Service | Innovation | Value

Shared Services Canada

Annex A-2 Statement of Work
Core Services

Enterprise Contact Centre Services (ECCS)

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1 ENTERPRISE CONTACT CENTRE SERVICE

(1) When ordered by Canada, by issuing Service Orders, the Enterprise Contact Centre Service (ECCS), as managed and implemented by the Contractor, must meet or exceed all of the requirements listed in this section of the SOW, in the balance of the SOW and elsewhere in the Contract prior to acceptance by Canada and during the entire period specified in each Service Order.

1.1 Service Catalogue

1.1.1 Service Access Points

(2) When requested by Canada in Service Orders, the Contractor must provide the Service Catalogue Items (SCIs) of Service Access Points (SAPs) for the ECCS identified in Table 1 which represents the implementation of a single (quantity 1) ECCS Type.

Table 1 Service Catalogue Items for ECCS SAPs

SCI	ECCS Type
SCID:ECCS-SAP-1	Agent
SCID:ECCS-SAP-2	Supervisor
SCID:ECCS-SAP-3	Application

1.1.1.1 Agents

(3) The following requirements apply to SCID:ECCS-SAP-1 when requested by Canada in a Service Order, where 1 SAP allows 1 Agent.

(4) The ECCS must allow Canada to define a number of Agents that exceeds the number of SAPs. For example, Canada may order 100 Agent SAPs and create 150 Agent profiles. However, only 100 Agents can be logged in at any time.

1.1.1.2 Supervisors

(5) The following requirements apply to SCID:ECCS-SAP-2 when requested by Canada in a Service Order, where 1 SAP allows 1 Supervisor.

(6) The ECCS must allow Canada to define a number of Supervisors that exceeds the number of SAPs. For example, Canada may order 10 Supervisors SAPs and create 15 Supervisors profiles. However, only 10 Supervisors can be logged in at any time.

1.1.1.3 Application

(7) The following requirements apply to SCID:ECCS-SAP-3 when requested by Canada in a Service Order, where 1 SAP allows 1 Application.

(8) The ECCS must create Applications based on call treatment and business logic, and any of the following programming parameters and variables as specified by Canada:

a) CLID;
b) DNIS;
c) Agents' Skillset;
d) Agent Priority Level (APL);
e) Call Priority Level (CPL);
f) number of calls in progress;
g) number of calls in queue;

h) Status of Agent (e.g. idle, not ready, make busy, on hold, logged out);
i) ratio of calls in queue to Agents;
j) expected wait time by Skillset;
k) voice channel availability;
l) recorded announcement availability;
m) variables including but not limited to:
    i) Agent IDs;
    ii) boolean values (e.g. true / false);
    iii) dates; and
    iv) time.

1.1.2 Real-Time Reports

(9) The following requirements apply to SCID:ECCS-RTReports when requested by Canada in a Service Order, where SCID:ECCS-RTReports allows a ECCS User (quantity 1) access to Real-Time Reports. as summarized in Table 2 by required frequency. The table provides a general description of the purpose and content for each report. It is Canada's intention to use existing reports provided by the Contractor where possible as solely determined by Canada. The exact reports will be determined during consultation with Canada.

Table 2 ECCS Real-Time Reports

Report Name	Application Performance Real-Time Report
Frequency	Real time, as required The report must be refreshed automatically at least every 30 seconds.
Purpose	A User-definable report that must provide access to information on the performance on Applications specified by the User.
Description	The report must provide for each Application: a) total calls answered; b) total calls abandoned; c) total calls waiting; d) average wait time; e) expected wait time; f) service level; and g) average call duration. The report must allow Canada to define thresholds for data fields, on a per Application basis, so that when a threshold is exceeded for a data field, the report displays the field in a different color.
Report Name	Agent Status Real-Time Report
Frequency	Real time, as required. The report must be refreshed automatically at least every 30 seconds.

Purpose	A User-definable report that must provide access to information on Agent status based on Applications specified by the User.
Description	The report must provide the following status information for each Agent: a) number of calls answered b) Agent talk time c) Agent available time d) Agent time by work mode The report must allow Canada to define thresholds for data fields, on a per Application basis, such that when a threshold is exceeded for a data field, the report displays the field in a different color.

1.1.3 Historical Reports

(10) The following requirements apply to SCID:ECCS-HistReports when requested by Canada in a Service Order, where SCID:ECCS-HistReports allows a ECCS User (quantity 1) access to Historical Reports as summarized in Table 3 by required frequency. The table provides a general description of the purpose and content for each report. It is Canada's intention to use existing reports provided by the Contractor where possible as solely determined by Canada. The exact reports will be determined during consultation with Canada.

(11) The ECCS must create and save historical data records for each Application 7 days per week and 24 hours per day, 365 days per year that includes:

a) 1 most recent months of historical data records by 15-minute interval; and
b) 13 most recent months of historical data records by 1-hour interval.

Table 3 ECCS Historical Reports

Report Name	Application Performance Historical Report
Frequency	Real time, as required. Scheduled time by day of week and by date
Purpose	A User-definable report that must provide access to historical performance information for an Application based on Applications specified by the User.
Description	The report must provide: a) sub-totals by interval (30 minutes, daily, weekly, monthly); b) summary for each field that includes: i) grand-total count for fields that are a total number for a given interval; ii) calculated averages based on the reporting interval period for fields that are averages; and iii) calculated fields based on the reporting interval period for fields that use a custom formula; and c) the following data fields by Application: i) number of calls received; ii) number of calls abandoned;

	iii) percentage of calls abandoned; iv) number of calls answered; v) percentage of calls answered; vi) Service Level; vii) number calls answered within Service Level; viii) percentage of calls answered within Service Level; ix) average wait time; x) average call duration; xi) number of calls Overflow (i.e., outflow); xii) number of calls Interflow; and xiii) number of calls Night Routing.
Report Name	Application Delay Before Answer Performance Historical Report
Frequency	Real time, as required. Scheduled time by day of week and by date
Purpose	A User-definable report that must provide access to historical performance of Application Delay Before Answer based on Applications specified by the User.
Description	The report must include: a) sub-totals by interval (30 minutes, daily, weekly, monthly); and b) summary for each field that includes: i) grand-total count for fields that are a total number for a given interval; ii) calculated averages based on the reporting interval period for fields that are averages; and iii) calculated fields based on the reporting interval period for fields that use a custom formula; and c) the following data fields by Application on the number and percentage of calls answered (at a minimum): i) in less or equal to 15 seconds; ii) more than 15 seconds and in less or equal to 30 seconds; iii) more than 30 seconds and in less or equal to 1 minute; and iv) more than 1 minute.
Report Name	Application Delay Before Abandon Performance Historical Report
Frequency	Real time, as required. Scheduled time by day of week and by date
Purpose	A User-definable report that must provide information on the historical performance of Application Delay Before Abandon based on Applications specified by the User.
Description	The report must include: a) sub-totals by interval (30 minutes, daily, weekly, monthly); b) summary for each field that includes: i) grand-total count for fields that are a total number for a given interval;

	ii) calculated averages based on the reporting interval period for fields that are averages; iii) calculated fields based on the reporting interval period for fields that use a custom formula; and c) the following data fields by Application on the number and percentage of calls abandoned (at a minimum): i) in less or equal to 15 seconds; ii) more than 15 seconds and in less or equal to 30 seconds; iii) more than 30 seconds and in less or equal to 1 minute; and iv) more than 1 minute.
Report Name	Agent by Application Performance Historical Report
Frequency	Real time, as required. Scheduled time by day of week and by date
Purpose	A User-definable report that must provide information on the historical performance of each Agent by Application based on Applications specified by the User.
Description	The report must include: a) sub-totals by interval (30 minutes, daily, weekly, monthly); b) summary for each field that includes: i) grand-total count for fields that are a total number for a given interval; ii) calculated averages based on the reporting interval period for fields that are averages; and c) calculated fields based on the reporting interval period for fields that use a custom formula; and d) the following data fields by Application and for each Agent: i) Number of calls answered; i) Number of outgoing calls for Agent logged in; ii) Agent total talk time; iii) Agent average talk time and percentage; iv) Agent available time; v) Agent time by work mode; vi) Agent Login time; and vii) Agent Logout time.
Report Name	Call by Call Historical Report
Frequency	Real time, as required. Scheduled time by day of week and by date
Purpose	A User-definable report that must provide information on the historical data reports specified by the User.

Description	The report must provide call-by-call daily historical data records for 26 most recent months that includes the following information for each call: a) CLID (when available); b) DNIS; c) date, time and day of week; d) caller entered digits; and e) call state (e.g. answered, transferred, conferenced).
Report Name	DTMF Menu Historical Report
Frequency	Real time, as required. Scheduled time by day of week and by date
Purpose	A User-definable report that must provide access to information on the usage of the DTMF Menu based on the date and time interval specified by the User.
Description	The report generator must provide: a) DTMF Menu title; b) total hours, minutes and seconds usage; c) total count of calls; and d) total count per menu selection.
Report Name	Reason Codes Summary Historical Report
Frequency	Real time, as required. Scheduled time by day of week and by date
Purpose	A User-definable report that must provide access to information on the Reason Codes entered by Agents based on the date and time interval specified by the User.
Description	The report generator must provide: a) Reason Code; b) Reason Code description; c) date and time; d) total count by Reason Code.
Report Name	Reason Codes Detailed Historical Report
Frequency	Real time, as required. Scheduled time by day of week and by date
Purpose	A User-definable report that must provide access to information on the Reason Codes entered by Agents based on the date and time interval specified by the User.
Description	The report generator must provide:

	a) Reason Code; b) Reason Code description; c) Agent name or Agent ID; d) Client telephone number; e) date and time; f) Agent name.

1.2 Standards

(12) The Contractor is not required to implement standards that are mutually exclusive. Where standards are mutually exclusive, the Contractor must implement the standard(s) specified by Canada.

(13) The ECCS must comply with the following standards and recommendations:

a) [RFC 791, RFC 2474] IPV4;
b) [RFC 2460] Internet Protocol version 6 (IPv6) Specification;
c) [RFC 3261] The Session Initiation Protocol (SIP);
d) [RFC 3264] An Offer/Answer Model with the Session Description Protocol (SDP);
e) [RFC 3550] RTP: A Transport Protocol for Real-Time Applications;
f) [RFC 4320] Actions Addressing Identified Issues with the Session Initiation Protocol's (SIP) Non-INVITE Transaction;
g) [RFC 4412] Communications Resource Priority for Session Initiation Protocol (SIP);
h) [RFC 4733] RTP Payload for DTMF Digits, Telephony Tones, and Telephony Signals;
i) [RFC 4734] Definition of Events for Modem, Fax, and Text Telephony Signals;
j) [RFC 5244] Definition of Events for Channel-Oriented Telephony Signalling;
k) [RFC 6878] IANA Registry for the Session Initiation Protocol (SIP) "Priority" Header Field;
l) [RFC 8217] Clarifications for When to Use the name-addr Production in SIP Messages;
m) [RFC 8224] Authenticated Identity Management in the Session Initiation Protocol (SIP);
n) [RFC 8225] PASSporT: Personal Assertion Token;
o) [RFC 8226] Secure Telephone Identity Credentials: Certificates;
p) [RFC 8588] Personal Assertion Token (PaSSporT) Extension for Signature-based Handling of Asserted information using toKENs (SHAKEN);BellCore SR-NWT-001268, plus revisions;
q) ITU-T Rec. E.164 international public telecommunication numbering plan;
r) ITU-T Rec. G.168 Digital Network Echo Cancellers;
s) ITU-T Rec. G.711: μ-law pulse code modulation (PCM) of voice frequencies;
t) ITU-T Rec. Y.1541 Network performance objectives for IP-based services;
u) ITU-T Rec. V.18 Operational and interworking requirements for DCEs operating in the text telephone mode;
v) ITU-T Rec. T.30 Procedures for document facsimile transmission in the general switched telephone network;
w) ITU-T Rec. V.150.1 Modem-over-IP networks: Procedures for the end-to-end connection of V-series DCEs; and
x) ITU-T Rec. V.151 Procedures for the end-to-end connection of analogue PSTN text telephones over an IP network utilizing text relay.

1.3 Technical Design

(14) The technical design for the ECCS is described in Figure 1 for information purposes only.

(15) The ECCS infrastructure must be implemented in Canada.

(16) The ECCS must store and process all Canada Data in Canada.

(17) The ECCS network traffic under the Contractor control (meaning traffic initiated in one part of Canada to a destination or individual located in another part of Canada) must be only routed through Canada unless otherwise approved by Canada for emergency purposes only.

(18) The ECCS must not use the Internet to:

a) synchronize ECCS configuration between Contractor SDPs; and

b) route traffic (i.e. media and/or signaling) between the Canada WAN and the Enterprise Contact Centre Services.

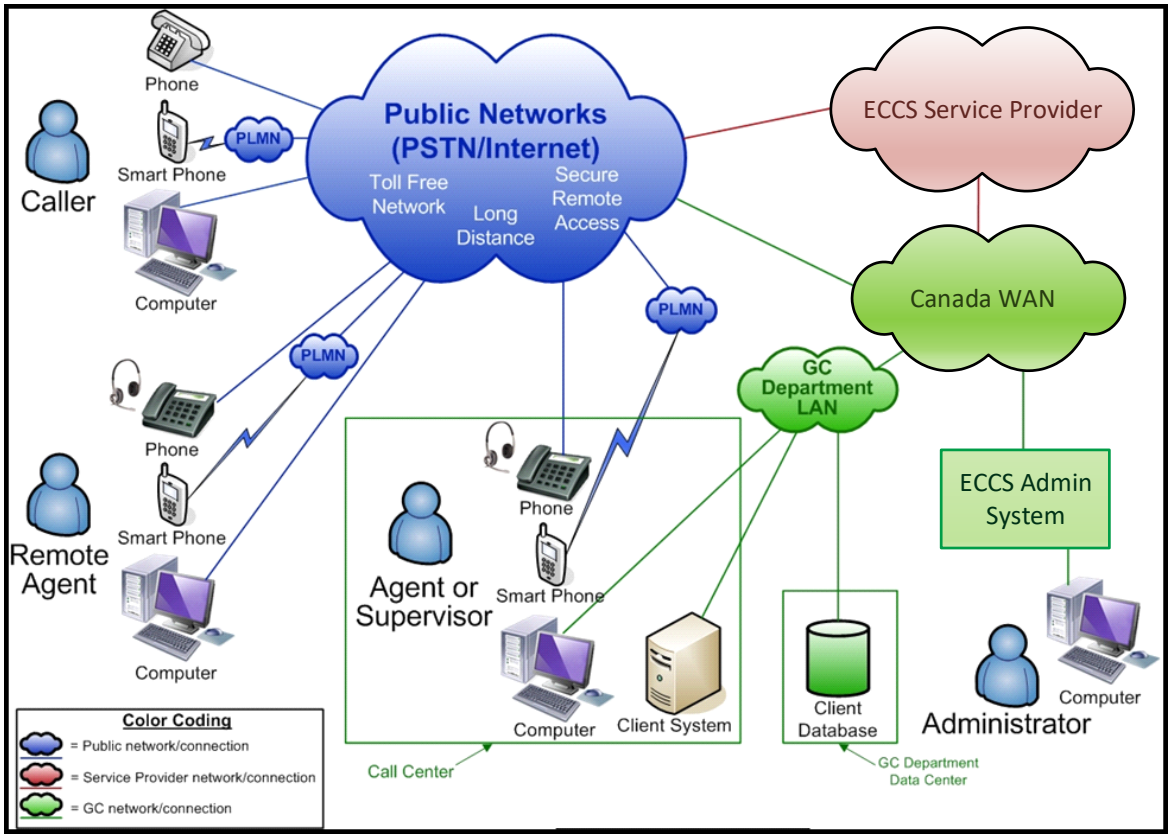

Figure 1 ECCS Network Environment

(19) The ECCS must connect directly to the Canada WAN at Contractor Data Centres.

(20) The ECCS must include infrastructure at primary and secondary Contractor SDPs that are geographically separated and powered by distinct power grids and connected to distinct PSTN central offices.

(21) The ECCS must automatically route traffic from the primary or secondary Contractor SDP in a transparent manner with no degradation in the functionality and performance of the Enterprise Contact Centre Service when there is a failure of the ECCS at either the primary or secondary Contractor SDP.

(22) The ECCS must provide near real-time (within 5 minutes) synchronization of the ECCS configuration between the primary and secondary Contractor SDPs using network services provided by the Contractor.

(23) The ECCS must interoperate and/or use the following Canada Services when and as required by Canada:

a) Canada WAN;
b) Canada Cellular Service;
c) Canada PSTN Service;
d) Canada Toll Free Service; and
e) Canada Long Distance Service.

(24) The ECCS must allow the following media and/or signaling exchange with Canada Telephones:
a) Voice Calls;
b) Dialled Number Identification Service - Automatic Number Identification (DNIS-ANI);
c) Calling Party Name Display (CPND) (unless blocked by the Calling Party);
d) Calling Line Identification (CLID) (unless blocked by the Calling Party);
e) Dual Tone Multi-Frequency (DTMF) end-to-end; and
f) Call Progress Tones (e.g. ringing, busy, re-order);

(25) The ECCS must provide the following features to Canada Telephones:
a) Call Hold;
b) Call Transfer;
c) Call Redirect;
d) Consultation on Hold; and
e) Global Numbers direct dial.

(26) The ECCS must allow ECCS Users to establish persistent voice connections using:
a) POTS land lines;
b) VoIP telephone lines;
c) PSTN telephone numbers serviced by:
i) Time Division Multiplexing Private Branch Exchanges (TDM PBX);
ii) IP Telephony Systems and Services;
d) Cellular telephones / smartphones.

1.4 User Interface

(27) The ECCS User interface must allow the use of both Canada's official languages by ECCS Users

(28) The ECCS User interface must allow visually and hearing impaired ECCS Users that conforms to the Canada Treasury Board standards on Web Usability (https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=24227), which excludes commercial off-the-shelf applications.

1.5 User Accounts

(29) The ECCS must allow Agents to login/ log-out of ECCS using their telephone.

(30) The ECCS must require ECCS Users to update their password at a frequency specified by Canada.

(31) The ECCS must not store or cache any data on an ECCS Users workstation.

(32) The ECCS must allow ECCS Users to configure their language preference (English or French) for display menus, data, reports and help files.

(33) The ECCS must provide account profiles for ECCS Users that at a minimum include:
a) user name;
b) user ID; and
c) user password.

(34) The ECCS must allow Supervisors identified by Canada (e.g. super users) to modify the following ECCS User account profile parameters:

a) user name;

b) user type; and

c) password.

(35) The ECCS must allow Supervisors to group Agents as team members of Agent Groups.

(36) The ECCS must allow Supervisors to assign Agents to Supervisors.

(37) The ECCS must allow Supervisors to view and edit all configuration parameters associated with:

a) Applications;

b) Priority queues;

c) Agent Skillsets;

d) Agent Groups; and

e) Agent IDs.

1.6 User Status

(38) The ECCS must provide Status to Agents that includes:

a) logged in and waiting to receive a call (i.e. Ready);
b) logged in but not available to receive calls (i.e. Not Ready);
c) logged out and not available to receive calls (i.e. Logged Out);
d) logged in and on a call (i.e. Busy);
e) in Call Wrap Up mode; and
f) has put a call on hold.

(39) The ECCS must allow Agents to change their following Status:

a) logged in and waiting to receive a call (i.e. ready);
a) logged in but not available to receive calls (i.e. not ready); and
b) logged out and not available to receive calls (i.e. logged out).

(40) The ECCS must display Status to Agents and Supervisors specified by Canada.

(41) The ECCS must implement any change of Status in real time.

1.7 Telephony Service Features

(42) The ECCS must allow the following telephony service features:

a) Barge-In;
b) Call Conference;
c) Call Hold;
d) Call Logs;
e) Call Progress Tones;
f) Call Trace;
g) Call Transfer;
h) DNIS/ANI
i) Calling Party Name Display (CPND);
j) Calling Line Identifier (CLID);
k) Dual Tone Multi-Frequency (DTMF) end-to-end; and

l) Speed Dial.

1.8 Agents Skillsets and Proficiency

(43) The ECCS must allow a minimum of 100 Skillsets per Agent.

(44) The ECCS must allow a Proficiency Level from 1 (low) to 5 (high) for a Skillset

(45) The ECCS must allow Supervisors to assign a Proficiency Level to each Skillset.

(46) The ECCS must automatically apply Proficiency Levels to Skillsets upon Agent login.

(47) The ECCS must allow Supervisors to make changes to Skillsets and Proficiency Levels for Agents while those Agents are logged in and answering calls.

(48) The ECCS must allow Supervisors to create and update the Skillsets and Proficiency Levels for Agents by importing the data from a COTS file format specified by Canada.

(49) The ECCS must allow Supervisors to export and import the Skillsets and Proficiency Levels using a COTS file format as approved by Canada.

(50) The ECCS must log any changes made by Supervisors to Skillsets and Proficiency Levels for an Agent where the log entries include:

a) Supervisor name;
b) date and time change was made;
c) settings before the change; and
d) settings after the change.

1.9 Reason Codes

(51) The ECCS must allow up to 100 Reason Codes as specified by Canada.

(52) The ECCS must allow Agents to enter up to 20 different Reason Codes during a call.

(53) The ECCS must store Reason Codes records for a call that includes the following information for each record:

a) Reason Code;
b) Reason Code description;
c) Agent ID;
d) Client telephone number;
e) date and time;
f) Agent name.

(54) The ECCS must allow Canada to download Reason Code records in a COTS file format.

(55) The Contractor must store Reason Code records for the Contract duration.

1.10 Call Forcing

(56) The ECCS must implement Call Forcing when requested by Canada,

(57) The ECCS must prevent Agents from enabling and disabling Call Forcing.

(58) Unless otherwise specified by Canada, the ECCS must provide a Call Forcing warning tone before a call is connected to an Agent.

(59) The ECCS must allow Supervisors to enable and disable Call Forcing for Interaction Priority queues and Skillsets.

1.11 Recorded Announcement and Music

(60) The ECCS must provided callers with recorded announcements from the beginning of a recorded announcement.

(61) The ECCS must allow a minimum of 15 different recorded announcements for each Interaction Priority Queue.

(62) The ECCS must play music and/or recorded announcements to callers while waiting in an Interaction Priority Queue, as specified by Canada, that includes:

a) the order of music and recorded announcement; and

b) number of times a recorded announcement is to be repeated.

(63) Unless otherwise specified by Canada, the ECCS must play:

a) French recorded announcements followed by English for calls originating from the province of Quebec and other provinces and/or NPAs and NXXs specified by Canada;

b) English recorded announcements followed by French for calls originating from all other provinces and/or NPAs and NXXs where Canada does not designate French; and

c) provide subsequent recorded announcements in French or English as selected by the caller.

(64) The ECCS must play a recorded announcement as specified by Canada, that notifies callers when an Interaction Priority Queue is:

a) closed;

b) after hours; and

a) during an emergency.

(65) The ECCS must automatically close an Interaction Priority Queue and play a pre-defined recorded message specified by Canada if there are no Agents logged in an Interaction Priority Queue.

(66) The ECCS must allow recorded announcements of up to 120 seconds in duration.

(67) The Contractor must allow Canada to:

a) provide its own music and recorded announcements; and

b) use music and recorded announcements provided by the Contractor.

(68) The music and recorded announcements provided by the Contractor must be SOCAN licensed or non-copyrighted.

(69) The ECCS must allow Supervisors to enable and disable:

a) music;

a) recorded announcements;

b) playback of estimated wait time in Interaction Priority Queue; and

c) playback of position in Interaction Priority Queue.

(70) The ECCS must provide a recorded message within 5 seconds of caller being placed in an Interaction Priority Queue.

(71) The ECCS must automatically play music and/or recorded messages to callers without affecting their position in an Interaction Priority Queue.

(72) The ECCS must allow Supervisors to record announcement using access control with a telephone .

(73) The ECCS must allow Supervisors to assign recorded announcements to an Application and for the change to take effect immediately.

(74) The ECCS must allow Supervisors to record or modify messages using a telephone handset.

(75) When requested by Canada, the ECCS must provide (i.e. playback) the estimated wait time to callers when calls are queued for recorded announcements and when the wait time exceeds a threshold specified by Canada.

(76) The ECCS must playback to callers a recorded message, as specified by Canada (e.g. office hours or special message as required) for each Interaction Priority Queue, when there are no Agents logged in, and as specified by Canada:

a) disconnect the calls; or
b) route the calls to a destination specified by Canada, that is a:
    i) telephone number;
    ii) Application.

1.12 DTMF Menu

(77) The ECCS must include DTMF (i.e. touch-tone) Menus that allow:

a) menu options and recorded announcements as specified by Canada;
b) up to 10 menu options per level; and
c) a minimum of 5 levels per menu option.

(78) The ECCS must provide DTMF (i.e. touch-tone) Recognition that allows callers to select an option from a DTMF Menu, that subsequently route calls to:

a) an Agent (via an Interaction Priority queue);
b) a telephone number (On-net);
c) other DTMF Menu options (1 level down);
d) DTMF Menu options to be repeated at any time; and
e) return to the main menu at any time.

1.13 Call Presentation

(79) The ECCS must provide a minimum of 15 Call Presentation parameters based on the following programmable delays in 1 second increments:

a) Call Wrap-up Delay;
b) Call Return to Queue Delay for unanswered calls; and
c) Call Forcing Delay.

(80) The ECCS must allow Supervisors to assign and modify Call Presentation parameters for Agents.

(81) The ECCS must display on the Telephony Devices (where allowed) and ECCS Softphones:

a) telephone number dialed by the caller (e.g., 1-800-555-1212);
b) Calling Party Line Identification (CLID), when available;
c) Calling Party Name Display (CPND), when available; and
d) Interaction Priority Queue name associated with the dialed number (e.g., Service Canada).

1.14 Call Priority Level

(82) The ECCS must provide a minimum of 5 Call Priority Levels (CPLs) that can be assigned to Trunk Routes (e.g. Toll Free calls may have a higher CPL than local calls).

(83) The ECCS must automatically prioritize call routing to Agents based on CPLs such that calls with highest CPL are answered first.

(84) The ECCS must automatically increase the CPL of a call when the wait time for that call exceeds thresholds specified by Canada.

1.15 Call Admission Control

(85) The ECCS must allow Supervisors to set the maximum number of calls and estimated wait time in an Interaction Priority Queue for calls barred from entering an Interaction Priority Queue.

(86) The ECSS must provide a busy signal to callers when calls are barred from entering an Interaction Priority Queue.

(87) Whenever calls are barred from entering an Interaction Priority Queue, and unless otherwise specified by Canada, the ECCS must allow callers to re-enter the DTMF Menu if the call was transferred from the DTMF Menu.

1.16 Call Detail Recording

(88) When requested by Canada, the ECCS must create and store a Call Detail Records (CDRs) for each outgoing and incoming call that includes the following information:

a) caller telephone number;
b) called telephone number;
c) total session duration (in seconds);
d) call routing information (e.g., route or call type);
e) start date of call;
f) end date of call;
g) start time of call; and
h) end time of call.

1.17 Alert Notifications

(89) The ECCS must allow Supervisors to configure alert notifications (e.g. turn wait time in red) for an Applications when the maximum time for a data field is exceeded.

(90) The ECCS must allow Supervisors to activate / deactivate alert notifications for an Application

1.18 Call Processing

(91) When Agents do not answer calls within a time period specified by Canada, the ECCS must:

a) automatically change Status for Agents to Not Ready or Logged Out, as specified by Canada;
b) return calls to an Interaction Priority Queue (IPQ); and
c) set call to become the next one to be answered.

(92) The ECCS must not require an Agent to be connected to the ECCS User interfaceto login to an Application and answer calls.

(93) The ECCS must allow Agents to answer calls even if they are disconnected from the ECCS User interface.

(94) The ECCS must allow Agents to transfer calls to another Agent, Supervisor and/or Application that includes:

a) a supervised transfer during which the Agent remains on the call until the party the call is transferred to answers; and
b) an unsupervised transfer during which the Agent hangs up once the transfer has been initiated.

(95) The ECCS must allow Agents to transfer a call to telephone number.

(96) The ECCS must allow Agents to perform a three-party conference call between the client, the Agent, and any other third party that includes On-net and Off-net telephone numbers (e.g. Supervisor, Agent or any PSTN telephone number).

(97) The ECCS must allow Agents to request assistance from one or more Supervisors (e.g. group Supervisor) and other Agents (e.g. team leader) by pressing a button on the telephone set or clicking an icon on the ECCS Softphone.

(98) The ECCS must allow Agents to place callers on hold to talk privately with a third party (e.g. supervisors and technical experts) within or outside ECCS (i.e. On-net or Off-net) as required.

(99) The ECCS must allow Blind Transfer and Supervised Call Transfer from Agents to:

a) IPQs;
b) PSTN telephone numbers;
c) Agents; and
d) Supervisors.

(100) The ECCS must allow Supervisors to Barge-in and listen to Agents conversation with clients.

(101) The ECCS must implement a Barge-in warning tone that is heard by Agents only and not by the clients, when and as specified by Canada.

(102) The ECCS must allow Supervisors to force disconnect Agents (i.e. logoff) from any Application at any time.

(103) The ECCS must provide Call Wrap-up Time.

(104) The ECCS must allow Supervisors to modify Night Routing parameters.

(105) The ECCS must play a recorded message and disconnect callers when maximum wait time in an IPQ is reached.

(106) The ECCS must queue calls for a live Agent for calls with no touch-tone response;

(107) The ECCS must route long distance outgoing calls to the Canada Long Distance Service.

(108) The ECCS must allow incoming toll-free calls from the Canada Toll Free Service.

(109) The ECSS must allow Agents to log in at any time regardless of trunk availability and call volumes.

1.19 Interaction Priority

(110) The ECCS must implement an Interaction Priority for an Application that can include the following configuration parameters as specified by Canada:

a) DTMF Menu (e.g., for service in English press 1, pour le service en français appuyer sur le 2).
b) Call Forcing within pre-defined number of seconds;
c) playback of Recorded Announcement;
d) playback of Music;
e) call answering priority by telephone number;
f) caller telephone number and name display on Agent and Supervisor telephone;
g) automatic call treatment when exceeding maximum number of calls allowed in an Interaction Priority queue, that includes:
    i) call disconnect;
    ii) call redirect;
    iii) busy signal;
h) automatically returns calls to the source Interaction Priority queue when unanswered by an Agent within a pre-defined number of rings or seconds;
i) automatically make Agent unavailable after a call returns to queue;
j) Agent to Supervisor direct dial telephone key/button assignment;
k) Overflow;
l) Intraflow;
m) Interflow;
n) routing to Most Idle Agent;
o) Multiple Call Handling;
p) Manual Answering;
q) Night Routing;

r) Time of Day Routing;
s) Time of Day Announcement;
t) Redirection On No Answer;
u) Service Observing; and
v) Time After Call Work.

(111) The ECCS must allow Interaction Priorities to be implemented and activated without interruption to the ECCS (i.e. call processing, routing, queuing and distribution).

1.20 Interaction Priority Queue

(112) The ECCS must allow a minimum of 30 telephone numbers per Interaction Priority Queue (IPQ).

(113) The ECCS must allow Agents to register in multiple IPQs.

(114) The ECCS must allow Supervisors to assign a name to an IPQ.

(115) When a callers' wait time or number of calls in an IPQ reaches the maximum threshold allowed per IPQ, the ECCS must:
a) return a busy signal to callers;
b) play an announcement and disconnect callers; or
c) route callers to a voice mailbox.

(116) The ECCS must allow automatic overflow calls to another IPQ and maintain the calls priority in the new IPQ, when calls in an IPQ exceed:
a) maximum wait time; and
b) maximum number of calls.

(117) The ECCS must allow an IPQ based on:
a) time of day;
b) day of week;
c) Agent availability;
d) call volume; and
e) caller telephone number (i.e. NPA-NXX).

(118) The ECCS must overflow calls to other IPQs, manually or automatically as specified by Canada, based on:
a) length of time waiting in an IPQ; or
b) number of callers waiting in an IPQ.

(119) The ECCS must maintain a calls priority when the call is transferred from one IPQ to another (i.e. not place callers to the bottom position of an IPQ).

(120) The ECCS must automatically close an IPQ and play a recorded message (specified by Canada, when there are no agents logged in to the IPQ, when specified by Canada for the IPQ

(121) The ECCS must allow Supervisors to configure (increase/decrease) the maximum wait time and maximum number of calls allowed in an IPQ.

(122) The ECCS must allow Supervisors to close an IPQ, play a recorded message as specified by Canada, and automatically disconnect callers.

(123) The ECCS must allow Supervisors to schedule the following changes for an IPQ:
a) maximum number of calls allowed;
b) recorded announcements to play;
c) open and close; and
d) night service by time of day and by day of week.

1.21 Interaction Distribution

(124) The ECCS must provide Interaction Distribution that automatically distributes calls between Agents based on:

a) callers' position in an IPQ; and

b) Call Priorities and Skillsets.

(125) The ECCS must provide capacity to distribute all calls routed to an IPQ.

(126) Unless otherwise specified by Canada, the ECCS must automatically distribute calls to Agents that have the highest Proficiency Level and highest idle time.

1.22 Incident Management

(127) The outage time for any of the following Incidents must be included in the calculation of the SLT-SA and SLT-MTRS for ECCS:

a) 1 or more IPQs are unable to process Communication Channels interactions as implemented;

b) Real-Time or Historical Reporting is not available for use by Canada;

c) 2 or more ECCS Users are unable to register a change of Status; and

d) 1 or more Supervisors are unable to access ECCS.

2 PSTN ACCESS SERVICE

(128) The PSTN Access Service (PAS) provides Communication Channels, as managed and implemented by the Contractor, that must meet or exceed all of the requirements listed in this section of the SOW, in the balance of the SOW and elsewhere in the Contract prior to acceptance by Canada and during the entire Contract period.

2.1 Service Catalogue

2.1.1 Network Access Points

(129) When requested by Canada in a Service Order, the Contractor must provide the Service Catalogue Items (SCIs) for NAPs at Contractor SDPs specified in Table 4 according to:

a) Committed Traffic Rate (CTR);

Table 4 Service Catalogue Items for NAPs

SCI	CTR (Mbps)
SCID:PAS-NAP-01	10
SCID:PAS-NAP-02	100
SCID:PAS-NAP-03	500
SCID:PAS-NAP-04	1000

(130) The Contractor must use Terrestrial Links for NAPs unless otherwise approved by Canada.

(131) A NAP must implement SIP Trunking.

(132) A NAP must allow a sustained full duplex symmetrical CTR.

(133) The Contractor must implement a NAP as follows (refer to Figure):

a) provide dual Network Links where one Network Link is referenced as the ‘Primary’ Network Link and the other Network Link is referenced as the ‘Secondary’ Network Link, but both are located at the same Contractor SDP, that are dedicated to Canada (or logically and securely separated as approved by Canada) up to the Contractor PSTN demarcation point;

b) provide each Network Link using separate infrastructure (i.e. cabling, fiber, conduit, routers, etc.) from the Contractor POPs and up to the PSTN;

c) terminate each CE Router and associated Network Link on a separate PE Router, where each PE Router is located at a different, geographically diverse (not in the same building) Contractor POP (i.e. POP1 and POP2);

d) configure the PE Routers to:

i) route network traffic over the Primary Network Link. If the Primary Network Link fails, the associated network traffic must be automatically re-routed over the Secondary Network Link in a seamless manner such that the re-routed traffic is not disrupted. Once the failure of the Primary Network Link is corrected, the traffic on the Secondary Network Link must be automatically routed back to the Primary link in a seamless manner such that the re-routed traffic is not disrupted; or

ii) route network traffic over both the Primary Network Link and Secondary Network Link simultaneously (load shared). If a Network Link (Primary or Secondary) fails, the network traffic must be automatically re-routed over the other Network Link (Primary or Secondary) in a seamless manner such that the re-routed traffic is not disrupted. Once the failure of the

failed Network Link is corrected, the traffic on the other Network Link must be automatically routed back to the restored Network Link in a seamless manner such that the re-routed traffic is not disrupted; and

e) maintenance activities only affect 1 of the Network Links at any given time.

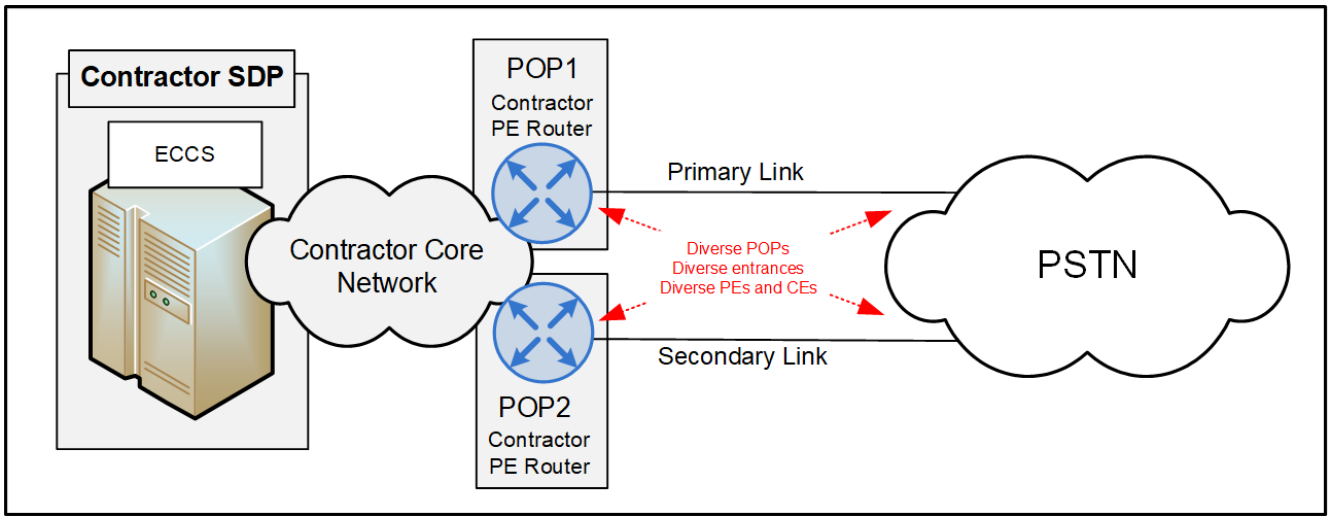

Figure Dedicated Dual Diverse Access Network Links

2.1.2 Service Access Points

(134) When requested by Canada in Service Orders, the Contractor must provide the Service Catalogue Items (SCIs) for the SAPs in Table at Contractor SDPs, where each SAP represents a single (1) concurrent Incoming Call or Outgoing Call for a Communication Channel.

Table 5. Service Catalogue Items for PSTN Access SAPs

SCID
SCID:PAS-SAP-IAO

(135) The PAS must allow concurrent Incoming Calls and Outgoing Calls up to the number of SAPs (i.e. SCID:PAS-SAP-IAO) ordered by Canada.

2.1.3 Direct Inward Dialing Telephone Numbers

(136) When requested by Canada in a Service Order, the Contractor must provide SCID:PAS-DID, which represents a single PSTN Direct Inward Dialing (DID) Telephone Number that complies with E.164 global numbering and dialing plan.

(137) The PAS must allow Calling Parties to dial DID Telephone Numbers allocated within the same Free Calling Area without incurring Long Distance Call charges.

(138) The PAS must provide Canada with contiguous blocks of PSTN DID Telephone numbers (where available) for Canada SDPs.

2.1.4 Service Features

(139) When and as requested by Canada in Service Orders, the Contractor must provide the Service Catalogue Items (SCIs) for the Service Features in Table 6.

Table 6 Service Catalogue Items for Service Features

SCID	Service Features
SCID:PAS-CAH	Call Overflow Handling
SCID:PAS-CAR	Customer Activated Redirect
SCID:PAS-TrafficStudy	Traffic Studies
SCID:PAS-LD	Long Distance

2.1.4.1 Call Overflow Handling

(140) The requirements in this subsection apply to SCID:PAS-CAH.

(141) The PAS must route calls that exceed a Trunk Route capacity or a failed NAP, as specified by Canada and in accordance with Call Routing (see Call Routing section), to:

a) an alternate Trunk Route that terminates on a Canada Service or Canada System; or
b) a PSTN telephone number as specified by Canada.

2.1.4.2 Customer Activated Redirect

(142) The requirements in this subsection apply to SCID:PAS-CAR.

(143) The PAS must redirect incoming calls for a DID and/or PSTN Access to a telephone number specified by Canada in accordance with Call Routing (see Call Routing section).

(144) The PAS must redirect incoming calls to a telephone number specified by Canada within 5 minutes of Canada activating a Trigger DID at any time of day specified by Canada.

(145) The PAS must allow Canada to activate / deactivate call redirect of incoming calls using a method approved by Canada.

2.1.4.3 Traffic Studies

(146) The requirements in this subsection apply to SCID:PAS-TrafficStudy.

(147) The Contractor must complete a Traffic Study in units of 7 consecutive Calendar Days for Trunk Routes in consultation with Canada and approved by Canada that includes:

a) hourly customer measurements that includes: usage in minutes, number of outgoing calls, number of incoming calls, total calls and incoming call overflows;
b) hourly customer measurements for each Trunk Route that includes: usage in minutes, total calls and blocked calls;
c) hourly customer measurements for each Trunk Route that includes: usage in minutes, number of outgoing calls, number of incoming calls, total calls, incoming call overflows and maintenance busy usage in minutes;
d) busy hour daily summary for each Trunk Route of customer measurements that includes: usage in minutes, number of outgoing calls, number of incoming calls, total calls, incoming call overflows and maintenance busy usage in minutes;
e) busy hour daily summary for each Trunk Route required for the following Grades of Service: 1%, 5% and 10% of call blockage at average peak hour;
f) total usage on Trunk Routes of customer;
g) Average Holding Time on Trunk Routes of customer; and
h) all Service busy/blockage.

(148) The Contractor must provide Canada with a Traffic Study Report that summarizes the results of the Traffic Study within 5 FGWDs of completion of the Traffic Study

2.1.4.4 Long Distance (LD)

(149) The requirements in this subsection apply to SCID:PAS-LD.

(150) The PAS must route Long Distance calls to the Contractor Long Distance service until Carrier Identification Codes (CICs) or Pre-designated Interexchange Carriers (PICs) are implemented by the Contractor to route Long Distance calls to the Canada Long Distance Service.

(151) The Contractor must calculate Long Distance charges in 6 second increments that includes a 30 seconds minimum charge, based on the rate per minute for Long Distance destination telephone numbers.

2.2 Standards

(152) The Contractor is not required to implement standards that are mutually exclusive. Where standards are mutually exclusive, the Contractor must implement the standard(s) specified by Canada.

(153) The PAS must comply with the following standards and recommendations:

a) ITU-T Rec. E.164 international public telecommunication numbering plan;
b) ITU-T Rec. G.711: μ-law pulse code modulation (PCM) of voice frequencies;
c) ITU-T Rec. V.18 Operational and interworking requirements for DCEs operating in the text telephone mode;
d) ITU-T Rec. T.30 Procedures for document facsimile transmission in the general switched telephone network;
e) ITU-T Rec. V.150.1 Modem-over-IP networks: Procedures for the end-to-end connection of V-series DCEs; and
f) ITU-T Rec. V.151 Procedures for the end-to-end connection of analogue PSTN text telephones over an IP network utilizing text relay.

2.3 Number Portability

(154) The Contractor must coordinate all Work to port telephone numbers identified by Canada from third party services to the Service.

2.4 Call Features

(155) The PAS must provide the following call features:

a) Progress Tones (ringing, busy, re-order, call waiting);
b) unless calling telephone number display blocking is activated by the caller or caller service provider:
    i) Calling Line Identification (CLID); and
    ii) Calling Name Display (CNAMD).

(156) The PAS must allow the following call features:

a) Dual Tone Multi-Frequency (DTMF) end-to-end;
b) Call Transfer;
c) Call Hold;
d) Call Redirect;
e) Consultation on Hold.

2.5 Calling Line Identification (CLID)

(157) The PAS must provide the caller telephone number unless calling telephone number display blocking is activated by the caller or caller service provider.

2.6 Calling Name Display (CNAMD)

(158) The PAS must provide the caller telephone name display unless name display blocking is activated by the caller or caller service provider.

2.7 Dialled Number Identification Service (DNIS)

(159) The PAS must provide the telephone number as originally dialled by the caller.

2.8 Trunk Routes

(160) The Contractor must provide one or more Trunk Routes as specified by Canada, dedicated to:

a) Incoming Calls and Outgoing Calls;
b) Incoming Calls;
c) Outgoing Calls;
d) Long Distance Calls; and
e) Toll Free Calls.

(161) The Contractor must configure Trunk Routes to reserve a minimum call capacity and allow a maximum number of calls for one or more Trunk Route as specified by Canada.

(162) The Contractor must configure Trunk Routes to insert/delete/replace digits dialed for calls and associated telephone numbers as specified by Canada.

(163) The PAS must provide outbound CLIDs and CPNDs for each Trunk Route as specified by Canada.

2.9 Call Routing

(164) The PAS must route Incoming Calls and Outgoing Calls from/to the Free Calling Areas at no additional cost to Canada and the Calling Parties.

(165) The PAS must route outgoing Long Distance calls to the Canada Long Distance Service at no additional cost to Canada.

(166) The PAS must route outgoing Toll Free calls to the Toll Free service at no additional cost to Canada.

(167) The PAS must route incoming Toll Fee calls from Canada Toll Free Service to Applications as specified by Canada.

(168) When specified by Canada, the PAS must route calls that exceed a Trunk Route capacity or a failed NAP to:

f) an alternate Trunk Route that terminates on a Canada Service or Canada System; or
g) a PSTN telephone number as specified by Canada

(169) The PAS must allow call transfers from On-net to Off-net telephone numbers as specified by Canada.

(170) The PAS must release SAPs after an incoming to outgoing call transfer is completed and the call is released by ECCS.

(171) The PAS must allow Canada to specify a maximum number of incoming calls to terminate on a Trunk Route telephone number.

(172) The PAS must route calls for telephone numbers using Trunk Routes as specified by Canada.

(173) The PAS must route calls to Trunk Routes and/or telephone numbers as specified by Canada when a call cannot be completed to a destination telephone number.

(174) The PAS must route the following calls to the Canada Long Distance Service:

a) PSTN direct dial Long Distance within Canada and U.S.;
b) PSTN 1+NPA+555+1212 LD directory;

c) PSTN 011 for automatic overseas telephone numbers; and
d) PSTN 01 for operator-assisted overseas telephone numbers.

(175) The PAS must allow the following calls where the service is available :
a) message relay services (TDD/TTY) for impaired hearing;
b) PSTN within the Free Calling Area; and
c) PSTN Toll Free telephone numbers.

(176) The PAS must prevent tromboning of calls transferred to PSTN telephone numbers by relaying call routing instructions (e.g., release link transfer, SIP Call Redirect) using DTMF, out-of-band signaling or Call Redirect as specified by Canada.

(177) The PAS must reroute calls to a PSTN telephone number as specified by Canada when the telephone number of a Service is unreachable (e.g. failure of Service at Contractor SDP).

(178) The PAS must provide Free Calling Areas of the same or greater geographical coverage as the Incumbent Local Exchange Carrier (ILEC), where the Free Calling Areas are defined based on the Calling and Called Party telephone numbers.

2.10 Recorded Messages

(179) The PAS must play a recorded message to a caller when:
a) PSTN calls cannot be completed as dialed;
b) call blocked;
c) call return – busy;
d) all lines (SAPs) busy;
e) invalid prefix codes; and
f) DID telephone numbers assigned to Canada are not in service.

(180) The PAS must play recorded messages in French followed by English for calls originating in the province of Quebec, and English followed by French for calls originating outside of the province of Quebec, unless otherwise specified by Canada for selected SDPs.

(181) The PAS must allow media (i.e., music and announcements) to be played back to Calling Parties.

2.11 Interoperability

(182) The PAS must provide signaling information to Canada Services and Canada Systems at the start and end of a call (i.e. call supervision).

(183) The PAS must interoperate with the following Canada Services and Canada Systems:
a) Canada Long Distance Service;
b) Canada Toll Free Service; and
c) Teletypewriter (TTY) and Telecommunications Device for Deaf (TDD) that use Baudot Code.

2.12 CODECS

(184) The PAS must use G.711 for calls from/to the PSTN.

2.13 Performance

(185) The PAS must provide call connect times (i.e., ring-back or busy tone) between On-net Communication Devices and PSTN telephone numbers that do not exceed existing PSTN (ILECs and interexchange carriers included) call connect times for the same source and destination Calling Areas.

(186) The PAS must provide a:

a) Packet Transit Delay, excluding any telephone equipment at Canada SDPs, less than or equal to 150 milliseconds for each call within North America;
b) Packet Loss that does not exceed 0.05%;
c) Jitter (i.e. Packet Delay Variation) that does not exceed 20 msec; and
d) Mean Opinion Score (MOS) that is a minimum of 3.8.

(187) The PAS must provide echo control (i.e. echo cancellation and echo suppression).

2.14 Security

(188) The PAS must ensure that IP addresses used for ECCS are not accessible nor visible from the public Internet or any other network that are not approved by Canada (i.e. hide Canada network topology and IP addresses).

(189) The PAS must automatically detect and reject:

a) malformed signaling;
b) malformed media; and
c) unauthorized signaling.

(190) The PAS must prevent tampering with a call including the:

a) identity of the call/session originator;
b) intended destination or any routing information imbedded in the signaling packets of the call/session; and
c) media content (i.e. voice media) of the call/session.

(191) The PAS must prevent unauthorized access to Canada Service, including:

a) Denial of Service;
b) Malformed Packet;
c) Spoofing; and
d) SIP Flooding.

2.15 Reports

(192) The PAS must create and save historical data records for each Trunk Group 7 days per week and 24 hours per day, 365 days per year that includes:

a) 13 most recent months of historical data records by 15-minute interval; and
b) 24 most recent months of historical data records by 1-hour interval.

(193) The Contractor must provide PAS Report, in French or English as requested by the User, as summarized in Table 7.

Table 7 PAS Reports

Report Name	PAS Usage Report
Frequency	Historical Report, as required.
Purpose	A User-definable report that must provide access to information on the usage of PAS by a date and time interval specified by the User.
Description	The report generator must provide:

	a) number of calls by trunk group; b) number of calls by Call Type; and c) Grade of Service by trunk group.
Report Name	PAS KPI Report
Frequency	Within 10 FGWDs of a request
Purpose	A User-definable report that must provide access to information for 1 or more Key Performance Indicators for a reporting interval, data set interpolation interval and retention duration specified by the User where the data set interpolation interval and retention durations can include: a) hourly view (15-minute intervals); b) daily view (hourly interval); and c) weekly view (daily interval).
Description	The report must provide the following Key Performance Indicators: a) MOS; b) number of calls blocked; and c) number of calls dropped.

2.16 Incident Management

(194) The outage time for any of the following Incidents must be included in the calculation of the SLT-SA and SLT-MTRS for the PAS:

a) 5% or more of Communication Channels are unavailable;
b) MOS over a 1-hour interval falls below 3.8;
c) unable to route long distance calls to Canada Long Distance Service;
d) unable to allow toll free calls from Canada Toll Free Service;
e) unable to route calls to an Application;
f) unable to allow TDD incoming or outgoing calls;
g) unable to playback recorded messages or music to callers; or
h) security breach detected.