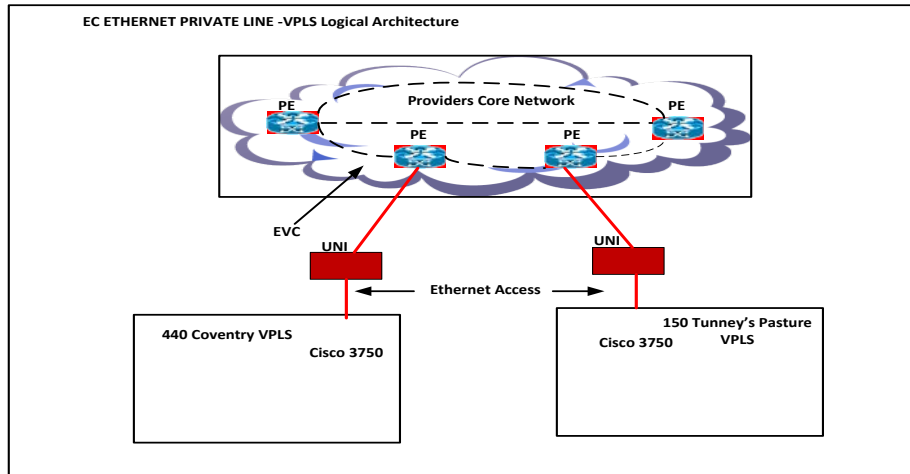


Figure 2 – Ethernet Private Line Overview (EVPL-VPLS)

5. Layer 2 Network Services

5.1. EC Unmanaged Sites

As further stipulated below, the Contractor must provide connectivity, bandwidth and Layer 2 network services to the following locations:

Building Address (Physical Location)	Dedicated Ethernet Bandwidth Required
440 Coventry, Ottawa ON	100 Mbps
150 Tunney's Pasture Drive, Ottawa ON	100 Mbps
30 Victoria, Gatineau QC	1000 Mbps (primary and diversity)
350 King Edward, Ottawa ON	1000 Mbps (primary, diversity and remote sites)

Table 1 – EC Unmanaged Sites

5.2. Layer 2 Service Requirements

The Contractor must:

- a) Provide VPLS (Virtual Private Line Service) Layer 2 from 440 Coventry to KED as shown in Figure 2 (Ethernet Private Line Overview (EVPL-VPLS)).
- b) Provide VPLS (Virtual Private Line Service) Layer 2 from 150 Tunney's Pasture to KED as shown in Figure 2 (Ethernet Private Line Overview (EVPL-VPLS)).
- c) Apply labels to the PE routers only.
- d) Employ an RFC 1918 private addresses scheme or property registered ARIN public addresses.
- e) Implement at minimum SHA-2 authentication.

- f) “Intentionally Deleted”.

5.3. EC VLANs

EC network management personnel must have the ability to fully and transparently configure and manage the EC VLAN environment without requiring intervention from the Contractor.

5.4. Scaling

At the request of the Technical Authority through a Service Order (SO), the Contractor must provide the following Layer 2 services:

- a) Bandwidth scaling at pre-established increments of 100 Mbps or 1000 Mbps differentials within five business days;
- b) The addition or removal of edge facilities on a mutually agreed upon timeline;
- c) The addition or removal of redundant links between facilities on a mutually agreed upon timeline;
- d) The optional service described in section 4.1.2 of this SOW and listed as Service Item 6 in Annex B – Pricing Table.

5.5. Ethernet Standards

The Contractor must provide support for the following Ethernet network standards:

- a) Transparent L2 and L3 services
- b) Layer 2 & 3 VLAN tags
- c) Layer 2 & 3 Control protocol (STP, CDP, LLDP and LACP v2)
- d) Layer 3 Routing Protocols (EIGRP, RIP, OSPF, MPLS, OPENFLOW, ISIS)
- e) Layer 3 IP routing (IPV4 & IPV6 [IETF 4659])
- f) Broadcast and Multicast Traffic at line rate
- g) Quality of Service (803.1q)
- h) VLAN transparent service, multi-stacking of 802.1q tags like QinQ, maximum MTU size frames at port speeds of 10/100/1000 Mbps
- i) Traffic shaping
- j) 802.1q tagging, 802.3 frames and 802.1ad/QinQ
- k) 803.10 Base T
- l) 802.3U 100 Base TX, 100 Base FX
- m) 802.3Z 1000 Base X
- n) 802.1P/Q VLAN Multi Link Tagging standard
- o) Must permit Split Multi-Link Trunking
- p) Must permit Split Multi-Link Trunking
- q) Multiple VLANs over one physical port

6. PE Router Services

6.1. PE Router Design

The Contractor must provide PE Router Design configuration and implementation addressing the following elements:

- a) Hardware configuration including necessary parts and modules;
- b) IOS/Software versions;
- c) Network access, routing, and IP addressing schemes;
- d) Security parameters and policies; and
- e) Design testing

6.2. PE Router Implementation

The Contractor must configure and turn-up the PE router as part of any implementation plan required for maintaining and/or replacing the existing Layer 2 networking services.

Lead time for implementation at a particular EC site is dependent on site location, hardware availability, and network access type. The Contractor must provide EC with an implementation plan at the beginning of the implementation stage.

Certain pieces of hardware may be subject to manufacturing limitations or supply shortages. Where there are unforeseen limitations or shortages on hardware supplied by the Contractor, and where it's financially viable, the Contractor must source the hardware from alternative suppliers. The Contractor must notify the EC Technical Authority of changes to the implementation plan.

Any implementation plan changes requested by EC must be approved by the Contractor and the EC Technical Authority; changes will be documented by the Contractor in a revised Implementation Plan. All change requests must be submitted in writing to the Contractor SPOC.

7. Network Performance

7.1. Network Performance, Reliability and Stability Service Levels

The Contractor must meet the following service levels for performance, reliability and stability:

- a) Packet error rate must be less than 0.1% over a period of one billing month.
- b) The transmission delay (latency) must be less than 20 milliseconds on all received packets. The bandwidth provisioned at each site must accommodate as sustained bandwidth usage at the rated bandwidth in full duplex without dropping packets.

- c) The Contractor must verify these metrics with appropriate test equipment at EC's request two times every year.
- d) The Contractor's core network must have "self-healing" properties and attributes such that customer traffic is automatically rerouted to support sub-second recovery from fibre or equipment failures.

8. Service Requirements

8.1. Fibre Connectivity

The Contractor must connect their single mode fibre network through a media converter or other appropriate device to an Ethernet switch port in the EC's Server Room or Telecommunication Room in each building.

PART III – GENERAL REQUIREMENTS

9. Change Management

9.1. Non-Event

Between Electoral Events the Contractor must provide a minimum notification of 30 Business Days for any changes to the network that could affect EC.

9.2. Event and Event Readiness

During Electoral Events and event readiness only emergency changes that could affect the integrity of the network will be permitted. These include, but are not limited to, changes related to remediating hardware, network operating system, and network application vulnerabilities. Should emergency changes be required, prior to implementation, EC must be notified in advance in writing. If possible, emergency changes must be implemented during maintenance windows or between midnight and 6:00 A.M. Eastern Time. EC will make the Contractor aware of periods of Electoral Events and event readiness.

10. EC'S Responsibility for Content Transmitted over the Network

EC is solely responsible for any content that it, or that any person it permits to use the EC MAN Services being provided under the Contract, transmits or receives using those EC MAN Services.

11. Service Management

The Contractor must ensure the availability and operationalization of EC network services 24 hours a day/365 days a year for the duration of the Contract.

11.1. Key Resources

The Contractor must provide two Key Resources (Service Operations Manager and Network Architect) to manage the business and technical aspects of the Contract.

11.1.1. Service Operations Manager

- a) The Contractor must provide a Service Operations Manager (also known as the single point of contact [SPOC]) that will manage the service level targets/agreements set forth in this Contract.
- b) The Service Operations Manager must:
 - i. Be EC's day-to-day point of contact;

- ii. Facilitate contract management review, operational, and service provisioning meetings as required;
 - iii. Prepare and distributes minutes and records of decisions of all meetings within two working days of occurrence of the meeting;
 - iv. Liaise with the EC Contract Authority and Technical Authority;
 - v. Provide status updates/presentations to EC on incidents, problems, root cause analysis, etc.;
 - vi. Facilitate any necessary Contract amendment discussions;
 - vii. Ensure that any management and service level reports specified in the Contract are prepared and delivered to EC in a timely manner;
 - viii. Manage the prioritization, resolution and escalation of Contract issues, incidents, problems, and complaints; and
 - ix. Create and maintain a log of Contract issues and action items.
- c) The Service Operations Manager must have a minimum of five years of experience in the following:
- i. Serving as the single point of contact for managing the escalation of service management and service delivery issues, problems and complaints;
 - ii. Serving as a single point of contact and liaison for service desk issues and associated processes;
 - iii. Facilitating communications and integration with the client's service desk;
 - iv. Assessing service level compliance;
 - v. Assessing service performance;
 - vi. Reconciling service credits;
 - vii. Implementing best practices for service management, service delivery and service improvement.

11.1.2. Network Architect

- a) The Contractor must provide a Network Architect who will be the EC main point of contact for engineering, design and architecture services related to the Contract.

- b) The Network Architect must facilitate network design and engineering meetings and any technical working groups to review and update any design issues.
- c) The Network Architect must have a minimum of five years of experience in the following:
 - i. Serving as the single point of contact and liaison for the planning, engineering, design and architecture of MAN Services;
 - ii. Documenting and analyzing network requirements, assessing the impacts to the EC MAN Services and recommending network changes, upgrades, and functional equipment;
 - iii. Ensuring that Service Design and Engineering documentation, inclusive of network diagrams, is prepared and delivered to EC whenever a modification is made to EC MAN Services;
 - iv. Facilitating network design and engineering meetings and any technical working groups; and
 - v. Reviewing and updating the Service Design.

11.1.3. Resource Availability

- a) All Key Resources must be accessible from 8:00 to 17:00 ET during Business Days using office phone, cellular phone and e-mail.
- b) In the event that a Key Resource is unavailable, the Contractor must designate a back-up resource to provide the services of the Key Resource and inform the EC Technical Authority of the name, phone number and e-mail address of the back-up resource.

12. Service Monitoring, Reporting and Documentation

12.1. Monthly Reports

12.1.1. The Contractor must provide a monthly report detailing the following:

- a) Network availability
- b) Incidents reported by EC
- c) Incidents reported by the Contractor

- d) Average repair time by severity
- e) Outstanding Service Request Tickets

Monthly service reports are primarily used by EC to monitor and assess the delivery of work by the Contractor, provide EC with detailed information that it requires for service assurance and are used in Operational, Service Provisioning and Contract Management Review Meetings.

12.2. Report Delivery

12.2.1. The Contractor must ensure that all reports and documentation for MAN Services are available to Elections Canada within 48 hours of the end of a billing period.

12.3. Report Language

12.3.1. The Contractor must provide reports and documentation in English.

12.4. Handling of Information

12.4.1. The Contractor must handle all protected and classified reports, documents and records in accordance with Canadian Industrial Security Directorate security policies and practices. <http://ssi-iss.tpsgc-pwgsc.gc.ca/msi-ism/ch8-eng.html#ch8-800>

12.4.2. The Contractor must keep confidential all information provided to the Contractor by or on behalf of EC in connection with the Work, as set out in the Contract.

13. Service Operations

13.1. Service Desk

13.1.1. The Contractor must provide a Service Desk that performs the following functions:

- a) acting as the primary point of contact for EC MAN Service Incidents 24 hours per day, 7 days per week, 365 days per year;
- b) answering and continuing the subsequent dialogue using the official language of Canada (French or English) requested by the EC authorized representative;
- c) interacting to record, track and resolve incidents with EC's representatives as designated by EC;
- d) providing a toll-free telephone number (e.g. 1-800 number) for EC authorized representatives to contact the Service Desk; and

- e) providing a single email address for EC authorized representatives to access the Service Desk.

13.1.2. The Contractor must provide a Service Desk with sufficient personnel with the appropriate skills and experience who are knowledgeable about the EC MAN Services.

13.2. Operations Centre

13.2.1. The Contractor must provide a primary Operations Centre within Canada, with the infrastructure and resources required for the centralized management and operation of the EC MAN Services, 24 hours per day, 7 days per week, 365 days per year.

13.2.2. The Contractor must staff its Operations Centres with personnel with the skills and experience necessary to operate EC MAN Services.

13.2.3. The Contractor must ensure that all operators including key resources and service desk personnel have been cleared to Reliability status if they are maintaining EC MAN Services. Screening procedures for Reliability status may be found at: <http://ssi.pwgsc-tpsgc.gc.ca/msi-ism/ch2-prt1-eng.html>

13.3. Service Portal

13.3.1. Within 60 Business Days after the date of Contract Award, the Contractor must provide, and receive EC's acceptance of, a secure web portal, the Service Portal. The Service Portal must be accessible by using a web browser for a minimum of five concurrent Users, 7 days per week, 24 hours per day and 365 days per year.

13.3.2. The Contractor must provide EC with up to 10 Service Portal user accounts.

13.3.3. The Contractor must provide the following near real-time network statistics through the Service Portal:

- a) Traffic in bits per second;
- b) Percent utilization;
- c) TX and RX errors and discards;
- d) Total bytes transferred;
- e) Average packet length;
- f) Maximum bytes transferred per hour by day for send and receive per network segment;
- g) Latency in millisecond; and
- h) Jitter in milliseconds.

14. Escalation

Although most incidents/problems will follow normal resolution processes, should situations arise where escalation is required for incidents and/or problems, the Contractor must follow the escalation steps based on the resolution stages within EC that are specified below:

Incident/Problem Resolution Stage	Elections Canada	Contractor
1 – Prioritization and Support	Manager, Data Centre and Network Operations	Service Operations Manager
2 – Investigation and Diagnosis	Director, Information Technology Infrastructure Operations	Director of Network Operations
3 – Resolution	Chief Information Officer	VP of Operations

Table 2 – Escalation

15. IT Service Management

The Contractor must provide IT Service Management for EC MAN Services, in English as described in this subsection, 24 hours per day, 7 days per week, 365 days per year.

15.1. Event and Incident Management

- 15.1.1. The Contractor must proactively monitor EC MAN Services for Incidents 7 days per week, 24 hours per day, 365 days per year.
- 15.1.2. The Contractor must co-operatively work with EC and any other third parties as requested by EC to resolve Incidents.
- 15.1.3. The Contractor must create one Incident Ticket for each Incident immediately upon discovery of the Incident.
- 15.1.4. The Contractor must notify EC of Incidents within five minutes of detection of the Incidents. The notifications must be provided by email to EC. If the Contractor does not receive acknowledgement of the notification from EC within fifteen minutes, the Contractor must inform the EC Manager of Data Centre and Network Operations by telephone.
- 15.1.5. Incidents are subject to the following Severity levels:
 - a) Severity One – Complete outage of a network link;

- b) Severity Two – Significant degradation of service with available workarounds affecting a large number of users;
 - c) Severity Three – Degradation of service with available workarounds available affecting less than five of users;
 - d) Severity Four – Minor functionality loss or a bug.
- 15.1.6. The Contractor must provide EC with status updates of Incidents by email (and possibly by telephone in cases of Severity One incidents).
- 15.1.7. The Contractor must provide an estimated time for resolution with each update both verbally and within the Incident Ticket.
- 15.1.8. The Contractor must resolve Incidents by taking appropriate action to repair and restore EC MAN Services as quickly as possible in accordance with the SLT-SA and SLT-MTRS associated with the EC MAN Service.
- 15.1.9. The Contractor must track and report the outage time of each Incident in the associated Incident Ticket.
- a) The outage time for an Incident must start at the time (start time) that the Incident is detected by the Contractor, or reported to the Contractor by EC, whichever occurs first.
 - b) The outage time for an Incident ends at the time that the EC MAN Service is fully restored for that Incident.
- 15.1.10. When access to an EC SDP is required to resolve an Incident, the Contractor must request access to the EC SDP from the EC Manager of Data Centre and Network Operations.
- 15.1.11. The Contractor must not alter the outage time for an Incident Ticket once the Incident Ticket has been closed. Any required changes to outage time are facilitated through the adjusted outage time field within the Incident Ticket.
- 15.1.12. The Contractor must make a reasonable effort to investigate and resolve the Incident without requesting access to the SDP (i.e. remote diagnostics and consulting with third parties involved with the service delivery).
- 15.1.13. The Contractor must identify and document the causal factors (root causes) of all Incidents when known.
- 15.1.14. The Contractor must provide a briefing that details any analysis and actions taken for an Incident within one Business Day of a request by EC for an Incident.

15.1.15. For Severity One and Two incidents, the Contractor must provide a Post-Incident Report detailing root cause analysis and the actions taken by the Contractor to resolve the incident within two Business Days of a request by EC. If EC finds the Post-Incident Report to be incomplete or inaccurate, it will advise the Contractor of the deficiency. Following such notification, the Contractor must re-issue the report addressing the deficiency within two Business Days. Should EC continue to find the Post-Incident Report to be deficient, it will be considered as not delivered and EC will advise the Contractor of the start of service credits related to non-delivery of the report.

15.1.16. The Contractor must provide EC with ongoing updates for the action plans contained within its Post-Incident Reports. The Contractor must notify EC in advance when it becomes aware that it will not meet target dates specified in its action plans.

16. Security

16.1. Assessment of Products

16.1.1. The products that form part of EC MAN Services must be evaluated by a recognized certification body approved by EC, or evaluated by the Contractor by conducting a vulnerability assessment and functionality assessment to validate that the product (including both hardware and software) conforms to its stated security functionality, at no additional cost to EC. For Contractor assessments, test plans and test results must be provided to EC within 10 Business Days of a request by EC. EC reserves the right to independently validate and approve the products. EC-approved and recognized certification bodies include but are not limited to:

a) Common Criteria (CCS): <http://www.commoncriteriaportal.org/>

b) Cryptographic Module Validation Program (CMVP):
<http://csrc.nist.gov/groups/STM/cmvp/validation.html#02>

16.1.2. When any Contractor provided equipment is returned, the configuration and user data must be purged immediately in accordance with the Canadian Security Establishment (“CSE”) ITSG-06. In addition, any classified or protected information stored on Removable Media Devices must be also purged immediately in accordance with the Canadian Security Establishment (“CSE”) ITSB-112 directive.

16.2. Network Management Protocols

16.2.1. The Contractor must not use port forwarding or Internet Protocol Security (IPSec) for transport of protocols with known vulnerabilities and/or considered insecure by EC, including Telnet, FTP, TFTP and HTTP, unless approved by EC.

17. Service Orders

17.1.1. EC will issue a Service Order to the Contractor to perform, modify, augment or reduce a network service item that is to be provided under the Contract on an as-and-when requested basis.

17.1.2. Whenever the Contractor receives a Service Order from EC, the Contractor agrees to provide the Services ordered in accordance with the terms and conditions and at the prices/rates set out in the Contract. Regardless of when a Service Order is issued, all Service Orders automatically end no later than the last day of the Contract Period, and Canada is not required to cancel any Service Orders at the end of the Contract Period.

17.1.3. The Contractor must provide a Service Order Acknowledgement (SOA) to the EC Technical Authority via e-mail within one working day of receiving a Service Order, and within 1 hour of receiving an Emergency Service Order.

17.1.4. The Contractor must not reject a Service Order. If the Contractor requires clarification of a Service Order, the Contractor must request the clarifications within one working day for a normal Service Order or within one hour of an Emergency Service Order.

18. Service Level Targets (SLT)

18.1. SLT Overview

18.1.1. The Contractor must design, implement, manage and operate the EC MAN Services such that they meet the Service Level Targets (SLTs) defined in this section.

18.1.2. The Contractor must count omitted SLT performance measurements as failed measurements, with the exception of performance measurements for the affected EC MAN Service that are in a failed state (i.e. an outage).

18.1.3. For all rounding of SLT measurements, the Contractor must use the symmetric arithmetic rounding up that rounds half-way numbers up. In this case, a "half-way" value such as 5.5 will round up to 6. Where three decimal places are required, a value

such as 99.9445 will round up to 99.945, while the number 99.9342 will round down to 99.934.

- 18.1.4. All calculations of availability expressed as a percentage must be based on a minimum of 4 decimal points rounded to the nearest 3 decimal points (for example, 99.9784% = 99.978%).
- 18.1.5. The Contractor must monitor, measure, calculate, and report on service levels 7 days per week, 24 hours per day, 365 days per year, unless otherwise indicated for a specific SLT.
- 18.1.6. All service levels that the Contractor is required to measure and any associated test results must be accessible to EC via the Service Portal.
- 18.1.7. Outage time for an EC MAN Service begins from the time (start time) that the Incident is detected by the Contractor, or reported to the Contractor by EC, whichever occurs first. The outage time used in the calculations ends when the EC MAN Service is fully restored for the Incident.
- 18.1.8. A lack of proper security clearance by the Contractor, Contractor's resources or other individual identified to perform the Work does not preclude the Contractor from its obligation to restore the affected service within the SLT. Persons without current and valid clearances must not be allowed to perform the Work.
- 18.1.9. In cases where EC attempts to report an Incident for an outage where the Contractor's Service Desk does not answer the call, the start time for the outage begins at the time EC places the unanswered call to the Service Desk or when the Contractor detects the Incident, whichever occurs first. EC will timestamp and document the point at which a call was placed by EC.
- 18.1.10. The outage time used in the calculation of SLTs excludes any time whereby EC agreed to suspend the associated Incident Ticket and resumes when EC requests that the Incident Ticket be unsuspending.
- 18.1.11. The outage time used in the calculation of SLTs excludes the time for Service Requests approved by EC.

18.2. Service Level Target for Service Availability (SLT-SA)

- 18.2.1. The Service Level Target for Service Availability (SLT-SA) is that Service Availability must be greater than or equal to 99.900%.

18.2.2. The period of measure for SLT-SA is monthly; therefore the total number of minutes in the measurement period will vary based on the number of calendar days in the month.

18.2.3. The Contractor must calculate SLT-SA as follows:

$$\frac{\text{measurement period} - \text{sum of the outage times}}{\text{measurement period}} \times 100$$

Example:

Measurement period (June): 30 days = 30 x 24 hours x 60 minutes = 43,200 minutes

Sum of all outage minutes for the NAP in the month: 98 minutes (excludes time associated with SLT- MTRS exception)

Calculation: ((43,200 - 98) / 43,200) x 100 = 99.773%

18.2.4. The outage time from the following events may be excluded from the calculation of SLT-SA as determined by EC during review of Incidents:

- a) a failure occurs to equipment or facilities owned and managed by the Contractor, but due to redundancy and/or diversity implemented within EC MAN Service Infrastructure, the EC MAN Service is restored within a re-route timeframe of less than 100 milliseconds;
- b) a failure occurs related to a Security Incident where EC has approved mitigation actions that impact the service's availability;
- c) an outage occurs due to the loss of power at the SDP beyond the time period for power backup provided by the Contractor;
- d) the outage associated with an approved Emergency Service Request, which does not exceed a two hour period and for which the Contractor has provided a Post-Service Request Report; and
- e) the outage is determined to be due to the fibre cable being cut or damaged by a third party (i.e. a third party not performing Work for the Contractor).

18.3. Service Level Target for Maximum Time to Restore Service (SLT-MTRS)

18.3.1. The Service Level Target Maximum Time to Restore Service (SLT-MTRS) must not exceed:

- a) 1.0 hours during event periods when EC is engaged in delivering an Electoral Event;
- b) 4.0 hours during non-electoral event periods.

18.3.2. The measurement for SLT-MTRS is on a per Incident basis.

- 18.3.3. SLT-MTRS remains applicable for failures where the cause of the outage is due to the fibre cable being cut or damaged by a third party (i.e. a third party not performing Work for the Contractor).
- 18.3.4. SLT-MTRS is applicable for Severity One and Two incidents during both event and non-event periods, and Severity Three incidents during event periods.
- 18.3.5. SLT-MTRS does not apply to Severity Four incidents; however they must be resolved with five business days.

19. Service Migration

19.1. Migration Stage

The Contractor is responsible for and must manage and coordinate all aspects of the Work required to implement EC MAN Services including:

- a) provision and installation of all Connecting Equipment;
- b) provision and installation of cable termination equipment such as customer interface panels;
- c) provision and installation of wall mounting surfaces such as plywood backboards, etc.;
- d) provision and installation of Contractor Equipment at EC SDPs as rack mounted (default) or shelf mount when specified by EC in the Service Order;
- e) conduct of on-site surveys to confirm infrastructure availability and site fit-up requirements including Connecting Equipment, power, space and heating/ventilation/air conditioning (HVAC) within the SDP;
- f) implementation of the Contractor Equipment within the physical location at the SDP (rack, shelf) as specified by EC. In the event the Contractor Equipment is implemented in the wrong location, the implementation will be considered incomplete until the Contractor returns and relocates the equipment at no additional cost to EC;
- g) label of all Contractor Equipment and cables at each SDP using a naming convention mutually agreed upon by the Contractor and EC; and
- h) facilitation of all construction of Connecting Equipment including all administration, procurement and logistics associated with any required fit-up and

construction except for power, space and HVAC.

19.2. Acceptance Procedures for Initial Migration Service Orders and Start of Billing

For Service Orders that are part of Initial Migration, the acceptance procedures will be as follows:

- a) The Contractor must send EC a Work Completion Notice (WCN) and EC must sign-off on the service as fully functional prior to the start of billing.
- b) Once EC has migrated to that Service at the SDP, a “10 business day Acceptance Period” will apply. During the 10 business day Acceptance Period, as part of EC’s acceptance process for a Service, EC may test any function of the Service to determine whether it meets the requirements of the Contract. If the Service does not meet the requirements of the Contract, EC may reject the Work or require that it be corrected at the Contractor’s expense before accepting the Work. No payments for the Service are chargeable under the Contract until the Service is accepted.
- c) If EC provides notice of any deficiency during the 10 business day Acceptance Period by initiating an Incident Ticket, the Contractor must address the deficiency at no additional cost to EC as soon as possible and notify EC in writing once the deficiency is corrected and re-issue the WCN, at which time EC will be entitled to re-inspect the Work and the 10 business day Acceptance Period will start again.
- d) At 11:59 PM on the final day of the 10 business day Acceptance Period during which EC has not initiated any Incident Ticket, EC will be deemed to have accepted the Service. At this point, the Service may be deemed fully functional and the Contractor may begin billing for the Service in accordance with the payment terms of the Contract effective the day following that acceptance.

20. Transition Services / Contract Close-Out Phase

20.1. Contract Close-Out Phase

In the period leading up to the end of the Contract Period, also referred to as the “Contract Close-Out Phase”, the Contractor will make all reasonable efforts to assist EC in the transition from the Contract to a new contract with another supplier or to EC itself. The Contractor agrees that there will be no additional cost for these transition services.

The following applies with respect to these transition services:

- a) The Contract Close-Out Phase may overlap with the implementation phase of any follow-on contract issued by EC.
- b) EC may issue one or more Service Requests for the Contract Close-Out Phase.
- c) During the Contract Period, the Contractor must continue to provide the MAN Services until the MAN Services are terminated during the transition to the follow-on contractor or to EC itself.
- d) The Contractor, upon receiving notification of EC initiated Contract termination or the expiration of the contract term, must work with EC to effect a seamless transition of MAN Services from the Contractor to the follow-on contractor or to EC, whichever will be performing the same or similar work. In doing so, the Contractor agrees to work closely and co-operatively with the follow-on contractor(s) or EC at no additional cost.
- e) As part of the transition services, within 30 Business Days of a request by EC, the Contractor must provide operational, administrative, management, support, maintenance, technical, design, configuration, network diagrams and schematics, naming and addressing information and documentation for all the MAN Services in an electronic file format and file naming convention specified by EC.
- f) The Contractor must request from EC, no later than 60 Business Days before the Contract expiration date, disposal instructions for the MAN Services Data. The Contractor must return and/or dispose of its MAN Services Data holdings in accordance with the instructions provided by EC and perform media sanitization in compliance with CSEC ITSG-06. Upon request by the Technical Authority, the Contractor must provide a certification that it has disposed of the MAN Services Data in accordance with this Contract.

21. Service Credits

21.1. Failure to Meet Service Level Target for Service Availability

If the Contractor fails to meet the Service Level Target for Service Availability (SLT-SA) for an EC MAN NAP in any given month, the Contractor must provide a Service Credit to EC, as summarized in Table 3.

SLT-SA		Service Credit for SLT-SA Exceptions
SA	99.90%	<p>Applies to failures of the single NAP for Single Access Link</p> <p>Service Credit for first occurrence in any 12-month period = Firm Monthly Price (FMP) for NAP x 100%</p> <p>Service Credit for second occurrence in any 12-month period for the same NAP = FMP for NAP x 150%</p> <p>Service Credit for third and subsequent occurrences in any 12-</p>

		month period for the same NAP = FMP for NAP x 200%
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Table 3 – Service Credits for SLT-SA Exceptions

21.2. Failure to Meet Service Level Target for Maximum Time to Restore Service

If the Contractor fails to meet the Service Level Target for Maximum Time to Restore Service (SLT-MTRS) at any time for any NAP, then the Contractor must provide a Service Credit to EC as set out in Table 4.

For each failure, the maximum total Service Credit that can apply for an SLT-MTRS exception is the FMP for the affected NAPs times 200%.

SLT-MTRS		Service Credit for SLT-MTRS Exceptions
MTRS Event	1 hour	<p>Service Credit for NAP service outage > 1 and < 2 hours = FMP for NAP x 100%</p> <p>An additional FMP x 25% for each additional 1-hour interval (or part thereof) of NAP service outage time starting at 2 hours.</p> <p>Example 1: Service Credit for 2 hours = FMP x 125%</p> <p>Example 2: Service Credit for 3.5 hours = FMP x 150%</p>
MTRS Non-Event	4 hours	<p>Service Credit for NAP service outage > 4 and < 6 hours = FMP for NAP x 100%</p> <p>An additional FMP x 25% for each additional 2-hour interval (or part thereof) of NAP service outage time starting at 6 hours.</p> <p>Example 1: Service Credit for 6 hours = FMP x 125%</p> <p>Example 2: Service Credit for 9 hours = FMP x 150%</p>

Table 4 – Service Credits for SLT-MTRS Exceptions

21.3. Failure to Deliver Post-Incident Reports

The Contract will provide a Service Credit of \$500 if it fails to deliver an EC accepted Post-Incident Report for a Severity One or Severity Two incident within 48 hours of incident resolution/service restoration.