Statement of Work (SOW)
For the installation of an Avaya CM G400 solution
At SSC EDC, Bldg. O-215,
CFB Borden, Borden, ON

21 July 2017

Contents

1.   Introduction

There is a new Shared Services Canada (SSC) Enterprise Data Centre (EDC) complex (Bldg. O-215) being constructed for DND at 83 Lundy Lane, Borden, Ontario. For SSC EDC Bldg O-215, SSC/DND is installing a contractor provide a Telephony Solution based on Avaya Communication Manager (G400 series) solution.

Borden Data Center operational telephony service will provide a service for the Borden Data Center SSC, facility management and security staff for the purposes of voice and fax communications.
Borden Data Center operational telephony service will provide a service that permits the data center staff & tenants to make emergency voice calls, and personnel voice calls as related to their work within the data center.
Borden Data Center operational telephony service will not be used by data center tenants, their platforms or their applications for out of band management by telephony, remote management by telephony, or point to point telephony connectivity.

Building occupancy will be November 20 2017.

This document details the work to be performed by the contractor, for Shared Services Canada (SSC). This Statement of Work (SOW) is based on the best information provide to the SSC Desk officer from various sources and are described here.

2.   Project Objectives

To implement a contractor provided a Telephony Solution based on Avaya Aura Communication Manager (AACM), Release 7.1 at CFB Borden SSC Enterprise Data Centre (EDC) Bldg O-215. All work to be coordinated with the SSC Desk officer and the Site POC.

3.   Project Scope

The contractor will design, configure and implement a contractor provided Avaya Aura Communication Manager, Release 7.1 communications system solution with voice trunking to CFB Borden base PBX 3712. In order to do this the contractor will:

3.1 Provide, install, and configure the following:

- Rack-mounted Avaya Aura Communication Manager, Release 7.1 (JITC) with quantity one (1) G430 gateway, one (1) G450 gateway, up to sixty four (64) VoIP (H.323) phones, twenty six (26) Analogue Ports, two (2) analog (E&M) trunks, and two (2) T1-PRI Tie Trunks (to the Borden PBX in building T150 (CS1000)), (see Appendix B for recommended BOM)
- Twelve (12) 9221 analogue sets of which nine (9) will be installed,
- Sixty four (64) 9608G VoIP sets of which fifty five (55) will be installed,

- Three (21) B189 VoIP conference sets with expansion microphones of which two (2) will be installed,
- Two (2) fax machines (supplied by SSC)
- One (1) T1-PRI (Q-Sig) Tie trunk to CFB Borden PBX 3712 over existing fibre via a Luxcom Two (2) OM-200 Multiplexers (supplied by Contractor),,
- One (1) UPS (Eaton) and batteries as defined in appendix (supplied by Contractor),
- Configuration of hardware and software as noted with this SOW,
- Configuration and Installation of ancillary equipment and sets as per SSC/DND documentation (User Profile Worksheet to be provided by DND),
- On Site training for USERS on phones, features and voice mail for key personnel (train the trainers) (no more than five (5) persons with duration not less than 4 hours) with supporting material left and re-useable by the trainers,
- On Site training for SYSTEM ADMINISTRATORS covering adds, moves and changes of people and phones, system troubleshooting, and system auditing for key personnel (no more than five (5) personnel with duration not less than 2 days) with supporting material left and re-useable by the DND & SSC, and
- One (1) Years support and maintenance contract.

3.2 Provisioning the solution to:

The AACM solution will be provisioned to deliver:

- Data network (IP) connectivity conforming with the data networking/IP addressing plan as provided by SSC;
    - Telephony IP networks **including media, signalling and management networks** will be separate VLANs **that are** segregated and isolated from all other networks (absolutely no external IP network connectivity),
- Telephony **call** routing conforming with the DTN national dialing plan and policies as provided by DND/SSC,
- End users, devices programming, and voicemail programming into the system(s) according to 'User Profile Worksheet',
- Two (2) Bilingual Auto Attendant / IVR trees to four (4) levels depth with voice recordings from SSC personnel,
- Ensure emergency calls are routed according to base policy,
- Enable on-site notification of emergency calls as directed by SSC/DND.

3.3 Interface with:

The AACM will be interfacing with the following provided eqpt:

- Multiplexer (Luxcom OM-200 or equivalent) used for PRI (Q.Sig) Tie Trunks between CFB Borden PBX 3712 (CS 1000 r5.0) and the SSC EDC AACM) (See Appendix C),
- One (1) analog telephone line or analog trunk to the paging/announcement (supplied by SSC),

- Two (2) analog telephone line to the facsimile machine (supplied by SSC).

3.4 Pre-staging tasks

Contractor can pre-stage the system to minimized on site time; possible pre-staging tasks are

- Configure/ Provision/ Program Avaya Communication Manager, media gateways, optical multiplexers, UPS, ...
- Configure/ Provision/ Program the PRI connectivity to CFB Borden PBX 3712 (CS 1000 r5.0),
- Configure/ Provision/ Program the telephony solution applications including voicemail (Communication Manager Messaging), auto attendant/call vectors (Communication Manager)
- Configure/ Provision/ Program the telephones and user profiles,
- Ship all equipment to CFB Borden building O-215, 83 Lundy , Borden, Ontario site ensure label contains building O-215 and building POC.

3.5 Onsite tasks

- Meet with the POC and validate the telephony solution requirements,
- Review with the SSC rep the "User Profile" document, the equipment room layout and the site internal cabling,
- As required, participate in all project meetings/conference calls with the SSC Desk officer and/or site POC,
- Work with the SSC and other contractor teams (as designated by SSC),
- Inventory the equipment prior to starting the installation,
- Verify the rack power provide for the system install, ensure grounding as per manufacturer specifications, G450 will be installed in Office Area, and G430 will be installed in POP Room A as directed by site POC,
- Installation of related telephony hardware and cabling (Note: depend on the configuration and/or building wire contractor may choose to use either 25PR Pigtails or RJ45 plugs),
- Connect the system to the building wiring,
  - o To establish AACM connection with CFB Borden PBX 3712 (CFB Borden PBX 3712 configuration will be completed under the GDNS contract by Telus),
- The installation, and implementation of Avaya Communication Manager to include (but not limited to) the following,
  - o Digit dialing for O-215 AACM
    - Four (4 digits in-building dialing),
    - PSTN access through local PRI trunks: 89+10 digits,
    - CSN access through local PRI trunks: 86+7 digits,
  - o Program and configure Voicemail ports,

- o Program/setup Auto Attendant / IVR tree (maximum 4 levels) for the main site number and one other number (as required),
- Program a maximum of one hundred (100) locals/sets with associated eighty (80) voice mailboxes including:
- Program and configure up to two (2) analog lines for faxes (SSC provided),
- Program and configure up to two (2) VoIP conference sets and additional microphones,
- Program and configure one (1) analog line/trunk for public announcement system (SSC provided),
- Program and configure one (1) VoIP emergency calls On Site Notification telephone as directed by site POC,
- Install and configure all AACM sets and/or lines,
  - o Place set in their respective location/offices,
- Work with the SSC/DND and other delegated vendors/contractors to migrate the locals from the CFB Borden PBX 3712 to the EDC Telephony Solution (no retention of services or telephones on CFB Borden PBX 3712 required),
- Ensure 911 call routing is functioning correctly with CFB Borden PSAP with building O-215 onsite notification;
- Configure Remote Access Service (RAS), (if applicable);
- Configure Paging / Public Announcement line/trunk route (if applicable),
- Completely acceptance test the system with site POC and SSC representatives:
  - o test in building dialling,
  - o test CSN dialling,
  - o test external dialling,
    - PSTN local and long distance, ensure LD restrictions are enforced,
    - faxes
    - secure calls (if applicable)
  - o verify Auto Attendant menus (if applicable),
  - o verify IVR functions (if applicable),
  - o verify paging system(s) (if applicable),,
  - o verify RAS function (if applicable), and
  - o confirm 911 ONS plus call routing with CFB Borden PSAP,
- Participate in customer testing of all equipment to ensure end to end connectivity and expected feature operation,
- Complete USER training session, and SYSTEM ADMINISTRATOR training session within two (2) weeks before or after of building O-215 Go Live date of 29 September 2017.

4.   Other consideration

- Under the GDNS Contract, TELUS will make all the changes and/or installs on the CFB Borden CS1000 PBX,
- Contractor will ensure that power and earth ground met the manufacture requires for an AACM G430 and G450 installation,
- Telephony PRI interoperability with CFB Borden CS1000 PBX is best achieved with Q.SIQ. Telephony solution is to support Q.SIG trunking.

- Telephony solution may be required to interoperate with secure devices supporting V150.1.
- Telephony solution may be required to interoperate with Session Initiation Protocol (SIP) devices in the future. System must be able to be upgraded to support SIP. Do not include any SIP specific hardware or software.
- Contractor will provide SSC Desk officer with a copy of as-builds (to include (but limited to) site drawing/pictures, copy of the all programing, copy of all passwords),
- Implementation timeline as mutually agreed to with the SSC Desk Officer and the Site POC.
- Upon request the contractor request will be provide a copy of pertinent site drawings,
- All Personal **MUST** hold a valid Enhanced Reliability security cleared (may need to provide their clearance number each time they enter the base),

5.   Site POC responsibilities

- The Site POC will provide the appropriate mounting equipment. For this rack-mount installation, site POC will provide 19" rack within MTR and each IDF,
- Provide a prime contact for all implementation issues,
- Provide a site contact list for the project and ensure availability of required resources for the duration of the project,
- Allow appropriate access to the Equipment / Office room(s) for performing the installation,
- Installation of necessary power distribution boxes, conduits, groundings, lightning protection, connectors, cables and associated hardware,
- Provide grounded backup (generator) power within 1.5m of equipment to be installed,
- If applicable, provide laptop / PC, IP address, and/or LAN connection for the Avaya Aura admin terminal,
- When applicable, provide floor plans and identify location of telephones, extension info, faxes, POS, etc.,
- The Building has been prewired; therefore SSC will be responsible for the internal building wiring,
- Provide Power and Cooling,
- Site POC will supply earth ground in proximity of equipment installation which must be connected to the building structure's main ground,
- Providing extension numbering schema,
- Providing script for auto attendant greetings,
- Providing menu for auto attendant application,
- Provide voice talent or recordings (MP3 or WAV format) for auto attendant greetings,
- Providing the IP addressing methodology currently employed (if applicable),
- Provide Ethernet network for telephony IP networks including media, signalling and management networks on separate VLANs that are segregated and isolated from all other networks (absolutely no external IP network connectivity) (Network connectivity as per established by DND policy especially between SECURE areas and other areas),
- POC and team must be available during implementation and training activities, and

- Provide all Ethernet and fibre patch cables not included in the Avaya Communication Manager and Luxcom equipment configurations.
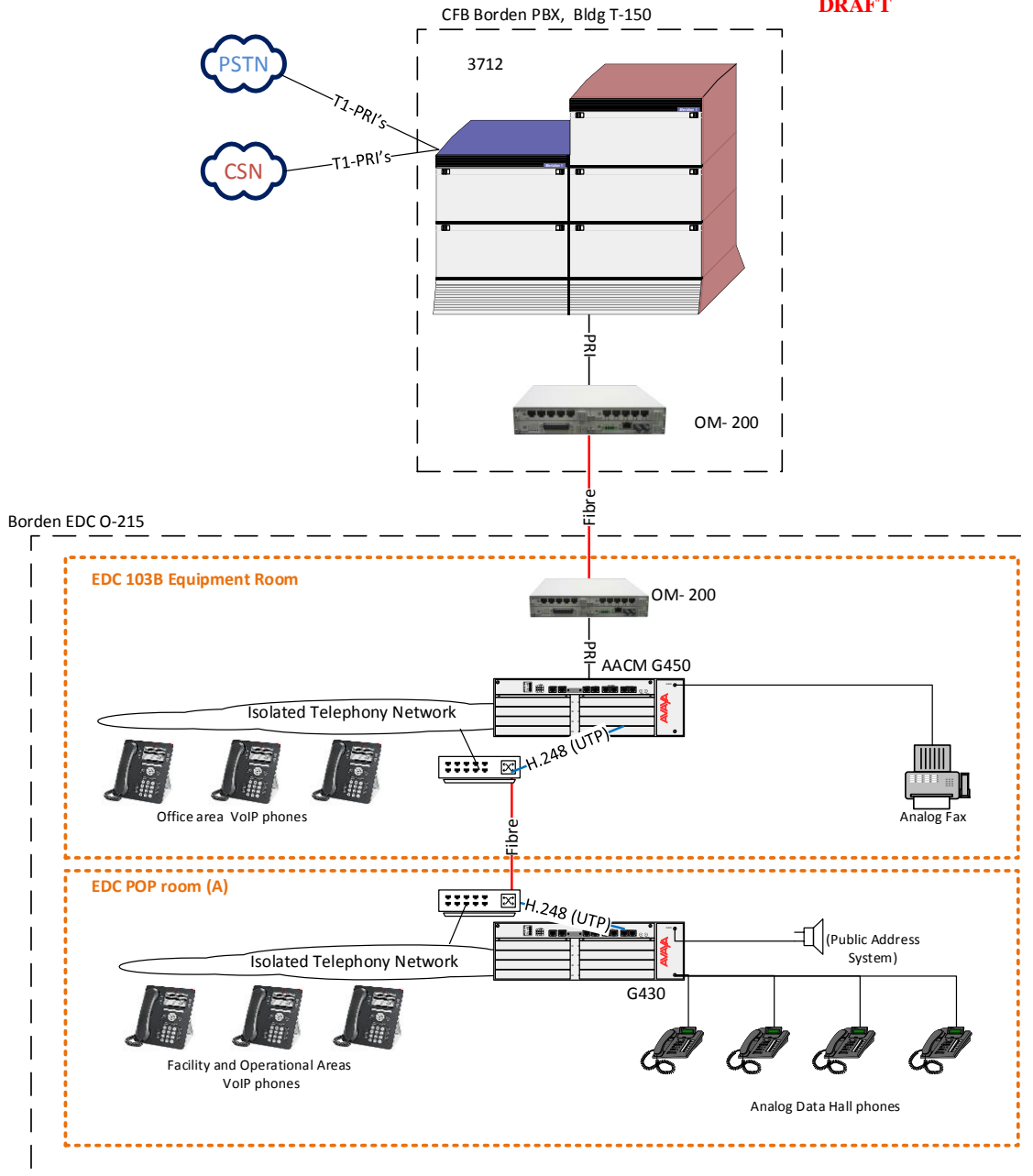
6.   Acceptance Criteria and Sign-off

- Contractor to provide Site POC and the SSC Desk officer with an Acceptance & Sign-off document to review and agree upon in advance of installation.

Appendix A: CFB Borden EDC Telephony Solution

Propose Hybrid solution for Borden EDC

DRAFT

CFB Borden PBX, Bldg T-150

3712

PSTN — T1-PRI's

CSN — T1-PRI's

PRI

OM- 200

Fibre

Borden EDC O-215

EDC 103B Equipment Room

OM- 200

PRI

AACM G450

Isolated Telephony Network

H.248 (UTP)

Office area VoIP phones

Analog Fax

Fibre

EDC POP room (A)

H.248 (UTP)

Isolated Telephony Network

(Public Address System)

G430

Facility and Operational Areas
VoIP phones

Analog Data Hall phones

The AACM is configured for:
Analog ports/lines (Faxes),
Analog line/trunk (PA system) **TBD**,
1 or 2 full T1-PRI port (connected to Borden PBX),
Analog, VoIP desk and VoIP conference sets
Conference sets w/Mics, and
Embedded Voice Mail.

1st PRI **TBD**
2nd PRI **TBD**
D Channel **TBD**

Notes: Calls from Borden EDC will access:
 The Borden PBX locals (4 digit dialing),
 PSTN access through the PBX (89+10 digits), and
 CSN access through the PBX (86+7 digits).

Proposed AACM Config
Borden EDC
Conrad Uniacke
20 JUL 2017 (Draft)

Appendix B: Solution Bill of Materials (recommended)

Avaya Aura Communication Manager Configuration
To be supplied by contractor

Quantity	Part Number	Description
		CORE HARDWARE
1	700506957	G430 MP120 MEDIA GATEWAY
1	700506955	G450 MP160 MEDIA GATEWAY
1	700507394	G450 R2 POWER SUPPLY
1	700508924	S8300E SERVER
1	700406267	S8300/S8400 CD/DVD ROM DRIVE RHS
1	700394661	MM711 ANALOG MEDIA MODULE RHS
1	700394703	MM716 ANALOG MEDIA MODULE 24 FXS RHS
2	700439250	MM710B E1/T1 MEDIA MODULE
3	405362641	POWER CORD USA
2	700395445	120A CSU CABLE 50 FEET RHS
		CORE SOFTWARE
1	700512428	AVAYA AURA SYSTEM PLATFORM 6.4 CD
1	700512294	AVAYA APPLICATION VIRTUAL PLATFORM R7.1 DVD
1	381276	AV APPLICATION VIRTUAL PLTFRM R7 SINGLE CPU EMBEDDED SERVER
1	700510424	AV APPLICATION VIRTUAL PLATFORM R7 MEDIA KIT
1	700512298	AURA COMMUNICATION MANAGER R7.1 SOFTWARE DVD
1	387760	AURA R7 DEVICE SERVICES VE VAPPLIANCE SYSTEM LIC:DS;NU;SR
1	700512293	AVAYA AURA UTILITY SERVICES R7.1 DVD
1	391427	AVAYA AURA UTILITY SERVICES R7.1 AVP SYSTEM LIC:DS,SR
1	700510422	CM MESSAGING R7.0 APPLICATION OVA DVD
1	700510900	CM MESSAGING R7.0 LANGUAGES DVD
		USER LICENSING
100	380398	AURA R7 CORE SUITE NEW SOFTWARE LIC:NU;CU;SR
100	392475	CORE SUITE R7 MESSAGING SEAT BASIC R7 /E LIC:NU
15	380413	CORE SUITE R7 ASBCE R7 STD SVCS /E LIC:CU
30	380414	CORE SUITE R7 ASBCE R7 ADV SVCS /E LIC:CU
100	380415	CORE SUITE R7 ASBCE R7 STD HA LIC /E LIC:CU
100	380416	CORE SUITE R7 ASBCE R7 ADV HA LIC /E LIC:CU
100	380418	CORE SUITE R7 AVAYA MULTIMEDIA MSG BASIC USER R6 /E LIC:NU

100	380419	CORE SUITE R7 EQUINOX IPAD R3 /E LIC:NU
100	380420	CORE SUITE R7 EQUINOX WIN R3 /E LIC:CU
100	380421	CORE SUITE R7 EQUINOX MOBILE R3 /E LIC:NU
100	380422	CORE SUITE R7 AES UNIFIED DESKTOP R7 /E LIC:CU
100	380424	CORE SUITE R7 EC500 SINGLE MODE R9 /E LIC:NU
100	380425	CORE SUITE R7 ONE-X CES R6 /E LIC:CU
100	380426	CORE SUITE R7 VIDEO R7 /E LIC:NU
100	380429	CORE SUITE R7 PRESENCE SERVICES R7 /E LIC:NU
100	380430	CORE SUITE R7 AVAYA BREEZETM R3 USER /E LIC:CU
100	380432	CORE SUITE R7 CMM R7 /E LIC:NU
100	380434	CORE SUITE R7 EQUINOX MAC R3 /E LIC:NU
100	380435	CORE SUITE R7 ONE-X COMMUNICATOR R6 /E LIC:NU
100	380436	CORE SUITE R7 COMMUNICATOR FOR MS LYNC R6 /E LIC:NU
1	380423	CORE SUITE R7 INTG MGMT SITE ADMINISTRATION R6 /E LIC:DS
		PHONES
64	700507946	IP TELEPHONE 9608G GRAY GIGABIT ETHERNET (TAA)
3	700503700	AVAYA B189 IP CONF PHONE
50	700383375	IP PHONE 9620 9608/11 94/9500 WALL MOUNT
3	700501539	AVAYA B100 SERIES EXPANSION MICROPHONES 1PR FOR CONFERENCE PHONE
12	700287717	Avaya 6221 analogue telephone

Package must include
- JITC CERTIFIED software for DND purposes
- Q.SIG Support for CS1000 interop
- SIP Support capability for WCS interoperability

Fiber Optic Extenders/Multiplexers
To be supplied by Contractor

Location from	Location to	Connections	Function
O-215 MTR	T-150	T1/PRI (qty2)	CSN, PSTN

Requirement for Fiber Multiplexers BLDGXX		
LUXCOM Part Number	**Description**	**Qty.**
OM200-CH4	4 Slot SONET chassis, w/o power supply	2
OM200-PS~4	Power supply module for 4 slot chassis	3
OM200-OCA1-SM-ST-0	Optical Module, 1310nm, SM, c/w redundant supply	3
OM200-T1/E1	T1/E1module	4

UPS Equipment
To be supplied by Contractor

Requirement for UPS		
Eaton PN	**Description**	**Qty.**
5PX1000RT	Eaton 5PX 1000 120V 2U Rack Tower, 8ft 5-15P Input Cord, (8)5-15R Outlets	2
5PXEBM48RT	Eaton 5PX 48V EBM R/T 2U, 1000-2200va Models	6
103007018-5591	2-post rail kit	2