	Public Works and Government Services Canada	**Travaux publics et Services gouvernementaux Canada**

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving - PWGSC / Réception des soumissions - TPSGC
11 Laurier St. / 11, rue Laurier
Place du Portage, Phase III
Core 0A1 / Noyau 0A1
Gatineau
Québec
K1A 0S5

Revision to a Request for Supply Arrangement - Révision à une demande pour un arrangement en matière d'approvisionnement

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Title - Sujet
TBIPS

Solicitation No. - N° de l'invitation	**Date**
EN578-055605/E	2013-01-22

Client Reference No. - N° de référence du client	**Amendment No. - N° modif.**
EN578-055605	001

File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
003ei.EN578-055605	

GETS Reference No. - N° de référence de SEAG
PW-$$EI-003-25338

Date of Original Request for Supply Arrangement   2013-01-18
Date de demande pour un arrangement en matière d'app. originale

Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-03-04	**Time Zone Fuseau horaire** Eastern Standard Time EST

Address Enquiries to: - Adresser toutes questions à:	**Buyer Id - Id de l'acheteur**
Benoit(003ei), Real	003ei

Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(819) 934-4667 ( )	(819) 956-7827

Delivery Required - Livraison exigée

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:

Security - Sécurité
This revision does not change the security requirements of the solicitation.
Cette révision ne change pas les besoins en matière de sécurité de l'invitation.

Instructions: See Herein

Instructions: Voir aux présentes

Issuing Office - Bureau de distribution
Electronic Information Technology Professional Srv Div/Div des srv professionnels en technologie de l'information électronique
11 Laurier St. / 11 rue Laurier
Portage III 0A1 - 1
Gatineau
Québec
K1A 0S5

Acknowledgement copy required	**Yes - Oui**	**No - Non**
Accusé de réception requis		

The Offeror hereby acknowledges this revision to its Offer.
Le proposant constate, par la présente, cette révision à son offre.

Signature	**Date**

Name and title of person authorized to sign on behalf of offeror. (type or print)
Nom et titre de la personne autorisée à signer au nom du proposant.
(taper ou écrire en caractères d'imprimerie)

For the Minister - Pour le Ministre

Canada

Solicitation No. - N° de l'invitation	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur
EN578-055605/E	001	003ei
Client Ref. No. - N° de réf. du client	File No. - N° du dossier	CCC No./N° CCC - FMS No/ N° VME
EN578-055605	003eiEN578-055605	

<u>This Solicitation Amendment is raised to answer the following question</u>:

Q 1: I have ordered the English version of the RFP TBIPS - EN578-055605/E, however Annex A is completely in French. Can you please provide me with an English copy of Annex A?

A 1: The Annex A, in English and French, are attached to Amendment #1.

TABLE OF CONTENTS

APPLICATIONS SERVICES STREAM

A.1 Application/Software Architect

Experience Levels

Level 1:   < 5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Develop technical architectures, frameworks and strategies, either for an organization or for a major application area, to meet the business and application requirements.
- Identify the policies and requirements that drive out a particular solution.
- Analyze and evaluate alternative technology solutions to meet business problems.
- Ensures the integration of all aspects of technology solutions.
- Monitor industry trends to ensure that solutions fit with government and industry directions for technology.
- Analyze functional requirements to identify information, procedures and decision flows.
- Evaluate existing procedures and methods, identify and document database content, structure, and application sub-systems, and develop data dictionary.
- Define and document interfaces of manual to automated operations within application sub-systems, to external systems and between new and existing systems.
- Define input/output sources, including detailed plan for technical design phase, and obtain approval of the system proposal.
- Identify and document system specific standards relating to programming, documentation and testing, covering program libraries, data dictionaries, naming conventions, etc.

Specialties could include but are not limited to:

• ActiveX	• HML	• MIL-STD-498	• PowerBuilder	• TCP/IP
• ADS	• HTML	• MS Access	• Rational Rose	• Unisys DBII
• ASP	• IBM DB2	• MS SQL	• RPG	• Unix
• BPWin	• IDMS	• .NET	• RUP	• Visual Basic
• C++	• Impromptu	• Netron/CAP	• SAP	• Visual C++
• CICS	• IMS	• ODBC	• SQL Server	• XML
• Cold Fusion	• Informix	• OLAP	• SQL*DBA	
• CORBA	• Ingres	• Oracle	• SQL*Forms	
• Crystal Reports	• J2EE	• Oracle CASE	• SQL*Menu	
	• Java	• Oracle Financials	• SQL*Net	
• Delphi	• JavaScript	• Perl	• SQL*Plus	
• EbXML	• JDBC	• PHP	• SQL*Report	
• ERWin	• JSP	• PL/SQL	• Sybase	

A.2 ERP Functional Analyst
Experience Levels
Level 1:   < 5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience
Responsibilities could include but are not limited to:
• Develop and document ERP functional, business, and/or system requirements specifications. • Develop and document screen, report and interface requirements. • Develop functional, business, and/or system interface or capability interaction. • Gather and analyze information to establish the functional needs of a system or project. • Design methods and procedures for computer systems, and sub-systems of larger systems. • Develop, test and implement small computer systems, and sub-systems of larger systems. • Document forms, manuals, programs, data files, and procedures.
Specialties could include but are not limited to:

• Impromptu • JDEdwards • Oracle	• PeopleSoft • SAP • Syteline			

A.3 ERP Programmer Analyst				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Develop low-level detailed requirements, programming, and systems development of ERP Systems. • System testing and implementation.				
Specialties could include but are not limited to:				
• Impromptu • JDEdwards	• Oracle • PeopleSoft	• SAP • Syteline		

A.4 ERP System Analyst				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Develop requirements, feasibility, cost, design, and specification documents for ERP systems. • Implement ERP systems to support projects, departments, organizations or businesses. • Translate ERP business requirements into systems design and specifications. • Analyze and recommend alternatives and options for solutions. • Develop technical specifications for ERP systems development, design and implementation.				
Specialties could include but are not limited to:				
• Impromptu • JDEdwards	• Oracle • PeopleSoft	• SAP • Syteline		

A.5 ERP Technical Analyst

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Comprehensive understanding of the technical capabilities offered by ERP facilities.
- Develop or assist with business and functional requirements, project scope, estimates of effort and duration.
- Translate functional and business requirements into technical requirements.
- Develop and/or manage technical aspects of application software, user interfaces, and third-party components.
- Conduct, assist with, an/or manage unit and system tests.
- Establish technical standards for the technical framework.

Specialties could include but are not limited to:

• Impromptu	• Oracle	• SAP		
• JDEdwards	• PeopleSoft	• Syteline		

A.6 Programmer/Software Developer

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Develop and prepare diagrammatic plans for solution of business, scientific and technical problems by means of computer systems of significant size and complexity.
- Analyze the problems outlined by the systems analysts/designers in terms of such factors as style and extent of information to be transferred to and from storage units, variety of items to be processed, extent of sorting, and format of final printed results.
- Select and incorporate available software programs.
- Design detailed programs, flow charts, and diagrams indicating mathematical computation and sequence of machine operations necessary to copy and process data and print the results.
- Translate detailed flow charts into coded machine instructions and confer with technical personnel in planning programs.
- Verify accuracy and completeness of programs by preparing sample data, and testing them by means of system acceptance test runs made by operating personnel.
- Correct program errors by revising instructions or altering the sequence of operations.
- Test instructions, and assemble specifications, flow charts, diagrams, layouts, programming and operating instructions to document applications for later modification or reference.

Specialties could include but are not limited to:

• ActiveX	• HML	• MIL-STD-498	• PowerBuilder	• TCP/IP
• ADS	• HTML	• MS Access	• Rational Rose	• Unisys DBII
• ASP	• IBM DB2	• MS SQL	• RPG	• Unix
• BPWin	• IDMS	• .NET	• RUP	• Visual Basic
• C++	• Impromptu	• Netron/CAP	• SAP	• Visual C++
• CICS	• IMS	• ODBC	• SQL Server	• XML
• Cold Fusion	• Informix	• OLAP	• SQL*DBA	
• CORBA	• Ingres	• Oracle	• SQL*Forms	
• Crystal Reports	• J2EE	• Oracle CASE	• SQL*Menu	
• Delphi	• Java	• Oracle Financials	• SQL*Net	
• EbXML	• JavaScript	• Perl	• SQL*Plus	
• ERWin	• JDBC	• PHP	• SQL*Report	
	• JSP	• PL/SQL	• Sybase	

A.7 Programmer/Analyst

Experience Levels

Level 1:   < 5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Create and modify code and software.
- Create and modify screens and reports.
- Gather and analyze data for the conduct of studies to establish the technical and economic feasibility of proposed computer systems, and for the development of functional and system design specifications.
- Design methods and procedures for small computer systems, and sub-system of larger systems.
- Develop, test and implement small computer systems, and sub-systems of larger systems.
- Produce forms, manuals, programs, data files, and procedures for systems and/or applications.

Specialties could include but are not limited to:

- ActiveX - ADS - ASP - BPWin - C++ - CICS - Cold Fusion - CORBA - Crystal Reports - Delphi - EbXML - ERWin	- HML - HTML - IBM DB2 - IDMS - Impromptu - IMS - Informix - Ingres - J2EE - Java - JavaScript - JDBC - JSP	- MIL-STD-498 - MS Access - MS SQL - .NET - Netron/CAP - ODBC - OLAP - Oracle - Oracle CASE - Oracle Financials - Perl - PHP - PL/SQL	- PowerBuilder Rational Rose - RPG - RUP - SAP - SQL Server - SQL*DBA - SQL*Forms - SQL*Menu - SQL*Net - SQL*Plus - SQL*Report - Sybase	- TCP/IP - Unisys DBII - Unix - Visual Basic - Visual C++ - XML

A.8 System Analyst

Experience Levels
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience

Responsibilities could include but are not limited to:
• Develop requirements, feasibility, cost, design, and specification documents for systems. • Implement systems to support projects, departments, organizations or businesses. • Translate business requirements into systems design and specifications. • Analyze and recommend alternatives and options for solutions. • Develop technical specifications for systems development, design and implementation.

Specialties could include but are not limited to:

• ActiveX • ADS • ASP • BPWin • C++ • CICS • Cold Fusion • CORBA • Crystal Reports • Delphi • EbXML • ERWin	• HML • HTML • IBM DB2 • IDMS • Impromptu • IMS • Informix • Ingres • J2EE • Java • JavaScript • JDBC • JSP	• MIL-STD-498 • MS Access • MS SQL • .NET • Netron/CAP • ODBC • OLAP • Oracle • Oracle CASE • Oracle Financials • Perl • PHP • PL/SQL	• PowerBuilder • Rational Rose • RPG • RUP • SAP • SQL Server • SQL*DBA • SQL*Forms • SQL*Menu • SQL*Net • SQL*Plus • SQL*Report • Sybase	• TCP/IP • Unisys DBII • Unix • Visual Basic • Visual C++ • XML

A.9 System Auditor				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Review organizational IT policy, standards and procedures and provide advice on their adequacy. • Conduct systems under development reviews by reviewing project documentation, conducting interviews, assessing work completed, and, based on findings, reporting on compliance with policy, standards and procedures; and, progress against plan. • Conduct reviews of systems recently implemented and reporting on: ▪ benefits actually achieved versus projected benefits, ▪ features actually delivered versus stated requirements, ▪ the adequacy of controls and system security features, ▪ user satisfaction based on surveys or interviews, ▪ system performance and reliability. • Review systems that have been in production status for some time and report on issues, deficiencies, and shortcomings.				
Specialties could include but are not limited to:				
•				

A.10 Test Coordinator

Experience Levels

Level 1:   <5years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Provide advice, guidance and coordination efforts for test strategies and plans, selection of automated testing tools, and identification of resources required for testing.
- Plan, organize, and schedule testing efforts for large systems, including the execution of systems integration tests, specialized tests, and user acceptance testing (e.g., stress tests).

Specialties could include but are not limited to:

• ASP	• HML, XML or EbXML	• Java	• SAP
• C++	• IBM DB2DMS	• MS SQL	• Sybase
• COBOL	• IMS	• Netron/CAP	• Unisys DBII
• CORBA	• Informix	• Oracle Peoplesoft	• Unix
• Delphi	• Ingres	• PHP	• Visual Basic
		• PowerBuilder	

A.11 Tester

Experience Levels
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience

Responsibilities could include but are not limited to:

- Test planning and coordination.
- Supervision of testing in accordance with the plan.
- Management and monitoring of test plans for all levels of testing.
- Management of walkthroughs and reviews related to testing and implementation readiness.
- Status reporting.
- Development of test scenarios and test scripts.
- Establishing and maintaining source and object code libraries for a multi-platform, multi-operating system environment.
- Establishing software testing procedures for unit test, integration testing and regression testing with emphasis on automating the testing procedures.
- Establishing and operating "interoperability" testing procedures to ensure that the interaction and co-existence of various software elements, which are proposed to be distributed on the common infrastructure, conform to appropriate departmental standards (e.g. For performance, compatibility, etc.) and have no unforeseen detrimental effects on the shared infrastructure.
- Establishing a validation and verification capability which assumes functional and performance compliance.

Specialties could include but are not limited to:

•				

A.12 WEB Architect				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Define architecture to be used in web-based projects. • Perform architectural modeling to ensure consistency of the design with existing work. • Select the development language to be used for the project. • Assess the impact of the new requirements on existing web applications. • Develop code based upon design and requirements documents. • Write code to write to and read from the database. • Unit test the code prior to releasing it for integration testing. • Monitor the need for architectural changes as the project progresses. • Develop test plans for testing the system. • Ensure functionalities have been implemented according to specifications. • Define assumptions and constraints of architecture with regard to physical structure and data collection. • Develop post-implementation plan for monitoring/tracking architecture stability.				
Specialties could include but are not limited to:				
• ActiveX • EbXML	• HML • HTML	• Java • JavaScript	• .NET • Perl	• XML

A.13 WEB Designer

Experience Levels
Level 1:　　　<5 years of experience Level 2:　　　5-<10 years of experience Level 3:　　　10+ years of experience

Responsibilities could include but are not limited to:

- Define architecture to be used in the web-based projects.
- Create and apply designs that maximize usability of existing objects.
- Perform architectural modeling to ensure consistency of the design with existing work.
- Select the development language to be used for the project.
- Assess the impact of the new requirements on existing web applications.
- Develop code based upon design and requirements documents.
- Write code to write to and read from the database.
- Unit test the code prior to releasing it for integration testing.
- Monitor the need for design changes as the project progresses.
- Develop test plans for testing the system.
- Ensure functionalities have been implemented according to specifications.
- Define assumptions and constraints of architecture with regard to physical structure and data collection.
- Develop post-implementation plan for monitoring/tracking design stability.

Specialties could include but are not limited to:

• ActiveX	• HML	• Java	• .NET	• XML
• EbXML	• HTML	• JavaScript	• Perl	

A.14 WEB Developer

Experience Levels

Level 1:	<5 years of experience
Level 2:	5-<10 years of experience
Level 3:	10+ years of experience

Responsibilities could include but are not limited to:

- Develop and prepare diagrammatic plans for web based service delivery over the internet.
- Analyze the problems outlined by systems analysts/designers in terms of such factors as style and extent of information to be transferred across the internet.
- Select and use the best available web development tools for linking the internet based client to the departmental "back end" information delivery programs and databases.
- Design high-usability web pages to meet the requirement.
- Verify accuracy and completeness of programs by preparing sample data, and testing them by means of system acceptance test runs made by operating personnel.
- Correct program errors by revising instructions or altering the sequence of operations.
- Test instructions, and assemble specifications, flow charts, diagrams, layouts, programming and operating instructions to document applications for later modification or reference.

Specialties could include but are not limited to:

• ActiveX	• HML	• Java	• .NET	• XML
• EbXML	• HTML	• JavaScript	• Perl	

A.15 Web Graphics Designer

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Create web pages including graphic design.
- Develop and implement usability tests, analysis result and modify design accordingly.
- Develop flowcharts (web site flow maps) depicting navigation and content.
- Develop line drawings or block diagrams illustrating the priority of information, links, navigation and space requirements.
- Develop content diagrams showing the interactive connection between pages.
- Develop interactive prototypes showing basic form and functionality used for both usability testing and presentations.

Specialties could include but are not limited to:

• ActiveX	• HML	• Java	• .NET	• XML
• EbXML	• HTML	• JavaScript	• Perl	

A.16 Web Multi-media Content Consultant				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Create web pages including multi-media design. • Develop and implement usability tests, analyze results and modify design accordingly. • Develop flowcharts (web site flow maps) depicting navigation and basic content. • Develop line drawings or block diagrams illustrating the priority of information, links, navigation and space requirements. • Develop content diagrams showing the interactive connection between web pages. • Develop interactive prototypes showing basic form and functionality used for both usability testing and presentations.				
Specialties could include but are not limited to:				
• ActiveX • EbXML	• HML • HTML	• Java • JavaScript	• .NET • Perl	• XML

A.17 Webmaster				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Create web pages including graphics and general web site design. • Develop and implement usability tests, analyze results and modify design accordingly. • Develop flowcharts (web site flow maps) depicting navigation and basic content. • Develop line drawings or block diagrams illustrating the priority of information, links, navigation and space requirements. • Develop content diagrams showing the interactive connection between web pages. • Develop interactive prototypes showing basic form and functionality for both usability testing and presentations.				
Specialties could include but are not limited to:				
• ActiveX • EbXML	• HML • HTML	• Java • JavaScript	• .NET • Perl	• XML

GEOMATICS SERVICES STREAM

G.1 Geomatics Analyst
Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience
Responsibilities could include but are not limited to: - Develops and documents detailed statements of requirement. - Analyzes functional requirements to identify information, procedures and decision flows. - Evaluates existing procedures and methods, identifies and documents data base content, structure and application sub-systems, and develops data dictionary. - Defines and documents interfaces of manual to automated operations within sub-systems, to external systems and between new and existing systems. - Defines input/output sources, including a detailed plan for technical design phase, and obtains approval of same. - Designs and documents in detail all system components, their interfaces and operational environment. - Designs data structures and files, sub-systems and modules, programs, batch, on line, and production monitoring procedures, testing strategy and systems. - Documents system design, concepts and facilities, presents and obtains approval of detailed system design. - Produces an operational system including all forms, manuals, programs, data files and procedures. - Provides advice on GIS and Remote Sensing technology and its application. - Performs analysis and modeling. - Designs and implements functional prototypes. - Interprets project objectives and creates appropriate data, analysis and output products (maps, reports). - Restructures data from various sources and in diverse formats. - Creates and updates metadata. - Creates, updates and maintains procedures and standards. - Creates, updates, revises and documents data sets. - Designs processes for performing earth observation (EO) image processing. - Analyzees and process EO data. - Designs and writes GIS and/or Remote Sensing related programs.
Specialties could include but are not limited to:

- GIS Product Suites	-	-	-	

G.2 Geomatics Specialist				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Implements data structures and files, sub-systems and modules, programs, batch, on line, and production monitoring procedures, testing strategy and systems. - Tests and implements small systems and sub-systems of larger systems. - Produces forms, manuals, programs, data files and procedures. - Produces components of an operational system including all forms, manuals, programs, data files and procedures. - Performs analysis and modeling - Creates, updates, revises and documents GIS and/or earth observation data sets. - Creates appropriate data, analysis and output products (maps, reports) to meet project objectives. - Restructures data from various sources and in diverse formats. - Creates and updates metadata. - Creates updates and maintains procedures and standards. - Supports the design of, and writes, GIS and remote sensing related programs. - Analyze and process earth observation (EO) image and GIS data.				
Specialties could include but are not limited to:				
• GIS Product Suites				

G.3 GIS Applications Analyst				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Develops and documents detailed statements of requirement. - Analyzes functional requirements to identify information, procedures and decision flows. - Evaluates existing procedures and methods, identifies and documents data base content, structure and application sub-systems, and develops data dictionary. - Defines and documents interfaces of manual to automated operations within sub-systems, to external systems and between new and existing systems. - Defines input/output sources, including a detailed plan for technical design phase, and obtains approval of same. - Designs and documents in detail all system components, their interfaces and operational environment. - Designs data structures and files, sub-systems and modules, programs, batch, on line, and production monitoring procedures, testing strategy and systems. - Documents system design, concepts and facilities, presents and obtains approval of detailed system design. - Produces an operational system including all forms, manuals, programs, data files and procedures. - Performs manual code changes. - Performs screen and report changes. - Gathers and analyzes data for the conduct of studies to establish the technical and economic feasibility of proposed computer systems, and for the development of functional and system design specifications. - Designs methods and procedures for small computer systems and sub-systems of larger systems. - Develops, tests and implements small systems and sub-systems of larger systems. - Produces forms, manuals, programs, data files and procedures. - Provides advice on GIS technology and its application. - Designs and implements functional prototypes. - Performs analysis and modeling. - Creates, updates, revises and documents GIS data sets. - Interprets project objectives and creates appropriate data, analysis and output products. - Restructures data from various sources and in diverse formats. - Creates and updates metadata. - Creates, updates and maintains procedures and standards. - Designs and writes GIS-related programs.				
Specialties could include but are not limited to:				
• GIS Product Suites				

G.4 GIS Application Architect				
Experience Levels				
Level 1:　　　<5 years of experience Level 2:　　　5-<10 years of experience Level 3:　　　10+ years of experience				
Responsibilities could include but are not limited to:				
- Desig and develop the application architecture for the project, in the context of the overall system architecture. - Select the paradigm and technology for application program-to-program communication (APPC) among the components. - Define the application tiers, frameworks, components types and interfaces. - Specify and provide ownership of reusable application components or reusable application code. - Identify key business and technology drivers that impact application architectures, such as end-user community requirements, existing software distribution capabilities, existing application environment (including legacy and packaged systems), and performance and availability requirements, and design application architecture to meet these considerations. - Define strategies and plans for application rationalization and retirement in the context of the project's phasing strategy. - Develop and maintain coding standards. - Lead the application development team in architecture decisions and review/authorize development team architecture decisions. - Lead code design reviews. - Monitore and support the development of the system's applications to ensure they are compliant with the application architecture, and refine the application architecture as required.				
Specialties could include but are not limited to:				
• GIS Product Suites				

G.5 GIS Data Architect				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Design and develop the data architecture for the project, in the context of the overall system architecture. - Set Data Policy and the technical solution for the management, storage, access, navigation, movement, and transformation of data. - Specify recommended DBMS and ETL tools and technologies for structured and unstructured content. - Design the Metadata Repository. - Create a data model for the project that is independent of the technology solution. - Examine and enforce opportunities to provide data reuse, balancing the issues of centralization and replication. - Ensure the preservation of strategic data assets as applications and technologies evolve. - Monitor and support the development of the system's data to ensure it is compliant with the data architecture, and refine the data architecture as required.				
Specialties could include but are not limited to:				
• GIS Product Suites				

G.6 GIS Infrastructure Architect				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Design and develop the infrastructure architecture for the project, in the context of the overall system architecture. - Focus on the standards and technologies for enabling systems performance qualities, such as availability, scalability, recoverability, etc. - Evaluate and select the system's server hardware, operating system and job control. - Support the GIS Application Architect in selecting the application framework. - Balance the quality issues cost vs. robustness, and hardware architecture. - In conjunction with the System Architecture team, size the application and select the hardware and software configuration. - Establish a process to monitor system performance against requirements. - Monitor and support the development of the system's infrastructure to ensure it is compliant with the infrastructure architecture, and refine the infrastructure architecture as required.				
Specialties could include but are not limited to:				
• GIS Product Suites				

G.7 GIS Programmer/Analyst				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Provide operational, technical and analytical expertise to GIS projects by understanding how to apply the principles and practices of GIS as a decision support tool. • Translate spatially related user requirements and technical systems specifications into working, tested GIS applications, including developing detailed programming specifications, writing and/or generating code, compiling and integrating data driven programs and systems, interacting with spatial databases and conducting unit tests.				
Specialties could include but are not limited to:				
• GIS Product Suites				

G.8 GIS Project Manager				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
Within both the IT and GIS system environments: • Defines and documents the objectives for the project; determines budgetary requirements, the composition, roles and responsibilities, and terms of reference for the project team. • Manages the project during the development, implementation and operations startup by ensuring that resources are made available, and that the project is developed, and made fully operational within agreed time, cost and performance parameters. • Formulates statements of problems; establishes procedures for the development and implementation of significant, new or modified project elements to solve these problems, and obtains approval thereof. • Reports progress of the project on an ongoing basis and at scheduled points in the life cycle. • Meets in conference with stakeholders and states problems in a form capable of being solved. • Prepares plans, charts, tables and diagrams to assist in analyzing or displaying problems; works with a variety of project management tools. • Project sign-off				
Specialties could include but are not limited to:				
• GIS Product Suites				

G.9 GIS System Architect				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Design the overall target architecture of the IT system to meet the formally established requirements (functional and non-functional) of a project. - Monitor and support the development of the system to ensure it is compliant with the target architecture and refine the target architecture as required. - Ensure the integration of the system's component architectures – data, application, infrastructure, etc., into the overall target system architecture. - Ensure the integration of the system architecture into the sponsoring organization's enterprise architecture. - Establish phased project plans that lead to a completed target architecture. - Leading the development of architecture Guiding Principles and architecture blueprints. - Ensure the systems overall viability throughout the systems development and implementation phases; - ensure the solution and the scope are compliant with the stated requirements (quality control); - Balancing trade-offs between requirements and costs for the system and communicating the issues to the Technical Authority - Survey emerging developments, new technologies, standards and methodologies that will have a positive impact on the system architecture, and incorporate these into the system architecture. - Manage the System Architecture team to achieve these goals.				
Specialties could include but are not limited to:				
• GIS Product Suites				

G.10 GIS Web Mapping Developer				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Develop and prepare diagrammatic plans for web based service delivery over the Internet. - Analyze the problems outlined by systems analysts/designers in terms of such factors as style and extent of information to be transferred across the Internet. - Select and use the best available web development tools for linking the Internet-based client to the IT system's "back end" information delivery programs and databases. - Design high-usability web pages to meet the requirement. - Verify accuracy and completeness of programs by preparing sample data and testing them by means of system acceptance test runs made by operating personnel. - Correct program errors by revising instructions or altering the sequence of operations. - Test instructions, and assemble specifications, flow charts, diagrams, layouts, programming and operating instructions to document applications for later modification or reference.				
Specialties could include but are not limited to:				
• GIS Product Suites	• CGI • HTML	• JavaScript • Perl		

G.11 Mapping Technician				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Plan map content, format and design and compile required data from aerial photographs, survey notes, records, reports and other maps. • Generate maps and related graphs and charts using digital mapping techniques, computer interactive graphics, computer assisted design and drafting (CAD) software, and geographic information systems (GIS) software.				
Specialties could include but are not limited to:				
• GIS Product Suites				

IM/IT SERVICES STREAM

I.1 Data Conversion Specialist				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Oversee all facilities of the conversion process. - Complete mapping, interfaces, mock conversion work, enhancements, actual conversion, and verify completeness and accuracy of converted data. - Establish a strong working relationship with all clients, interact effectively with all levels of client personnel, and provide conversion support. - Analyze and coordinate data file conversions. - Work with importing files from heterogeneous platforms.				
Specialties could include but are not limited to:				
•				

I.2 Database Administrator

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Customize data base conversion routines.
- Finalize Conversion Strategy.
- Generate new database with the client.
- Maintain data dictionaries.
- Develop and implement procedures that will ensure the accuracy, completeness, and timeliness of data stored in the database.
- Develop and implement security procedures for the database, including access and user account management.
- Maintain configuration control of the database.
- Perform and/or coordinate updates to the database design.
- Control and coordinate changes to the database, including the deletion of records, changes to the existing records, additions to the database
- Develop and coordinate back-up, disaster recovery and virus protection procedures.

Specialties could include but are not limited to:

• BPWin • ERWin • IBM DB2 • IDMS • Informix • Ingres	• MS Access • MS SQL • Oracle • Oracle CASE • Oracle Financials • Silverrun	• SQL Server • SQL*DBA • SQL*Forms • SQL*Menu • SQL*Net • SQL*Plus • SQL*Report	• Sybase • Unisys DBII	

I.3 Database Analyst				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Define new database structures. • Define data conversion strategy. • Define database conversion specifications. • Finalize Conversion Strategy. • Work very closely with the users in order to maintain and safeguard the database. • Identify requirements for improvements to existing databases by determining users' information requirements and system performance and functional requirements. • Develop and implement procedures that will ensure the accuracy, completeness, and timeliness of data stored in the database. • Mediates and resolves conflicts among users' needs for data. • Advise programmers, analysts, and users about the efficient use of data.				
Specialties could include but are not limited to:				
• BPWin • ERWin • IBM DB2 • IDMS • Informix • Ingres	• MS Access • MS SQL • Oracle • Oracle CASE • Oracle Financials • Silverrun	• SQL Server • SQL*DBA • SQL*Forms • SQL*Menu • SQL*Net • SQL*Plus • SQL*Report	• Sybase • Unisys DBII	

I.4 Database Modeller / IM Modeller

Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- The Data Architect has both strategic and tactical responsibility for developing and maintaining the Architecture and Data Models for corporate and project specific initiatives. This responsibility includes the identification of data most valuable to the department, the integration of this data, and the development of core relating data models.   The resulting data models will be based on data architecture and modeling design principles and tenets.
- Design, develop and maintain Logical Data Models.
- Analyze proposed changes to databases from the context of the Logical Data Model.
- Provide technical expertise in the use and optimization of data modeling techniques to team members.
- Provide technical assistance, guidance and direction in terms of data analysis and modeling to team members.
- Provide assistance to project team and business users relating to data issues and data analysis concepts.
- Participate in the development of data modeling and metadata policies and procedures.
- Participate in data analysis as a result of new/updated requirements.
- Apply approved changes to logical data models.
- Comply with corporate data architectures, strategies and frameworks, including enterprise data warehouse activities.
- Analyze and evaluate alternative data architecture solutions to meet business problems/requirements to be incorporated into the corporate data architecture.
- Review corporate architecture strategies and directions, data requirements, and business information needs and devise data structures to support them.
- Improve modeling efficiency through recommendations on how to better utilize current metadata repositories.
- Comply with corporate repository metadata directions.
- Provide input to refinement of data architectures.
- Participate in data architecture refinement.
- Define access strategies.
- Construct, monitor and report on work plans and schedules.

Specialties could include but are not limited to:

- BPWin - ERWin - IBM DB2 - IDMS - Informix - Ingres	- MS Access - MS SQL - Oracle - Oracle CASE - Oracle Financials - Silverrun	- SQL Server - SQL*DBA - SQL*Forms - SQL*Menu - SQL*Net - SQL*Plus - SQL*Report	- Sybase - Unisys DBII	

I.5 IM Architect

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Analyze existing capabilities and requirements, develop redesigned frameworks and recommend areas for improved capability and integration. Develop and document detailed statements of requirements.
- Evaluate existing procedures and methods, identify and document database content, structure, and application subsystems, and develop data dictionary.
- Define and document interfaces of manual to automated operations within application subsystems, to external systems, and between new and existing systems.
- Prototype potential solutions, provide tradeoff information and suggest recommended courses of action.
- Perform information modelling in support of BPR implementation.
- Perform cost/benefit analysis of implementing new processes and solutions.
- Provide advice in developing and integrating process and information models between business processes to eliminate information and process redundancies.
- Provide advice in defining new requirements and opportunities for applying efficient and effective solutions; identify and provide preliminary costs of potential options.

Specialties could include but are not limited to:

• BPWin • ERWin • IBM DB2 • IDMS • Informix • Ingres	• MS Access • MS SQL • Oracle • Oracle CASE • Oracle Financials • Silverrun	• SQL Server • SQL*DBA • SQL*Forms • SQL*Menu • SQL*Net • SQL*Plus • SQL*Report	• Sybase • Unisys DBII	

I.6 Network Analyst				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Prepare implementation plans for particular technologies. • Installs and monitors particular facets of technology. • Configures and optimizes technical installations. • Troubleshoots, and responds to user problems. • Maintain up to date knowledge of particular technologies and products supporting that technology.				
Specialties could include but are not limited to:				
•				

I.7 Platform Analyst

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Develop and document detailed statement of requirements for the proposed platform.
- Analyze functional requirements to identify information, procedures and decision flows.
- Evaluate existing procedures and methods, identify and documents database content, structure, and application sub-systems, and develop data dictionary.
- Define and document interfaces of manual to automated operations within sub-systems, to external systems and between new and existing systems.
- Define input/output sources, including detailed plan for technical design phase, and obtain approval for system proposals.
- Design and document in detail all system components, interfaces and operational environment.
- Design data structures and files, sub-systems and modules, programs, batch, on line, and production monitoring procedures, testing strategy and systems.
- Document system design, concepts and facilities, present and obtain approval of detailed system designs.
- Produce operational systems including all forms, manuals, programs, data files and procedures.

Specialties could include but are not limited to:

•				

I.8 Storage Architect

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Develop, analyze, design, and implement the organization's storage infrastructure/architecture to ensuring high levels of data quality and availability.
- Develop capacity planning, backup and restore procedures for storage capabilities.
- Develop or assist in development of data disaster recovery plans, as they relate to storage capabilities and continuity.
- Develop, implement, and oversee policies and procedures to ensure consistent and seamless storage continuity and capabilities.

Specialties could include but are not limited to:

•				

I.9 System Administrator				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Install, monitor, upgrade and maintain operating systems. - Install, monitor, upgrade and maintain hardware and software. - Work with Business Analysts, Project Managers, Developers, and clients/stakeholders to maintain and improve software performance. - Apply problem solving skills to troubleshoot and resolve technical problems. - Ensure timely and reliable system administration procedures, such as backup and/or recovery. - Analyze system performance and recommend improvements.				
Specialties could include but are not limited to:				
•				

I.10 Technical Architect
Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience
Responsibilities could include but are not limited to:
• Develop technical architectures, frameworks and strategies, either for an organization or for a major application area, to meet the business and application requirements. • Identify policies and requirements that drive out a particular solution. • Analyze and evaluate alternative technology solutions to meet business problems. • Ensure the integration of all aspects of technology solutions. • Evaluate hardware and software relative to their ability to support specified requirements and, by determining potential and actual bottlenecks, and improve system performance through recommended hardware changes. • Review computer software systems and data requirements as well as communication and response needs and determine operating systems and languages needed to support them.
Specialties could include but are not limited to:

•				

I.11 Technology Architect
Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience
Responsibilities could include but are not limited to:
• Develop technical architectures, frameworks and strategies, either for an organization or for a major application area, to meet the business and application requirements. • Identify the policies and requirements that drive out a particular solution. • Analyze and evaluate alternative technology solutions to meet business problems. • Ensures the integration of all aspects of technology solutions. • Monitor industry trends to ensure that solutions fit with government and industry directions for technology. • Provide information, direction and support for emerging technologies. • Perform impact analysis of technology changes. • Provide support to applications and/or technical support teams in the proper application of existing infrastructure. • Review application and program design or technical infrastructure design to ensure adherence to standards and to recommend performance improvements.
Specialties could include but are not limited to:

• Hardware • Host System Software	• Software • Storage • Network			

BUSINESS SERVICES STREAM

B.1 Business Analyst
Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience
Responsibilities could include but are not limited to:
• Develop and document statements for considered alternatives. • Perform business analyses of functional requirements to identify information, procedure, and decision flows. • Evaluate existing procedures and methods, identify and document items such as database content, structure, application subsystems. • Define and document interfaces of manual to automated operations within application subsystems, to external systems, and between new and existing systems. • Establish acceptance test criteria with client. • Support and use the selected departmental methodologies.
Specialties could include but are not limited to:

• BPWin • Oracle CASE	• Rational Rose • RUP			

B.2 Business Architect				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience, or 5+ years of experience with a recognized professional certification				
Responsibilities could include but are not limited to:				
• Develop policies and rules that allow an organization to carry out its mandate and functional responsibilities, and that govern the organization's actual and planned capabilities in terms of computers, data, information, human resources, communication facilities, software and management responsibilities. • Develop the specifications for where, how and why the various organizational components fit together as they do, and how they support the organization's mandate.				
Specialties could include but are not limited to:				
• BPWin • Oracle CASE	• Rational Rose • RUP			

B.3 Business Consultant

Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience, or 5+ years of experience with a recognized professional certification

Responsibilities could include but are not limited to:
• Analyze, evaluate, develop business processes (financial, operational, systems, etc.). • Identify organizational and/or project business opportunities for improvement and streamlining of business processes. • Identify and evaluate critical success parameters, factors and performance measurements. • Assist other stakeholders in development and implementation of business improvement processes and programs.

Specialties could include but are not limited to:

•				

B.4 Business Continuity/Disaster Recovery Specialist

Experience Levels

Level 1:	<5 years of experience
Level 2:	5-<10 years of experience
Level 3:	10+ years of experience, or 5+ years of experience with a recognized professional certification

Responsibilities could include but are not limited to:

- Develop and implement business and technology continuity plans.
- Develop technology and business continuity and disruption recovery strategies.
- Develop crisis communication planning strategies.
- Identify past and potential impact resulting from disruptions.
- Develop techniques to identify and evaluate potential disruptions.
- Develop and implement backup, replication and redundancy strategies as required.
- Develop awareness, training, and communication programs with both internal staff and other stakeholders.
- Establish coordination activities with internal and external stakeholders and establish actual and potential dependencies.
- Develop and implement monitoring activities and performance management.

Specialties could include but are not limited to:

•				

B.5 Business Process Re-engineering (BPR) Consultant
Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience, or 5+ years of experience with a recognized professional certification
Responsibilities could include but are not limited to:
• Review existing work processes and organizational structure. • Analyze business functional requirements to identify information, procedures and decision flows. • Identify candidate processes for re-design; prototype potential solutions, provide trade-off information and suggest a recommended course of action. Identify the modifications to the automated processes. • Provide expert advice in defining new requirements and opportunities for applying efficient and effective solutions; identify and provide preliminary costs of potential options. • Provide expert advice in developing and integrating process and information models between processes to eliminate information and process redundancies. • Identify and recommend new processes and organizational structures. • Provide expert advice on and/or assist in implementing new processes and organizational changes. • Document workflows. • Use business, workflow and organizational modeling software tools.
Specialties could include but are not limited to:

•				

B.6 Business System Analyst

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Develop and document a detailed statement of requirements for the proposed alternative recommended in the preliminary analysis report.
- Perform business analyses of functional requirements to identify information, procedures, and decision flows.
- Evaluate existing procedures and methods, identify and documents items such as database content, structure, application subsystems, and develop data dictionary.
- Define, document, and design interfaces of manual to automated operations within application subsystems, to external systems, and between new and existing systems.
- Identify candidate business processes for re-design, prototype potential solutions, provide trade-off information and suggest a recommended course of action. Identify the modifications to the automated processes.
- Support and use the selected departmental methodologies.

Specialties could include but are not limited to:

• BPWin	• Rational Rose			
• Oracle CASE	• RUP			

B.7 Business Transformation Architect
Experience Levels
Level 1: <5 years of experience   Level 2: 5-<10 years of experience   Level 3: 10+ years of experience, or 5+ years of experience with a recognized professional certification
Responsibilities could include but are not limited to:
• Analysis and development of business success "critical success factors".   • Analysis and development of architecture requirements design, process development, process mapping and training.   • Responsible for leading other functional staff to define business strategy and processes in support of transformation and change management activities.   • Participate in change impact analysis and change management activities.   • Participate in organizational realignment (job re-design organizational re-structuring).   • Coordinate development of training and coordination with other stakeholders.   • Create presentations and present to various stakeholders, and facilitate meetings and discussions.
Specialties could include but are not limited to:

•				

B.8 Call Centre Consultant
Experience Levels
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience
Responsibilities could include but are not limited to:
• Provide expert advice on and/or developing and implementing computer enabled call centers that permit service agents to efficiently and effectively respond to client service requests received by telephone and other electronic media. • Provide expert advice on and/or developing Interactive Voice Response (IVR) Application systems that permit callers to obtain information or enter transactions using the telephone and keypad. • Provide expert advice on and/or developing service request management application systems.
Specialties could include but are not limited to:

•				

B.9 *Courseware Developer

* *To* be used for IT courseware requirements only. Non IT courseware requirements must be processed through the Learning Services Supply Arrangement E60ZH-070003

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Perform needs assessment/analysis for training purposes.
- Plan and monitor training projects.
- Perform job, task, and/or content analysis.
- Write criterion-referenced, performance-based objectives.
- Recommend instructional media and strategies.
- Develop performance measurement standards.
- Develop training materials.
- Prepare end-users for implementation of courseware materials.
- Communicate effectively by visual, oral, and written form with individuals, small group, and in front of large audiences.

Specialties could include but are not limited to:

•				

B.10 Help Desk Specialist

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Perform a variety of network problem analysis and monitoring tasks, monitor network management systems and respond appropriately to user requests and problems
- Perform initial problem analysis and triage problem to other appropriate staff when appropriate.
- Maintain liaison with network users and technical staff to communicate the status of problem resolution to network users; log and track requests for assistance.
- Develop, implement, and/or participate in the preparation of procedure manuals and documentation for help desk use; conduct periodic user satisfaction surveys and track user problem trends; make recommendations for improvements to the network systems and create reports based on information provided from user surveys and trends.
- Develop, implement, and/or participate in the distribution of network related information to users to include information such as help desk procedures and network handbooks.
- Participate in the development of a comprehensive training plan for help desk procedures; assist in training personnel providing backup coverage.
- Participate in on-site installations of network systems for users.
- Perform other related duties incidental to the work described herein.

Specialties could include but are not limited to:

•				

B.11 * Instructor, IT

*To be used for IT instructor only. Non IT instructor requirements must be processed through the Learning Services Supply Arrangement E60ZH-070003

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Assess the relevant characteristics of a target audience.
- Prepare end-users for implementation of courseware materials.
- Conduct training courses.
- Communicate effectively by visual, oral, and written form with individuals, small group, and in front of large audiences.

Specialties could include but are not limited to:

•				

B.12 Network Support Specialist
Experience Levels
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience
Responsibilities could include but are not limited to:
• Coordinate installation, operation, maintenance, resolution of hardware and software problems, monitoring of traffic, capacity planning, system backup and user training for a Local Area Network. • Evaluate, test and recommend new data communication hardware and software. • Maintain interface with vendor representatives and other computing resources to resolve hardware and software problems. • Inform new users of the appropriate hardware and software specifications for access to the network. • Install or coordinate installation of network hardware, software for use with personal computers and mainframe/personal computer interaction, and network upgrades according to vendor instructions. • Configure equipment with assistance from vendor or other computing resources. • Prepare and maintain procedure manuals and documentation for internal use. • Maintain a reference library to include reference manuals and user guides. • Maintain accurate records and logs of users, equipment serial numbers, service records, maintenance agreements, warranties, wiring schemes and network problems and solutions. • Develop, implement, participate, and test a network disaster recovery plan. • Resolve all connectivity and internal technical problems. • Assist in training users to use the network and related software.
Specialties could include but are not limited to:
•

B.13 Operations Support Specialist				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Provide systems administration and systems operations support, including setting up user access, user profiles, back up and recovery, day-to-day computer systems operations. • Perform software upgrades, and apply patches. • Provide customer interface to ensure requested changes are implemented. • Monitor computer workload trends and make adjustments to ensure optimum utilization of computer resources.				
Specialties could include but are not limited to:				
•				

B.14 Technical Writer

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Document help text, user manuals, technical documentation, web page content, etc.
- Review documentation standards and the existing project documentation.
- Determine documentation requirements and makes plans for meeting them.
- Gather information concerning the features and functions provided by the developers.
- Assess the audience for the documents/manuals which are required and prepare a statement of purpose and scope for each.
- Develop a table of content for each document/manual and write or edit the required content.
- Investigate the accuracy of the information collected by making direct use of the material being documented.
- Prepare or coordinate the preparation of any required illustrations and diagrams.
- Design the layout of the documents/manuals.
- Use word-processing, desk-top publishing and graphics software packages to produce final camera-ready copy.

Specialties could include but are not limited to:

• RoboHelp				

PROJECT MANAGEMENT SERVICES STREAM

P.1 Change Management Consultant

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience, or 5+ years of experience with a recognized professional
               certification

Responsibilities could include but are not limited to:

- Analysis and development of business "critical success factors".
- Analysis and development of architecture requirements design, process development, process mapping and training.
- Responsible for leading other functional staff to define business strategy and processes in support of transformation and change management activities.
- Participate in change impact analysis and change management activities.
- Participate in organizational realignment (job re-design organizational re-structuring).
- Coordinate development of training and coordination with other stakeholders.
- Create presentations and present to various stakeholders, and facilitate meetings and discussions.

Specialties could include but are not limited to:

•				

P.2 Enterprise Architect
Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience, or 5+ years of experience with a recognized professional certification
Responsibilities could include but are not limited to:
• Evaluate the enterprise's business/ICT architecture, determine its consistency and integration with the organization's business/ICT strategies, assess the degree of its alignment with Treasury Board CIO Business Transformation Enablement Program (BTEP) and Federated Architecture Program (FAP) and recommend changes to the business/ICT architecture to improve its alignment with these external factors. • Identify future business/ICT requirements against the current enterprise architecture, perform gaps analyses, develop Requirements for Technology Architectures (RTA), and prepare migration strategies. • Assess the feasibility of migrating from the current state to the target business architecture and enabling technologies and Identify the risks associated with migrating to the target business architecture and technologies and make recommendations for risk mitigation. • Identify business and technology trends that create opportunities for business improvement, advise business and ICT Senior Executives on ICT trends and emerging technologies and the impact on the organization's and government ICT architectures and business strategies, model "What if" scenarios and recommend appropriate changes to the existing architecture and ICT infrastructure, and recommend alternative solutions, methodologies and strategies. • Produce an architectural evolution plan, recommend prioritization of architecture evolution initiatives, and develop and/or implement an architecture evolution plan. • Manage the development and implementation of an architectural improvement plan. • Coach, mentor and train the organization to perform any of the above.
Specialties could include but are not limited to:
•				

P.3 HR Consultant				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Develop guiding HR practices and principles. • Conduct Recruitment and selection. • Conduct Performance Management and Evaluation. • Develop Training and Development Programs. • Reward and Recognition Programs. • Coordinate Learning and Development initiatives, including identification of training needs, implementation of training plans and learning and development strategies. • Undertake research and provide recommendations on HR initiatives. • Consult, influence, communicate, conduct team and workshop facilitation.				
Specialties could include but are not limited to:				
•				

P.4 Organizational Development Consultant
Experience Levels
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience, or 5+ years of experience with a recognized professional certification
Responsibilities could include but are not limited to:
• Enable, facilitate, and mediate the evolution of the various organizational or departmental structures toward the organization's or department's desired outcome or structure. • Assist with organizational needs assessment and strategic planning to ensure development of human capital to meet business objectives and goals. • Provide advice, support and consultation to senior staff, business unit requests, and front line management to achieve strategic initiatives and goals. • Research, design, implement and maintain employee development programs including leadership development and other management development programs. • Develop and implement processes to measure the effectiveness of development and learning efforts to ensure performance improvements are focused on measurable and attainable results. • Serve as an expert resource by collaborating with HR and business unit executives to ensure clear standards and metrics linked to talent reviews and employee development plans. • Develop strategic partnerships with other internal project managers to identify and consult on change management initiatives to support strategic projects requiring organizational culture change. • Proactively address and respond to Organizational Development issues by bringing key stakeholders together to assess root causes and performance gaps and recommend appropriate interventions. • Practice continuous improvement processes and procedures, eliminating non-value added activities. • Conduct focus groups and/or process improvement sessions as needed. • Implement and manage the organization's training to ensure cost effective employee development activities that support the organization's strategic initiatives. • Manage and facilitate organizational initiatives and projects as requested.
Specialties could include but are not limited to:
•				

P.5 Project Executive
Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience, or 5+ years of experience with a recognized professional certification
Responsibilities could include but are not limited to:
• Manage several Project Managers, each responsible for an element of the project and its associated project team. • Define and document project objectives, determine budget requirements. • Meet with other organizational executives to ensure all organizational (internal and external) stakeholders are committed and moving forward on project and organizational goals. • Resolve issues related to the project. • Prepare plans, charts, tables and diagrams to assist in analyzing or displaying problems; work with a variety of project management tools. • Project sign-off.
Specialties could include but are not limited to:
•

P.6 Project Administrator

Experience Levels

Level 1: <5 years of experience
Level 2: 5-<10 years of experience
Level 3: 10+ years of experience, or 5+ years of experience with a recognized professional certification

Responsibilities could include but are not limited to:

- Assist project management and data processing professionals, technical users and end users in simple routine tasks.
- Provide administrative and technical support of a clerical nature as required to projects.
- Assist in performing such tasks as maintaining project documentation and application/system libraries.
- Act as the first point of contact in a "hot-line" situation by accepting incoming calls, logging calls, attempting to resolve simple problems and following established procedures for more difficult problems.
- Track project change requests.
- Maintain and update relevant project information in manual and/or electronic files; project information might include such things as project activity schedule, status reports, correspondence.
- Use computer tools, aids, system control languages on PCs, minis, or mainframes to perform work.
- Communicate with project management and data processing professionals, technical users and end users on administrative matters related to the project.

Specialties could include but are not limited to:

• MS Project				

P.7 Project Coordinator
Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience, or 5+ years of experience with a recognized professional certification
Responsibilities could include but are not limited to:
• Assist project management and data processing professionals, technical users and end users in project coordination and synchronization tasks. • Provide administrative and technical support of a clerical nature as required to a project team. • Assist in performing such tasks as maintaining project documentation and application/system libraries. • Act as the first or single point of contact in a "hot-line" situation by accepting incoming calls, logging calls, attempting to resolve simple problems and following established procedures for more difficult problems. • Track project change requests. • Maintain and update relevant project information in manual and/or electronic files; project information might include such things as project activity schedule, status reports, correspondence. • Use computer tools, aids, system control languages on PCs, minis, or mainframes to perform work. • Communicate with project management and data processing professionals, technical users and end users on administrative matters related to the project.
Specialties could include but are not limited to:

• MS Project				

P.8 Project Leader				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience, or 5+ years of experience with a recognized professional certification				
Responsibilities could include but are not limited to:				
- Specify the general requirements of the system, develop broad system alternatives and identify their administrative, economic and technical feasibility and practically as well as associated policy and organizational change requirements. - Analyze and evaluate each alternative based on make/buy, impact and cost/benefit considerations, and propose, justify, plan and cost the implementation of the selected alternative. - Produce overall plan, a detailed plan for the functional analysis phase, and obtain approval of preliminary analysis. - Plan, direct and control the activities of a system development team within scheduled time and cost parameters. - Evaluate proposed computer applications to determine technical, operational and economic feasibility. - Design and test systems to ensure that the objectives of the system are met and that the outputs produced are in accordance with client requirements. - Monitor the design, implementation and operations start-up of the proposed system against established goals, objectives and milestones.				
Specialties could include but are not limited to:				
• MS Project				

P.9 Project Manager
Experience Levels
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience, or 5+ years of experience with a recognized professional certification
Responsibilities could include but are not limited to:
• Manage several Project Managers, each responsible for an element of the project and its associated project team. • Manage the project during the development, implementation and operations startup by ensuring that resources are made available and that the project is developed and is fully operational within previously agreed time, cost and performance parameters. • Formulate statements of problems; establishes procedures for the development and implementation of significant, new or modified project elements to solve these problems, and obtains approval thereof. • Define and document the objectives for the project; determine budgetary requirements, the composition, roles and responsibilities and terms of reference for the project team. • Report progress of the project on an ongoing basis and at scheduled points in the life cycle. • Meets in conference with stakeholders and other project managers and states problems in a form capable of being solved. • Prepare plans, charts, tables and diagrams to assist in analyzing or displaying problems; work with a variety of project management tools. • Project sign-off.
Specialties could include but are not limited to:
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P.10 Project Scheduler				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience, or 5+ years of experience with a recognized professional certification				
Responsibilities could include but are not limited to:				
• Develop and support project schedules. • Develop and maintain Work Breakdown Structures. • Produce appropriate reports and identify scheduling and/or dependency issues. • Conduct and provide critical path analysis. • Assist in schedule co-ordination efforts with internal and external project stakeholders.				
Specialties could include but are not limited to:				
• MS Project				

P.11 Quality Assurance Specialist/Analyst				
Experience Levels				
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
• Lead development of test plans, test scripts and test data. • Participate in functional and technical design reviews, perform integration/functional and system testing, and verify test results. • Identify and document software defects. • Participate with other project resources to resolve defects. • Perform regression testing of software applications.				
Specialties could include but are not limited to:				
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P.12 Risk Management Specialist
Experience Levels
Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience, or 5+ years of experience with a recognized professional certification
Responsibilities could include but are not limited to:
• Conduct risk assessments. • Identify project risks and overall project risks. • Recommend alternative solutions, methodologies and strategies for risk mitigation and management. • Produce risk management plans. • Conduct risk assessments for troubled projects to quickly assess associated risks and recommend courses of action to minimize inherent risks. • Assist in prioritization and assignment of risks. • Assist in the development and/or implementation of Risk Management Plans. • Manage the implementation of Risk Management Plans to identify, analyze, plan, track and control project risks on a continuous basis throughout the project life cycle. • Coach, mentor and train project teams in risk mitigation techniques.
Specialties could include but are not limited to:

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CYBER PROTECTION SERVICES / IT SECURITY SERVICES STREAM

C.1 Strategic IT Security Planning and Protection Consultant *(formerly CPSA WS1)*				
Experience Levels Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Review, analyze, and/or apply the IT Security Policies, Procedures and Guidelines of International government, Federal, Provincial or Territorial government. - Review, analyze, and apply the best practices, national or international computer law and ethics, IT Security architecture, and IT Security Risk Management Methodology - Develop vision papers delineating the way ahead to ensure that IT Security and cyber protection are business enablers - Conduct business function analysis and business impact assessments - Brief senior managers - Provide strategic assessments on technology trends and emerging technologies - Provide IT Security strategic planning and advice. - Conduct feasibility studies, technology assessments and cost-benefit analyses, and propose system implementation plans for IT Security - Develop advanced R&D policy/strategy - Collect, collate and prioritize client IT Security and Information Infrastructure Protection requirements - Evaluate and assist in the selection of enterprise-wide technology tools - Review and prioritize IT Security and Information Infrastructure Protection programs - Develop strategic IT Security architecture vision, strategies and designs using the <u>Business Transformation Enablement Program</u> (BTEP) methodology and the Government Strategic Reference Model (GSRM) - Develop IT Security programs and service designs using the following GSRM models: Program Logic Model, Program and Service Alignment Model, Service Integration and Accountability Model, State Transition Model, Information Model and Performance Model - Develop and deliver training material relevant to the resource category - Review and prioritize IT Security and Information Infrastructure Protection programs				
Specialties could include but are not limited to:				
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C.2 IT Security Methodology, Policy and Procedures Analyst				
Experience Levels Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to: • Review, analyze, and/or apply Federal, Provincial or Territorial Government IT Security methodologies, programs, policies, procedures, standards, guidelines, and IT Security Risk Management methodologies. • Develop IT Security standards, procedures and guidelines pursuant to the requirements of The National Security Policy, Policy on Government Security, supporting operational standards (e.g., MITS), departmental/agency security policy, and other relevant standards, procedures and guidelines • Develop IT Security policy in the areas of IT security and assurance, standard Certification & Accreditation frameworks for IT systems, information infrastructure protection, product evaluation, privacy, Business Continuity Planning, contingency planning and Disaster Response Planning, Research &Development • Develop IT Security risk assessment methodologies for application to Government of Canada institutions • Develop and deliver training material relevant to the resource category				
Specialties could include but are not limited to:				
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C.3 IT Security TRA and C&A Analyst
Experience Levels Level 1:　　　<5 years of experience Level 2:　　　5-<10 years of experience Level 3:　　　10+ years of experience
Responsibilities could include but are not limited to: • Review, analyze, and/or apply Federal, Provincial or Territorial IT Security policies, System IT Security Certification & Accreditation processes, IT Security products, safeguards and best practices, and the IT Security risk mitigation strategies • Identify threats to, and vulnerabilities of operating systems (such as MS, Unix, Linux, and Novell), and wireless architectures • Identify personnel, technical, physical, and procedural threats to and vulnerabilities of Federal, Provincial or Territorial IT systems • Develop reports such as: Data security analysis, Concepts of operation, Statements of Sensitivity (SoSs), Threat assessments, Privacy Impact Assessments (PIAs), Non-technical Vulnerability Assessments, Risk assessments, IT Security threat, vulnerability and/or risk briefings • Conduct Certification activities such as: Develop Security Certification Plans, Verify that security safeguards meet the applicable policies and standards, Validate the security requirements by mapping the system-specific security policy to the functional security requirements, and mapping the security requirements through the various stages of design documents, Verify that security safeguards have been implemented correctly and that assurance requirement have been met. This includes confirming that the system has been properly configured, and establishing that the safeguards meet applicable standards, Conduct security testing and evaluation (ST&E) to determine if the technical safeguards are functioning correctly, Assess the residual risk provided by the risk assessment to determine if it meets an acceptable level of risk • Conduct Accreditation activities such as: Review of the certification results in the design review documentation by the Accreditation Authority to ensure that the system will operate with an acceptable level of risk and that it will comply with the departmental and system security policies and standards and identify the conditions under which a system is to operate (for approval purposes). This may include the following types of approvals: • Developmental approval by both the Operational and the Accreditation Authorities to proceed to the next stage in an IT system's life cycle development if sensitive information is to be handled by the system during development • Operational written approval for the implemented IT system to operate and process sensitive information if the risk of operating the system is deemed acceptable, and if the system is in compliance with applicable security policies and standards • Interim approval - a temporary written approval to process sensitive information under a set of extenuating circumstances where the risk is not yet acceptable, but there is an operational necessity for the system under development • Develop and deliver training material relevant to the resource category
Specialties could include but are not limited to:
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C.4 IT Security Product Evaluation Specialist				
Experience Levels Level 1: <5 years of experience Level 2: 5-<10 years of experience Level 3: 10+ years of experience				
Responsibilities could include but are not limited to:				
- Review, analyze, and/ or apply the: - Canadian Common Criteria Evaluation and Certification Scheme, or, any evaluation scheme recognized under the Common Criteria Recognition Arrangement - Product evaluation methodologies, standards and best practices - IT software and hardware security products - Operating Systems such as MS, Unix, Linux, and Novell - IT Security architectures including wireless - TCP/IP - Cryptographic Algorithms - FIPS 140 evaluation - Product evaluation policies, procedures and guidelines - Product assessment methodologies, evaluations and reports - Complete tasks directly supporting the departmental IT Security and Cyber Protection Program - Develop and deliver training material relevant to the resource category				
Specialties could include but are not limited to:				
- TCP/IP - FIPS 140				

C.5   PKI Specialist

Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience, or 5+ years of experience with one of the following certifications: SNIA Certified Professional (SCP) or SNIA Certified Systems Engineer (SCSE) or SNIA Certified Architect (SCA) or SNIA Certified Storage Networking Expert (SCSNE)

Responsibilities could include but are not limited to:

- Develop PKI related policies, standards, guidelines and procedures.
- Review existing PKI policies, standards, guidelines and procedures and provide advice as to their appropriateness and effectiveness.
- Review and analyze the application of PKI architecture, Digital signatures/certificates, PKI products, Internet security protocols, directory standards, certificate protocols, and Certification Authority (CA).
- Interoperability and governance studies
- Conduct compliance audits of PKI related concerns, including operations, application systems and infrastructure.
- Conduct PKI related security threat and risk assessments of IT facilities, application systems and communications.
- Conduct PKI related reviews of backup and recovery plans.
- Investigate PKI related incidents and report cause and related weaknesses and recommend remedies.
- Develop PKI Certificate Policy, Practice Statement development, and Policy compliance inspections and audits.
- Design the PKI related framework and implement the PKI infrastructure required to protect assets and to support application systems.
- Provide advice on PKI aspects of application systems under development.
- Complete tasks directly supporting the departmental IT Security and Cyber Protection Program.
- Develop and deliver PKI awareness and training programs.

Specialties could include but are not limited to:

• SSL • S-HTTP • HTTP	• S-MIME • IPSec • SSH	• X.500 Directory Standards • X.509 Certificate Protocols	• TCP/IP • UDP • DNS • SMTP	

C.6 IT Security Engineer

Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Review, analyze and/or apply:
  - Directory Standards such as X.400, X.500, and SMTP
  - Operating Systems such as MS, Unix, Linux, and Novell
  - Networking Protocols such as HTTP, FTP, and Telnet
  - Secure IT architectures fundamentals, standards, communications and security protocols such as IPSec, IPv6, SSL, and SSH
  - IT Security protocols at all layers of the Open Systems Interconnection (OSI) and Transmission Control Protocol/Internet Protocol (TCP/IP) stacks
  - Domain Name Services (DNS) and Network Time Protocols (NTP)
  - Network routers, multiplexers and switches
  - Application, host and/or Network hardening and security best practices such as shell scripting, service identification, and access control
  - Intrusion detection/prevention systems, malicious code defence, file integrity, Enterprise Security Management and/or firewalls
  - Wireless technology
  - Cryptographic Algorithms
- Identify the technical threats to, and vulnerabilities of, networks
- Manage the IT Security configuration
- Analyze IT Security tools and techniques
- Analyze the security data and provide advisories and reports
- Analyze IT Security statistics
- Prepare technical reports such as IT Security Solutions option analysis and implementation plans
- Provide Independent Verification and Validation (IV&V) support to IT Security related projects including:
  - IT Security audits, including applicable reports, presentations and other documentation,
  - Review of contingency plans, Business Continuity Plans and Disaster Response Plans
  - Design/development and conduct IT Security protocols tests and exercises
  - Project oversight
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

- SSL - HTTP - FTP - Telnet	- S-MIME - IPSec - SSH	- X.400/X.500 Directory Standards - X.509 Certificate Protocols	- TCP/IP - OSI - DNS - SMTP - NTP	

C.7 IT Security Design Specialist
Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience
Responsibilities could include but are not limited to:

- Review, analyze, and/or apply: Architectural methods, frameworks, and models such as TOGAF, US government FEAP, Canadian government BTEP and GSRM, Zachman, UMM
- Review, analyze, and/or apply a broad range of security technologies including multiple types of systems and applications architectures, and multiple hardware and software platforms, including:
  - Directory Standards such as X.400, X.500, and SMTP
  - Operating Systems such as MS, Unix, Linux, and Novell
  - Networking Protocols (e.g., HTTP, FTP, Telnet)
  - Network routers, multiplexers and switches
  - Domain Name Services (DNS) and Network Time Protocols (NTP)
- Review, analyze, and/or apply Secure IT architectures, standards, communications, and security protocols such as IPSec, SSL, SSH, SMIME, HTTPS
- Review, analyze, and/or apply IT Security protocols at all layers of the Open Systems Interconnection (OSI) and Transmission Control Protocol/Internet Protocol (TCP/IP) stacks
- Review, analyze, and/or apply The significance and implications of market and technology trends in order to apply them within architecture roadmaps and solution designs. (examples: web services security, incident management, identity management)
- Review, analyze, and/or apply Best practices and standards related to the concept of network zoning and defence in-depth principles
- Review, analyze, and/or apply IT Security protocols at all layers of the Open Systems Interconnection (OSI) and Transmission Control Protocol/Internet Protocol (TCP/IP) stacks
- Analyze IT Security statistics, tools and techniques
- Analyze security data and provide advisories and reports
- Prepare technical reports such as requirement analysis, options analysis, technical architecture documents, mathematical risk modeling
- Brief senior managers
- Security architecture design and engineering support
- Conduct data security designation/classification studies
- Prepare tailored IT Security alerts and advisories from open and closed sources Complete tasks directly supporting the departmental IT Security and Cyber Protection Program
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

• SSL • HTTP • HTTPS • FTP • Telnet	• S-MIME • IPSec • SSH	• X.400/X.500 Directory Standards • X.509 Certificate Protocols	• TCP/IP • OSI • DNS • SMTP • NTP	

C.8 Network Security Analyst

Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

- **Responsibilities could include but are not limited to:**
- Review, analyze, and/or apply:
    - Internet security protocols such as SSL, S-HTTP, S-MIME, IPSec, SSH
    - TCP/IP, UDP, DNS, SMTP, SNMP
    - Approved GC Cryptographic Algorithms
    - Directory Standards such as X.400, X.500, and SMTP
    - Networking Protocols (e.g., HTTP, FTP, Telnet)
    - Network hardening (for example: shell scripting, service identification)
    - Technical IT Security safeguards
    - IT Security tools and techniques
    - Operating Systems such as MS, Unix, Linux, and Novell
    - Intrusion detection systems and firewalls
    - Network routers, multiplexers and switches
    - Wireless technology
- Analyze security data and provide advisories and reports
- Conduct impact analysis for new software implementations, major configuration changes and patch management
- Develop proof-of-concept models and trials for IT Security
- Design/develop IT Security protocols
- Identify and analyze technical threats to, and vulnerabilities of, networks
- Analyze IT Security tools and techniques
- Complete tasks related to authorization and authentication in physical and logical environments
- Prepare tailored IT Security alerts and advisories from open and closed sources
- Complete tasks directly supporting the departmental IT Security and Cyber Protection Program
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

• SSL, • S-HTTP • HTTP • FTP • Telnet	• S-MIME • IPSec	• X.400/X.500 Directory Standards • X.509 Certificate Protocols	• TCP/IP • UDP • DNS • SMTP • SNTP	

C.9   IT Security Systems Operator
Experience Levels Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience

Responsibilities could include but are not limited to:
• Review, analyze and/or apply:
  ○ Networking Protocols (HTTP, FTP, Telnet)
  ○ Internet security protocols (for example: SSL, S-HTTP, S-MIME, IPSec, SSH)
  ○ TCP/IP, UDP, DNS, SMTP
  ○ Directory Standards such as X.400, X.500, and SMTP
  ○ Network routers, multiplexers and switches
  ○ Network hardening (for example: shell scripting, service identification)
  ○ Wireless technology
  ○ Technical threats to, and vulnerabilities of, networks
  ○ Technical IT Security safeguards
  ○ IT software and hardware security products
• Configure operating systems such as MS, Unix, Linux and Novell
• Configure IT Security management
• Configure intrusion detection systems, firewalls and content checkers, extracting and analyzing reports and logs, and responding to security incidents
• Configure/update virus scanners
• Complete tasks directly supporting the departmental IT Security and Cyber Protection Program
• Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

• SSL, • HTTP • S-HTTP • FTP • Telnet	• S-MIME • IPSec	• X.400/X.500 Directory Standards • X.509 Certificate Protocols	• TCP/IP • UDP • DNS • SMTP • SNTP	

C.10   IT Security Installation Specialist

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Review, analyze, and/or apply:
  - MITS and TBITS sect ion 6.9 (structured wiring)
  - Networking Protocols (HTTP, FTP, Telnet)
  - Internet security protocols (for example: SSL, S-HTTP, S-MIME, IPSec, SSH)
  - TCP/IP
  - Secure integration of PC, router and hub technology
- Identify and analyze threats to, and vulnerabilities of, IT systems and IT Security safeguards
- Install, configure, integrate, policy fine-tune, operate, monitor performance, and detect faults in the system for:
  - Host and network intrusion detection and prevention systems
  - Network and computer forensics systems
  - Firewalls, VPNs and network devices
  - Enterprise network vulnerability tools
  - Malicious code, anti-spam and content management tools
  - File integrity tools
  - Remote management utilities
  - Enterprise Security Management (ESM)/Security Information Management (SIM) systems
  - Data preservation and archiving utilities
  - Threat agents analysis tools and other emerging technologies including privacy enhancement, predictive analysis, VoIP, data visualization and fusion, wireless security devices, PBX and telephony firewall
- Install operating systems such as MS, Unix, Linux, and Novell
- Install intrusion detection systems, firewalls and content checkers
- Install and integrate supporting access control technology, such as CCTV, card access readers, electronic access control systems
- Completed tasks directly supporting the departmental IT Security and Cyber Protection Program
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

• SSL, • HTTP • S-HTTP • FTP • Telnet	• S-MIME • IPSec • SSH	• X.400/X.500 Directory Standards • X.509 Certificate Protocols	• TCP/IP • UDP • DNS • SMTP • SNTP	•

C.11 IT Security VA Specialist

Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Review, analyze, and/or apply:
  - Threat agents analysis tools and other emerging technologies including privacy enhancement, predictive analysis, VoIP, data visualization and fusion, wireless security devices, PBX and telephony firewall
  - War dialers, password crackers
  - Public Domain IT vulnerability advisory services
  - Network scanners and vulnerability analysis tools such as SATAN, ISS, Portscan & NMap
  - Networking Protocols (HTTP, FTP, Telnet)
  - Internet security protocols such as SSL, S-HTTP, S-MIME, IPSec, SSH, TCP/IP, UDP, DNS, SMTP, SNMP
  - Wireless Security
  - Intrusion detection systems, firewalls and content checkers
  - Host and network intrusion detection and prevention systems - Anti-virus management
- Identify threats to, and technical vulnerabilities of, networks
- Conduct on-site reviews and analysis of system security logs
- Collect, collate, analyze and disseminate public domain information related to networked computer threats and vulnerabilities, security incidents and incident responses
- Prepare and/or deliver IT Security threat, vulnerability and/or risk briefings
- Completed tasks directly supporting the departmental IT Security and Cyber Protection Program
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

• SSL, • HTTP • S-HTTP • FTP • Telnet	• S-MIME • IPSec	• X.400/X.500 Directory Standards • X.509 Certificate Protocols	• TCP/IP • UDP • DNS • SMTP • SNTP	

C.12 Incident Management Specialist

Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Review, analyze, and/or apply:
  - Network scanners and vulnerability analysis tools such as SATAN, ISS, Portscan & NMap
  - Reporting and resolution procedures for IT Security incidents (for example DOS attacks) and International IT Security incident advisory services
  - Networking Protocols such as HTTP, FTP, Telnet
  - Internet security protocols such as SSL, S-HTTP, S-MIME, IPSec, SSH
  - TCP/IP, UDP, DNS, SMTP, SNMP
  - Intrusion detection systems, firewalls, content checkers and antivirus software
  - Network infrastructure components, such as multiplexers, routers/hubs, switches
- Provide incident analysis support, including:
  - Response mechanisms
  - Co-ordination of all prevention and response plans
  - Emergency Operations Centre (EOC) activities
  - Co-ordination with the national Integrated Threat Assessment Centre and Government Operations Centre
  - Participation in the Integrated National Security Framework and National Cyber Security Strategy
- Collect, collate, analyze and disseminate public domain information related to networked computer threats and vulnerabilities, security incidents and incident responses
- Conduct on-site reviews and analysis of system security logs
- Produce system activity reports,logs and incident analysis
- Assist in managing and running an incident response centre
- Complete tasks directly supporting the departmental IT Security and Cyber Protection Program
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

• SSL, • HTTP • S-HTTP • FTP • Telnet	• S-MIME • IPSec	• X.400/X.500 Directory Standards • X.509 Certificate Protocols	• TCP/IP • UDP • DNS • SMTP • SNTP	

C.13 Physical IT Security Specialist
Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Review, analyze, and/or apply risk management methodologies and GC, Provincial or Territorial IT Security Policies, Procedures, Standards, Guidelines.
- Conduct safeguard analysis and implementation for the physical protection of personnel and Information System (IS) assets
- Identify and analyze physical threats to, and vulnerabilities of networks
- Conduct activities related to authorization and authentication in physical and logical environments
- Complete tasks directly supporting the departmental IT Security and Cyber Protection Program
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

C.14 IT Security R&D Specialist

Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Review, analyze, and/or apply:
  - Canadian universities and industrial IT Security R and D capabilities
  - Directory Standards such as X.400, X.500, and SMTP
  - Networking Protocols such as HTTP, FTP, Telnet
  - Internet security protocols such as SSL, S-HTTP, S-MIME, IPSec, SSH
  - Wireless Security, Bluetooth standards
  - TCP/IP, UDP, DNS, SMTP, SNMP standards and protocols
  - Intrusion detection systems, firewalls and content checkers;
  - Cryptographic Algorithms
  - Security best practices
- Develop and implement Security Programs such as: biometrics, digital rights management, RFID, access control, removable media management, etc
- Design and develop prototypes
- Research of open source material with a view to analyzing trends and emerging technologies
- Develop proof-of-concept models and trials for IT Security
- Analyze Research & Development reports
- Participate in national/international Research & Development forums
- Complete tasks directly supporting the departmental IT Security and Cyber Protection Program
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

• SSL, • HTTP • S-HTTP • FTP • Telnet	• S-MIME • IPSec	• X.400/X.500 Directory Standards • X.509 Certificate Protocols	• TCP/IP • UDP • DNS • SMTP • SNTP	

C.15 Computer Forensics Specialist

Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Review, analyze, and/or apply:
  - Forensic policy, standards, procedures and guidelines
  - Network and computer forensics systems
  - Secure laboratory operations
  - Chain of custody of evidence
  - Computer Incident Investigative Planning and Conduct
  - Courtroom presentations
  - National or international computer law and ethics
- Draft investigative reports
- Complete tasks directly supporting the departmental IT Security and Cyber Protection Program
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:

C.16 PIA Specialist
Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience
Responsibilities could include but are not limited to:

- Review, analyze, and/or apply:
  - Treasury Board Privacy Impact Assessment Policy and Guidelines
  - Federal Privacy Act and Regulations
  - Treasury Board Privacy and Data Protection Policy
  - Personal Information Protection and Electronic Documents Act (PIPEDA)
  - GC IT/IM policies and guidelines
  - Government On-Line (GOL) initiatives
  - Secure Channel Network including its technical and business processes and service offerings
  - IT Security practices and principles
  - IT Security technological solutions
- Conduct privacy impact assessments (PIAs) and preliminary privacy impact assessments (PPIAs) of projects and concepts, in accordance with the requirements of:
  - Treasury Board Privacy Impact Assessment Policy
  - Treasury Board Privacy Impact Assessment Policy Guidelines
  - Other relevant standards, procedures and guidelines
- Analyze the flow of information using the PIA model provided by the client
- Conduct privacy analysis to provide evidence of compliance with privacy principles and to identify privacy risks
- Develop Privacy Risk Management Plans
- Develop recommendations as to possible privacy risk mitigation strategies
- Complete tasks directly supporting the departmental IT Security and Cyber Protection Program
- Develop and deliver training material relevant to the resource category

Specialties could include but are not limited to:				
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C.17 EMSEC Security Specialist				
Experience Levels				
Level 1: <5 years of experience				
Level 2: 5-<10 years of experience				
Level 3: 10+ years of experience				

Responsibilities could include but are not limited to:
- Plan, review, develop and provide recommendation on the installation of high assurance crypto devices and classified IT systems in accordance with EMSEC policies and guidance publications
- Conduct EMSEC inspection of facilities and make recommendations with respect to relevant aspects of classified IT security architecture and systems
- Review, analyze, evaluate and provide recommendations relating to EMSEC zoning
- Review, analyze, test/evaluate and provide recommendations relating to walk-in radio frequency shielded enclosures

Specialties could include but are not limited to:

TELECOMMUNICATIONS SERVICES STREAM

T.1 Radio Frequency (RF) Systems Specialist
Experience Levels Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Review, analyze, and provide recommendations on LF/MF/HF/VHF/UHF system and sub-system interface documentation;
- Recommend LF/MF/HF/VHF/UHF system level solutions for discrepancies, deficiencies, and changes to equipment and specifications;
- Liaise with LF/MF/HF/VHF/UHF sub-system technical groups to ensure system integrity, performance, reliability, and maintainability;
- Provide LF/MF/HF/VHF/UHF system integration, analysis, and evaluation services;
- Prepare the planning and procurement support documentation, including technical data specifications, plans and drawings, standards, and SOWs for miscellaneous interface and facility ancillary items;
- Review, analyze, and provide recommendations relating to LF/MF/HF/VHF/UHF system components and associated documentation;
- Conduct design, technical, and management reviews to monitor, advise, and report on progress and potential problems;
- Conduct LF/MF/HF/VHF/UHF system integration testing and evaluation;
- Analyze LF/MF/HF/VHF/UHF system deficiencies and recommends cost effective solutions;
- Review and report upon suitability of industry documentation; and
- Conduct technical definition studies and options analysis.

Specialties could include but are not limited to:

T.2 Satellite Communication Specialist
Experience Levels   Level 1:   <5 years of experience   Level 2:   5-<10 years of experience   Level 3:   10+ years of experience

Responsibilities could include but are not limited to:
- Prepare operational satellite communications deficiency and requirements documentation;
- Review, analyze, and provide recommendations on satellite communications interface documentation;
- Review, analyze, and provide recommendation on satellite communications engineering details, including plans, specifications, and related data, to assess their adequacy and suitability;
- Recommend satellite communications level solutions based on an analysis of discrepancies, deficiencies and changes to equipment and specifications;
- Liaise with engineering groups to ensure satellite communications integrity, performance, reliability, and maintainability;
- Provide satellite communications integration and analysis services;
- Review, analyze, and provide recommendations relating to satellite communications, and associated documentation;
- Conduct design, technical, and management reviews to monitor, advise, and report on progress and potential problems;
- Conduct satellite communications integration testing and evaluation;
- Manage test and evaluation plans and presents the results;
- Analyze satellite communications deficiencies and recommends effective solutions;
- Review, analyze and provide recommendations on the suitability of industry documentation;
- Develop test plans for prototypes and full tests; and
- Conduct technical definition studies and options analyses.

Specialties could include but are not limited to:

T.3	**Telecommunication Cable Plant Designer**

Experience Levels

Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Complete the planning, technical design, and engineering required for the construction, installation, and maintenance of internal and external telecommunications supporting infrastructure in accordance with applicable codes and standards;
- Confirm rights-of-way and easements;
- Use surveying equipment to complete topographical surveys of cable routes;
- Ensure that the elevations of cable plant underground supporting infrastructures are correct;
- Ensure that the environmental impact studies and recommendations have been carried out before recommending that the project proceed;
- Prepare a statement of requirements (SOR) identifying the construction engineering work to be completed for the project;
- Complete the technical design and engineering required to determine the transmission design, cable routing, and protection devices that are needed for internal and external coaxial, copper and fibre optic telecom and data cable networks;
- Prepare technical installation drawings, sketches, specifications, and installation directive(s) required for the project;
- Investigate and reports upon all on-site utilities, including power, water, gas, sewer, storm drains, etc., to ensure sufficient clearance is available for the proposed cable routes;
- Review, interpret, and complete technical assessments and designs;
- Prepare technical designs and specifications;
- Determine and prepare a list of the materials needed to complete the project;
- Develop Technical Installation Directive, technical drawings, and other supporting documentation for review and distribution to the installing agent and to other associated agencies;
- Review and monitor project implementation plans while the project is in progress, and recommends appropriate changes in courses of action to the technical authority;
- Complete technical reviews of telecommunication requests;
- Conduct requirements analysis with end-users to recommend and determine their information technology requirements, including the hardware and connectivity needs;
- Perform technical acceptance testing as well as technical and quality assurance inspections on telecommunications cable network projects;
- Analyze and interpret test results and takes or recommend necessary corrective actions;
- Provide updates and briefings to the technical authority and on-site personnel on the development and status of the project; and
- Conduct technical briefings for construction and installation staff, consultants, and contractors.

Specialties could include but are not limited to:

T.4   Telecommunication Technician
Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:
- Review, analyze, and provide recommendations on telecommunication system and sub-system interface documentation, including radio, microwave, satellite, network, and telecom;
- Recommend telecommunication system level solutions to address discrepancies, deficiencies and changes to equipment and specifications;
- Liaise with telecommunication sub-system technical to ensure system integrity, performance, reliability, and maintainability;
- Support the preparation, planning and development of procurement documentation, such as technical data specifications, plans and drawings, standards, and SOWs, for miscellaneous interface and facility ancillary items;
- Conduct design, technical and management reviews to monitor and advise on progress and potential problems;
- Conduct telecommunication system integration testing and evaluation;
- Analyze telecommunication system deficiencies and recommends appropriate solutions;
- Review, analyzes, and provides recommendations on the suitability of industry documentation;
- Develop test plans for prototypes and full system tests; and
- Conduct technical definition studies and options analyses.

Specialties could include but are not limited to:

T.5 Private Branch Exchange (PBX) Technologist

Experience Levels
Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience

Responsibilities could include but are not limited to:

- Review, analyze, and provide recommendations on PBX system and sub-system interface documentation;
- Review, analyze, and provide recommendation for solutions for PBX system level for discrepancies, deficiencies and changes to equipment and specifications;
- Liaise with PBX sub-system technical groups to ensure system integrity, performance, reliability, and maintainability;
- Conduct PBX system integration, testing, analysis and evaluation services;
- Prepare documentation related to PBX, including technical data specifications, plans and drawings, standards, and SOWs, for miscellaneous interface and facility ancillary items;
- Review, analyze, and provide recommendations relating to PBX system components and associated documentation;
- Contribute to the design, technical, and management reviews to monitor, advise, and report on progress and potential problems related to PBX;
- Analyze PBX system deficiencies and recommends cost effective solutions;
- Review and report upon the suitability of industry documentation on PBX Systems; and
- Conduct technical definition studies and options analysis related to PBX.
- Review, analyze and evaluate network monitoring and performance tools/reports. Determine and advise on required
- corrective action(s) for system performance and availability enhancements;
- Review and analyze PBX traffic studies and network management data, and provide timely recommendations;
- Analyze and identify, from a technology perspective, new service requirements for connectivity or feature enhancement.

Specialties could include but are not limited to:

T.6 Telecommunication System Specialist
Experience Levels
Level 1:   <5 years of experience
Level 2:   5-<10 years of experience
Level 3:   10+ years of experience

Responsibilities could include but are not limited to:
- Review, analyze, and provide recommendations on telecommunication system and sub-system interface documentation, including radio, microwave, satellite, network, and telecom;
- Recommend telecommunication system level solutions for discrepancies, deficiencies and changes to equipment and specifications;
- Liaise with telecommunication sub-system technical groups to ensure system integrity, performance, reliability, and maintainability;
- Analyze and integrate telecommunication systems;
- Prepare planning and procurement support documentation, such as technical data specifications, plans and drawings, standards, and SOWs, for miscellaneous interface and facility ancillary items;
- Review, analyze, and provide recommendations relating to telecommunication system components and associated documentation;
- Participate in design, technical, and management reviews to monitor, advise, and report on progress and potential problems;
- Conduct telecommunication system integration testing and evaluation;
- Analyze telecommunication system deficiencies and recommends cost effective solutions;
- Review, analyze, and provide recommendations on the suitability of industry documentation;
- Conduct technical definition studies and options analyzes; and
- Design, manage and maintain telecommunication systems.

Specialties could include but are not limited to:

T.7 Antenna Structure Engineer

Experience Levels

Level 1: <5 years of experience
Level 2: 5-<10 years of experience
Level 3: 10+ years of experience
All Levels: - Must have a minimum of a university undergraduate degree in Engineering from a Canadian Council of Professional Engineers (CCPE) accredited engineering program (Copy of certificate to be provided with the Bidder's proposal). Or;
- Alternatively, should the candidate's degree be from a non-CCPE accredited engineering program, their engineering education credentials must be deemed 'substantially equivalent' by the CCPE via an application to the Engineering International - Education Assessment Program, (EI-EAP), (Copy of the official CCPE judgment to be included).
- Must be a licensed as a Professional Engineer by the recognized Provincial Licensing Authority in the province or territory of work.

Responsibilities could include but are not limited to:

- Perform professional certifications, such as, "stamps" drawings, under the Professional Engineers Act of the Province of Ontario, or under a similarly appropriate act in the applicable jurisdiction;
- Review, analyze, and provide recommendations on system and sub-system interface documentation;
- Review and evaluate engineering details, including plans, specifications, and related data, to assess their adequacy and suitability;
- Recommend system level solutions for discrepancies, deficiencies and changes to equipment and specifications;
- Liaise with sub-system engineering groups to ensure system integrity, performance, reliability, and maintainability;
- Provide system integration, analysis and evaluation services;
- Prepare planning and procurement support documentation, such as technical data specifications, plans and drawings, standards, and SOWs, for miscellaneous interface and facility ancillary items;
- Review, analyze, and provide recommendations relating to system components and associated documentation;
- Participate in design, technical, and management reviews to monitor, advise, and report on progress and potential problems;
- Conduct system integration testing and evaluation;
- Manage test and evaluation plans and presents the results;
- Analyze system deficiencies and recommends cost effective solutions;
- Develop test plans for prototypes and full system tests;
- Conducts engineering and technical definition studies and options analyzes;
- Design and test prototype electronics assemblies, including the integration and customization of available IT hardware and software packages;
- Perform antenna towers engineering;
- Perform Radio Communications (LF/MF/HF/VHF/UHF) engineering;
- Perform microwave systems engineering.

Specialties could include but are not limited to:

T.8   Radio Frequency (RF) Engineer

Experience Levels

Level 1: <5 years of experience
Level 2: 5-<10 years of experience
Level 3: 10+ years of experience

All Levels: - Must have a minimum of a university undergraduate degree in Engineering from a Canadian Council of Professional Engineers (CCPE) accredited engineering program (Copy of certificate to be provided with the Bidder's proposal). Or;
- Alternatively, should the candidate's degree be from a non-CCPE accredited engineering program, their engineering education credentials must be deemed 'substantially equivalent' by the CCPE via an application to the Engineering International - Education Assessment Program, (EI-EAP), (Copy of the official CCPE judgment to be included).
- Must be a licensed as a Professional Engineer by the recognized Provincial Licensing Authority in the province or territory of work.

Responsibilities could include but are not limited to:

- Perform professional certifications, such as certifying frequency engineering briefs, under the Professional Engineers Act of the Province of Ontario, or under a similarly appropriate act in the applicable jurisdiction;
- Review and comment upon system and sub-system interface documentation;
- Review and evaluate engineering details, including plans, specifications and related data, to assess their adequacy and suitability;
- Recommend system level solutions for discrepancies, deficiencies and changes to equipment and specifications;
- Liaise with sub-system engineering groups to ensure system integrity, performance, reliability, and maintainability;
- Provide system integration, analysis, and evaluation services;
- Prepare planning and procurement support documentation, such as technical data specifications, plans and drawings, standards, and SOWs, for miscellaneous interface and facility ancillary items;
- Review, analyze, and provide recommendations relating to system components and associated documentation;
- Participate in design, technical and management reviews or meetings in order to monitor and advise on progress and potential problems;
- Conduct system integration testing and evaluation;
- Manage test and evaluation plans and presents the results;
- Analyze system deficiencies and recommends cost effective solutions;
- Review and reports upon suitability of contractor produced documentation;
- Develop test plans for prototypes and full system tests;
- Conduct engineering and technical definition studies and options analyses;
- Design and test prototype electronics assemblies, including integration and customization of available IT hardware and software packages;
- Conduct radio communications (LF/MF/HF/VHF/UHF) engineering;
- Conduct digital and computer systems engineering, voice and data network engineering; and microwave systems engineering.

Specialties could include but are not limited to:

T.9 Lineman Technician
Experience Levels Level 1:   <5 years of experience Level 2:   5-<10 years of experience Level 3:   10+ years of experience

Responsibilities could include but are not limited to:
- The resource must conduct scheduled preventive maintenance and necessary corrective actions on internal and external cable plants to include all aerial, buried, antenna support structures and underground systems and associated hardware;
- Conduct scheduled preventive maintenance on all telecommunication rooms (TRs) and main telecommunication rooms (MTRs) to include inside cable, equipment racks/trays, metallic bonding and grounding, labeling, fire stopping and cable records;
- Conduct as directed by the Line Section Manager emergency/priority repair capabilities for all installed copper/fibre/support structures;
- Operate DND Line construction vehicles (up to a 5-ton with a derrick boom) and equipment to erect poles and install pole line hardware and cables;
- Perform installation and repair capability to external cable plants to include antennae support systems;
- Perform installation and repair capability to internal cable plants to include Data Voice Outlet (DVO) installation/removal, alarm circuits, CATV, and fibre patches;
- Maintain accurate copper and fibre electronic cable records database utilizing Microsoft office products;
- Perform Lineman Technician-related tasks incidental to the work described herein

Specialties could include but are not limited to: