



The Open Group Certified IT Specialist (Open CITS) Program

Conformance Requirements

May 2012
Version 2.2

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The Open Group Certified IT Specialist (Open CITS) Program: Conformance Requirements Version 2.2

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Comments relating to the material contained in this document may be submitted to:

The Open Group
Apex Plaza
Forbury Road
Reading
Berkshire, RG1 1AX
United Kingdom

or by electronic mail to:

ogspecs@opengroup.org

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1. BACKGROUND

1.1 Introduction

A common characteristic of people-certification programs in the marketplace is that most test or validate the existence of relevant knowledge. Few reach beyond this. Clearly “book learning” is a critical first step to becoming effective at anything. But the effectiveness, potential, and the degree and value of contribution rise to a new level as relevant skills and experience are gained in a topical area. It is clearly important to “know” a subject, but it is more valuable to have applied that knowledge.

It is for this reason that The Open Group Certified IT Specialist (Open CITS) program is based on an assessment of people skills, technical skills, and experience, not just tests of knowledge.

In today’s global and highly competitive environment, businesses are striving for Boundaryless Information Flow™; therefore they need to be flexible and able to quickly respond to changing market conditions irrespective of geographical boundaries, time zones, and organizational structures. Also, in order to achieve competitive advantage and to increase performance, organizations need to collaborate more than ever, supported by open and interoperable standards.

Although technological and semantic standards are crucial to support Boundaryless Information Flow, the key success factor for organizations to collaborate is still the quality of their individual employees. The success of an IT-enabled business highly depends on the proper abilities, experience, and skills of its IT Specialists, no matter in what part of the business solutions lifecycle they are involved (solution or product technical sales, construction, implementation, systems integration, and solution support) or in what context (technology, industry, business, or training).

The demand for competent, experienced IT Specialists will further increase, driven by a strong growth in business/IT projects across the world. This is particularly true now that more and more solutions and projects are sold and delivered in a global, distributed context, catalyzed by the growth in offshore IT resources and new, upcoming markets. Businesses need to staff their projects typically from multiple sources, both from within and outside the company, potentially from multiple continents and multiple providers. Businesses increasingly look to multiple vendors to provide products and solutions to address their business requirements. They find themselves more and more involved in collaborative engagements with partners, alliances, providers, clients, and even competitors.

To thrive in a context like this, it is paramount to have a global, standardized view of the skills, experience, and competences of IT Specialists. This will enable organizations to find and select the right resources to address their business needs, which is all the more relevant now that regulatory compliance and the ever-growing expectations of the market explicitly demand the highest quality of service.

Vendor-independent, global, role-based Open CITS brings the guarantee that other organizations in the business ecosystem acquire and possess similar, comparable capabilities; this is a prerequisite for any successful collaboration.

From the point of view of the IT Specialist, certification against an open, global standard brings many benefits as well – it provides a clear, motivating path for career development and it contains portable credentials that will be recognized and accepted on a global scale. The latter is crucial, as many IT Specialists find that today’s working environment constantly creates new, often international opportunities. Certified IT Specialists will be part of a world-wide community of professionals that share the same background, values, and standards in their profession. The Open CITS standard is explicitly profession-based – it focuses on the competences and experience that provide a much-needed higher dimension to the many limited, product-specific certifications that currently exist.

The Open Group Open CITS program thus provides an element that is currently missing in the IT industry: a set of recognized standards that allow organizations to benchmark against the required skill level, experience, and knowledge, and select the right people for the job.

1.2 The Open Group Open CITS Program

The Open Group IT Specialist Certification Program (the Program) is designed to validate the existence of those qualities and skills in a professional that enable the effective development, implementation, and operation of IT solutions. The Program is skills and experience-based and goes beyond validating the mastery of any specific knowledge base.

The Program includes a framework for accreditation of third parties to establish IT Specialist certification programs affiliated to The Open Group. The framework of accreditation and certification is specifically intended to standardize the process and criteria for IT Specialist professional certification and establish a foundation for the required skills and experience necessary to achieve such a distinction. The Program has been designed to be flexible and extensible so that the framework may be adopted by any industry, country, or organization.

The Open Group supports two different routes to IT Specialist certification:

- The first route is *direct* certification by The Open Group.
- The second is *indirect*, through third-party programs accredited by The Open Group.

The Open CITS Conformance Requirements for IT Specialist certification apply equally to the direct and indirect routes to certification.

Beyond the Open CITS Conformance Requirements for a Certified IT Specialist, third parties operating Accredited Certification Programs (ACPs) may levy additional requirements on their Candidates in order to satisfy their internal skills requirements. Such additional requirements are called *extended certification requirements* or simply *extended requirements*. For example, extended certification requirements might include experience with proprietary corporate tools or products, or appropriate industry or cultural requirements.

The Program requires ACPs' extended certification requirements to be effectively documented and communicated within the accredited program. In addition, extended certification requirements must not relax the skills, experience, or process requirements set forth by the framework established herein.

The Program is based upon a set of key documents:

1. The *Certification Policy*, which sets out the policies and processes by which an IT Specialist may achieve certification.
2. The *Conformance Requirements* (this document), which documents the skills and experience that a Certified IT Specialist must possess.
3. The *Accreditation Policy*, which sets out the policies and processes by which an Organization may achieve accreditation.
4. The *Accreditation Requirements*, which documents the criteria that must be met by an Accredited Certification Program.

1.3 Levels of Certification

The Program recognizes three levels of certification – “Certified”, “Master”, and “Distinguished” – in increasing order of skill and experience.

Level 1: Certified IT Specialist (able to perform with assistance/supervision, with a wide range of appropriate skills, as a contributing IT Specialist)

Level 2: Master Certified IT Specialist (able to perform independently and take responsibility for delivery of systems and solutions as a lead IT Specialist)

Level 3: Distinguished IT Specialist (delivering leadership, scope, depth, and breadth of impact)

It is recommended that all professionals seeking Open CITS certification at Level 1 or Level 2 have the following:

- Three (3) years’ experience in the Stream in the last five (5) years
- Five (5) years’ work experience in IT in the last eight (8) years

For guidance, it would normally take three to five years of additional IT experience to grow from Level 1 certification to Level 2 certification, and a further two to five years to grow to Level 3 certification.

Certification Level	Experience Requirements
Level 1: Certified	Level 1 Certified IT Specialists are required to have led technical aspects of projects or engagements within their chosen Stream. Level 1 Certified IT Specialists must have acted in the role of IT Specialist within their Stream in at least two (2) successful engagements. The deliverables produced by the Candidate must have contributed to the engagement meeting its acceptance criteria.
Level 2: Master Certified	Level 2 Certified IT Specialists are recognized experts who have mastered the state-of-the-art in their field. Level 2 Certified IT Specialists: <ul style="list-style-type: none"> • Lead teams involving multiple streams on projects or engagements • Make significant contributions to project definition and management • Are involved in the growth and development of others Level 2 Certified IT Specialists must have acted in a leadership role in at least three (3) successful engagements.
Level 3: Distinguished	Level 3 Certified IT Specialists are experts in the application of information and communications technology to system design and implementation, taking into account security, extensibility, interoperability, manageability, and organizational considerations. They are leaders of the profession, constantly learning and applying new techniques and technologies and seeking to design new and innovative solutions. What distinguishes IT Specialists at Level 3 from those at Level 2 are leadership, scope, depth, and breadth of impact.

1.4 Program Logo

IT Specialists certified within the Program are able to use an Open Group logo on their business cards, etc. In accordance with the Trademark License Agreement and Trademark Usage Guide, the logos that may be used include a label (tag line).

The labels for the three levels are as follows:

Level	Label
3	Distinguished IT Specialist
2	Master IT Specialist
1	Certified IT Specialist

1.5 Terminology and Definitions

This table defines terms or clarifies the meaning of words used within this document. Where an acronym is also used, it is provided in parentheses.

Accredited Certification Program (ACP)	An IT Specialist certification program, operated by a third party, that has successfully completed the accreditation process and which is listed in the Accreditation Register on the Certification Authority's web site.
Certification Authority (CA)	The organization that manages the day-to-day operations of the Program in accordance with the policies defined in this Conformance Requirements document. The Open Group acts as the Certification Authority for IT Specialist Certification.
Certification Board	The group of subject matter experts appointed by the Certification Authority or by an Accredited Certification Program to evaluate applications for certification.
Certification Package	The detailed description of the skill levels attained and experience undergone that provides the Certification Authority or Accredited Certification Program with sufficient information to determine whether the Candidate meets the Conformance Requirements. The Certification Package is never made public. The Certification Package is created by the Candidate by filling in the Certification Package Template.
Certification Package Template	The template document provided to Candidates by the Certification Authority to enable them to create Certification Packages.
Certification Record	The information identifying the Candidate, including contact details, and describing the way in which the Candidate meets the Conformance Requirements, including the Candidate's selection of Client Focus, Technical Focus, and Stream. The Certification Record of a Certified IT Specialist is made available by the Certification Authority at the discretion of the Certified IT Specialist.
Certification System Deficiency (CSD)	An agreed error in the Certification System, which is inhibiting the certification process. A Certification System Deficiency is one possible outcome of a Problem Report.
Certified IT Specialist	A Candidate that has successfully completed the certification process, who has been notified in writing by the Certification Authority that the certification requirements have been met, and who has accepted the TMLA.
Direct Certification	Direct certification is achieved by applying directly to The Open Group, or to a third party operating the Program on behalf of The Open Group, and successfully completing the certification process. Direct certification is open to any Candidate, regardless of who they work for, or where in the world they live and work.
Directory of Certified IT Specialists	The official list of all Certified IT Specialists, which is maintained by the Certification Authority and made publicly available on the Certification Authority's web site.

Evaluation Process Deficiency (EPD)	An agreed error in the Evaluation Process that is inhibiting the certification process. An Evaluation Process Deficiency is one possible outcome of a Problem Report.
Indirect Certification	Indirect certification is achieved by applying to an Accredited Certification Program and successfully completing the certification process. To be eligible for certification by a particular Accredited Certification Program, Candidates must work for the Organization running the Accredited Certification Program.
Interpretation (INT)	Decision made by the Specification Authority that elaborates or refines the meaning of the Conformance Requirements, Certification Policy, Accreditation Requirements, Accreditation Policy, or a standard or best practice referenced therein. An Interpretation is one possible outcome of a Problem Report.
Problem Report (PR)	A question of clarification, intent, or correctness of an accreditation or certification document, or the web-based Certification System.
Program Logo	The logo or other trademarks as designated from time to time by The Open Group for use within the Program in relation to Certified Specialists.
Specification Authority (SA)	The Open Group IT Specialist Certification working group, or its successor, which is responsible for developing, maintaining, and interpreting the Certification Policy, Conformance Requirements, Accreditation Policy and Accreditation Requirements of the Program.
Trademark License Agreement (TMLA)	The agreement between the Certified IT Specialist and The Open Group that contains the legal commitment by the Candidate to the conditions for use of the Program Logo.

1.6 Relationship to SFIA

The Skills Framework for the Information Age (SFIA) is a framework for describing the skills of information systems professionals. SFIA is used to unite a wide variety of other systems in the recruitment, development, training, and reward of Information Systems (IS) staff throughout the world (see www.sfia.org.uk).

In developing the Program, SFIA has been used as an underlying structure to help with the organization of the Open CITS Conformance Requirements and as a resource to help in their validation.

Open CITS and SFIA differ in their approaches:

- SFIA identifies a comprehensive set of categories of skill that are needed in the IS domain, and describes the skills in these categories at several different levels. Individuals assessing themselves against SFIA are likely to find that they meet the SFIA criteria in several different categories, and organizations using SFIA to define the skills required for a particular role may need to select skills from more than one SFIA category.
- The Open CITS program identifies a number of different areas of work that need to be performed by IT Specialists, and defines the detailed skills and experience requirements that would be expected of people who have successfully performed in those roles.

Where there is a clear mapping between an Open CITS Conformance Requirement and SFIA, the SFIA reference is included in the Open CITS definitions in the column “Skill”.

Open CITS Level 2 has been assessed as meeting or exceeding the SFIA generic requirements at Level 5.

1.7 Migration and Change History

This section details changes made to the Open CITS Conformance Requirements (Doc. No. X084).

Version No.	Date	Change
1.0	December 2007	First publication. Covers Level 1 and Level 2 certification.
1.1	April 2008	Supersedes Version 1.0. Implementation of Corrigendum U081 (dated December 17, 2007), adding the Business Information Management (BIM) Stream and revising requirements ITSCDM06 and ITSCDM07 to correctly reflect the agreed company review change requests CR102 and CR103.
2.0	February 2010	Supersedes Version 1.1. Adds a new conformance level – Level 3. The Conformance Requirements for the Streams and Focus Areas, and the Core Foundation Skills for Level 1 and Level 2 are not changed between Version 1.1 and Version 2.0.
2.0.1	July 2011	Supersedes Version 2.0. Contains cosmetic changes to Version 2.0 only for the change in program name.
2.1	October 2011	Supersedes Version 2.0.1. Implementation of Corrigendum U111, adding a Security Stream into Level 1 and 2.
2.2	May 2012	Supersedes Version 2.1. Implementation of Corrigendum U013, adding the Service Management Streams into Level 1 and Level 2.

Part 1: Conformance Requirements for Level 1 and Level 2

2. LEVEL 1 AND 2 ROLES AND RESPONSIBILITIES

IT Specialists support solution construction, implementation, and systems integration in a Technology, Industry, or Business Stream. IT Specialists are proficient in a Client Focus Area and Technical Focus Stream Area. They are capable of working with requirements and designs to ensure successful implementation of production projects and engagements. Depending on their organization or role, IT Specialists can perform services for fee, or provide sales for products, services, and solutions, or provide support for products, services, and solutions, or provide training in support of products, services, and solutions.

As IT Specialists mature in the profession, it is expected that their area of Technical Focus may broaden to include deep skills in areas related to their technical Stream. This development pattern is supported and encouraged as this makes the professional better rounded and more valuable to their client and their organization.

IT Specialists deliver high-quality solutions to clients (internal or external) in response to varying business requirements. They utilize product, technology, industry, architectural, and business skills. IT Specialists often use tools to manage, analyze, design, and implement solutions. IT Specialists have an in-depth understanding of products, offerings, and services within their Technical Focus Area and Stream.

2.1 Characteristics of the IT Specialist – Client and Technical Focus Areas

The key skills and contributions IT Specialists bring to their pursuits are multifold. IT Specialists ensure that IT solutions are designed, implemented, operated, and maintained to suit client needs. IT Specialists possess a variety of skill sets based on their particular Client and Technical Focus Area.

IT Specialist skills are comprised of a number of skill sets, which are largely determined by a number of factors:

- IT Specialists interface with clients in one of four ways, termed Client Focus Areas:
 - **Services:** IT Specialists who primarily apply their technical skills in an internal or external customer billable services and implementation environment.
 - **Sales:** IT Specialists who apply their technical skills to support the sales of vendor products, services, and solutions.
 - **Support:** IT Specialists who apply their technical skills to support the operation and maintenance of vendor products, services, and solutions.
 - **Training:** IT Specialists who primarily apply their technical skills to develop and deliver training courses.
- IT Specialists focus on one Technical Focus Area. This document will describe Streams and Sub-Streams within each Technical Focus Area. An IT Specialist will generally focus on one Stream or Sub-Stream within one Technical Focus Area. The Technical Focus Areas are:
 - **Solution Development:** IT Specialists in this Technical Focus Area transform business requirements and architecture requirements through analysis, design, development, test, and deployment into viable business solutions.
 - **Solution Deployment:** IT Specialists in this Technical Focus Area work with products or solutions based on any vendor hardware or software to ensure the service provision based on business operations requirements.

IT Specialists in each Stream work in very diverse roles or specialties but are united by their deep technical expertise and the methods they use. To designate these different specialties, we use the word *Streams*. In many organizations, Streams are comparable to job codes or domains. In some Streams, we have defined *Sub-Streams*. This is purely for convenience in documentation. There is no difference from a certification perspective between a Stream and a Sub-Stream except that, where Sub-Streams are defined, certification is only available to the Sub-Streams.

IT Specialists possess a set of core skills regardless of their chosen Client and Technical Focus Areas. In order to implement complex solutions or contribute to the sale of technically advanced products and solutions, the IT Specialist should possess deep Technical, Leadership, and People skills in their area of expertise. Candidates must demonstrate that they possess a common set of fundamental skills and experiences, and in addition must show that they possess deep skills in one Client Focus Area as well as one Technical Focus Stream.

The Conformance Requirements for the Program consist of the following skill sets, as shown in Figure 1 below:

- Core Foundation skills
- Client Focus skills
- Technical Focus skills
- Experience requirements

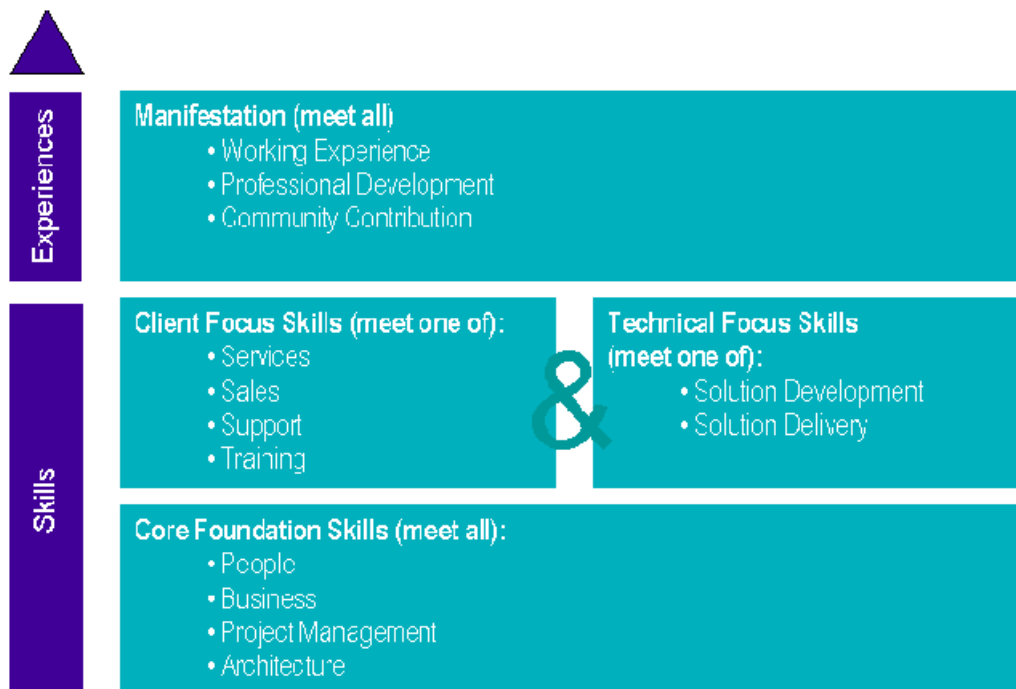


Figure 1: Required Skill Sets of IT Specialist Certification

The Core Foundation Skills apply equally to all IT Specialists and therefore provide a foundation for flexibility and an opportunity for career change and personal development. IT Specialists are expected to be deployable in both client-facing and pure technical roles, and must be able to make the bridge between them. Both sets of skills are needed to transform client ideas and requirements into effective solutions. For these reasons, a Certified IT Specialist must have both a Client Focus and a Technical Focus.

To be certified, an IT Specialist must have demonstrated substantial working experience within their Client and Technical Focus Areas and have repeatedly demonstrated their ability to make the bridge between the client-facing and technical aspects of a solution.

As professionals, IT Specialists are expected to contribute to the community of IT Specialists and to continue to develop their professional skills and expertise.

Effective IT Specialists typically possess and exhibit the following:

Technical skills	IT Specialists require practical skills and experience with many application and infrastructure (operational) products, technologies, and services. IT Specialists have the specialized skills required to construct, implement, operate, and maintain all aspects of a client IT infrastructure. Beyond that base of technical depth, effective IT Specialists usually possess additional technical skills in one or more specialty areas.
Leadership skills	The effective IT Specialist is a leader, providing knowledge, technical, and team leadership skills in their work, to their clients, and for their teams.
People skills	The IT Specialist must have a high level of communications, consulting, and client relationship skills. The IT Specialist must be able to clearly communicate complex technical and business concepts, both to clients (internal or external) and to team members, and to negotiate change. Problem-solving of client business and technical issues is a principle role of the IT Specialist, and he or she must be capable of effectively identifying and framing problems, leading the collection of elements of information, and integrating this information to produce timely and thoughtful decisions.

2.2 Description of IT Specialist Depth and Breadth

The Program validates certification candidate skills across four major dimensions: Client Focus, Technical Focus, People & Business, and Project & Architecture. The certification program ensures that the Candidate not only possesses deep technical skills, but also Business and People skills that are deemed important in today’s business climate.

As the IT Specialist gains the required skills and experiences in each dimension, the IT Specialist outwardly expands the depth and breadth of skills required for certification. Figure 2 depicts this process.

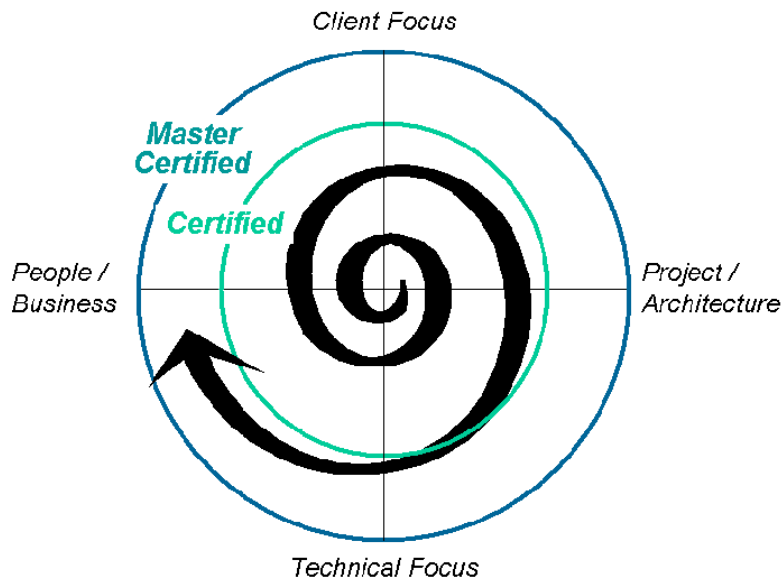


Figure 2: IT Specialists must Develop Themselves in each Dimension

These skills cover **People, Business, Project, and Architecture** aspects and enable IT Specialists to work effectively with Architects, Business Consultants, and Project/Engagement Managers. These skills are needed in order to implement complex solutions or contribute to the sale of technically advanced products and solutions. Each skill may be Solution, Client, Technical, or Leadership-related.

2.3 Client Focus Areas

IT Specialists are deployed in four broad Client Focus Areas across company organizations worldwide. IT Specialist Client Focus Areas are: Services, Sales, Support, and Training.

Services	IT Specialists in this Client Focus Area primarily apply their skills in an internal or external customer billable services and implementation environment.
Sales	IT Specialists in this Client Focus Area primarily apply their skills to support the sales of vendor products, services, and solutions. Individuals who are part of Sales typically have responsibility for non-billable activities, such as driving revenue through in-depth, complex demonstrations, technical evaluations, or proof-of-concepts.
Support	IT Specialists in this Client Focus Area primarily apply their skills to support the operation and maintenance of vendor products, services, and solutions. Individuals who are part of Support typically have responsibility for sizing, troubleshooting, and critical customer situations.
Training	IT Specialists in this Client Focus Area primary apply their skills to develop and deliver training courses. The professionals in this area combine assignments in client projects with the delivering of training courses to clients (internal or external).

2.4 Technical Focus Areas and Streams

An IT Specialist will focus on one of two Technical Focus Areas: Solution Development or Solution Delivery. Each of these Technical Focus Areas has multiple Streams and/or Sub-Streams against which a Candidate may apply for Certification. For convenience in documentation, related Streams may be grouped together and called *Sub-Streams*.

Sub-Streams were introduced to the Program purely for convenience in documentation and description. There is no intended difference in depth, scope, value, or significance between an area of specialization categorized as a Sub-Stream *versus* one categorized as a Stream.

For certification purposes, Sub-Streams are treated as Streams.

It is expected that, over time, additional Streams (and Sub-Streams) may be added to the Program to address the evolving roles of IT Specialists.

2.4.1 Technical Focus Area: Solution Development

IT Specialists in this Technical Focus Area transform business requirements and architecture requirements through analysis, design, development, test, and deployment into viable business solutions. The Solution Development Technical Focus Area aims at realizing total and partial information systems solutions, including the description and formulation of processes, procedures, and work instructions. The Solution Development Technical Focus Area contains the following Streams:

- **Business Analysis**

IT Specialists in this Stream have expertise in analysis and description of business processes, and their translation into functional and non-functional IT requirements. Business analysts act as the interpreters between the worlds of IT and business. Typical examples of the deliverables are functional and non-functional requirements, use-cases, process models, and impact analysis.

- **Applications Development**

IT Specialists in this Stream have expertise in translating IT requirements in the design, development, and assembly of components to create custom information systems. Typical examples of the deliverables are functional and technical designs, models, components, code, unit tests, and documentation.

- **Packaged Application Implementation**

IT Specialists in this Stream have expertise in implementing, integrating, and customizing commercial Independent Software Vendor (ISV) packages such as CRM, ERP, Finance, Accounting, or vertical industry-specific packages. The Packaged Application Implementation IT Specialist is characterized by a combination of general development knowledge with package knowledge and the specific domain to which the package relates. Typical examples of the deliverables are functional and technical designs, models, components, code, parameters, unit tests, and documentation.

- **Data Integration**

IT Specialists in this Stream will have expertise in making available, integrating, and optimizing structured and/or unstructured data using database products, technologies, and methods. Typical examples of the deliverables are database designs, information models (logical, physical, dimensional, etc.), data migration plans, and data warehouses.

- **Infrastructure Design**

IT Specialists in this Stream will have expertise in selecting the optimal combination of storage systems, networking systems, servers, and/or printing systems based on application and business information requirements. Typical examples of the deliverables are capacity plan, standardization plan, migration plan, and infrastructure model.

- **Testing**

IT Specialists in this Stream will have expertise in the planning, design, management, execution, and reporting of tests using appropriate testing tools and techniques, and conforming to agreed standards, to ensure that new and amended systems, together with any interfaces, perform as specified together

with the business. Typical examples of the deliverables are testing strategies, test plans, test cases, test reports, and quality metrics.

- **Business Information Management**

IT Specialists in this Stream have expertise in making available, integrating, and optimizing structured and/or unstructured data in order to present or distribute information for use and analysis by the business. Specialties are Business Intelligence and Content Integration. Typical examples of the deliverables are strategy maps, information models (logical, physical, dimensional, etc.), data warehouses, balanced scorecards, and reports.

2.4.2 Technical Focus Area: Solution Delivery

IT Specialists in this Technical Focus Area work with products or solutions based on any vendor hardware or software to ensure that the service provision meets business and architecture requirements. The Solution Delivery Technical Focus Area is composed of a number of Streams and Sub-Streams:

- **Infrastructure & Application Management**

IT Specialists in this Stream will have expertise in managing and operation of IT hardware, software, communications, and/or application solutions, and the resources required to plan for, develop, deliver, and support properly engineered IT services and products to meet the needs of a business.

The scope of this Stream includes preparation for new or changed services, management of the change process, and maintenance of regulatory, legal, and professional standards, management of performance of systems and services in relation to their contribution to business performance, and management of bought-in services including, for example, public network, virtual private network, and outsourced services. Typical examples of the deliverables are service-level reporting, risk, and contingency planning.

- **Systems & Hardware Products**

IT Specialists in this Stream work with products or solutions based on any vendor hardware and/or any vendor operating system software. The Systems & Hardware Products Stream is comprised of four Sub-Streams:

- **Storage Systems**

IT Specialists in this Sub-Stream will have expertise in one or more storage system technology areas. Examples include: disk, tape, optical, SAN, NAS, or storage software related to these technologies. Typical examples of the deliverables are building proof-of-concept solutions with storage system technology and architecting storage solutions to address client requirements.

- **Networking Systems**

IT Specialists in this Sub-Stream will have expertise in one or more networking system technology areas. Examples include: routers, networking controllers, bridges, or networking software related to these technologies. Typical examples of the deliverables are building proof-of-concept solutions with networking system technology and architecting networking solutions to address client requirements.

- **Server**

IT Specialists in this Sub-Stream will have expertise in one or more server technologies, including different hardware architectures and operating systems. Typical examples of the

deliverables are building proof-of-concept solutions with server system technology and architecting server solutions to address client requirements.

— Cross Systems

IT Specialists in this Sub-Stream will have expertise in two or more servers, their operating system environments, and/or storage technologies and their inter-relationship and operation. Typical examples of the deliverables are building proof-of-concept solutions with server and storage system technology across multiple operating system environments, and architecting server and storage solutions across multiple operating system environments to address client requirements.

Note: Level 1 Certification is not available for this Sub-Stream.

• Software

IT Specialists in this Stream work with products or solutions based on any vendor software or open source software products. Software products fall under five Sub-Streams:

— Application Development Products

IT Specialists in this Sub-Stream will have expertise in one or more application development products. Examples include mainstream application development frameworks, such as those from IBM, Microsoft, and Sun.

Typical examples of the deliverables are building proof-of-concept solutions with application development technology, architecting application development software solutions to address client requirements, and conducting solution assurance reviews to ensure proposed solutions meet client requirements.

— Application & Integration Middleware

IT Specialists in this Sub-Stream will have expertise in one or more Application and Integration Middleware (AIM)-based software product areas. Examples include mainstream AIM software, such as those from IBM, Microsoft, and Mercator.

Typical examples of the deliverables are building proof-of-concept solutions with AIM technology across multiple operating system environments and AIM solutions to address client requirements.

— Data Management

IT Specialists in this Sub-Stream will have expertise in one or more relational and non-relational data management-based software product areas. Examples include mainstream data management software, such as those from IBM and Oracle.

Typical examples of the deliverables are building proof-of-concept solutions with data management technology and architecting data management solutions to address client requirements.

— Content Management

IT Specialists in this Sub-Stream will have expertise in one or more areas of content management software. Content management software captures, stores, manages, integrates, and delivers all forms of digital content across a company's entire value chain to create real

business value. Content management systems and integrated processes provide the unified approach for managing multiple content types. Examples include mainstream content management software, such as those from IBM, Microsoft, and Sun.

Typical examples of the deliverables are building proof-of-concept solutions with server and storage system technology across multiple operating system environments and architecting server and storage solutions across multiple operating system environments to address client requirements.

— Portal and Collaboration

IT Specialists in this Sub-Stream will have expertise in one or more areas of portal and collaboration software. Examples include mainstream portal and collaboration software, such as those from IBM and Microsoft.

Typical examples of the deliverables are building proof-of-concept solutions with portal and collaboration technology, architecting portal and collaboration software solutions to address client requirements, and conducting solution assurance reviews to ensure that proposed solutions meet client requirements.

- Security

IT Specialists in this Stream will have expertise in analyzing and translating business requirements into control objectives, designing security controls, and implementing them along with a security management cycle. Security specialists assist in finding the proper balance between enabling and securing in relation to the customer's organization, culture, and ecosystem. Typical examples of the deliverables include asset classification models, risk analysis reports, information security policies, security solution scenarios, implementation plans, security services, organization models, procedures, security effectiveness evaluation reports, security awareness workshops, and security incident management plans.

- Service Management

IT Specialists in this Stream will have expertise in the validation and implementation of services according to the wishes and expectations of a client. The service performance levels are described in Service Level Agreements and Underpinning Contracts. For every Agreement or Contract, specific processes and tools are determined. Functions within Service Management control and co-ordinate and can have several areas of attention such as Service Delivery Management, Process Management, Contract Management, and Supply Management.

3. CONFORMANCE REQUIREMENTS (NORMATIVE)

The Open CITS Conformance Requirements for a Certified IT Specialist are broken down as follows:

- Core Foundation skills
- Client Focus skills
- Technical Focus skills
- Experience Requirements

Requirements that are stated as applying to Certified IT Specialists apply equally to Candidates for certification.

3.1 Selecting the Appropriate Certification Template

A certification Candidate will select only one Client Focus Area, and one Stream within one Technical Focus Area. The Candidate will describe his or her experiences based on these selections.

Core Foundation skills are the same for all Candidates regardless of the Client Focus and Technical Focus/Stream selected.

3.2 Skill Levels

For the Core Foundation, Client Focus, and Technical Focus Stream skill sets, Candidates must meet or exceed the minimum skill level defined for each of the skill sets. Skill levels are defined as follows:

Skill Level	Description
Limited	Limited or no knowledge
General	General conceptual knowledge only
Applied	Applied skills – performs with supervision or mentoring
Deep	In-depth skills – mastered the current state-of-the-art and is able to perform without supervision
Expert	Expert skills – advances the state-of-the-art

Table 1: Skill Levels and Descriptions

3.3 Core Foundation Skills

The following table defines the Core Foundation skills for the Program. The Core Foundation skills are categorized into People skills, Business skills, Project skills, and Architecture skills.

Candidates must be able to document that they have demonstrated these skills at the required level (or higher) repeatedly and successfully.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCCF01	People	Apply Written Communication Skills	Demonstrate good written communications, including the use of proper grammar, spelling, document organization, clarity, and use of content appropriate for the audience.	Applied	Deep
ITSCCF02	People	Apply Verbal Communication Skills	Demonstrate good verbal communications, including strong eye contact (where culturally appropriate), responsiveness to questions, ability to stay on subject, use of good feedback, and follow-up questions, etc., so that effective two-way communication is demonstrated.	Applied	Deep
ITSCCF03	Project	Set Technical Direction	Given a scope of solution to be accomplished, set the technical direction and constraints of the project or engagement and monitor compliance.	Applied	Deep
ITSCCF04	People	Negotiate Equitable Solutions	Given a conflict, mediate opposing viewpoints and negotiate equitable solutions to ensure successful and stable outcomes.	Applied	Deep
ITSCCF05	Project	Manage Stream-specific Elements of an IT Project Plan	Given a project plan, identify those elements of the plan that put the integrity of the Stream-specific elements at risk and help the client and/or project manager by managing those elements so that the project can be successfully completed.	Applied	Deep
ITSCCF06	Business	Understand Business Aspects	Understand the stakeholders' business needs and how they relate to the Candidate's Stream.	Applied	Deep
ITSCCF07	Business	Provide Solution Input to Winning Bids	Create the Stream/Technical Focus Area-related solution within winning bids, proposals, or contract extensions.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCCF08	People	Problem Analysis and Resolution	Demonstrate the ability to perform logical analysis and problem solving.	Applied	Deep
ITSCCF09	People	Apply Mentoring Techniques	Establish mentoring relationships that provide feedback and coaching to enable colleagues or clients to develop and improve performance.	Applied	Deep
ITSCCF10	People	Team Leadership	Capable of leading a team.	Applied	Applied
ITSCCF11	Project	Develop Solution	Given one or more business or technical requirements, create the structures of a solution that can be validated to meet those requirements.	Applied	Deep
ITSCCF12	Project	Personal Impact Awareness	Understand the relationship of the personal contribution to the context of the overall objective of the project or engagement.	Applied	Applied
ITSCCF13	Architecture	Understand Interface to Architecture	Understand the relationship of the personal contribution to the context of the enterprise or project architecture.	Applied	Deep
ITSCCF14	Technique	Develop Re-use Mindset	Use, when possible, already developed objects and materials.	Applied	Deep

3.4 Client Focus Area Skills

Certified IT Specialists must be able to demonstrate that they have demonstrated skills in *one* of the Client Focus Areas:

- Services
- Sales
- Support
- Training

3.4.1 Services

IT Specialists in this Client Focus Area primarily apply their technical skills in an internal or external customer billable services and implementation environment.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCTS01	Technique	Advise on Possible Solution (TECH)	Provide advice to the client on a range of applications and products, which may be employed in the solution.	Applied	Deep
ITSCTS02	Technique	Understand Business Aspects	Assess client needs, requirements, preferences, and expectations.	Applied	Deep
ITSCTS03	Technique	Advise on Large and/or Complex Engagements	Given a large and/or complex engagement, define and prepare partial or complete solutions and/or proposals and plans that successfully meet or exceed client needs and expectations.	Applied	Deep
ITSCTS04	Technique	Assure Solution Viability	Assure solution viability that meets the client's requirements (appropriateness of the solution in the client context).	Applied	Deep
ITSCTS05	Technique	Develop Plans	Develops plans that are comprehensive, realistic, and effective.	Applied	Deep

3.4.2 Sales

IT Specialists in this Client Focus Area primarily apply their technical skills to support the sales of vendor products, services, and solutions. Individuals who are part of sales typically have responsibility for non-billable activities, such as driving revenue through in-depth, complex demonstrations, technical evaluations, or proof-of-concepts.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSA01	Technique	Advise on Technical Decisions (TECH)	Provide advice to the client on a range of applications and products, which may be employed in the solution.	Applied	Deep
ITSCSA02	Method	Use Sales Method (SALE)	Use a documented sales method.	Applied	Applied
ITSCSA03	Technique	Lead Technical Evaluation and Demonstration	Lead technical evaluations and demonstrations (e.g., proof-of-concepts, feasibility studies, benchmarks, or pilots).	Applied	Deep
ITSCSA04	Technique	Assure Initial Solution Viability	Assure initial solution viability that meets the client's requirements (e.g., quality assurance, systems assurance, risk assessment).	Applied	Deep
ITSCSA05	Technique	Develop Competitive Analyses	Given a set of client priorities and constraints, develop a competitive analysis and business justification.	Applied	Deep
ITSCSA06	Technique	Create Client Deliverables	Create client deliverables (e.g., by creating scenarios, custom demonstrations such as prototypes or user interfaces, or custom presentations that represent vendor products and solutions).	Applied	Deep

3.4.3 Support

IT Specialists in this Client Focus Area primarily apply their technical skills to support the operation and maintenance of vendor products, services, and solutions. Individuals who are part of support typically have responsibility for sizing, troubleshooting, and critical customer situations.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSU01	Technique	Advise on Technical Decisions (TECH)	Advise and guide the client on technical decisions for the use of vendor products, services, and solutions (trusted technical advisor). Examples include: <ul style="list-style-type: none"> Identify problems related to installation, update, configuration, operations, or performance Provide subject matter expertise on solution design Provide advice on potential resolutions and their implementation 	Applied	Deep
ITSCSU02	Technique	Problem Analysis and Resolution	Provide problem management. Examples include: <ul style="list-style-type: none"> Apply problem solving skills Assess risk and severity Locate and allocate resources as necessary Involve Subject Matter Experts (SMEs) to solve the problems Implement problem resolution (install, test, and run patches, upgrades) 	Applied	Deep
ITSCSU03	Technique	Provide Technical Leadership	Provide technical leadership; for example, leading reviews of impact analysis and fitness-for-purpose.	Applied	Deep
ITSCSU04	Technique	Create Client Deliverables	Create client deliverables. Examples include: <ul style="list-style-type: none"> Create scenarios and custom demonstrations (e.g., prototypes, user interface) Develop custom presentation that represents vendor's products, services, and solutions 	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSU05	Technique	Manage Change	<p>Manage change with significant technical scope or business impact. Examples include:</p> <ul style="list-style-type: none"> • Ensure all changes are authorized and reviewed for their potential impact. • Give personal attention to high priority/emergency change processing. • Ensure all changes are tracked and that history is available. • Track and authorize changes using appropriate tools. • Allow emergency changes to be made by authorized personnel. • Have a back-out and recovery plan in place for major changes. • Define go, no-go decision points. 	Applied	Deep
ITSCSU06	Technique	Identify Sales Opportunity	Identify sales opportunities by recognizing and articulating potential new business opportunities related to clients or client relationships.	Applied	Deep
ITSCSU07	Technique	Propose Solution	Given a non-trivial client problem, propose a successful solution or part solution within the Stream.	Applied	Deep

3.4.4 Training

IT Specialists in this Client Focus Area primarily apply their technical skills to develop and deliver training courses. The professionals in this area combine assignments in client projects with the developing and delivering of training courses to clients.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCTR01	Technique	Understand Training Concepts and Models	Understand basic training models and concepts and the art and science of teaching.	Applied	Deep
ITSCTR02	Technique	Define Learning Objectives	Define the learning objectives of the training program together with the client.	Applied	Deep
ITSCTR03	Technique	Customize Training Programs (TMCR)	Design and develop customized training programs based on client needs.	Applied	Deep
ITSCTR04	Technique	Use Training Techniques	Understand varying training forms, styles, and interventions most appropriate for the situation. To do this, Candidates must be aware of their own natural training styles.	Applied	Deep
ITSCTR05	Technique	Vary Training Delivery Mode	Use more than one form of training delivery (e.g., classroom training, individual coaching, e-learning, case-based training, action learning).	Applied	Deep
ITSCTR06	Technique	Adapt Delivery	Adapt delivery based on target audience.	Applied	Deep
ITSCTR07	Technique	Teach to Different Learning Styles	Recognize different learning styles of trainees and translate this into effective interventions.	Applied	Deep
ITSCTR08	Technique	Create and Maintain Training Programs (TMCR)	Translate the relevant developments in the Candidate's area of expertise into new training programs and improvements of existing training programs.	Applied	Deep
ITSCTR09	Technique	Develop and Update Training Materials	Develop and update training materials (e.g., syllabi, exercises, e-learning modules, simulations).	Applied	Deep
ITSCTR10	Technique	Relate Training Concepts to Subject Matter Expertise Area	Publish or present about relationships between training concepts and subject matter area expertise.	N/A	Applied

3.5 Solution Development Streams

3.5.1 Business Analysis

IT Specialists in this Stream have expertise in analysis and description of business processes, and their translation into functional and non-functional IT requirements. Business analysts act as the interpreters between the worlds of IT and business. Typical examples of the deliverables are functional and non-functional requirements, use-cases, process models, and impact analysis.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCBA01	Context	Understand Business Aspects	Apply knowledge of the client's vertical or horizontal business context to identify, understand, and articulate the client's business strategy, problems, and objectives.	Applied	Deep
ITSCBA02	Technique	Conduct Requirements Gathering Workshops	Conduct requirements gathering workshops with a client to meet the stated objective.	Applied	Deep
ITSCBA03	Technique	Define Requirements	Define requirements using modeling techniques or otherwise to produce deliverables (e.g., use-cases, data flow diagrams, entity relationship diagrams, etc.).	Applied	Deep
ITSCBA04	Technique	Perform Gap Analysis	Validate the proposed solution against requirements (gap analysis).	Applied	Deep
ITSCBA05	Strategy	Develop Requirements Gathering Strategy	Select the appropriate methods, techniques, and tools for identifying, analyzing, and documenting client requirements.	Applied	Deep
ITSCBA06	Technique	Perform Business Justification	Develop business justification (scope, goals, benefits, costs) for proposed solutions.	Applied	Deep
ITSCBA07	Technique	Define Business and IT Requirements (ANAL)	Translate business needs and opportunities to business and IT requirements.	Applied	Deep
ITSCBA08	Context	Perform Business Process Impact Analysis	Identify the impact of the proposed solutions to the business process.	Applied	Deep
ITSCBA09	Method	Use Method	Use a Stream-specific method and/or process to gather and analyze requirements.	Applied	Deep
ITSCBA10	Technique	Validate Requirements	Validate requirements with the client.	Applied	Deep

3.5.2 Application Development

IT Specialists in this Stream have expertise in translating IT requirements in the design, development, and assembly of components to create custom information systems. Typical examples of the deliverables are functional and technical designs, models, components, code, unit tests, and documentation.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCAD01	Technique	Write Software	Program in one mainstream programming language, according to project guidelines and coding standards.	Deep	Deep
ITSCAD02	Strategy	Recommend Programming Language	Given a business and technical context, compare the possibilities, strengths, and weaknesses of two or more programming languages to make recommendations.	Applied	Deep
ITSCAD03	Technique	Perform Unit Test and Debug	Given a test plan, perform unit test and debug complex software.	Applied	Deep
ITSCAD04	Tool	Use Automated Development Tools	Use automated development tools.	Applied	Deep
ITSCAD05	Technique	Define Development Metrics	Define and measure metrics tracking development progress and quality.	Applied	Deep
ITSCAD06	Strategy	Develop Complex Solution	Given a set of requirements, design, build, test, and package significant aspects of a complete solution required by the client.	Applied	Deep
ITSCAD07	Tool	Use Configuration Management Tools	Use configuration management tools.	Applied	Deep
ITSCAD08	Method	Use Application Development Methods	Use two or more major application development methods (e.g., LAD/Waterfall, RAD, DSDM, RUP).	Applied	Deep
ITSCAD09	Technique	Develop Design	Elaborate and translate functional and non-functional requirements into a design.	Applied	Deep

3.5.3 Packaged Application Implementation

IT Specialists in this Stream have expertise in implementing, integrating, and customizing commercial Independent Software Vendor (ISV) packages such as CRM, ERP, Finance, Accounting, or vertical industry-specific packages. The Packaged Application Implementation specialist is characterized by the combination of general development knowledge with package knowledge and the specific domain to which the package relates. Typical examples of the deliverables are functional and technical designs, models, components, code, parameters, unit tests, and documentation.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCPA01	Technique	Use ISV Products, Technologies, and Methodologies	Use ISV products, technologies, and methods to provide a solution to a client's (internal or external) problem. Examples of vendors who produce ISV products include Oracle, SAP, and PeopleSoft.	Applied	Deep
ITSCPA02	Technique	Understand Conversion to ISV Products	Advise or support clients (internal or external) on which migration or conversion tools, procedures, and products are required to migrate or convert to ISV products.	Applied	Deep
ITSCPA03	Technique	Understand ISV Upgrade	Advise or support clients (internal or external) on new ISV product versions, including new features and functions, upgrade process, and any pre-requisites that may be needed.	Applied	Deep
ITSCPA04	Technique	Understand ISV Product Configuration	Advise or support clients (internal or external) on product configuration to run in the client environment.	Applied	Deep
ITSCPA05	Technique	Understand ISV Recoverability	Advise or support clients (internal or external) on ISV logging, recovery, and back-up capabilities.	Applied	Deep
ITSCPA06	Technique	Understand ISV Best Practices	Advise or support clients (internal or external) on deployment techniques and/or best practices of ISV solutions or products.	Applied	Deep
ITSCPA07	Technique	Optimize ISV Product Performance and Capacity	Configure product to meet the client's requirements for performance and capacity (e.g., use clustering, mobile and web access, replication and mail routing, multi-lingual).	Applied	Deep
ITSCPA08	Technique	Understand ISV Failover Capability and Redundancy	Advise or support clients (internal or external) on ISV failover capability and redundancy.	Applied	Deep

3.5.4 Data Integration

IT Specialists in this Stream will have expertise in making available, integrating, and optimizing structured and/or unstructured data using database products, technologies, and methods. Typical examples of the deliverables are database designs, information models (logical, physical, dimensional, etc.), data migration plans, and data warehouses.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCDI01	Tool	Design Complex Databases	Design of complex databases, applying appropriate data modeling and database design tools.	Deep	Deep
ITSCDI02	Technique	Implement Databases	Follow best practices on implementing databases.	Applied	Deep
ITSCDI03	Strategy	Plan and Develop Databases on Large to Very Large Projects	Plan and develop databases on large to very large projects.	Applied	Deep
ITSCDI04	Tool	Use Database Administration and Management Tools	Use database administration and management tools to meet client needs and/or solve client problems.	Applied	Deep
ITSCDI05	Tool	Use Data Integration/Federation Tools	Use tools for data integration and/or federation.	Applied	Deep
ITSCDI06	Technique	Manage Performance Measurement, Analysis, and Optimization	Manage performance measurement, analysis, and optimization.	Applied	Deep
ITSCDI07	Method	Leverage Data-related Development Methods	Selection, tailoring, and implementation of data-related development methods.	Applied	Deep
ITSCDI08	Technique	Lead a Complex Database Design/Implementation Effort	Lead a complex database design/implementation effort.	N/A	Deep
ITSCDI09	Strategy	Advise and Support Clients on Tools and Techniques	Compare the possibilities, strengths, and weaknesses of different tools and techniques that can be combined into different data integration solutions.	Applied	Deep

3.5.5 Infrastructure Design

IT Specialists in this Stream will have expertise in selecting the optimal combination of storage systems, networking systems, servers, and/or printing systems based on application and business information requirements. Typical examples of the deliverables are capacity plans, standardization plans, migration plans, and infrastructure models.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCID01	Method	Use Infrastructure Design Framework	Given a set of application and/or business information requirements, select, adapt, and use an appropriate infrastructure design method or framework to design the optimal combination of storage systems, networking systems, servers, and/or printing systems to meet the requirements.	Applied	Deep
ITSCID02	Technique	Build a Technical Solution	Plan, design, develop, integrate, and implement infrastructure components of a solution that spans multiple disciplines and/or technologies.	Applied	Deep
ITSCID03	Technique	Understand IT Technology	Knowledge and use of at least two technology areas: storage, servers, networking, or printing systems. Position and justify them in the scope of an overall project.	Applied in two (2) areas	Applied in three (3) areas
ITSCID04	Technique	Define Capacity Plan	Define capacity criteria and forecast utilization in order to initiate and manage capacity plans.	Applied	Deep
ITSCID05	Technique	Position and Justify Solution	Position and justify the infrastructure design in the scope of an overall project to a client (internal or external).	Applied	Deep
ITSCID06	Method	Define Migration Plan	Develop a migration plan for upgrades and new versions of infrastructure components to maintain optimal work environment availability.	Applied	Deep
ITSCID07	Method	Define Performance Plan	Develop a performance plan, applying knowledge of appropriate industry tools and lifecycle standards to improve client's business and product lifecycle performance.	Applied	Deep
ITSCID08	Method	Model Performance	Use appropriate prototypes and simulation tools to model the performance of infrastructure components and adjust the infrastructure design as required.	Applied	Deep

3.5.6 Testing

IT Specialists in this Stream will have expertise in the planning, design, management, execution, and reporting of tests using appropriate testing tools and techniques, and conforming to agreed standards, to ensure that new and amended systems, together with any interfaces, perform as specified together with the business. Typical examples of the deliverables are testing strategies, test plans, test cases, test reports, performance metrics, and quality metrics.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCTE01	Technique	Develop Test Plans	Develop comprehensive test plans based on risks and acceptance criteria agreed with the client.	Applied	Deep
ITSCTE02	Strategy	Develop Test Strategies	Develop test strategies to ensure client solutions meet expected objectives.	Applied	Deep
ITSCTE03	Technique	System-level Testing (SINT)	Create and execute end-to-end functionality tests at the system level.	Applied	Deep
ITSCTE04	Method	Select and Use Full Lifecycle Testing Methodology Concepts	Select and use the appropriate full lifecycle testing methodology concepts, including different levels and types of tests.	Applied	Deep
ITSCTE05	Technique	Build Test Cases and Test Scripts	Build test cases and test scripts, based on business requirements, which specify test inputs, execution conditions, and expected results for every component being delivered.	Applied	Deep
ITSCTE06	Technique	Create Customized Test Data	Create customized test data based on system architecture and production environment (e.g., mock data, dummy data).	Applied	Deep
ITSCTE07	Technique	Design a Test Environment	Design a test environment to support the test strategy.	Applied	Deep
ITSCTE08	Technique	Define and/or Implement Inspections and Defect Prevention Techniques	Define and take responsibility for the implementation of inspections and defect prevention techniques to ensure the quality of the client solution.	Applied	Deep
ITSCTE09	Tool	Understand Test Tool Functionality	Know the functionality of testing tools from more than one supplier and how such tools would support the testing strategy.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCTE10	Technique	Automate Test Scripts	Translate manual testing procedures and/or test specifications into automated test scripts.	Applied	Deep
ITSCTE11	Tool	Use Configuration Management Tools	Use configuration/library management tools to ensure that the correct version of test target and tests are staged for testing.	Applied	Deep
ITSCTE12	Tool	Use Test Management Tools	Use widely accepted test management tools in support of test selection, configuration, and execution.	Applied	Deep
ITSCTE13	Tool	Use Defect Management Tools	Use widely accepted defect management tools in support of defect tracking and impact analysis.	Applied	Deep

3.5.7 Business Information Management

IT Specialists in this Stream have expertise in making available, integrating, and optimizing structured and/or unstructured data in order to present or distribute information for use and analysis by the business. Specialties are Business Intelligence (BI) and Content Integration (CI). Typical examples of the deliverables are strategy maps, information models (logical, physical, dimensional, etc.), data warehouses, balanced scorecards, and reports.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCBI01	Method	Use a Development Methodology	Ability to make effective use of at least one development method relevant to the BIM Stream (e.g., RUP, DSDM).	Applied	Deep
ITSCBI02	Strategy	Compare BIM Tools	Advise and support clients (internal or external) with comparison and selection of BIM tools and/or products.	Applied	Deep
ITSCBI03	Strategy	Identify Organizational Change	Identify and communicate the organizational changes needed for the successful implementation of BI or CI systems; for example, new roles, responsibilities, and the new organizational structures required for governance and management.	Applied	Deep
ITSCBI04	Context	Identify Business Process Change	Identify and communicate the changes to business processes needed for the successful implementation of BI or CI systems.	Applied	Deep
ITSCBI05	Technique	Identify Business Requirements	Identify business requirements for a BI or CI system and identify the pros and cons of different technical solutions.	Applied	Deep
ITSCBI06	Strategy	Understand Concepts for Managing Information	Understand the information lifecycle and have expertise in managing information concepts such as KPI, Dashboard, BPM, Workflow, Collaboration, Search, and Retrieval.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCBI07	Tooling	Use ISV Products, Technologies, and Methods	Know and effectively use ECM ISV products, technologies, and methodologies. (Vendors may include IBM, Microsoft, Oracle, Documentum, OpenText, etc.) (CI) Or: Know and effectively use appropriate database design, administration, and management tools for information management solutions. (BI)	Applied	Deep
ITSCBI08	Technique	Use CI or BI-specific Techniques	Effective use of one or more of the (business) classification, access control, and security techniques. (CI) Or: Design data warehouse architectures through the effective use of at least one architecture framework. (BI)	Applied	Deep
ITSCBI09	Tooling	Use Storage Models and/or Infrastructure	Effective use of relevant storage models, audit trail, and/or system infrastructure tools to manage an information solution infrastructure.	Applied	Deep
ITSCBI10	Technique	Design Complex Databases	Design complex databases, using data modeling techniques like ERD, dimensional, and/or data vault modeling.	Applied	Deep
ITSCBI11	Strategy	Expertise with KPIs	Define Key Performance Indicators (KPIs) in collaboration with the decision-makers within an organization.	Applied	Deep
ITSCBI12	Technique	Create and Analyze Information	Expertise in the creation of reports and information analyses, based on KPI data, to meet client requirements.	Deep	Deep
ITSCBI13	Tooling	Use BIM Tools	Effective use of at least one BI or CI-specific tool to meet client needs in data integration, ETL, content ingestion, and/or federation.	Deep	Deep
ITSCBI14	Technique	Manage Performance	Manage performance of information management solution environments to meet clients' needs for high data volumes, (near) real-time loading, and quick analysis results.	Applied	Deep

3.6 Solution Delivery Streams

3.6.1 Infrastructure & Application Management

IT Specialists in this Stream have expertise in managing and operating IT infrastructure (typically hardware, software, and communications) and the resources required to plan for, develop, deliver, and support properly engineered IT services and products to meet the needs of a business. This Stream includes preparation for new or changed services, management of the change process, and maintenance of regulatory, legal, and professional standards, management of performance of systems and services in relation to their contribution to business performance, and management of bought-in services including, for example, public network, virtual private network, and outsourced services. Typical examples of the deliverables are service-level reporting, risk, and contingency planning.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSM01	Strategy	Plan, Implement, and Customize Systems Management Functions	Plan, implement, and customize systems management functions in a client IT organization.	Applied	Deep
ITSCSM02	Tool	Use System Management Tools	Use system management tools, such as those from CA, HP, and IBM, to support the systems management functions listed in ITSCSM06. Implement and configure tools for operational control, growth, planning, resiliency, and recoverability.	Applied	Deep
ITSCSM03	Method	Use Industry Standard Methodologies	Use a method such as ITIL, ITPM, BSP, or any other system of best practices or mixture thereof, to support and configure the systems management functions.	Applied	Deep
ITSCSM04	Strategy	Develop Systems Management Strategy	Create a strategy which allows the systems management functions to be open and flexible to future needs and changes in either business or technological directions.	Applied	Deep
ITSCSM05	Technique	Define and Validate Recoverability	Define and document all operation functions and all requirements for the recovery of any component. Maintain the documentation and regularly validate recoverability.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSM06	Technique	Understand Systems Management Components (CFMG) (CHMG) (USUP) (PBMG) (AVMT) (ASMG) (CPMG) (SLMO) (SCMT)	Advise or support clients (internal or external) on system management components: <ul style="list-style-type: none"> • Configuration Management • Change Management • Release Management • Incident Management • Problem Management • Availability Management • Asset Management • Service Continuity • Capacity Management • Service-level Management • Security Management 	Applied for five (5) components, General for remainder	Deep for one (1) component, Applied for remainder
ITSCSM07	Technique	Respond to Changes in Business or Technology	Grow and improve the management functions established in support of the client's business as it reacts to changes in business or technology.	Applied	Applied

3.6.2 Systems & Hardware Products

IT Specialists in this Stream work with products or solutions based on any vendor hardware and/or any vendor operating system software. The Systems & Hardware Products Stream is comprised of four Sub-Streams:

- Storage Systems
- Networking Systems
- Server
- Cross Systems

3.6.2.1 Storage Systems

IT Specialists in this Sub-Stream will have expertise in one or more storage system technology areas. Examples include: disk, tape, optical, SAN, NAS, or storage software related to these technologies.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSS01	Strategy	Apply Competitive Knowledge	Apply knowledge of competing vendor storage systems, and what differentiates them, to solving a client's business problem.	Applied	Deep
ITSCSS02	Technique	Configure Storage Systems	Configure complex storage systems for optimum performance against client needs.	Applied	Deep
ITSCSS03	Technique	Perform Storage Conversion	Perform storage conversions from one or more vendor products to another.	Applied	Deep
ITSCSS04	Technique	Integrate Cross-vendor Storage Systems	Integrate storage systems from more than one vendor or technology.	Applied	Deep
ITSCSS05	Technique	Integrate Storage Systems in Complex Environments	Given a complex storage environment, select and apply the appropriate techniques, such as synchronous and/or asynchronous mirroring, or point-in-time copy for online back-up and recovery.	Applied	Deep
ITSCSS06	Method	Plan Storage Capacity	Perform capacity planning including performance analysis and preparation of documented recommendations.	Applied	Deep
ITSCSS07	Technique	Advise on Storage Back-up and Recovery	Advise or support client on back-up and recovery procedures for storage systems.	Applied	Deep

3.6.2.2 Networking Systems

IT Specialists in this Stream will have expertise in one or more networking system technology areas. Examples include: routers, networking controllers, bridges, or networking software related to these technologies.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCNS01	Technique	Networking Problem Determination	Use networking problem determination skills to assess clients' network problems.	Applied	Deep
ITSCNS02	Technique	High Availability Networking Principles	Understand and apply high availability networking principles to restore clients' networks to normal levels of availability and performance, and recommend actions to prevent recurrence of problems.	Applied	Deep
ITSCNS03	Technique	Network Technology Skills	Understand three or more of the following technologies: IPSec, L2TP, PPTP, public/private keys, SSL, or Virtual Private Networks (VPNs), and apply that knowledge in the technology selection, design, and implementation of clients' networks.	Applied	Deep
ITSCNS04	Technique	WAN or LAN Skills	According to the Client Focus Area, either design, plan the installation, implement, and network manage WANs or LANs, or troubleshoot LAN/WAN problems in multiple environments with network management experience on at least one environment.	Applied	Deep
ITSCNS05	Technique	Networking API Skills	Design and implement networking components using APIs such as CPI-C, sockets, or equivalent.	Applied	Deep
ITSCNS06	Strategy	Networking Performance Skills	Use appropriate tools to tune networks for optimum performance to meet client needs.	Applied	Deep
ITSCNS07	Tool	Customize Network Management Tools or Conduct Problem Determination using Networking Tools	According to the Client Focus Area, either customize network management tools to build a proactive solution for network performance and health trending, with violation notification for problem identification, or troubleshoot networks using problem determination tools, such as network sniffers, etc.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCNS08	Architecture	Advise or Support Clients with Network Architectures	Advise or support clients (internal or external) on network architectures including the naming and addressing methods, data formats, and protocols of the architecture, such as TCP/IP, Frame Relay, ATM, OC-x or DS-x transport, and routing protocols, such as RIP, BGP, OSPF.	Applied	Deep
ITSCNS09	Technique	Plan Network Capacity	Advise or support clients (internal or external) in network capacity planning, performance analysis, and preparation of documented results (WAN, LAN, or Client-Server end-to-end).	Applied	Deep
ITSCNS10	Technique	Advise or Support Clients on IP Convergence Applications	Advise or support clients (internal or external) in at least one of the following IP convergence applications: VoIP, Unified Messaging, Real-time Collaboration, and IPTV.	Applied	Deep

3.6.2.3 Server

IT Specialists in this Sub-Stream will have expertise in one or more mainstream server technologies. Examples include products from HP, IBM, and Sun.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSV01	Technique	Application of Product Knowledge	Given a client business problem, select the appropriate server architecture and instance to meet client requirements. Example server architectures are those from the major server families of IBM, HP, Sun, etc.	Applied	Deep
ITSCSV02	Technique	Integrate with Other Systems and Solutions	Given a customer requirement, integrate new capability with existing systems and/or solutions. Examples might include integration of: <ul style="list-style-type: none"> • Web server • Firewall • Authentication servers • Application server • Data base servers • Messaging systems • Back-end data extraction to data warehouse systems 	Applied	Deep
ITSCSV03	Technique	Configure Servers	Configure server to operate efficiently in the client environment. Show how a balanced system configuration was achieved (e.g., processors, memory, I/O and network resources, disk, tape, switch fabric, I/O paths) and appropriately sized for the workload to be run. Show how sufficient back-up and recovery capability for the requirements of the workload was achieved.	Applied	Deep
ITSCSV04	Technique	Back-up and Recover Servers	Advise or support clients (internal or external) in the selection and deployment of the appropriate methods, such as incremental, image copy, mirroring, cross-site, failover, and disaster recovery strategies.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSV05	Technique	Effective Use of System Management Tools	Advise or support clients (internal or external) in the effective use of mainstream system and/or operational management tools to achieve availability and operational goals.	Applied	Deep
ITSCSV06	Technique	Advise or Support Server Consolidation	Advise or support a client (internal or external) on server consolidation, including sizing, configuration, planning, and covering risk management, recovery implications, and deployment options.	Applied	Deep

3.6.2.4 Cross Systems

IT Specialists in this Stream will have expertise in two or more server or storage technologies and their inter-relationship and operation.

Note: There is no Level 1 certification for this Stream.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCCS01	Technique	Apply Multi-server, Storage, and O/S Knowledge	Advise and support clients (internal or external) with several heterogeneous server, operating system, and storage systems.	N/A	Deep
ITSCCS02	Technique	Propose End-to-End Solutions using Multiple Technologies	Design, present, and propose server, operating system, and storage solutions with focus on cross-system technologies.	N/A	Deep
ITSCCS03	Technique	Perform as a Solution Designer	Perform as a solution designer: <ul style="list-style-type: none"> Analyze client business and IT challenges Design a comprehensive solution integrating into the client's environment 	N/A	Deep
ITSCCS04	Technique	Evaluate and Adapt Solutions into Complex Environments	Evaluate and adapt the sub-specialty area solutions to different and complex environments.	N/A	Deep
ITSCCS05	Technique	Heterogeneous Technology Consultative Skills	Demonstrate sales, planning, and consulting skills in servers and storage products, covering both hardware and key system software elements.	N/A	Applied in four (4) areas, one of which must be Storage

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCCS06	Technique	Complex Solution Design	<p>Demonstrate consultative skills in three (3) of the solution areas listed below in multiple customer environments:</p> <ul style="list-style-type: none"> • Server Virtualization technologies • Storage Virtualization technologies • Infrastructure Simplification and Consolidation strategies • Middleware implementations as they relate to Server and Storage products • Business Continuity, High Availability, and Disaster Recovery • Cross-system disciplines (e.g., Security, Clustering, Network Connectivity, Database Placement, Data Connectivity, or Systems Management) <p>Examples must include analysis and design of cost-justified solutions using common metrics; e.g., TCO, TCA (Acquisition), QoS (Quality of Service), and TTM/C (Time-to-market/ Customer).</p>	N/A	Applied in three (3) solution areas

3.6.3 Software

IT Specialists in this Stream work with products or solutions based on any vendor software or open source software products. Software products specialists are grouped into five Sub-Streams:

- Application Development Products
- Application Integration Middleware
- Data Management
- Content Management
- Portal and Collaboration

3.6.3.1 Application Development Products

IT Specialists in this Stream will have expertise in one or more application development-based software product areas. Examples include: IBM Rational Suite, Microsoft .Net, and Sun Development Software.

These IT Specialists typically specialize in one or more of the following areas: Process & Portfolio Management, Requirements Definition & Management, Architecture Management, and Quality Management.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCDP01	Method	Use Application Development Products and Methodologies	Understand the proper application of development methodologies and the appropriate tools used in the software development lifecycle. Be able to apply the different areas of the methodology to the phases in the lifecycle and identify the appropriate tool(s) to perform the development activity.	Applied	Deep
ITSCDP02	Technique	Advise or Support Clients on the Value of the Entire Application Development Lifecycle	Demonstrate and articulate the value of the entire application development lifecycle, including all of the areas involved and how they are inter-related. Specifically understand and explain the value of an integrated development lifecycle.	Applied	Deep
ITSCDP03	Tool	Select and Install Tools	Given a client requirement and development environment, select and install the appropriate development tool.	Applied	Deep
ITSCDP04	Method	Understand Industry Standards	Demonstrate knowledge of industry standards in the area of specialization (i.e., UMA for PPM specialization, UML for ADC specialization) to meet a customer's development process requirements.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCDP05	Tool	Configure and Customize Tools	Identify requirements for configuration and customization in order for the development tool to work optimally in the identified development environment. This may include special security needs, special process needs, distributed access needs, or automation extensions.	Applied	Deep
ITSCDP06	Technique	Integrate Application Development Tools	Support the full lifecycle development approach by integration between your tool of specialization and the relevant tools in other areas (i.e., between requirements and testing).	Applied	Deep
ITSCDP07	Technique	Support Client Application Development Framework	Advise or support client (internal or external) application development groups in best practices on following their development methodology and in the proper way to use/configure the development tools. This includes mentoring on which tools should be used by which roles to perform which actions at its simplest, or actually extending the products via their extensibility interfaces at its most complex.	Applied	Deep

3.6.3.2 Application & Integration Middleware

IT Specialists in this Stream will have expertise in one or more application and integration middleware-based software product areas.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCAI01	Technique	Understand Adapter Interfaces	Advise or support clients (internal or external) on adapter interfaces to provide system interconnectivity.	Applied	Deep
ITSCAI02	Technique	Understand Data Interchange Standards	Advise or support clients (internal or external) on data interchange across disparate systems (e.g., XML, SOAP).	Applied	Deep
ITSCAI03	Method	Understand Application Integration Methodologies	Advise or support clients (internal or external) on application integration methodologies and architectures, such as SOA and web services.	Applied	Deep
ITSCAI04	Technique	Advise or Support Clients on Program-to-Program Interfaces	Advise or support clients (internal or external) on program-to-program interfaces across disparate systems (e.g., APPC, DPL, and RPC).	Applied	Deep
ITSCAI05	Technique	Use Application Integration Products to Facilitate SOA Enablement	Given a set of client requirements, select and advise or support on the installation and configuration of application integration products that facilitate the enablement of SOA.	Applied	Deep
ITSCAI06	Technique	Understand Product Configuration	Advise and support product configuration based on a complete understanding of the client environment.	Applied	Deep
ITSCAI07	Technique	Advise and Support on Recoverability	Advise and support clients (internal or external) in determining the need for logging, recovery, and back-up and demonstrate how best to implement the appropriate tools and techniques to meet these requirements.	Applied	Deep
ITSCAI08	Technique	Advise and Support on Deployment Techniques and Best Practices	Advise and support clients (internal or external) on appropriate deployment techniques and best practices to ensure optimal performance and capability.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCAI09	Technique	Advise and Support on Performance and Capacity	Advise and support customers on optimal solution configurations to meet their requirements for performance and capacity.	Applied	Deep
ITSCAI10	Technique	Advise and Support on Failover and Redundancy Capability	Advise and support on high availability solutions covering failover capability and redundancy techniques.	Applied	Deep

3.6.3.3 Data Management

IT Specialists in this Stream will have expertise in one or more relational and/or non-relational data management-based software products.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCDM01	Tool/ Method	Data Management Tools, Technologies, and Methods	Given a set of client priorities and constraints, effectively use information management tools, technologies, and methods (e.g., content management software, data management software, and their related administration and design tools and methods) to meet the needs of the client.	Applied	Deep
ITSCDM02	Technique	Advise and Support on Data Compatibility Issues Across Disparate Systems	Advise and support clients (internal or external) in identifying and resolving incompatibility issues in heterogeneous data environments.	Applied	Deep
ITSCDM03	Technique	Advise and Support on Data Models	Advise and support clients (internal or external) about the appropriate data models and data requirements for sources and targets.	Applied	Applied
ITSCDM04	Tool	Advise and Support on Data Migration or Conversion	Advise and support clients (internal or external) about data migration, the issues involved, and the tools, procedures, and products required to migrate or convert data stores as appropriate.	Applied	Deep
ITSCDM05	Technique	Advise and Support on Data Management Product Features	Advise and support clients (internal or external) on new versions of data management products, including advice on the value of new features and functions, upgrade processes, and product pre-requisites.	Applied	Deep
ITSCDM06	Technique	Advise and Support on Product Configuration	Advise and support clients on product configuration based on the client environment.	Applied	Deep
ITSCDM07	Technique	Advise and Support on Data Mining Techniques	Given a client requirement, advise and support the client (internal or external) on the current data mining techniques and tools that would meet the requirement.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCDM08	Technique	Advise and Support on Data Management Solutions Available	Advise clients (internal or external) on the requirements for data management solutions and support the client in the matching of requirements with product capabilities using approved methodologies.	Applied	Deep
ITSCDM09	Technique	Advise and Support on Recoverability	Advise and support clients (internal or external) in determining the need for logging, recovery, and back-up and how best to implement the appropriate tools and techniques to meet these requirements.	Applied	Deep
ITSCDM10	Technique	Advise and Support on Deployment Techniques and Best Practices	Advise and support clients (internal or external) on appropriate deployment techniques and best practices to meet client needs.	Applied	Deep
ITSCDM11	Technique	Configure Product to Optimize Performance and Capacity	Advise and support clients (internal or external) on optimal solution configurations to meet client needs for performance and capacity (e.g., use clustering, mobile and web access, replication, and multi-lingual).	Applied	Deep
ITSCDM12	Technique	Advise and Support on Failover and Redundancy Capability	Advise and support clients (internal or external) on high availability solutions covering failover capability and redundancy techniques.	Applied	Deep

3.6.3.4 Content Management

IT Specialists in this Stream will have expertise in one or more areas of content management software. Content management software captures, stores, manages, integrates, and delivers all forms of digital content across a company's entire value chain to create real business value. Content management systems and integrated processes provide the unified approach for managing multiple content types.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCCM01	Tool/ Method	Use Content Management Tools, Technologies, and Methodologies	Use content management tools, technologies, and methodologies to ensure optimal operations that meet the client needs.	Applied	Deep
ITSCCM02	Technique	Advise and Support on Data Compatibility Issues Across Disparate Systems	Advise and support clients (internal or external) in identifying and resolving incompatibility issues in heterogeneous data environments.	Applied	Deep
ITSCCM03	Technique	Advise and Support on Records Management Concepts	Based on understanding the pain points across the client's organization, provide advice and support on records management concepts.	Applied	Deep
ITSCCM04	Technique	Advise and Support on Search Techniques and Applications	Advise and support clients (internal or external) on search techniques and applications for content management.	Applied	Deep
ITSCCM05	Technique	Advise and Support on Document-centric Routing and Workflow	Advise and support clients (internal or external) on document-centric routing and workflow, including identifying user roles and user access levels.	Applied	Deep
ITSCCM06	Tool	Advise and Support on Migration or Conversion Tools	Advise or support clients (internal or external) on the migration or conversion tools, procedures, and products required to migrate or convert to or between content management solutions.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCCM07	Technique	Advise and Support on New Product Features and Relationship to the Content Management Solution	Advise and support clients (internal or external) on new versions of content management products, including advice on the value of new features and functions, upgrade processes, and product pre-requisites, including any limitations on the use of the content in downstream applications.	Applied	Deep
ITSCCM08	Technique	Advise and Support on Product Configuration	Advise and support clients (internal or external) on content management product configuration to run in the client environment.	Applied	Deep
ITSCCM09	Technique	Advise and Support on Recoverability Capabilities	Advise and support clients (internal or external) on content management product logging, recovery, and back-up capabilities.	Applied	Deep
ITSCCM10	Technique	Advise and Support on Deployment Techniques and Best Practices of Solutions or Products	Advise and support clients (internal or external) on content management product deployment techniques and best practices.	Applied	Deep
ITSCCM11	Technique	Configure Product to Meet the Client's Requirements for Performance and Capacity	Configure content management product to meet the client's requirements for performance and capacity (e.g., use clustering, mobile and web access, replication and mail routing, multi-lingual, etc.).	Applied	Deep
ITSCCM12	Technique	Advise and Support on Failover Capability and Redundancy	Advise and support clients (internal or external) on content management failover capability and redundancy.	Applied	Deep

3.6.3.5 Portal & Collaboration

IT Specialists in this Stream will have expertise in one or more areas of portal and collaboration software.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCPC01	Tool/ Method	Use Workplace-related Tools, Technologies, and Methodologies	Given a set of client priorities and constraints, use portal and collaboration-related tools, technologies, and methods to meet client needs.	Applied	Deep
ITSCPC02	Technique	Advise and Support on Migration or Conversion Tools	Advise and support clients (internal or external) on migrating or converting to a new portal and collaboration solution.	Applied	Deep
ITSCPC03	Technique	Advise and Support on New Portal and Collaboration Product Versions	Advise and support clients (internal or external) on new versions of portal and collaboration products, including advice on the value of new features and functions, upgrade processes, and product pre-requisites.	Applied	Deep
ITSCPC04	Technique	Advise and Support on Product Configuration	Advise and support clients (internal or external) on portal and collaboration product configuration to run in the client environment.	Applied	Deep
ITSCPC05	Technique	Advise and Support on Available Solution Options or Products	Advise and support clients (internal or external) on portal and collaboration solutions.	Applied	Deep
ITSCPC06	Technique	Advise and Support on Product Recoverability Features	Advise and support clients (internal or external) on portal and collaboration logging, recovery, and back-up capabilities.	Applied	Deep
ITSCPC07	Technique	Advise and Support on Deployment Techniques and Best Practices	Advise and support clients (internal or external) on deployment techniques and best practices of portal and collaboration solutions or products.	Applied	Deep
ITSCPC08	Technique	Advise and Support on Product Performance and Capacity	Advise and support on portal and collaboration product configuration to meet the client's requirements for performance and capacity.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCPC09	Technique	Advise and Support on Product Failover and Redundancy Capability	Advise and support clients (internal or external) on portal and collaboration failover capability and redundancy.	Applied	Deep

3.6.4 Security

3.6.4.1 Security Domains

Security Domain	Illustration
Identity & Access Management	IAM Solution Design & Implementation IAM Process Design & Implementation User Provisioning & Workflow Management
Software Lifecycle Security	Secure Software Development Secure Coding and/or Code Review Testing software on Security Aspects
Continuity Management	Business Continuity Management Disaster Recovery Planning and/or Testing
Security Mechanisms	Cryptography Data integrity PKI Back-up Network Communication Data Security Security Methodology & Theory
Security Governance	Information Risk Management Security Strategy (inc. business case) Security Consulting Security Policy Training and Awareness
Security Compliance	Statutory Laws & Regulations Audit Forensics
Security Operations	Security Management (incident, change, configuration, etc.) Information Security Systems Lifecycle Management Threat & Vulnerability Management
Physical Security	Environmental security

For Level 1, Candidates must be able to demonstrate that they possess at least four (4) of the skills ITSCSE01 to ITSCSE09 at the Applied level, with the remainder at the General level. Examples provided to demonstrate skills at the Applied level must be spread across at least two (2) of the above security domains.

For Level 2, Candidates must be able to demonstrate that they possess at least three (3) of the skills ITSCSE01 to ITSCSE09 at the Deep level, and at least two (2) at the Applied level, with the remainder at the General level.

For Candidates holding a current certificate issued by a Recognized Security Certification Program, the examples provided to demonstrate Deep and Applied skills levels should be spread across at least three (3) security domains. For Candidates with no such certificate, the examples provided to demonstrate Deep and Applied skill levels should be spread across at least four (4) security domains.

Recognized Security Certification Programs at the time of initial publication are:

- ISC2: Certified Information Systems Security Professional (CISSP), Information Systems Security Management Professional (ISSMP), Information Systems Security Architecture Professional

(ISSAP), Information Systems Security Engineering Professional (ISSEP), Certified Secure Software Lifecycle Professional (CSSLP)

- ISACA: Certified Information Systems Auditor (CISA), Certified Information Security Manager (CISM)
- ASIS Int: Physical Security Professional (PSP)
- GIAC: Security Leadership Certificate (GSLC), Security Expert (GSE), Information Security Professional (GISP)

Recognized Security Certification Programs are evaluated and accepted as part of the certification process. The Certification Authority will maintain and make available a list of recognized certifications that may be cited by Candidates for certification.

Candidates for certification may request security certifications to be included in the list, in which case the certification will be evaluated for recognition and inclusion in the list of Recognized Security Certification Programs.

Security certifications may be submitted for recognition with an application for direct certification, or by an Accredited Certification Program (ACP).

Characteristic	Explanation	How Demonstrated
Relevance	The certification must be focused on the domain of IT security.	Documentation describing which security domains are covered by the certification.
In-depth or Widespread	The certification should be recognized as either covering at least six (6) of the above security domains or be an in-depth technical certification in one (1) or more security domains.	Documentation describing the depth and/or spread of the certification.
Active	Certification should be currently active and certifications criteria should be regularly updated to reflect the latest state-of-the-art in security.	Proof of the active status of the certification.
International	Certification should be available across geographical areas and have certified people across geographical areas.	Proof of the international availability and recognition of the certification.
Broad Acceptance	Either the certification is available across geographies and has certified people across geographies, or the certification is the leading such certification in its country or region.	Evidence of the international availability and recognition of the certification or its prevalence in the country or region.
Supporting Collateral	The certification must be supported by collateral materials for Candidates who wish to get certified. These materials might include, for example, templates, tools, and examples.	Proof of supporting collateral.
Continued Learning and Use	The certification must be based on continued learning within the domain(s) and practical experience as a security professional.	Examples of the proof submitted to the certification body.

3.6.4.2 Security Stream Skills

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSE01	Technique	Assess Potential Risks and Classify Information	Understand the customer's business requirements and ecosystem (including the regulatory/compliance context) and identify and classify security risks.	See above.	See above.
ITSCSE02	Technique	Define Control Objectives and Formulate Policy	Identify and articulate control objectives for reducing inherent risks to acceptable residual risks. Capture these control objectives in a policy.	See above.	See above.
ITSCSE03	Technique	Design Architecture	Translate the control objectives to architecture principles and perform a fit/gap analysis.	See above.	See above.
ITSCSE04	Technique	Detailed Design of Processes and/or Technical Solutions	Identify (existing/needed) security (aspects of) technology and processes and describe them in detail.	See above.	See above.
ITSCSE05	Technique	Build Secure Solutions	Apply architectural security principles to build technical, procedural, and/or organizational security controls.	See above.	See above.
ITSCSE06	Technique	Test Security Solutions	Define test objectives and test plans for security. Perform security tests.	See above.	See above.
ITSCSE07	Technique	Deploy Secure Solutions	Define a deployment plan and implement that plan to deploy secure solutions.	See above.	See above.
ITSCSE08	Technique	Monitor Performance and Evaluate Effectiveness	Monitor and assess security and compliance, and validate effectiveness of controls.	See above.	See above.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSE09	Technique	Manage Security	<p>Manage security, having fulfilled, for example, one of the following functions:</p> <ul style="list-style-type: none"> • Security Incident Response: Perform root-cause analysis and make recommendations for avoidance of similar incidents. • Security Compliancy: Implement compliancy technologies or processes and follow up on deviations. • Security Officer: Manage security policies, advise on security. 	See above.	See above.

3.6.5 IT Service Management

IT Service Management is a profession in which a service provider validates and implements services according to the wishes and expectations of a client. The service performance levels are described in Service Level Agreements and Underpinning Contracts. For every Agreement or Contract, specific processes and tools are determined. Functions within Service Management control and co-ordinate and can have several areas of attention like Service Delivery Management, Process Management, Contract Management, and Supply Management.

In the Open CITS program, IT Service Managers focus on one sub-Stream – Service Management Delivery, Service Management Consulting, or Service Management Operations, each of which are defined in the following sub-sections.

Relationship to the e-CF

The European e-Competence Framework (e-CF) is a reference framework of ICT competences that can be used and understood by ICT user and supply companies, ICT practitioners, managers and HR departments, the public sector, educational and social partners across Europe (see www.ecompetences.eu).

In developing the IT Service Management Streams for the Open CITS program, e-CF has been used as an underlying structure to help with the organization of the Open CITS Conformance Requirements and as a resource to help in their validation.

Where there is a clear mapping between an Open CITS Conformance Requirement and e-CF, the e-CF reference is included in the Open CITS definitions in the column “Skill” (e.g., A1). The mapping is based on a best-fit principle.

3.6.5.1 Service Management Delivery

Service Management Delivery will have expertise in managing IT hardware, software, communications, and/or application solutions and the resources required to plan, develop, deliver, and support properly

engineered IT services and products to meet the needs of a business. Typical ITIL V3 roles are Service Catalog Manager and Service Level Manager.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSMD01	Context	Respond to Business Changes (E1)	Grow and/or improve service management in response to changes in the client (internal or external) business.	Applied	Deep
ITSCSMD02	Context	Manage Cost	Manage the cost of the service including forecasting, monitoring, reporting, and improvement.	Applied	Deep
ITSCSMD03	Strategy	Manage Service Management Functions (E2)	Manage the planning, implementation, and customization of complex service management functions for clients (internal or external). Indications of complex service management functions are multiple SLAs, global, and/or distributed delivery, multiple clients, multiple services.	Applied	Deep
ITSCSMD04	Strategy	Create or Significantly Enhance Strategy (A1)	Create or significantly enhance a strategy that allows the service management functions to be open and flexible to future needs and changes in either business or technological directions.	Applied	Deep
ITSCSMD05	Method	Use Industry Standard Methods (D2)	Use an industry standard method such as ITIL, ITPM, BSP, or any other system of best practices or mixture thereof, to establish or significantly enhance service management capabilities.	Applied	Deep
ITSCSMD06	Technique	Define Recovery Plans (C3)	Define and document detailed plans for the recovery of services/components to meet SLAs.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSMD07	Technique	Define, Configure, or Establish Service Management Processes (E5)	Define, configure, or establish service management processes: <ul style="list-style-type: none"> • Configuration Management • Change Management • Release Management • Incident Management • Problem Management • Availability Management • Asset Management • Service Continuity • Capacity Management • Service-level Management • Security Management 	Applied	Deep
ITSCSMD08	Technique	Respond to Changes in Technology (E5)	Grow and/or improve service management in response to changes in technology.	Applied	Deep
ITSCSMD09	Technique	Define and Manage the Application of a Quality Framework or CSI (A2)	Define and manage the application of a quality framework or Continuous Service Improvement (CSI) to meet SLAs.	Applied	Deep
ITSCSMD10	Tool	Manage Implementation and Use of Management Tools (C3)	Manage the implementation and use of management tools to support service management processes, in the context of operational control, growth, planning, resiliency, and recoverability.	Applied	Deep

3.6.5.2 Service Management Consulting

Service Management Consulting will have expertise in advising, planning, and implementing the processes concerning managing, using, and improving IT hardware, software, communications, and/or application solutions and the tools required. Typical ITIL V3 roles are Service Design Manager, CSI Manager, and Process Owner.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSMC01	Context	Respond to Business Changes (E1)	Advise on growth and/or improvement in service management in response to changes in the client (internal or external) business.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSMC02	Strategy	Advise or Perform Service Management Functions (A1)	Advise or perform planning, implementation, and customization of service management functions for clients (internal or external).	Applied	Deep
ITSCSMC03	Strategy	Advise on the Creation or Significant Enhancement of a Strategy (A1)	Advise on the creation or significant enhancement of a strategy that allows the service management functions to be open and flexible to future needs and changes in either business or technological directions.	Applied	Deep
ITSCSMC04	Method	Use Industry Standard Methods (D2)	Advise on and select an industry standard method such as ITIL, ITPM, BSP, or any other system of best practices or mixture thereof, to establish or significantly enhance service management capabilities.	Applied	Deep
ITSCSMC05	Technique	Advise on Recovery Plans (A5)	Advise on the definition and documentation of detailed plans for the recovery of services/components to meet SLAs.	Applied	Deep
ITSCSMC06	Technique	Advise on Service Management Processes (E5)	Advise clients (internal or external) on the definition, configuration, or establishment of service management processes: <ul style="list-style-type: none"> • Configuration Management • Change Management • Release Management • Incident Management • Problem Management • Availability Management • Asset Management • Service Continuity • Capacity Management • Service-level Management • Security Management 	Applied	Deep
ITSCSMC07	Technique	Respond to Changes in Technology (E5)	Advise on growth and/or improvement in service management in response to changes in technology.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSMC08	Technique	Advise on the Application of a Quality Framework or CSI (E6)	Advise on the application of a quality framework or Continuous Service Improvement (CSI) to meet SLAs.	Applied	Deep
ITSCSMC09	Tool	Advise, Select, and Implement Management Tools (A5)	Advise, select, and implement management tools to support service management processes, in the context of operational control, growth, planning, resiliency, and recoverability.	Applied	Deep

3.6.5.3 Service Management Operations

Service Management Operations will have expertise in using and improve IT hardware, software, communications, and/or application solutions and the tools required. Typical ITIL V3 roles are Service Owner, Capacity Manager, Availability Manager, IT Service Continuity Manager, Supplier Manager, and IT Operations Manager.

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSMO01	Context	Respond to Business Changes (C3)	Respond to changes in the (internal or external) client's business by adapting and/or improving service management.	Applied	Deep
ITSCSMO02	Context	Manage Cost	Manage the cost of the service including forecasting, monitoring, reporting, and improvement.	Applied	Deep
ITSCSMO03	Method	Use Industry Standard Methods (C1-4)	Use an industry standard method such as ITIL, ITPM, BSP, or any other system of best practices or mixture thereof, to meet SLAs and/or achieve KPIs.	Applied	Deep
ITSCSMO04	Technique	Respond and Adapt to Changes to Service Management Functions (C1-4)	Respond and adapt to changes in planning, implementation, and/or customization of service management functions for clients (internal or external).	Applied	Deep
ITSCSMO05	Technique	Maintain and Validate Recovery Plans (C3)	Maintain and regularly validate detailed plans for the recovery of services/ components to meet SLAs.	Applied	Deep

Reference	Category	Skill	Description	Required Skill Level: Level 1	Required Skill Level: Level 2
ITSCSMO06	Technique	Provide Support using Service Management Processes (C1-4)	Provide client support using three or more of the following service management processes: <ul style="list-style-type: none"> • Configuration Management • Change Management • Release Management • Incident Management • Problem Management • Availability Management • Asset Management • Service Continuity • Capacity Management • Service-level Management • Security Management 	Applied	Deep
ITSCSMO07	Technique	Respond to Changes in Technology (C3)	Respond to changes in the (internal or external) client's technology by adapting and/or improving service management.	Applied	Deep
ITSCSMO08	Technique	Apply Quality Framework or CSI (C1-4)	Apply quality framework or Continuous Service Improvement (CSI) to meet SLAs.	Applied	Deep
ITSCSMO09	Tool	Use Management Tools (C1-4)	Use management tools to support service management processes, in the context of operational control, growth, planning, resiliency, and recoverability.	Applied	Deep

3.7 Working Experience

Certified IT Specialists must be able to demonstrate that they have at least the following experience:

Experience Category	Requirement: Level 1	Requirement: Level 2	How Documented by the Candidate for Initial Certification at Each Level
<p>EC01: Experience in the IT Industry</p>	<p>Candidates should have sufficient experience in the IT industry to demonstrate repeated success in meeting the Core Foundation Skills. Typically, this requires five (5) years of work experience in IT in the last eight (8) years (excluding time spent under tuition). Experience cited in a Certification Package to demonstrate each of the Core Foundation Skills should all be within the last eight (8) years and at least one example should be from the last three (3) years.</p>	<p>Candidates should have sufficient experience in the IT industry to demonstrate repeated success in meeting the Core Foundation Skills. Typically, this requires eight (8) years of work experience in IT in the last 12 years (excluding time spent under tuition). Experience cited in a Certification Package to demonstrate each of the Core Foundation Skills should all be within the last eight (8) years and at least one example should be from the last three (3) years.</p>	<p>Application Package must contain Candidate’s work history in IT.</p>
<p>EC02: Experience in Technical Focus Area/ Stream</p>	<p>Candidates should have sufficient experience as IT Specialists in their chosen Stream to demonstrate repeated success in meeting the Stream specific criteria. Typically, this requires three (3) years of work experience in their Stream in the last five (5) years (excluding time spent under tuition). Experience cited in a Certification Package to demonstrate each of the Stream-specific skills should all be within the last five (5) years and at least one example should be from the last three (3) years.</p>	<p>Candidates should have sufficient experience as IT Specialists in their chosen Stream to demonstrate repeated success in meeting the Stream-specific criteria. Typically, this requires three (3) years of work experience in their Stream in the last five (5) years and five (5) years of experience in projects involving two or more Streams in the last eight (8) years (excluding time spent under tuition). Experience cited in a Certification Package to demonstrate each of the Stream-specific skills should all be within the last five (5) years and at least one example should be from the last three (3) years.</p>	<p>Application Package must contain a list of Candidate’s experiences with start and end dates of involvement. Candidates should endeavor to provide references that can validate their participation in listed experiences. For direct certification, references may be customers/clients or Master IT Specialists who are not the Candidate’s immediate manager. For indirect certification, references may be managers, customers/clients, or Master IT Specialists. Reference may be made to the projects in the Experience Profiles (described below).</p>

Experience Category	Requirement: Level 1	Requirement: Level 2	How Documented by the Candidate for Initial Certification at Each Level
EC03: Experience in the Client Focus Area	Candidates should have sufficient experience as IT Specialists in their chosen Client Focus Area to demonstrate repeated success in meeting the Client Focus Area-specific criteria. Typically, this requires three (3) years of work experience in their Client Focus Area in the last five (5) years (excluding time spent under tuition). Experience cited in a Certification Package to demonstrate each of the Client Focus Area-specific skills should all be within the last five (5) years and at least one example should be from the last three (3) years.	Candidates should have sufficient experience as IT Specialists in their chosen Client Focus Area to demonstrate repeated success in meeting the Client Focus Area-specific criteria. Typically, this requires three (3) years of work experience in their Client Focus Area in the last five (5) years (excluding time spent under tuition). Experience cited in a Certification Package to demonstrate each of the Client Focus Area-specific skills should all be within the last five (5) years and at least one example should be from the last three (3) years.	Application Package must contain a list of Candidate's experiences with start and end dates of involvement. Candidates should endeavor to provide references that can validate their participation in listed experiences. For direct certification, references may be customers/clients or Master IT Specialists who are not the Candidate's immediate manager. For indirect certification, references may be managers, customers/clients, or Master IT Specialists. Reference may be made to the projects in the Experience Profiles (described below), or by reference to evidence provided in response to EC02.
EC04: Experience with Successful Project/Engagement Delivery	Candidates must have acted in the role of IT Specialist within their Stream in at least two (2) successful engagements. The deliverables produced by the Candidate must have contributed to the engagement meeting its acceptance criteria.	Candidates must have acted in a leadership role in at least three (3) engagements. At least two of the three engagements must have been in connection with projects that met their acceptance criteria.	Application Package must include a set of Experience Profiles, each of which demonstrates that the Candidate satisfies the stated criteria. Reference may be made to sections within the Experience Profiles, or the Candidate may provide a detailed description of a work effort that demonstrates compliance with this criterion.

3.8 Professional Development

Reference	Description	Requirement: Level 1	Requirement: Level 2
PD01	Training in Project Management	Attendance at a taught course, or through self-study within the last three (3) years.	Attendance at a taught course, or through self-study within the last three (3) years.
PD02	Knowledge of the Technology, Trends, and Techniques in the IT Industry	Candidates are required to develop and maintain their knowledge of the technology, trends, and techniques in the IT industry.	Candidates are required to maintain their knowledge of the technology, trends, and techniques in the IT industry.
PD03	Training in Technical Focus Area/ Stream and/or Client Focus Area	40 hours/year of training at a taught course or through self study in the Candidate's Focus Areas.	40 hours/year of training at a taught course or through self study in the Candidate's Focus Areas.

3.9 Community Contribution

Reference	Description	Requirement: Level 1	Requirement: Level 2
CC01	Contributions to the IT Specialist Profession	No requirement.	Candidates must make contributions to the IT Specialist profession; for example, mentoring, publications, teaching, research collaboration, or participation in professional organizations.
CC02	Contribution to the IT Specialist Community	No requirement.	As part of their contribution to the community, Master IT Specialists are expected to be available to serve from time to time on Direct Certification Boards at the request of the Certification Authority. Such participation will be evaluated positively at re-certification.

4. APPLICATION FOR CERTIFICATION

When applying for initial certification, or for certification at a new (higher) level, Candidates are required to create a Certification Package.

For *direct* certification, applications must be made using the Open CITS Certification Package Template and web site.

For *indirect* certification, applications must be made using the templates, forms, and processes of the Accredited Certification Program (ACP). The information required by an ACP may be a superset of the Open CITS Certification Package Template in order to support the extended requirements of an ACP.

In either case, the Certification Package will be made up of one or more templates that the Candidate will use to document how they meet the Core Foundation Skills and Experience Criteria described in this document.

For Level 2 certification, the Certification Package will also contain at least three (3) Experience Profiles, which will be the primary means by which a Candidate will demonstrate their experience. For Level 1 certification, the Certification Package will also contain at least two (2) Experience Profiles, which will be the primary means by which a Candidate will demonstrate their experience.

All applications must be readable, complete, and consistent.

4.1 Experience Profiles

An Experience Profile is a coherent written description of a project or technical engagement that provides Candidates with the opportunity to show how they perform as an IT Specialist within their Client and Technical Focus Areas, and enables a Certification Board to understand and question Candidates' thought processes and decisions.

Candidates must provide three (3) Experience Profiles (for Level 2 certification), or two (2) Experience Profiles (for Level 1 certification) describing projects undertaken within the five (5) years preceding an application, at least two of which must have been undertaken in the last three (3) years. Projects over two (2) years long may be used for multiple Experience Profiles under either of the following conditions:

- The project had clearly-defined work efforts which took place in parallel, each with their own solution development and design activities and their own deliverables.
- The project had clearly-defined phases that were executed in succession, each with its own solution development and design activities and deliverables. Note that a second project phase that constructs and implements the solution developed by the first phase does not meet this requirement.

In either case, each profiled project entity must meet all of the Experience Profile criteria defined in the table below.

Each Experience Profile must include:

- A concise summary of the client need
- A concise description of the project
- The Candidate's period of involvement

Table 2 defines the attributes that must be present within Experience Profiles for the two levels of certification, and against which the Experience Profiles will be evaluated.

Ref	Experience Profile Attribute	Description: Level 1	Description: Level 2
EXP01	Technical Expertise in his/her Technical and Client Focus Areas	The Experience Profiles must show that Candidates possess a deep set of business and technical skills which are leveraged during their work.	The Experience Profiles must show that Candidates possess a deep set of business and technical skills which are leveraged during their work.
EXP02	Key Decisions Made	Experience Profiles must contain a summary of the key technical decisions made by the Candidate, the reasons for the decisions, and the alternatives that were considered.	Experience Profiles must contain a summary of the key technical decisions made by the Candidate, the reasons for the decisions, and the alternatives that were considered.
EXP03	Demonstrated Success	Candidates must have acted in their role of IT Specialist in at least two (2) engagements or projects. At least one (1) of the two engagements must have been in connection with projects that met their acceptance criteria.	Candidates must have acted in their role of IT Specialist in at least three (3) engagements or projects. At least two (2) of the three engagements must have been in connection with projects that met their acceptance criteria.
EXP04	Perform as a Lead IT Specialist	N/A	Performed as a Technical Lead IT Specialist in the development, implementation, and/or management of a major project or subsystem.
EXP05	Address the Client Need	Experience Profiles must demonstrate that the Candidate's work contributed to meeting the stated requirements of the client.	Experience Profiles must demonstrate that the Candidate's work contributed to meeting the stated requirements of the client.

Table 2: Required Attributes for Experience Profiles

4.2 Evaluation Process

The Evaluation shall be conducted through a combination of audit of written documentation and a Certification Board interview.

4.2.1 Evaluation of Core Foundation Skills

The Candidate must supply a written self-assessment of the level of their Core Foundation Skills as listed in Section 3.3.

Candidates must be able to substantiate their self-assessment at a Certification Board interview.

4.2.2 Evaluation of Technical Focus and Client Focus Conformance Requirements

Candidates must provide evidence supporting their claim of meeting Technical Focus Area/Stream and Client Focus Area Conformance Requirements.

Candidates must be able to substantiate their documented statements during the Certification Board interview process.

4.2.3 Evaluation of Experience Profiles

Candidates must provide evidence supporting their claim of meeting Experience Conformance Requirements.

Level 2 Candidates must also submit three (3) Experience Profiles (two Experience Profiles for Level 1) that document the Candidate's role in the development of an IT solution that addresses the stated business problem. Each of the submitted Experience Profiles must include specific reference to the Experience Conformance Requirements listed in Section 3.6.4 and must meet Required Attributes for Experience Profiles defined in Section 4.1.

Candidates must be able to describe their roles and substantiate their claims at a Certification Board interview.

4.2.4 Evaluation of Professional Development

Candidates must provide a written description of their training or self-study. To demonstrate maintenance of their IT knowledge and to demonstrate their development of skills and knowledge in their chosen Technical Focus Area/Stream, Candidates are required to provide a written description of the activities they undertake to these ends.

Examples of qualifying activities are conference attendance, personal reading, formal education, being mentored, attending training courses, and/or related professional memberships.

4.2.5 Evaluation of Contributions to the IT Specialist Community

Candidates must provide a written description of their contributions to the IT Specialist community.

5. APPLICATION FOR RE-CERTIFICATION

Although compliance with the applicable skill requirements continues at all times to be a Conformance Requirement of the Program, Candidates for re-certification are not required to demonstrate their continued compliance to the applicable skill requirements when re-certifying.

Candidates for re-certification must supply sufficient information to assure the Certification Authority and the Certification Board members that the applicable Open CITS Conformance Requirements continue to be met and that they have continued to practice as an IT Specialist since their initial certification or last re-certification.

When applying for re-certification, Candidates are required to create and submit a Re-Certification Package.

For *direct* re-certification, applications must be made using the Open CITS Re-Certification Package Template and web site.

For *indirect* re-certification, applications must be made using the templates and forms provided by the Accredited Certification Program (ACP). The information required by an ACP may be a superset of the Open CITS Re-Certification Package Template in order to support the extended requirements of an ACP.

In either case, the Re-Certification Package will be made up of one or more templates that the Candidate will use to document how they have continued to practice as an IT Specialist and continued professional development activities since the initial certification or since the previous re-certification, as applicable.

5.1 Evaluation Process

The Evaluation shall be conducted through a combination of audit of written documentation and a Certification Board evaluation, as defined in the Open CITS Certification Policy. All applications must be readable, complete, and consistent.

Part 2: Conformance Requirements for Level 3

6. LEVEL 3 ROLES AND RESPONSIBILITIES (INFORMATIVE)

The role of the Distinguished IT Specialist is:

- To initiate, business justify, and lead projects for the development of new and sufficiently complex components in the areas of information, applications, and technology in order to meet business objectives
- To establish technical and process frameworks that are the foundation for systems across the organization and that are essential for the proper execution and delivery of critical and strategic business systems

Distinguished IT Specialists may also implement organization-wide initiatives aimed at supporting the enablement of the IT Specialist community through the development of tooling, education, or career enhancement.

The Distinguished IT Specialist is:

- An expert in the application of **Information and Communications Technology** to system design and implementation, taking into account security, extensibility, interoperability, manageability, and organizational considerations
- A **leader of the profession** who is constantly learning and applying new techniques and technologies and seeks to design new and innovative solutions

What distinguishes IT Specialists at Level 3 from those at Level 2 are **leadership, and scope, depth, and breadth of impact.**

6.1 Technical Leadership at Level 3

The Conformance Requirements at Level 3 are focused on innovative technical leadership through the realization of technical initiatives of significant breadth of impact across their client/organization as well as within the industry. The Conformance Requirements are intended to measure a Candidate's ability to successfully impact an organization's mission and business strategy through their leadership in the development and delivery of innovative IT solutions and initiatives.

Technical leadership at Level 3 is defined as leading the creation and realization of systems or solutions that are:

- Critical to the business
- Significant and complex – non-trivial and meaningful to the business
- Innovative
- Recognized as essential across multiple organizations or multiple lines of business
- Visible to stakeholders including, for example, customers or business partners

7. CONFORMANCE REQUIREMENTS (NORMATIVE)

Candidates applying for certification at Level 3 are required either to be certified at Level 2, or to have met the Level 2 Conformance Requirements at some time in the past.

Certification at Level 3, without previously being certified at Level 2, requires a Candidate to submit a Level 2 package in addition to the Level 3 package. To allow Level 3 certification for people who may have met the Level 2 requirements at some time in the past, the Level 2 time constraints are waived for combined Level 2/Level 3 applications.

Rather than specific technical skills or experience, certification at Level 3 focuses on leadership and on the breadth and scope of impact of the Candidate in the context of their work as an IT Specialist in their Stream or Streams. The Level 3 Conformance Requirements are therefore common for all IT Specialists irrespective of the Client Focus Area and Stream against which they achieved Level 2 certification.

7.1 Level 3 Scope and Definitions

Certification for Level 3 IT Specialists is focused on establishing the metrics to identify those Level 2 Master IT Specialists that have made valuable and recognizable contributions to their (internal or external) client's business.

In addition, these individuals also work to evolve the practice in their field of specialism.

7.1.1 Definitions Specific to Level 3

A number of the Core Foundation Skills refer to “significant” or “complex” contributions. These terms are defined below.

A **significant** contribution to a project is one that has a positive impact on the client's business and that is recognized by the client's business leadership.

Examples of impact are:

- A cross-organizational or cross-line of business engagement
- A substantial financial cost/benefit
- A troubled project turnaround saved by your ideas or efforts
- A high-risk project

A **complex** project or engagement is one or more of the following:

- System of systems integration
- Cross-organizational/business partner/multiple customer or multi-vendor coordination
- Alignment of IT systems to a new strategic business model
- Adoption of cutting-edge technologies
- A system of substantial scale as measured by the total number of components, the number of different kinds of components, and the complexity of the relationships between them

7.2 Level 3 Core Foundation Skills

There are no requirements for Core Foundation Skills, Technical Focus, or Client Focus Skills at Level 3, as assessment of these has been carried out at Level 2.

7.3 Level 3 Experience Criteria

Distinguished IT Specialists must be able to demonstrate that they have at least the following experience, gained in projects where they have contributed as an IT Specialist:

Reference	Description	How Documented by the Candidate
EC.L3.01	Facilitate the implementation of an important business initiative by promoting teaming and cross-organizational participation.	The Certification Package must contain a description of three or more of the Candidate's experiences that demonstrate this criterion, with start and end dates of involvement.
EC.L3.02	Initiate, lead, and influence multi-disciplinary initiatives across organizational or geographical boundaries coordinating the activities necessary to succeed.	The Certification Package must contain a description of three or more of the Candidate's experiences that demonstrate this criterion, with start and end dates of involvement.
EC.L3.03	You must have anticipated, created, and defined innovative concepts in a strategic environment.	The Certification Package must contain a description of three or more of the Candidate's experiences that demonstrate this criterion, with start and end dates of involvement.
EC.L3.04	You must have shown technical leadership in conducting special projects or strategic initiatives that span two or more Streams.	The Certification Package must contain a description of three or more of the Candidate's experiences that demonstrate this criterion, with start and end dates of involvement.
EC.L3.05	You must have operated at executive levels, conducting complex negotiations, and reaching agreements and commitments.	The Certification Package must contain a description of three or more of the Candidate's experiences that demonstrate this criterion, with start and end dates of involvement.
EC.L3.06	You should have demonstrated significant positive impact on the business.	The Certification Package must contain a description of three or more of the Candidate's experiences that demonstrate this criterion, with start and end dates of involvement.

7.4 Level 3 Professional Development

A Level 3 Certified IT Specialist is expected to show continued growth and pursuit of knowledge and education in their field and in leadership skills. A Candidate is required to show continued professional growth in each of the following categories.

Professional development activities cited in an application for certification should all have taken place in the previous three (3) years.

Reference	Description	Requirement: Level 3
PD.L3.01	Knowledge of the technology, trends, and techniques in the IT industry	Candidates are required to maintain their knowledge of the technology, trends, and techniques in the IT industry.
PD.L3.02	Leadership skills	Candidates are required to show continual development of their leadership skills.

Reference	Description	Requirement: Level 3
PD.L3.03	Knowledge of client's business	Candidates are required to develop and enhance their knowledge and understanding of their client's business and industry context.

7.5 Level 3 Contribution to the IT Specialist Community

The Candidate is expected to have provided significant contributions in the following categories.

Community contribution activities cited in an application for certification should all have taken place in the previous three (3) years.

Reference	Description	Conformance Criteria
CC.L3.01	Contributions to the IT Specialist Profession	<p>Candidates must make significant contributions to the IT Specialist profession with the objective of promoting the growth of the profession itself.</p> <p>Guidance:</p> <p>Candidates are expected to make visible contributions to the IT Specialist community or the body of knowledge. For example, contributions to standards bodies or professional associations that seek to define innovative new technical solutions, strategies, research, or technologies.</p> <p>Candidates must have contributed in at least two (2) of the following categories:</p> <ul style="list-style-type: none"> • Teaching • Creation of intellectual capital • Contribution to external conferences • External publications • Contribution to standards bodies/consortia • Service on certification boards
CC.L3.02	Profession Mentoring	<p>Actively facilitate the professional development of multiple aspiring IT Specialists, especially those seeking certification.</p> <p>Guidance:</p> <p>A Level 3 Certified IT Specialist is expected to help grow the ranks of the IT Specialist community. This is often referred to as <i>professional mentorship</i> or <i>mentoring</i>. Mentoring is the process in which an experienced IT Specialist works alongside a less experienced individual to impart their experience in order to help them grow professionally.</p>

Note: Evidence of contribution to the community will be required to be documented in the Certification Package.

8. APPLICATION FOR CERTIFICATION

When applying for certification at Level 3, Candidates are required to create a Certification Package.

For *direct* certification, applications must be made using The Open Group Certification Package template and web site. The web site is at www.opengroup.org/opencits/cert and the Certification Package templates are available at www.opengroup.org/opencits/cert/docs.

For *indirect* certification, applications must be made using the templates, forms, and processes of the Accredited Certification Program (ACP). The information required by an ACP may be a superset of The Open Group Certification Package template in order to support the extended requirements of an ACP.

In either case, the Certification Package will be made up of one or more templates that the Candidate will use to document how they meet the Core Foundation Skills and Experience Criteria described in this document. The Certification Package will also contain at least three (3) Experience Profiles, which will be the primary means by which a Candidate will demonstrate their experience.

8.1 Conformance Criteria for Experience Profiles

An Experience Profile is a coherent written description of a project or architectural engagement (for example, enterprise architecture, solution architecture, or architectural framework) that provides a Candidate with the opportunity to show how they perform as an IT Specialist, and enables a Certification Board to understand and question the Candidate's thought processes and decisions.

Candidates must provide three (3) Experience Profiles describing projects undertaken within the three (3) years preceding a Candidate's application. Projects over two (2) years long may be used for multiple Experience Profiles under either of the following conditions:

Condition 1: The project had clearly-defined work efforts which took place in parallel, each with their own solution development and design activities and their own deliverables.

Condition 2: The project had clearly-defined phases that were executed in succession, each with its own solution development and design activities and deliverables. Note that a second project phase that constructs and implements the solution developed by the first phase does not meet this requirement.

In either case, each profiled project entity must meet all of the Experience Profile criteria defined in Table 3 below.

Each Experience Profile must include:

- A description of the business purpose of the project
- A concise description of the project
- The Candidate's role
- The Candidate's period of involvement

Table 3 defines the attributes that must be present within Experience Profiles, against which the Experience Profiles will be evaluated.

8.1.1 References

For each project or engagement cited in a profile, references are required to confirm the Candidate's role, and the strategic nature and the success of the project (see EXP.L3.04). References should be from executives, senior management, other certified professionals, or customers. (At least one of the support

letters should be from outside the Candidate's business unit. This letter could be from an employee in another part of the Candidate's organization, a member of an external organization, or a customer.)

If you have a support letter from a customer in a language other than English, a translation must also be provided.

References must describe the stakeholder's relationship with the project and their business relationship to the Candidate.

Table 3: Required Attributes for Experience Profiles

Reference	Experience Profile Attribute	Description: Level 3
EXP.L3.01	Leading a project of significant business value and impact	<p>A Level 3 Certified IT Specialist has experience leading projects of significant business impact by directing the technical strategy and design.</p> <p>Experience Profiles must document projects or activities that resulted in visible positive business impact. Documented projects must have had significant business impact and meet the definition of significant and complex.</p> <p>Guidance to Candidates:</p> <p>The Candidate must have defined the technical strategy that supports the client's business case for a new business capability.</p> <p>The Experience Profile should identify the value of the business function (e.g., monetary value), the business opportunities realized that resulted from the strategy implemented, and the resulting solution.</p> <p>Examples:</p> <p>The Candidate understands, directs, and appropriately applies new initiatives and technologies.</p> <p>The Candidate worked with business leaders to align the organization's IT strategy with the needs of the business.</p>
EXP.L3.02	Key Decisions and Contributions	<p>The Candidate must explain their role and responsibility in a particular project.</p> <p>The Candidate is required to identify the key strategic decisions they made, their approach to the solution, their specific contributions (artifacts and deliverables), and the outcome of the project.</p> <p>Guidance to Candidates:</p> <p>The Candidate must document the thinking and decisions that led to their approach and solution.</p> <p>The Candidate should document the alternatives that were considered and how they worked to mitigate risks to their decisions.</p>
EXP.L3.03	Demonstrated Success	<p>The Candidate must have acted in the role of IT Specialist in at least three (3) successful significant engagements.</p> <p>Guidance to Candidates:</p> <p>The Candidate must have shown repeated success by the involvement in three successful significant engagements.</p>

8.2 Evaluation Process

The Evaluation shall be conducted through a combination of audit of written documentation and a Certification Board interview. All applications must be readable, complete, and consistent.

For *direct* certification, applications must be made using The Open Group Certification Package template and web site. The web site is at www.opengroup.org/opencits/cert and the Certification Package templates are available at www.opengroup.org/opencits/cert/docs.

For *indirect* certification, applications must be made using the templates and forms provided by the Accredited Certification Program (ACP). The information required by an ACP may be a superset of The Open Group Certification Package template in order to support the extended requirements of an ACP.

8.2.1 Evaluation of Experience

Candidates must provide descriptions of activities that demonstrate conformance with the Experience Conformance Requirements.

Candidates must also submit three (3) Experience Profiles that document the Candidate's role in the development of an IT solution that addresses the stated business problem. Each of the submitted Experience Profiles must meet the attributes defined in Table 3.

Candidates must be able to describe their roles and substantiate their claims at a Certification Board interview.

8.2.2 Evaluation of Professional Development

Candidates must provide a written description of their training or self-study.

To demonstrate maintenance of their IT and vertical industry knowledge and to demonstrate their development of skills and knowledge in IT, Candidates are required to provide a written description of the activities they undertake to these ends.

Examples of qualifying activities are conference attendance, personal reading, formal education, being mentored, attending training courses, and/or related professional memberships.

8.2.3 Evaluation of Contribution to the IT Specialist Community

Candidates must provide a written description of their contributions to the IT Specialist community.

9. APPLICATION FOR RE-CERTIFICATION

Although compliance with the applicable skill requirements continues at all times to be a Conformance Requirement of the Program, Candidates for re-certification are not required to demonstrate their continued compliance to the applicable skill requirements when re-certifying.

Candidates for re-certification must supply sufficient information to assure the Certification Authority and the Certification Board members that the applicable Conformance Requirements continue to be met and that they have continued to practice as an IT Specialist since their initial certification or last re-certification.

When applying for re-certification, Candidates are required to create and submit a Re-Certification Package.

For *direct* re-certification, applications must be made using The Open Group Re-Certification Package template and web site. The web site is at www.opengroup.org/opencits/cert and the Re-Certification Package templates are available at www.opengroup.org/opencits/cert/docs.

For *indirect* re-certification, applications must be made using the templates and forms provided by the Accredited Certification Program (ACP). The information required by an ACP may be a superset of The Open Group Re-Certification Package template in order to support the extended requirements of an ACP.

In either case, the Re-Certification Package will be made up of one or more templates that the Candidate will use to document how they have continued to practice as an IT Specialist since the initial certification or since the previous re-certification, as applicable. Evidence will also be required of continued Professional Development (PD.L3.01, PD.L3.02, PD.L3.03) and Community Contribution (CC.L3.01, CC.L3.02.).

9.1 Evaluation Process

The evaluation shall be conducted through a combination of audit of written documentation and Certification Board interviews. All applications must be readable, complete, and consistent.