

Information Systems roles in large companies

HR nomenclature - 2011

English version

July 2011



CIGREF, network of large companies, was established in 1970. It has over one hundred major french and european companies and organizations from all sectors (banking, insurance, energy, retail, manufacturing, services ...). CIGREF's mission is to promote Digital Culture as a source of innovation and performance.

Title report: HR Nomenclature 2011

CIGREF team:

Jean-François PÉPIN – General Manager
Sophie BOUTEILLER – Research Officer
Anne-Sophie BOISARD – Research fellow, PhD
Armand FRANCOIS – Research Assistant
Josette WATRINEL – Executive Secretary

Frédéric LAU – Mission Manager
Matthieu BOUTIN – Research Officer
Marie-Pierre LACROIX – Information Manager
Josette LEMAN – Executive Assistant

Acknowledgements:

We are grateful to Bertrand ETENEAU, CIO FAURECIA who led this discussion.

We also thank those who participated in this study:

Frédéric COUTARD - AGIRC ARRCO	Didier LAMBALLAIS - INRIA
Patrice TALMA - AIR FRANCE	Muriel REDER - LA POSTE
Dominique JOURDAIN – AXA	Gilles GALINDO - MICHELIN
Evelyne CHEDHOMME - BANQUE DE FRANCE	Stéphanie CLEMENTINE - POLE EMPLOI
Frédéric DEHESTRU - BOUYGUES TELECOM	Isabelle PERRIEUX - POLE EMPLOI
Stanislas ANDRE - BOUYGUES TELECOM	Etienne DE ROUGÉ - PSA PEUGEOT CITROËN
Ibrahim SIDIBE - CARREFOUR	Marianne DESLOUS - RENAULT
Hubert DELAFON - CIGREF	Christine PUECH - SAGEM Défense
Thérèse HIRSCHY - CNAV	Mireille LENGLET - SNCF
Jean-Pierre GARLATTI - DASSAULT AVIATION	Thierry SELLAN - SAFRAN Informatique
Yves SPIELMANN - EURO DISNEY SCA	Solange THIEBLIN - SAFRAN
Jean-Noël PONZEVERA - FAURECIA	Claude GRANDJEAN - SAFRAN
Florence MIELLE - GROUPAMA SI	Véronique BARDELMANN - SAFRAN
Annie ROZÉ - GROUPAMA SI	Renée PUJOLA - SNECMA
Laurence FOUASSIER - GROUPEMENT DES MOUSQUETAIRES - INTERMARCHÉ	Catherine ANCELIN - TOTAL

For information on this report, please use the contact information below to contact the CIGREF:

CIGREF, Réseau de Grandes entreprises
21, avenue de Messine 75008 Paris
Phone : + 33.1.56.59.70.00
Email : contact@cigref.fr

Internet :

<http://www.cigref.fr/>
<http://www.fondation-cigref.org/>
<http://www.histoire-cigref.org/>
<http://www.collection-cigref.org/>
<http://www.entreprises-et-cultures-numeriques.org>

SUMMARY

For the seventh time since 1991, CIGREF has updated its Nomenclature of IS roles which provides a description of the roles existing in the Information Systems Departments of large companies.

European work on e-Competence

The competitiveness of companies in Europe is to a large degree based on the effective use of information technologies, which means it is a requirement to have the appropriate competences to deploy them. Within the framework of the CEN/ISSS (*European Committee for Standardization/Information Society Standardization System*) and with the support of the European Commission, a steering structure known as the "ICT Skills Workshop" was set up as of 2004 to define and implement an action plan aiming to promote the Information and Communication Technology (ICT) profession in the European Union. This structure in particular decided in 2005 to build a "European e-Competence Framework - e-CF" based on the three most representative national reference frameworks in Europe:

1. The skills-oriented descriptions of competences distributed by the SFIA (UK)
2. The job profiles and development processes distributed by the AITTS (D)
3. The role nomenclature distributed by CIGREF (F)

A project team, made up of experts representing these three reference frameworks, proposed an approach, vocabulary and structure for the new e-CF reference framework. This team was assisted by large and varied group of European experts in human resources (HR) and information systems (IS) management.

In 2010, this team produced a competence framework which consists of 36 competences structured in four dimensions which reflect the different levels of decision-making in terms of HR management, as found within a company:

1. The areas of concern derived from the company's business processes
2. A set of competences for each area, with a generic description for each one.
3. A proficiency level for each competence in line with levels 3 to 8 defined in the European Qualifications Framework (EQF)
4. The knowledge and skills necessary for the attainment of each competence

Integration with work done by CIGREF

As a result of its studies, started in 2002, concerning e-competences and its participation in work conducted at a European level, CIGREF's HR group has decided to incorporate the competences from the e-CF into its nomenclature of roles. This nomenclature had already been formatted to allow this in its 2009 version. In 2010, the role data sheets were thus completed accordingly.

The 36 competences described in the e-CF (except *Channel Management* which does not concern the user companies) were distributed as part of each role data sheet in the CIGREF nomenclature depending on the real needs of companies in the HR group. The work was based on the existing tools and reference frameworks used in these companies.

A role data sheet therefore now contains the descriptions of each competence necessary to exercise the role, as well as the required level of each competence.

The full competence framework (e-CF) is also as an annex.

Today, many CIGREF member companies have adopted the CIGREF nomenclature of roles and several have also adopted the European e-Competence Framework, e-CF. This new version of the nomenclature should be suitable to meet their needs.

CONTENTS

Preamble	1
Organisation of the CIGREF nomenclature of Information Systems roles.....	4
Main changes relative to the CIGREF nomenclature published in 2009	5
Origins of the <i>e-Competence Framework (e-CF)</i> project.....	6
Description of the <i>e-Competence Framework</i>	7
Goals of the <i>e-Competence Framework</i>	8
The integration of the <i>e-Competence Framework</i> into the CIGREF nomenclature	9
1. STEERING, ORGANISATION AND MANAGEMENT OF CHANGES TO THE INFORMATION SYSTEM	11
1.1 Information Systems Consultant	13
1.2 Functional Architect	17
1.3 Business Information System Manager.....	21
1.4 Applications Manager.....	25
1.5 Internal Customer Manager	29
2. PROJECT MANAGEMENT.....	33
2.1 Head of Project.....	35
2.2 Business Project Manager	39
2.3 IT Project Manager	45
3. APPLICATION LIFECYCLE	52
3.1 Application Domain Manager.....	53
3.2 Programmer.....	57
3.3 Test Manager.....	60
3.4 Applications Architect.....	63
3.5 Software Configuration Officer	67
4. MAKING AVAILABLE AND IN-SERVICE SUPPORT OF INFRASTRUCTURES	71
4.1 Backoffice Technician	73
4.2 Desktop Technician.....	75
4.3 Network & Telecom Technician	79
4.4 Networks / Tools / Systems Administrator	83
4.5 Database Administrator	87
4.6 Production Systems Integrator.....	91
4.7 Operations Controller.....	95
4.8 Operating Systems Expert	97
4.9 Network & Telecom Expert	101

4.10	Technical Architect	105
5.	USER SUPPORT AND ASSISTANCE	109
5.1	User Liaison Officer.....	111
5.2	Help Desk Technician.....	115
6.	Methods, quality and security support.....	117
6.1	Security/Quality/Tools and Methods Expert.....	119
6.2	Contract Manager.....	125
6.3	Chief Information Security Officer- CISO.....	129
7.	OPERATIONAL MANAGEMENT.....	133
7.1	Chief Information Officer.....	135
7.2	IT Entity Manager	139
7.3	Head of Telecoms	143
7.4	Head of Operations	149
7.5	Head of Studies & Development	153
	Annex 1: Summary of roles/competences matrix	157
	Annex 2: European e-Competence framework.....	161

FIGURES

Figure 1: Transposition of company needs in the e-CF.....	8
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PREAMBLE

For 19 years now, CIGREF has regularly published a nomenclature of the "jobs & roles" in information systems.

This tool is the result of the sharing of experiences between the human resources directors of Information Systems Departments of CIGREF member companies. These exchanges have been formalised in a common description of the roles of the Information Systems

This joint study, updated on a regular basis, also makes it possible to monitor change in the businesses of Information Systems Departments. This change is a reflection of the changes occurring in the organisations of which they are a part. The nomenclature thus sheds specific light on the way in which Information Systems Departments are changing.

The first version, drawn up in 1991, proposed the following four families of roles based on information technology activities traditionally exercised in companies:

- Information Systems consultancy
- Research and development
- Production and operation
- Internal technical assistance

During the period from 1990 to 2000, Information Systems Departments opened up to new businesses and became more professional in the way they steered their activities. In 1995, the nomenclature thus included two new families of roles:

- User support and assistance demonstrated the growing importance assigned by Information Systems Departments to the user and the company.
- Information Systems Department administration and management reflected the desire to make Information Systems Departments subject to the same management constraints as the rest of the company as a whole.

2000 was a year that witnessed major technological, strategic and organisational changes in the information systems of large companies. These changes were reflected in the nomenclatures for 2001 and 2002:

- By the drawing up of prospects for possible career developments and CIGREF providing its opinion on the development of each role
- By the appearance of many new roles such as:

- Help Desk Technician which confirmed that users were being taken into consideration within companies
- Networks / Tools / Systems Administrator and Database Administrator.
- Software Configuration Officer which confirmed the deployment of software and ERP packages
- Chief Information Security Officer as a result of the security issues identified during the year 2000 being taken into account
- The rise of websites and the internet in 2001 also resulted in the appearance of the role of Webdesigner & Web Developer, which was to disappear again in 2002,
- Information Systems Department management became more comprehensively defined in 2001 by describing the roles of Head of Operations and IT Entity Manager,
- In 2002, because the organisation of the Information Systems was becoming essential, the role of IT Architect evolved into that of Functional Architect.

Numerous organisations making up the IT ecosystem, including CIGREF members, competence management and organisation consultants and training schemes thus either adopted the nomenclature, drew major inspiration from it or made reference to it.

In 2005, all CIGREF members had an operational reference framework of Information Systems roles. But the issue was evolving. It was now no longer a question of "roles" but of "competences": The changes to the human resources policies of major groups which, to take account of phenomena such as the change in IT budgets, technologies, management of service providers, the boom in the number of retirements or corporate mobility, started to establish ambitious competence management plans within their Information Systems Departments.

In 2005, CIGREF therefore fully reviewed the competence grids of its nomenclature with a view to drawing up a new tool: a reference framework of e-competences, to complement its nomenclature of Information System roles.

An invitation to take part in work on the drawing up of an international *e-Competence framework* (or e-CF) meant this thought process was shifted to a European level. Within the framework of the CEN/ISSS (*European Committee for Standardization/Information Society Standardization System*) and with the support of the European Commission, a steering structure known as the "*ICT Skills Workshop*" was set up as of 2004 to define and implement an action plan aiming to promote the Information and Communication Technology (ICT) profession in the European Union.

The CIGREF, with the HR group, participated actively as part of the team of experts working on the implementation of the *e-Competence framework*. In 2008, this team produced an initial prototype version of this tool. In view of the results, CIGREF thus decided to complete the CIGREF nomenclature by replacing the CIGREF competence grids with those from the e-CF.

In 2009, the Information System department was thus recognized as a source of value creation, it was more attractive, but also making it more and more just like any other department within the company's business. This "professionalization" of the Information Systems Department resulted in changes to models and organisations, particularly with the switch to service mode which has had a major influence on the organisation of roles.

In 2005, the way the roles of the Information Systems Department were structured offered an essentially "technical" vision of the information system. But the reality within companies has changed since that time. Information Systems Department roles have undergone gradual reorganisation, initially adopting a silo-based vision which placed the emphasis on the technical nature of roles, before moving onto a layered vision which organises roles with regard to the business processes of the company, reinforcing the idea that Information Systems Departments are, in a global sense, linked to company's business activity and strategy, and that the role to be played by Information Systems Departments is not merely technical, but is also organisational too.

In 2009, the nomenclature thus evolved to adopt a new structure of roles based on the following major families:

1. Steering, organisation and management of changes to the information system
2. Project management
3. Application lifecycle
4. Making available and in-service support of infrastructures
5. User support and assistance
6. Methods, quality and security support
7. Operational management

This change raised the level of the roles assigned to the Information Systems Department, by giving them added value and rendering them more attractive.

The 2009 version of the CIGREF nomenclature also prepared the way for the replacement of the CIGREF competences by the European competences, taken from the e-CF: The CIGREF competences were thus removed from the role descriptions and provided as an annex.

From 2008 to 2010, European work on the *e-competence framework* continued, with the ongoing active participation of the CIGREF HR group. A finalised version was ready in the

Spring of 2010. The CIGREF then worked on transposing the competences described in the e-CF into the businesses of the CIGREF nomenclature.

This is the purpose of this 2010 version of the CIGREF nomenclature of Information Systems roles.

ORGANISATION OF THE CIGREF NOMENCLATURE OF INFORMATION SYSTEMS ROLES

The **CIGREF nomenclature of Information Systems roles** presents a summary of the main "missions", "activities and tasks" and "competences" for the main information technologies roles in large French companies.

It also presents the typical career path (profiles and past experience) and the trends in changes to the function.

The set of roles is thus organised into seven families:

1. Steering, organisation and management of changes to the information system

This family groups together all the roles which are generally concerned with **ensuring the organisational and functional consistency** of the Information Systems.

Most of these roles work with the *business* in compliance with the **strategic orientations** and ambitions of the company.

2. Project management

This family groups together all the roles which steer, monitor and coordinate projects relating to development, deployment, IT infrastructure or methods, risks, etc.

These roles organise the work, management of resources and communication.

3. Application lifecycle

This family groups together the roles related to the design, development and realisation of the technical and applications aspects of projects.

These roles are not involved in Information Systems organisation but instead work on the building blocks implemented to integrate, design and maintain IT solutions.

4. Making available and in-service support of infrastructures

This family groups together the roles related to the design, development, integration and operation of infrastructures.

It also includes roles related to IT support internal to the Information Systems Department.

5. User support and assistance

This family groups together the roles oriented towards the Information Systems user in terms of assistance and supervision.

6. Methods, quality and security support

This family groups together all the roles related to the definition, establishment, inspection and audit of quality, methods and security standards and reference frameworks, in line with Information System department governance.

7. Operational management

This family groups together all the roles with line management responsibility for human resources, budget, decision-making or determination of scope.

Each family consists of a set of role identification data sheets; each of these provides a table presenting:

- The Title of the role, as well as other common or specific designations used in France and their English equivalents used in companies;
- The mission of the role, including the main assignment, the end goal of the job as it should be seen by the person holding the position as well its contribution to performance (of the project, of the "role", of the company);
- A description of the significant activities and tasks as encountered in the majority of organisations;
- A list of competences, taken from the e-CF (provided as an annex on page 161), observed as being constitutive of the IT Businesses of member companies.
- Trends and factors influencing change in the job / role under consideration: strategic context, change in markets and technologies, increased use of certain products and services, change in organisations, customers, management, regulations, etc. in recent years and in years to come;
- For each role, CIGREF has also sought to specify the typical deliverable that the role is expected to produce, as well as the necessary indicators to measure the performance of the role. These last two points are given for information purposes only and are not intended to be exhaustive.

MAIN CHANGES RELATIVE TO THE CIGREF NOMENCLATURE PUBLISHED IN 2009

There has been no change to the description of roles in the nomenclature between the 2009 version and this version.

The role data sheets have been supplemented with the competences taken from the *e-competence framework* or e-CF. The CIGREF competences presented in the annex to the 2009 version have been removed as they are no longer applicable.

ORIGINS OF THE *E-COMPETENCE FRAMEWORK (E-CF)* PROJECT

Within the framework of the CEN/ISSS (*European Committee for Standardization/Information Society Standardization System*) and with the support of the European Commission, a steering structure known as the "*ICT Skills Workshop*¹" was set up as of 2004 to define and implement an action plan aiming to promote the Information and Communication Technology (ICT) profession in the European Union. The expected contribution of those practical experts is a determining factor in the achievement of the growth objectives set in Lisbon in 2001.

The diversity of countries, companies and bodies represented in this workshop has from the outset been a key factor in its success.

By the end of 2005, a thorough diagnostics process had made it possible to identify four possible orientations for subsequent work:

1. To better understand and define competences in the field of ICT, in particular with regard to the deployment of such technologies in a corporate environment
2. To clarify the needs of employers in order to be able to adapt initial training schemes accordingly
3. To continue to offer and develop on-going training (right throughout an employee's professional career)
4. To establish relations with the EQF (*European Qualification Framework*)

The various different existing reference frameworks in Europe were analysed²:

- They often mix notions of knowledge and skills
- There is confusion regarding the expected results
- They have very different end goals
- They are often obsolete, as they are not always adapted to new technologies, new working methods or new forms of organisation.

Finally, during the course of 2006, the decision was taken to build a "European e-Competence Framework - e-CF" based on the three most representative national frameworks in Europe:

1. The skills-oriented descriptions of competences distributed by the SFIA (UK)
2. The job profiles and development processes distributed by the AITTS (D)
3. The job nomenclature distributed by CIGREF (F)

A project team, made up of experts representing these three reference frameworks, proposed an approach, vocabulary and structure for the new e-CF reference framework. This team was assisted by large and varied group of European experts in human resources and information systems management. The E-CF is thus the result of a European consensus

¹ For the CEN/ISSS and WS on ICT Skills see "Setting European Standards on ICT Skills" by P. Schgör in NL - Vol.7, no. 1 Spring 2009 and <http://www.cen.eu/cenorm/sectors/sectors/iss/activity/wsict-skills.asp>

² See document CWA 15515

reached with the participation of stakeholders from the IT ecosystem³, of user companies⁴, and various training and education institutions⁵.

DESCRIPTION OF THE *E-COMPETENCE FRAMEWORK*

This project team produced an initial intermediary version (e-CF 1.0) in 2008 and the definitive version of the framework (2.0) in 2010.

This European e-Competence Framework can be used to provide clear bases to help companies to take the right decisions concerning recruitment, career management, training or staff assessment. It establishes a link with the different national reference frameworks and provides a breakdown of competences, knowledge, and skills in IT in line with the company's working framework.

36 competences have been defined. They have been broken down into a structure which consists of four dimensions which reflect the different levels of decision-making in terms of HR management, as found within a company:

1. **The first dimension** revolves around the five areas of concern directly derived from the company's business processes: **PLAN, BUILD, RUN, ENABLE and MANAGE**.
2. **The second dimension** defines a set of competences for each area, with a generic description for each one. The 36 competences identified have a **generic definition which is comprehensible to all European stakeholders**.
3. **The third dimension** specifies one of the five **levels of proficiency and responsibility** for each competence in line with levels 3 to 8 defined in the European Qualifications Framework (EQF⁶)
4. **The fourth dimension** of the framework is devoted to **knowledge and skills**. This section provides a non-exhaustive set of elements which can be used to specify the major pre-requisites which define a given competence.

With this tree structure, companies can satisfy the following requirements with the appropriate level of granularity:

- Provisional management of jobs and competences (*Gestion Prévisionnelle des Emplois et Compétences - GPEC*)
- Collective management of jobs and positions (including qualifications)
- Individual development of career plans and competences
- Management of the catalogue of training "driven" by the company
- Annual training plan

³ Bitkom, Cisco Systems, SYNTEC Informatique, Deutsche Telekom, etc.

⁴ CIGREF, Bayer Business Services, Airbus, Michelin, NHS, IG Metall, etc.

⁵ EMSI Grenoble, Fondazione Politecnico di Milano, EXIN International, etc.

⁶ European Qualifications Framework

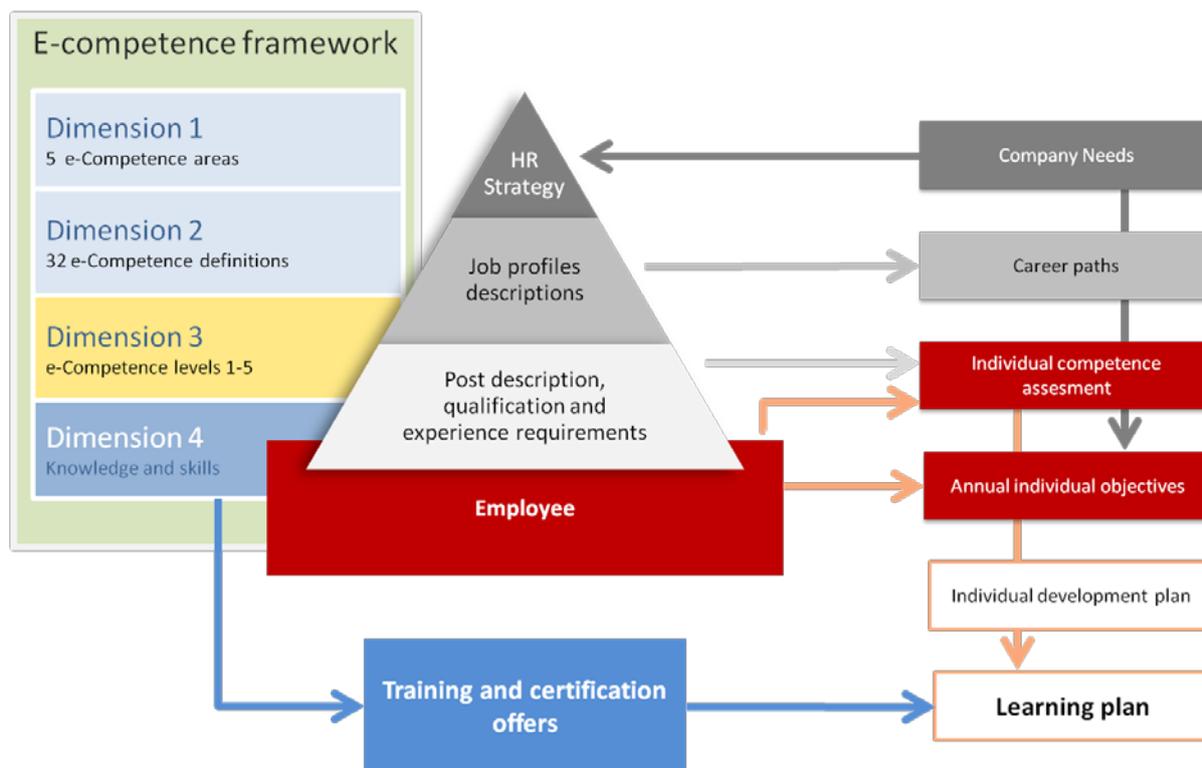


Figure 1: Transposition of company needs in the e-CF

To facilitate adoption and comprehension, the reference framework is accompanied by a user guide⁷ which provides recommendations enabling any stakeholder in the European IT ecosystem, to expand it by adding new definitions adapted to their sector of activity.

The reference framework is also accompanied by methodological documentation to meet the needs of a more scientific audience. Finally, to make it easier to consult, the competence framework shall be accessible to any European user via a European service portal⁸.

GOALS OF THE *E-COMPETENCE FRAMEWORK*

This reference framework of IT competences now constitutes a serious foundation for a European standard.

It is sufficiently generic to be adaptable to be the specific features of different countries and to technological developments over the years to come.

⁷ "User guidelines for the application of the European e-Competence Framework Available on <http://www.ecompetences.eu>

⁸ Which shall be made available at the following address: <http://www.ecompetences.eu>

It may help to stabilize the classification structures for IT competences and jobs in each country of Europe and, at company level, to provide a common language for the definition of jobs, training, training paths, qualifications, career paths, certifications, etc.

There are many potential users of the *e-Competence Framework*: It is of interest to IT practitioners who want to make progress in the exercise of their profession, as well as IT and Human Resources Managers who want to develop their staff and be plan ahead to meet future needs, Managers of training institutions who want to develop their teaching programme and students who are looking for orientations to provide guidance for the future, etc.

THE INTEGRATION OF THE *E-COMPETENCE FRAMEWORK* INTO THE CIGREF NOMENCLATURE

For five years now, CIGREF has been updating its IT business nomenclature with a view to integrating the competences from the e-CF.

In 2010, while the e-CF was being finalised, the CIGREF HR group met at two different sessions to distribute each of the competences between the different businesses in the nomenclature. This work was carried out based on the real-world experience of the companies present which use the existing reference frameworks and descriptions in their organisation. The competences for all the businesses were filled out, and all the competences were used except for competence D6, *Channel Management*, which is not relevant to user companies but to those involved in the IT ecosystem.

This document can therefore be considered to be the result of a consensus between the members of the HR group.

The summary of the breakdown of competences between the businesses can be consulted in Annex 1: Summary of roles/competences matrix (p 157)

Each role data sheet has been filled out with the competences identified. Only dimensions 1, 2 and 3 have been integrated into the role data sheets. Knowledge and skills are not presented directly in the role data sheets themselves in order to make them easier to read. They can however be accessed in the full version of the reference framework which is included in Annex 2: European e-Competence framework (p 161)

1. STEERING, ORGANISATION AND MANAGEMENT OF CHANGES TO THE INFORMATION SYSTEM

This family groups together all the roles which are generally concerned with **ensuring the organisational and functional consistency** of the Information System(s).

Most of these roles work with the *business* in compliance with the **strategic orientations** and ambitions of the company

This family comprises the following roles:

- 1.1 Information Systems Consultant
- 1.2 Functional Architect
- 1.3 Business Information System Manager
- 1.4 Applications Manager
- 1.5 Internal Customer Manager

1.1 Information Systems Consultant

1/3

Consultant	IS Engineering Contractor	Project Integrator
IS consultancy	Business-delegated Project Manager	Account Relationship Manager

MISSION

Anticipates and brings new projects to fruition by raising awareness of the contribution to be made by technologies and providing a prospective analysis of Business processes.

Assists the owner with the definition of needs and the solutions to be implemented, with a view to achieving better integration into the company's information system.

ACTIVITIES AND TASKS

Information Systems Consultancy	<p>Provides advice concerning how to optimise the use of existing tools and systems</p> <p>Keeps General Management and Business departments informed about, and raises their awareness of, technologies and the contributions that can be made by information technologies</p>
Assistance provided to Businesses or owner	<p>Makes specifications and recommendations for the development and implementation of a project or a solution</p> <p>Participates in the definition of general project specifications</p> <p>Checks the consistency of the functional and application architecture and the changes to be made to it</p> <p>Participates in the assessment and choice of a software package</p> <p>Assists Businesses or the owner with the development of service-based IT</p> <p>Makes recommendations concerning management as part of supervision of a project</p> <p>Participates in the design of the supervision plan</p>

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A3. Business Plan Development	Level 4
	Addresses the design and structure of a business or product plan including the identification of alternative approaches as well as return on investment propositions. Considers the possible and applicable sourcing models. Presents cost benefit analysis and reasoned arguments in support of the selected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests, including SWOT analysis.	<i>Provides leadership for the creation of an information system strategy that meets the requirements of the business.</i>
	A4. Product or Project Planning	Level 3
	Analyses and defines current and target status. Estimates cost effectiveness, points of risk, opportunities, strengths and weaknesses, with a critical approach. Creates structure plans; establishes time scales and milestones. Manages change requests. Defines delivery quantity and provides an overview of additional documentation requirements. Specifies correct handling of products.	<i>Exploits specialist knowledge to create and maintain complex documents of the project or product.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

1.1 Information Systems Consultant

COMPETENCES (continued)

A. PLAN	A6. Application Design	Level 1
	Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.	<i>Contributes to the design and general functional specification and interfaces.</i>
A. PLAN	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
E. MANAGE	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>
	E4. Relationship Management	Level 4
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Provides leadership for large or many client relationships. Authorizes investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships</i>
E. MANAGE	E5. Process Improvement	Level 3
	Measures effectiveness of existing ICT processes. Researches and benchmarks ICT process design from a variety of sources. Follows a systematic methodology to evaluate, design and implement process or technology changes for measurable business benefit. Assesses potential adverse consequences of process change.	<i>Exploits specialist knowledge to research existing ICT processes and solutions in order to define possible innovations. Makes recommendations based on reasoned arguments</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



1.1 Information Systems Consultant

DELIVERABLES

- Opportunity memo/emergence sheet (used to determine if it is sensible to launch the project)
- Scoping memo
- Advance study document
- General specifications

PERFORMANCE INDICATORS

Within a reasonable period of time:

- The number of requests submitted by Businesses
- The number of answers provided to questions asked by the Businesses

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	More than 10 years. Wide variety of experience. Good knowledge of the company's Businesses and the uses it makes of IS.

TRENDS AND FACTORS INFLUENCING CHANGE

Role at the intersection between Business Project Management and IT Project Management, which tends to attract professionals with dual competence (Business and IT expertise) who are capable of meeting the needs related to the rapid change in information systems.

1.2 Functional Architect

IS Architect

Enterprise Architect

Urbaniste

MISSION

The Functional Architect ensures that the development of the information system is coherent to the objectives of the company, the functional domain and the internal and external constraints (risk, cost, lead-times, etc.) and making the best use of the latest developments in technical architecture.

ACTIVITIES AND TASKS

Design of information systems	<p>Manages (construction, updates and development) the map of the information system or the sub-assembly of the system for which he/she is responsible</p> <p>Ensures the permanent integrity of the map of information system in relation to the master plan</p> <p>Specifies and validates the standards and guidelines for the architecture of the IS</p> <p>Proposes scenarios for the development and simplification of the information system taking into account the problems of decision management, developing the offer, developing requirements, organizational constraints, etc.</p>
Ensuring coherence of the Information System	Evaluates the relevance and coherence of projects regarding the target architecture and existing systems (through opportunity studies, defining requirements, choice of architecture for the functional system, etc.)
Communications	<p>Through advice and communication, promotes the map of the information system among the Business departments and the General Management</p> <p>Works in direct and permanent partnership with the Business directors on one side and the Managers of the functional and technical domains for the IS on the other</p>

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A1. IS and Business Strategy Alignment	Level 4
	Anticipates long term business requirements and determines the IS model in line with organisation policy. Makes strategic IS policy decisions for the enterprise, including sourcing strategies.	<i>Provides leadership for the construction and implementation of long term innovative IS solutions.</i>
	A5. architecture Design	Level 4
	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.	<i>Acts with wide ranging accountability to define the strategy to implement ICT technology compliant with business need. Takes account of the current technology platform, obsolescent equipment and latest technological innovations</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

1.2 Functional Architect

COMPETENCES (continued)

A. PLAN	A7. Technology Watching	Level 4
	Explores latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.	<i>Exploits wide ranging specialist knowledge of new and emerging technologies, coupled with a deep understanding of the business, to envision and articulate the solutions of the future. Provides expert guidance and advice, to the leadership teams in business and in technology, about potential innovations to support strategic decision-making.</i>
D. ENABLE	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
E. MANAGE	D2. ICT Quality Strategy Development	Level 4
	Defines, improves and refines a formal strategy to satisfy customer expectations and improve business performance (balance between cost and risks). Identifies critical processes influencing service delivery and product performance for definition in the ICT quality management system (ref D.4). Uses defined standards to formulate objectives for service management, product and process quality. Identifies ICT quality management accountability.	<i>Exploits wide ranging specialist knowledge to leverage and authorise the application of external standards and best practices.</i>
E. MANAGE	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>
E. MANAGE	E4. Relationship Management	Level 4
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Provides leadership for large or many client relationships. Authorizes investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

1.2 Functional Architect

COMPETENCES (continued)

E. MANAGE	E5. Process Improvement	Level 4
	Measures effectiveness of existing ICT processes. Researches and benchmarks ICT process design from a variety of sources. Follows a systematic methodology to evaluate, design and implement process or technology changes for measurable business benefit. Assesses potential adverse consequences of process change.	<i>Provides leadership and authorizes implementation of innovations and improvements that will enhance competitiveness or efficiency. Demonstrates to senior management the business advantage of potential changes</i>
	E7. Business Change Management	Level 3
	Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Evaluates change requirements and exploits specialist skills to identify possible methods and standards that can be deployed</i>
	E9. IT Governance	Level 4
	Defines, deploys and controls the management of Information Systems in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.	<i>Provides leadership for IT governance strategy by communicating, propagating and controlling relevant processes across the entire IT infrastructure.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- The information system map
- Plans and scenarios for IS changes
- Opportunity studies

PERFORMANCE INDICATORS

- Measurement of the agility and reactivity of the information system following a given modification (lead-time to integrate functional modifications to the IS following requests from the Businesses)

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs. engineer specializing in "design"	Minimum 10 years in project management and successful systems implementation in several functional domains.

TRENDS AND FACTORS INFLUENCING CHANGE

This role follows the complexity and rapidity of systems' development both on a technical and functional level.

It requires the capacity to integrate exogenous and increasingly interdependent elements into the information system (software, convergence platforms, etc.)

It also requires a strong understanding of the potential loss of integrity of the information system in the context of accelerating change of developments (technical, competitive, organizational, etc.) Must also adapt constantly to increasingly

frequent legal and functional changes.

1.3 Business Information System Manager



1/4

Domain Manager

MISSION

Manages the alignment of the Business's information system on the strategic orientation and Business processes by suggesting development scenarios for the information system which comply with the objectives and the processes defined, and ensuring the overall and dynamic coherence, as well as the pertinence and performance of the Business's IS.

ACTIVITIES AND TASKS

Strategic leadership	<p>Contributes to the optimization of Business processes, data, applications and associated systems (detection of opportunities, etc.)</p> <p>Participates in managing the performance of the IS, in particular the economic performance</p> <p>Through advice and communication, promotes the information system map as a tool to help with decision-making and management of performance</p> <p>Anticipates changes to the IS and their impact on the Business and vice versa</p> <p>Responsible for the management of the budget for the development of information technologies for their domain</p>
Administration of the IS	<p>Formalizes, consolidates and drives the development of the general information system map through the use of:</p> <ul style="list-style-type: none"> ➤ Functional models from the Business ➤ The architecture for the Business processes ➤ The references for basic and shared information from the Business ➤ The functional architecture of the IS (existing/proposed) <p>Participates in the administration of the information system in terms of references, rules, procedures, methodologies, Business objects and tools</p>
Project quality and management	<p>Evaluates the coherence and overall individual (portfolio) of projects in relation to the information system (existing/proposed)</p> <p>Consolidates the deviations in quality, cost and delivery</p> <p>Knowledge-building on understanding of the Business's information system:</p> <p>Ensures the quality of the project management</p> <p>Manages the skills map necessary to the development of the IS</p>

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A1. IS and Business Strategy Alignment	Level 4
	Anticipates long term business requirements and determines the IS model in line with organisation policy. Makes strategic IS policy decisions for the enterprise, including sourcing strategies.	<i>Provides leadership for the construction and implementation of long term innovative IS solutions.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

1.3 Business Information System Manager



2/4

COMPETENCES (continued)

A. PLAN	A2. Service Level Management	Level 3
	Defines, validates and makes applicable Service Level Agreements (SLA) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of customers and business.	<i>Influences and prepares the final Service Level Agreement (SLA) and accounts for the final content.</i>
	A3. Business Plan Development	Level 4
	Addresses the design and structure of a business or product plan including the identification of alternative approaches as well as return on investment propositions. Considers the possible and applicable sourcing models. Presents cost benefit analysis and reasoned arguments in support of the selected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests, including SWOT analysis.	<i>Provides leadership for the creation of an information system strategy which meets the requirements of the business.</i>
D. MANAGE	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
	D9. Personnel Development	Level 4
	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Takes proactive action and develops organisational processes to address the development needs of individuals, teams and the entire workforce.</i>
D. MANAGE	D10. Information and Knowledge Management	Level 5
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Correlates information and knowledge to create value for the business. Applies innovative solutions based on information retrieved.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

1.3 Business Information System Manager



3/4

COMPETENCES (suite)

E. ENABLE	E2. Project and Portfolio Management	Level 4
	Implements plans for a programme of change. Plans and directs a single or portfolio of ICT projects to ensure co-ordination and management of interdependencies. Orchestrates projects to develop or implement new, internal or externally defined processes to meet identified business needs. Defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. Develops contingency plans to address potential implementation issues. Delivers project on time, on budget and in accordance with original requirements. Creates and maintains documents to facilitate monitoring of project progress.	<i>Exploits wide ranging skills in project management to work beyond project boundary. Manages complex projects or programmes, including interaction with others. Influences project strategy by proposing new or alternative solutions. Takes overall responsibility for project outcomes, including finance and resource management. Is empowered to revise rules and choose standards.</i>
	E3. Risk Management	Level 2
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Understands and applies the principles of risk management and investigates ICT solutions to mitigate identified risks</i>
	E4. Relationship Management	Level 4
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Provides leadership for large or many client relationships. Authorizes investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships.</i>
	E5. Process Improvement	Level 3
Measures effectiveness of existing ICT processes. Researches and benchmarks ICT process design from a variety of sources. Follows a systematic methodology to evaluate, design and implement process or technology changes for measurable business benefit. Assesses potential adverse consequences of process change.	<i>Exploits specialist knowledge to research existing ICT processes and solutions in order to define possible innovations. Makes recommendations based on reasoned arguments</i>	
E6. ICT Quality Management	Level 2	
Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.	<i>Communicates and monitors application of the organizations quality policy</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

1.3 Business Information System Manager

COMPETENCES (continued)

E. ENABLE	E7. Business Change Management	Level 4
	Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Provides leadership to plan, manage and implement significant IT led business change</i>
	E9. IT Governance	Level 5
	Defines, deploys and controls the management of Information Systems in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.	<i>Defines and aligns the IT governance strategy incorporating it into the organizations corporate governance strategy. Adapts the IT governance strategy to take into account new significant events arising from legal, economic, political, business or environmental issues.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- All acceptance reports
- Monitoring project portfolios

PERFORMANCE INDICATORS

- Number of requests for development or correction
- Level of user satisfaction
- Level of availability of the systems
- Compliance with budgets

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs. IT or Management	A Senior Manager with at least 10 to 15 years experience in one or several Business domains who has supported IT projects, either as a Business Project Manager, or as a IT Project Manager, offering the dual IT and functional skills needed to fully understand their domain.

TRENDS AND FACTORS INFLUENCING CHANGE

This role follows the complexity and rapidity of systems' development both on a technical and functional level.

It requires the capacity to integrate exogenous and increasingly interdependent elements into the information system (software, convergence platforms, etc.).

Increasingly oriented towards researching and improving the quality of relationships between the Businesses, the Business Project Manager (where there is one) and the prime contractor.

Must integrate the development of functional architecture procedures into the management of the IS.

1.4 Applications Manager

1/4

General Systems Controller	Process / Product Manager	IS Manager
Application Controller		

MISSION

The role of the Applications Manager is to improve performance, contribute to operations and participate in the management and development of the Business's information system to render it compliant with the orientations, operating modes and processes defined at Business level.

ACTIVITIES AND TASKS

<p>Design of the development for the information system</p>	<p>Represents the Businesses or Business Project Managers throughout the everyday lifecycle of systems</p> <p>Participates in the development of rules for the operation and use of the information system</p> <p>Contributes to the construction and use of the IS and its development:</p> <ul style="list-style-type: none"> ➤ By suggesting improvements ➤ By participating in the management of ideas and proposals ➤ By participating in projects for the adaptation and development of the IS ➤ By participating in operational acceptance
<p>Implementation of the information system</p>	<p>Performs day-to-day management actions and processes for all aspects of the information systems in place (assistance, incident management, quality of service, contracts, satisfaction, training, etc.)</p> <p>Actively participates in the development and use of the information system</p> <p>In line with the Business strategy, contributes to the development of processes and of the information system. Pays particular attention, from the expression of needs onwards, to the operability of all aspects of the future system (acceptance specifications, acceptance, costs, performance, ergonomics, functional consistency)</p>
<p>Quality of the IS (performance, consistency, cost and delivery, etc.)</p>	<p>Coordinates and manages the network of people linked to the operation of the IS for the Business</p> <p>Ensures the maintenance of overall operating quality and performance of the information system of the Business (or the applications) for which they are responsible for by taking appropriate action</p> <p>Follows the rules for operation and use of the IS in compliance with Business and company standards and in accordance with defined Service Level Agreements</p> <p>Is responsible for documentation (framework memo, specifications, procedures, etc.) for the applications for which they are responsible</p> <p>Is responsible for the monitoring of and rules for operation and use of applications for which he/she is responsible</p> <p>Participates in controlling operating costs for the information system</p>

1.4 Applications Manager

COMPETENCES *(taken from the European e-Competence Framework)*

B. BUILD	B3. Testing	Level 3
	<p>Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.</p>	<p><i>Exploits specialist knowledge to supervise complex testing programmes. Ensures tests and results are documented to provide input to subsequent process owners such as Designers, users or maintainers. Accountable for compliance with testing procedures including a documented audit trail</i></p>
B. BUILD	B5. Documentation Production	Level 3
	<p>Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.</p>	<p><i>Adapts the level of detail according to the objective of the documentation and the targeted population.</i></p>
C. RUN	C1. User Support	Level 3
	<p>Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.</p>	<p><i>Manages the support process and is accountable for ensuring that agreed service levels are met. Plans resource allocation to ensure that the support is available with respect to the defined service level. Acts creatively, and seeks opportunities for continuous service improvement by analysing root causes. Manages the budget of the support function.</i></p>
C. RUN	C2. Change Support	Level 3
	<p>Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).</p>	<p><i>Ensures the integrity of the system by controlling the application of functional updates, software or hardware additions and maintenance activities. Complies with budget requirements.</i></p>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

1.4 Applications Manager

COMPETENCES (continued)

C. RUN	C3. Service Delivery	Level 2
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Systematically analyses performance data and communicates findings to senior experts. Escalates potential service level failures and recommends actions to improve service reliability. Tracks reliability data against service level agreement.</i>
	C4. Problem Management	Level 4
	Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Provides leadership and is accountable for the entire problem management process. Schedules and ensures well trained human resources, tools, and diagnostic equipment are available to meet emergency incidents. Has depth of expertise to anticipate critical component failure and make provision for recovery with minimum downtime. Constructs escalation processes to ensure that appropriate resources can be applied to each incident.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Monitoring development of applications systems
- Performance indicators for application(s)
- Applications documentation

PERFORMANCE INDICATORS

- Number of requests for development or correction
- User satisfaction levels
- Level of availability and performance of systems



1.4 Applications Manager

CAREER PATH

PROFILE	EXPERIENCE
Baccaulaureate +3 yrs. to Baccaulaureate +5 yrs. According to scope.	Functional and operational experience of the Business and the sector of activity. IS and project management experience.
<p>The positioning of the role of the Applications Manager in relation to that of the Business Information System Manager is not easy to establish.</p> <p>The consistent coordination of the two roles fundamentally depends upon:</p> <ul style="list-style-type: none"> • Organisational choices: Does the company want to place the emphasis on innovative projects, overall consistency or operational proficiency? • As well as the phase of the information lifecycle in which the company currently finds itself: Is the company in the phase of maintaining a mature, existing information system or rather in a phase of major overhaul or even of design of a new information system? 	

TRENDS AND FACTORS INFLUENCING CHANGE

As has already been underlined, on a growing number of projects, the overall success of the project depends upon the quality of the roll-out, which marks the end of the project and the start of operation of the product of project, as well as the intelligent and optimal use of existing systems by the individuals and especially the groups involved.

This was much less true in the case of earlier technologies, when the company's main efforts were put into the design and development of systems, and when there was a relatively low level of user self-sufficiency (highly-regulated working environment).

As observed in other sectors of activity, the added value is moved increasingly from upstream (production) towards downstream tasks, including customer service and use.



1.5 Internal Customer Manager

1/3

Technical Sales	Project Engineer (guarantor of quality of service to users)	(Large) Key account Engineer
Internal Customer Manager	Customer Service Manager	Facilitator

MISSION

The Internal Customer Manager coordinates the contractual relationship with the Information Systems Department and represents the customer (management, Business Project Manager, user) in dealings with the various departments of the Information Systems Department and with external suppliers.

Unites and coordinates the relationship between customers and the Information Systems Department. Highlights any ways in which these relationships are not functioning correctly and proposes improvements to information system stakeholders.

ACTIVITIES AND TASKS

Information for the Business	<p>Listening to the Business, provides information and advice on possible services and training and takes their needs into account</p> <p>Participates in users' raising awareness of security issues (backup, viruses, etc.)</p>
Analysis and monitoring of the quality of service	<p>Measures indicators / quality of service of the Information Systems Department in order to monitor users' satisfaction with the IS</p> <p>Analyses differences from service commitments (including cost and performance) and issues requests for action aimed at improving the quality of services</p>
Contractualisation of Business-DSI/Customer-supplier relationship	<p>Develops and updates service offers, costing (QCD), service agreements and contracts (service provided, quality factors, IS Dept. organisation, organisation and role of the customer)</p> <p>Organises and prepares monthly operating reviews</p> <p>Draws up assessments and reports on the activities and services provided to Businesses at contractual, economic and technical levels, as well as on aspects relating to image</p>
Manages the "Customer" problem	<p>Takes charge of the customer's problem until it is resolved</p> <p>Makes effective use of skills centres concerned</p>

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A2. Service Level Management	Level 3
	Defines, validates and makes applicable Service Level Agreements (SLA) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of customers and business.	<i>Influences and prepares the final Service Level Agreement (SLA) and accounts for the final content.</i>
D. ENABLE	D5. Sales Proposal Development	Level 4
	Develops technical proposals to meet customer solution requirements and provide sales personnel with a competitive bid. Underlines the energy efficiency and environmental impact related to a proposal. Collaborates with colleagues to align the service or product solution with the organisations capacity to deliver.	<i>Interprets and influences customer needs and the reference business contexts, proposes consultancy projects, in order to provide the ideal customer solutions, i.e. behaves as a "consultative seller"</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

1.5 Internal Customer Manager

COMPETENCES (continued)

D. ENABLE	D7. Sales Management	Level 5
	Drives the achievement of sales results through the establishment of a sales strategy. Demonstrates the added value of the organisations products and services to new or existing customers and prospects. Establishes a sales support procedure providing efficient response to sales enquiries, consistent with company strategy and policy. Establishes a systematic approach to the entire sales process, including understanding client needs, forecasting, prospect evaluation, negotiation tactics and sales closure.	<i>Assumes ultimate responsibility for the sales performance of the organization. Authorizes resource allocation, prioritizes product and service promotions, advises board directors of sales performance.</i>
	D8. Contract Management	Level 4
	Provides and negotiates contract in accordance with organisational processes. Ensures that supplier deliverables are provided on time, meet quality standards and comply with agreed service levels. Addresses non-compliance escalates significant issues, drives recovery plans and if necessary amends contracts. Maintains budget integrity. Assesses and addresses supplier compliance to legal, health and safety and security standards. Actively pursues regular supplier communication.	<i>Provides Leadership for supplier contract compliance and is the final escalation point for issue resolution.</i>
	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure.</i>
E. MANAGE	E4. Relationship Management	Level 4
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Provides leadership for large or many client relationships. Authorises investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- New projects or areas for improvement
- SLA (Service Level Agreement) for the establishment of the service contract with the Business (the customer) and reports thereon (see ITIL- Information Technology Infrastructure Library denomination)

PERFORMANCE INDICATORS

- Measurement of responsiveness in relation to customer requests
- Volume of sales



1.5 Internal Customer Manager

3/3

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs. Generalist	At least 10 years experience in the IT domain. Significant experience within the company and strong understanding of functional domains. Successful IT project management experience.
Interesting career development for IT personnel seeking to move away from purely technical responsibilities.	

TRENDS AND FACTORS INFLUENCING CHANGE

Role experiencing strong growth due to:

- Increasing technical complexity and diversification of the IT offer;
- Customers increasingly focused in controlling cost, delivery times and quality of IS projects.

2. PROJECT MANAGEMENT

This family groups together all the roles which **steer**, monitor and **coordinate** projects relating to development, deployment, IT infrastructure or methods, risks, etc.

These roles **organise** activity, resource management and communications.

This family comprises the following roles:

- 2.1 Head of Project
- 2.2 Business Project Manager
- 2.3 IT Project Manager

2.1 Head of Project



1/4

Project Manager

Programme Director

MISSION

The Project Director assumes ultimate responsibility for all dimensions of the project(s) (strategic, commercial, financial, human, legal, organisational, technical, etc.).

Manages the entirety of the project in all its complexity (multiple stakeholders, often with divergent interests, etc.).

Is the guarantor of the strategic importance of the project for the Business, the company or third parties.

ACTIVITIES AND TASKS

Project management	Ensures the pertinence and the opportunity for development of the project(s) Is responsible for all major decisions Validates the final acceptance of the project(s)
Coordination	Takes all actions necessary to lead the project to a successful conclusion Manages and coordinates communication through teams and various meetings Prepares and leads the change process
Resources management	Leads, optimises and is responsible for all project resources (human, budget, customer, final decision) Is responsible for the financial management of the project(s) as well as any requirements defined (quality, cost, delivery, etc.)

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A4. Product or Project Planning	Level 4
	Analyses and defines current and target status. Estimates cost effectiveness, points of risk, opportunities, strengths and weaknesses, with a critical approach. Creates structure plans; establishes time scales and milestones. Manages change requests. Defines delivery quantity and provides an overview of additional documentation requirements. Specifies correct handling of products.	<i>Acts with wide ranging accountability to take responsibility for complete project or product plan.</i>
	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.1 Head of Project

COMPETENCES (continued)

D. ENABLE	D2. ICT Quality Strategy Development	Level 4
	Defines, improves and refines a formal strategy to satisfy customer expectations and improve business performance (balance between cost and risks). Identifies critical processes influencing service delivery and product performance for definition in the ICT quality management system (ref D.4). Uses defined standards to formulate objectives for service management, product and process quality. Identifies ICT quality management accountability.	<i>Exploits wide ranging specialist knowledge to leverage and authorize the application of external standards and best practices.</i>
	D4. Purchasing	Level 4
	Applies a consistent procurement procedure, including deployment of the following sub processes: specification requirements, supplier identification, proposal analysis, evaluation of the energy efficiency and environmental compliance of products, suppliers and their processes, contract negotiation, supplier selection and contract placement. Ensures that the entire purchasing process is fit for purpose and adds business value to the organisation.	<i>Provides leadership for the application of the organisations procurement policies and makes recommendations for process enhancement. Applies experience and procurement practice expertise to make ultimate purchasing decisions.</i>
	D8. Contract Management	Level 2
	Provides and negotiates contract in accordance with organisational processes. Ensures that supplier deliverables are provided on time, meet quality standards and comply with agreed service levels. Addresses non-compliance escalates significant issues, drives recovery plans and if necessary amends contracts. Maintains budget integrity. Assesses and addresses supplier compliance to legal, health and safety and security standards. Actively pursues regular supplier communication.	<i>Acts systematically to monitor contract compliance and promptly escalate defaults.</i>
D9. Personnel Development	Level 4	
Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Takes proactive action and develops organizational processes to address the development needs of individuals, teams and the entire workforce.</i>	
D10. Information and Knowledge Management	Level 3	
Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure.</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.1 Head of Project

COMPETENCES (continued)

E. MANAGE	E2. Project and Portfolio Management	Level 5
	Implements plans for a programme of change. Plans and directs a single or portfolio of ICT projects to ensure co-ordination and management of interdependencies. Orchestrates projects to develop or implement new, internal or externally defined processes to meet identified business needs. Defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. Develops contingency plans to address potential implementation issues. Delivers project on time, on budget and in accordance with original requirements. Creates and maintains documents to facilitate monitoring of project progress.	<i>Provides strategic leadership for extensive interrelated programmes of work to ensure that Information Technology is a change enabling agent and delivers benefit in line with overall business strategic aims. Applies extensive business and technological mastery to conceive and bring innovative ideas to fruition.</i>
	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>
	E4. Relationship Management	Level 4
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Provides leadership for large or many client relationships. Authorizes investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships.</i>
	E6. ICT Quality Management	Level 2
Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.	<i>Communicates and monitors application of the organisations quality policy.</i>	
E7. Business Change Management	Level 4	
Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Provides leadership to plan, manage and implement significant IT led business change</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.1 Head of Project

COMPETENCES (continued)

E. MANAGE	E8. Information Security Management	Level 4
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Provides leadership for the integrity, confidentiality and availability of data stored on information systems and complies with all legal requirements</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Organization plan of managed project(s)
- Management Reporting on the alignment of the projects

PERFORMANCE INDICATORS

- Quality/Cost/Delivery indicators

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs. Initial graduate training (Manager or engineer)	7+ years as a Manager and in leading operational projects.
<p>Responsible for leading all necessary operations from the design to the development and completion of a major project. Takes full responsibility for directing the project in order to achieve the objectives (strategic, commercial, financial, organizational or other) set by the Business, in addition to "project management" itself which is the responsibility of the project Manager.</p> <p>Also ensures the identity of the project (as opposed to other participants who are not concerned with this specific aspect) and manages its progressive convergence on the objective.</p> <p>Because the Project Director may, in addition to the development of the information system for the Business, also be responsible for the marketing, commercial, economic, organisational, legal and human aspects of the project and its operation, he/she is similar to an "intrapreneur".</p>	

TRENDS AND FACTORS INFLUENCING CHANGE

Two trends in changes are to be reported:

- On the one hand, "information system" projects are now becoming more and more considerable in terms of goals, investments, organisations concerned, as well as their complexity and geographical scope;
- On the other hand, and for the same reason, there are less and less "IT" projects in the strict sense of the term, but instead there are company-wide projects concerning the overhaul of internal processes, the development of new products, the reorganisation of management networks, knowledge and customer loyalty or the overhaul of supply chains.

This function may be the peak of one's career or a stepping stone to higher functions within the company. Project management is increasingly considered by companies to be a high-level managerial competence and this rare and sought-after competence may thus be an integral part of a well-thought out career path.

2.2 Business Project Manager



1/5

User Project Manager	Project Leader	Strategic Controller

MISSION

Defines, implements and leads projects with the aim of obtaining an optimum result in compliance with the requirements of the Business, formulated and validated by or for the ordering party, as concerns quality, performance, cost, delivery and security.

ACTIVITIES AND TASKS

Responsibility for the functional content of project	<ul style="list-style-type: none"> Defines the needs of the Business, draws up general functional specifications and drafts accurate technical specifications Participates in the choice of a solution (software, development, etc.) in collaboration with the project Manager Plans the resources to be put in place (human, technical, financial, etc.) Defines and supervises the creation of prototypes and functional tests
Project leadership	<ul style="list-style-type: none"> Organises, coordinates and leads the project team Mediates in the event of any differences between the team and other parties involved Supervises project progress Coordinates, summarises and ensures the quality of validations declared Ensures the circulation and distribution of information to the Businesses Is responsible for all events occurring on the project
Preparation, deployment of the project and implementation of user support actions	<ul style="list-style-type: none"> Defines the user target Defines, at the earliest possible opportunity, the teaching method and resources for training of users Organizes training and support for users in accordance with their needs Defines the user support service Defines the details for processing development requests
Ensures the suitability of quality, cost, delivery	<ul style="list-style-type: none"> Performs acceptance of completed projects and evaluates their compliance with the specifications of the project Ensures that delivery times and costs are complied with During the project, suggests to the requestor possible modifications of objectives (quality, cost, delivery) linked to constraints in the completion or modifications to the environment Defines and manages the schedule for the progress of the project Decides on the choices to be made according to risk and results Puts in place all the indicators necessary to monitoring and managing the project, in particular for the evaluation of performance, cost and delivery

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A2. Service Level Management	Level 3
	Defines, validates and makes applicable Service Level Agreements (SLA) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of customers and business.	<i>Influences and prepares the final Service Level Agreement (SLA) and accounts for the final content.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.2 Business Project Manager

COMPETENCES (continued)

A. PLAN	A4. Product or Project Planning	Level 4
	Analyses and defines current and target status. Estimates cost effectiveness, points of risk, opportunities, strengths and weaknesses, with a critical approach. Creates structure plans; establishes time scales and milestones. Manages change requests. Defines delivery quantity and provides an overview of additional documentation requirements. Specifies correct handling of products.	<i>Acts with wide ranging accountability to take responsibility for complete project or product plan.</i>
	A6. Application Design	Level 1
	Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.	<i>Contributes to the design and general functional specification and interfaces.</i>
	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
B. BUILD	B3. Testing	Level 2
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.</i>
	B4. Solution Deployment	Level 3
	Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Accounts for own and others actions within solution provision activities including comprehensive communications with client. Exploits specialist knowledge to influence solution construction. Gives advice on aligning work processes and procedures with software upgrades.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.2 Business Project Manager

COMPETENCES (continued)

B. BUILD	B5. Documentation Production	Level 2
	Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i>
C. RUN	C2. Change Support	Level 2
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>During change, acts systematically to respond to day by day operational needs and react to them, avoiding service disruptions and maintaining coherence to service level agreement (SLA).</i>
D. ENABLE	D2. ICT Quality Strategy Development	Level 4
	Defines, improves and refines a formal strategy to satisfy customer expectations and improve business performance (balance between cost and risks). Identifies critical processes influencing service delivery and product performance for definition in the ICT quality management system (ref D.4). Uses defined standards to formulate objectives for service management, product and process quality. Identifies ICT quality management accountability.	<i>Exploits wide ranging specialist knowledge to leverage and authorise the application of external standards and best practices.</i>
	D9. Personnel Development	Level 3
D. ENABLE	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Monitors and addresses the development needs of individuals and teams.</i>
	D10. Information and Knowledge Management	Level 3
D. ENABLE	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.2 Business Project Manager

COMPETENCES (continued)

E. MANAGE	E2. Project and Portfolio Management	Level 4
	Implements plans for a programme of change. Plans and directs a single or portfolio of ICT projects to ensure co-ordination and management of interdependencies. Orchestrates projects to develop or implement new, internal or externally defined processes to meet identified business needs. Defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. Develops contingency plans to address potential implementation issues. Delivers project on time, on budget and in accordance with original requirements. Creates and maintains documents to facilitate monitoring of project progress.	<i>Exploits wide ranging skills in project management to work beyond project boundary. Manages complex projects or programmes, including interaction with others. Influences project strategy by proposing new or alternative solutions. Takes overall responsibility for project outcomes, including finance and resource management. Is empowered to revise rules and choose standards.</i>
	E3. Risk Management	Level 2
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Understands and applies the principles of risk management and investigates ICT solutions to mitigate identified risks</i>
	E4. Relationship Management	Level 3
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Accounts for own and others actions in managing a limited client base.</i>
	E6. ICT Quality Management	Level 2
Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.	<i>Communicates and monitors application of the organizations quality policy</i>	
E7. Business Change Management	Level 3	
Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Evaluates change requirements and exploits specialist skills to identify possible methods and standards that can be deployed</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.2 Business Project Manager

COMPETENCES (continued)

E. MANAGE	E8. Information Security Management	Level 2
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Project specifications
- General specifications
- Acceptance report

PERFORMANCE INDICATORS

- Notification of differences in quality, performance, cost and delivery, recorded in acceptance report(s)

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	Minimum 3 to 5 years, it being understood that the Business Project Manager for large projects will require previous experience on smaller-scale projects.
<p>The Business Project Manager is hands-on, representing users of the information system, and holds a position of responsibility central to the Business within the company.</p> <p>Generally, he/she is not a specialist in processing information.</p> <p>When the project is of a significant size and requires the establishment of a genuine project management structure, the Project Manager reports to the head of projects for the Business.</p> <p>The Business Project Manager must work in direct collaboration with the IT Project Manager, right from the start of the project. The ability to work as a partnership is a prerequisite for success.</p> <p>Entrusted to an experienced Manager, this role may lead to more important roles, such as that of Project Director, or to operational roles for the management of the Business for which the project is undertaken.</p>	

TRENDS AND FACTORS INFLUENCING CHANGE

The distribution of the project mode within companies leads them to identify the relationship between the Business Project Manager and the Information Systems Department in much greater detail, as well as defining the way in which the network operates which allows the project to rely on various internal resources.

2.3 IT Project Manager



1/7

Operating Controller

IT Project Manager

Project Manager

MISSION

Defines, implements and manages IT project in the Information System from its design stages to acceptance, with the aim of achieving an optimum result which complies with requirements formulated by the Business Project Manager as regards quality, performance, cost, delivery and security.

ACTIVITIES AND TASKS

Responsibility for technical project content	<ul style="list-style-type: none"> Defines the technical design and drafts detailed technical specifications Participates in the choice of software, in collaboration with the Business Project Manager Participates in the performance of specific development or integration tasks Defines tests to be carried out and participates in acceptance
Project leadership in the field	<ul style="list-style-type: none"> Organises, coordinates and leads the entire project management team Mediates in the event of any differences between the team and other parties involved Supervises project progress Coordinates, summarises and ensures the quality of validations declared Circulates and distributes information from the Business Project Manager Manages relationships with suppliers (from signature of the contract to final validation of the project)
Technical deployment of the project and implementation of user support actions	<ul style="list-style-type: none"> Deploys the new application or service Organises maintenance Participates in the training of users Organises user support
Ensures the suitability of quality, cost, delivery	<ul style="list-style-type: none"> Ensures that specifications are complied with Ensures that delivery times and costs are complied with During the project, suggests to the requestor possible modifications of objectives (quality, cost, delivery) linked to constraints in the completion or modifications to the environment

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A2. Service Level Management	Level 3
	Defines, validates and makes applicable Service Level Agreements (SLA) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of customers and business.	<i>Influences and prepares the final Service Level Agreement (SLA) and accounts for the final content.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.3 IT Project Manager

COMPETENCES (continued)

A. PLAN	A4. Product or Project Planning	Level 4
	Analyses and defines current and target status. Estimates cost effectiveness, points of risk, opportunities, strengths and weaknesses, with a critical approach. Creates structure plans; establishes time scales and milestones. Manages change requests. Defines delivery quantity and provides an overview of additional documentation requirements. Specifies correct handling of products.	<i>Acts with wide ranging accountability to take responsibility for complete project or product plan.</i>
	A5. architecture Design	Level 3
	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.	<i>Exploits specialist knowledge to define relevant ICT technology and specifications to be deployed in the construction of multiple ICT projects, applications or infrastructure improvements.</i>
	A6. Application Design	Level 3
Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.	<i>Accounts for own and others actions in ensuring that the application is correctly integrated within a complex environment and complies with user/customer needs</i>	
B. BUILD	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
	B1. Design and Development	Level 3
Designs and engineers software and/ or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces. Performs unit and system testing to ensure requirements are met.	<i>Acts creatively to develop and integrate components into a larger product.</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.3 IT Project Manager

COMPETENCES (continued)

B. BUILD	B2. Systems Integration	Level 3
	<p>Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.</p>	<p><i>Accounts for own and others actions in the integration process. Complies with appropriate standards and change control procedures to maintain integrity of the overall system functionality and reliability.</i></p>
		<p>And Level 4</p> <p><i>Exploits wide ranging specialist knowledge to create a process for the entire integration cycle, including the establishment of internal standards of practice. Provides leadership to marshal and assign resources for programmes of integration.</i></p>
	B3. Testing	Level 2
	<p>Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.</p>	<p><i>Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.</i></p>
B4. Solution Deployment	Level 3	
<p>Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addresses, configuration and performance data.</p>	<p><i>Accounts for own and others actions within solution provision activities including comprehensive communications with client. Exploits specialist knowledge to influence solution construction. Gives advice on aligning work processes and procedures with software upgrades.</i></p>	
B5. Documentation Production	Level 2	
<p>Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.</p>	<p><i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i></p>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

2.3 IT Project Manager



COMPETENCES (continued)

C. RUN	C2. Change Support	Level 3
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>Ensures the integrity of the system by controlling the application of functional updates, software or hardware additions and maintenance activities. Complies with budget requirements.</i>
D. ENABLE	D2. ICT Quality Strategy Development	Level 4
	Defines, improves and refines a formal strategy to satisfy customer expectations and improve business performance (balance between cost and risks). Identifies critical processes influencing service delivery and product performance for definition in the ICT quality management system (ref D.4). Uses defined standards to formulate objectives for service management, product and process quality. Identifies ICT quality management accountability.	<i>Exploits wide ranging specialist knowledge to leverage and authorise the application of external standards and best practices.</i>
	D4. Purchasing	Level 2
	Applies a consistent procurement procedure, including deployment of the following sub processes: specification requirements, supplier identification, proposal analysis, evaluation of the energy efficiency and environmental compliance of products, suppliers and their processes, contract negotiation, supplier selection and contract placement. Ensures that the entire purchasing process is fit for purpose and adds business value to the organisation	<i>Understands and applies the principles of the procurement process; places orders based on existing supplier contracts. Ensures the correct execution of orders, including validation of deliverables and correlation with subsequent payments.</i>
		Or Level 3
		<i>Exploits specialist knowledge to deploy the purchasing process, ensuring positive commercial relationships with suppliers. Selects suppliers, products and services by evaluating performance, cost, timeliness and quality. Decides contract placement and complies with organisational policies.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.3 IT Project Manager

COMPETENCES (continued)

D. ENABLE	D8. Contract Management	Level 2
	Provides and negotiates contract in accordance with organisational processes. Ensures that supplier deliverables are provided on time, meet quality standards and comply with agreed service levels. Addresses non-compliance escalates significant issues, drives recovery plans and if necessary amends contracts. Maintains budget integrity. Assesses and addresses supplier compliance to legal, health and safety and security standards. Actively pursues regular supplier communication.	<i>Acts systematically to monitor contract compliance and promptly escalate defaults.</i>
	D9. Personnel Development	Level 3
	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Monitors and addresses the development needs of individuals and teams.</i>
E. MANAGE	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure</i>
	E2. Project and Portfolio Management	Level 4
E. MANAGE	Implements plans for a programme of change. Plans and directs a single or portfolio of ICT projects to ensure co-ordination and management of interdependencies. Orchestrates projects to develop or implement new, internal or externally defined processes to meet identified business needs. Defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. Develops contingency plans to address potential implementation issues. Delivers project on time, on budget and in accordance with original requirements. Creates and maintains documents to facilitate monitoring of project progress.	<i>Exploits wide ranging skills in project management to work beyond project boundary. Manages complex projects or programmes, including interaction with others. Influences project strategy by proposing new or alternative solutions. Takes overall responsibility for project outcomes, including finance and resource management. Is empowered to revise rules and choose standards.</i>
	E3. Risk Management	Level 2
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Understands and applies the principles of risk management and investigates ICT solutions to mitigate identified risks</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



2.3 IT Project Manager

COMPETENCES (continued)

E. MANAGE	E4. Relationship Management	Level 3
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Accounts for own and others actions in managing a limited client base.</i>
	E6. ICT Quality Management	Level 2
	Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.	<i>Communicates and monitors application of the organizations quality policy</i>
	E7. Business Change Management	Level 3
	Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Evaluates change requirements and exploits specialist skills to identify possible methods and standards that can be deployed</i>
E8. Information Security Management	Level 2	
Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Detailed functional specifications for the project
- Acceptance report

PERFORMANCE INDICATORS

- Notification of differences in quality, performance, cost and delivery, recorded in acceptance report(s)

2.3 IT Project Manager



7/7

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	3 to 5 years, it being understood that the Business Project Manager for large projects will require previous experience in smaller-scale projects.
<p>For a dominant information system, the IT Project Manager generally comes from the Information Systems Department.</p> <p>When the project is of a significant size and requires the establishment of a genuine project management structure, the IT Project Manager reports to the head of the project for the business.</p>	

TRENDS AND FACTORS INFLUENCING CHANGE

Is a specialist in processing information, but skills widely exceed this domain and the IT Project Manager must be able to dialogue effectively with the Business Project Manager about Business concerns.

The distribution of the project mode within companies leads them to attempt to identify the relationship between the Business Project Manager and the Project Manager in much greater detail, as well as defining the way in which the network operates which allows the project to rely on various internal resources.

3. APPLICATION LIFECYCLE

This family groups the roles associated with **design, development** and the **technical and applications production** of projects.

These roles are not involved in IS organisation but instead work on the building blocks implemented to **integrate, design** and **maintain** IT solutions.

This family comprises the following roles:

- 3.1 Application Domain Manager
- 3.2 Programmer
- 3.3 Test Manager
- 3.4 Applications Architect
- 3.5 Software Configuration Officer

3.1 Application Domain Manager



1/4

Applications Manager	IT Liaison Officer for Applications	Head of IT for Systems
Head of Application Group	Head of Operational Maintenance for Applications	

MISSION

Performs and coordinates corrective and applications maintenance activities for the system under his/her responsibility. Also provides level 2 support and advice for service contracts and the Quality Plan. Also responsible for ensuring the upkeep of functional and technical skills required for the longevity of the application.

ACTIVITIES AND TASKS

Management of software configuration	<p>Provides support and advice concerning the use of the applications system under his/her responsibility</p> <p>Checks and ensures the operational quality and performance of the applications under his/her responsibility</p> <p>Coordinates corrective, preventive and developmental maintenance</p>
Management of quality of configuration	<p>Applies standards, methods and tools</p> <p>Checks the application mapping used as part of the reference framework used for the planning of architecture</p> <p>Identifies and updates the document repository for the applications system under his/her responsibility</p> <p>Ensures the upkeep of knowledge concerning solutions used for maintenance (Knowledge Management - KM)</p>
Communications	<p>Is the primary point of contact within the Information Systems Department for users of his/her application</p> <p>Is the primary point of contact for IT production for the application under his/her responsibility</p>

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
B. BUILD	B2. Systems Integration	Level 3
	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Accounts for own and others actions in the integration process. Complies with appropriate standards and change control procedures to maintain integrity of the overall system functionality and reliability.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



3.1 Application Domain Manager

COMPETENCES (continued)

B. BUILD	B3. Testing	Level 2
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.</i>
	B4. Solution Deployment	Level 3
	Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Accounts for own and others actions within solution provision activities including comprehensive communications with client. Exploits specialist knowledge to influence solution construction. Gives advice on aligning work processes and procedures with software upgrades.</i>
	B5. Documentation Production	Level 3
	Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Adapts the level of detail according to the objective of the documentation and the targeted population.</i>
C. RUN	C1. User Support	Level 2
	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Systematically interprets user problems identifying the solutions and possible side effects. Uses experience to identifying user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents to senior experts. Records and tracks user support procedures from outset to conclusion.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



3.1 Application Domain Manager

COMPETENCES (suite)

C. RUN	C2. Change Support	Level 2
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>During change, acts systematically to respond to day by day operational needs and react to them, avoiding service disruptions and maintaining coherence to service level agreement (SLA).</i>
	C3. Service Delivery	Level 1
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Acts under guidance to record and track reliability data .</i>
D. ENABLE	C4. Problem Management	Level 3
	Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Exploits specialist knowledge and in-depth understanding of the ICT infrastructure and problem management process to identify failures and resolve with minimum outage. Makes sound decisions in emotionally charged environments on appropriate action required to minimise business impact. Rapidly identifies failing component, selects alternatives such as repair, replace or reconfigure.</i>
	D9. Personnel Development	Level 3
D. ENABLE	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Monitors and addresses the development needs of individuals and teams.</i>
	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



3.1 Application Domain Manager

COMPETENCES (continued)

E. MANAGE	E4. Relationship Management	Level 3
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Accounts for own and others actions in managing a limited client base.</i>

DELIVERABLES

- Managing the configuration of the updated applications software

PERFORMANCE INDICATORS

- Speed of resolution of incidents
- Availability of his/her applications
- Time necessary for completion of developments

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +2 yrs.. BTS (French further education Technical certificate) or DUT (French University Diploma in Technology)	

TRENDS AND FACTORS INFLUENCING CHANGE

The scope of the role of the Application Domain Manager may encompass several applications.
May move into Project Manager roles.

3.2 Programmer



1/3

Programming Analyst	Development Analyst	IT Production Engineer
Functional Analyst	Production Analyst	

MISSION

At the request of the project management, and based on the functional specifications it has issued, the Programmer analyses, configures, and writes code for new application software components to meet the changes requested and in compliance with standards and procedures.

ACTIVITIES AND TASKS

Analysis	<ul style="list-style-type: none"> Contributes to the definition of general specifications Performs the technical analysis and the detailed study Adapts and configures application software packages (ERP) Performs prototyping
Qualification	<ul style="list-style-type: none"> Configures test cases for integration and unit tests Performs unit tests Identifies and resolves malfunctions
Development	<ul style="list-style-type: none"> Creates modules (applications objects and components) Assembles components Writes the documentation
Maintenance	<ul style="list-style-type: none"> Is responsible for corrective maintenance Is responsible for developmental maintenance Administrates reusable software components and updates the nomenclature for these components

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A6. Application Design	Level 1
	Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.	<i>Contributes to the design and general functional specification and interfaces.</i>
	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

3.2 Programmer

COMPETENCES (continued)

B. BUILD	B1. Design and Development	Level 2
	<p>Designs and engineers software and/ or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces. Performs unit and system testing to ensure requirements are met.</p>	<p><i>Systematically develops small components.</i></p>
		And Level 3
		<p><i>Acts creatively to develop and integrate components into a larger product.</i></p>
		And Level 4
		<p><i>Handles complexity by developing standard procedures and architectures in support of cohesive product development.</i></p>
	B2. Systems Integration	Level 2
	<p>Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.</p>	<p><i>Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.</i></p>
	B3. Testing	Level 2
	<p>Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.</p>	<p><i>Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.</i></p>
B4. Solution Deployment	Level 2	
<p>Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.</p>	<p><i>Acts systematically to build or deconstruct system elements. Identifies non performing components and establishes root cause of failure within the overall solution. Provides support to less experienced colleagues.</i></p>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



3.2 Programmer

COMPETENCES (continued)

B. BUILD	B5. Documentation Production	Level 2
	<p>Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.</p>	<p><i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i></p>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Code documented according to company rules and guidelines

PERFORMANCE INDICATORS

- Number of corrections in acceptance phase
- Performance of components developed (via benchmarks)
- Compliance with deadlines for completion of modifications
- Number of regressions

CAREER PATH

PROFILE	EXPERIENCE
<p>Baccalaureate +2 yrs.. BTS (French further education Technician's certificate) or DUT (French University Diploma in Technology)</p>	

TRENDS AND FACTORS INFLUENCING CHANGE

Due to increasing use of software, this role may progressively include software configuration tasks.

Importance of use of information systems increasingly taken into consideration.

Concern over reuse of developments.

Pronounced current trend in outsourcing or use of sub-contractors.



3.3 Test Manager

Product Assurance Controller	Certifications Officer	Qualifications Officer
Test Analyst		

MISSION

Must ensure that delivered products comply with needs and specifications. This applies to existing systems, innovations and changes, remedial action taken for incidents, or new products.

ACTIVITIES AND TASKS

Some Test Managers may have a team under their control.

The Test Manager carries out the following steps in coordination with the IT Project Manager.

Organising tests	Plans the different testing tasks, taking into account material constraints, and constraints in terms of human resources and environments
Designing tests	Ensures that the deliverables necessary for the creation of a test plan are received Drafts functional qualification plans with other stakeholders (key users, project Managers, etc.) Drafts installation, integration and operating test plans according to the business case or run book Organises and updates test configurations, in compliance with installation processes
Carrying out tests	Sets up test monitoring tools Coordinates test execution, and the monitoring of anomalies Reports back to the project Manager Drafts the qualification file Organises archiving, reporting, and operating procedures Updates test templates (standard configurations)

COMPETENCES *(taken from the European e-Competence Framework)*

B2. Systems Integration		Level 2
B. BUILD	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

3.3 Test Manager

COMPETENCES (continued)

B. BUILD	B3. Testing	Level 3
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Exploits specialist knowledge to supervise complex testing programmes. Ensures tests and results are documented to provide input to subsequent process owners such as Designers, users or maintainers. Accountable for compliance with testing procedures including a documented audit trail</i>
	B4. Solution Deployment	Level 2
Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Acts systematically to build or deconstruct system elements. Identifies non performing components and establishes root cause of failure within the overall solution. Provides support to less experienced colleagues.</i>	
	B5. Documentation Production	Level 2
Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i>	
D. ENABLE	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

3.3 Test Manager



CIGREF

3/3

DELIVERABLES

- Acceptance reports

PERFORMANCE INDICATORS

- Compliance with deadlines
- Obligation fulfilment
- Production incidents rate

CAREER PATH

PROFILE	EXPERIENCE
Baccaureate +2 yrs. BTS (French further education Technician's certificate) or DUT (French University Diploma in Technology)	

TRENDS AND FACTORS INFLUENCING CHANGE

Since they are familiar with the applications, they could move on to research functions, to carry out applications analyses.
 If they initially came from Business departments, they could move on to the Business Project Manager role.



3.4 Applications Architect

Development Integrator	Integrator- Designer	Integrator onto Platforms
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MISSION

Under the jurisdiction of the IT Project Manager, participates in choosing different software components (software packages, databases, specific developments, etc.), and ensures that IS and enterprise architecture plans set out for the project are adhered to.

ACTIVITIES AND TASKS

The Applications Architect plays a role in implementing new or existing applications.

Identifying and selecting the project's technical components	Under the jurisdiction of the IT Project Manager, defines and implements functional and technical IS architecture for applications he is in charge of Uses existing objects from the systems map when possible
Receiving, validating, and assembling components	Assembles and integrates components Can carry out pre-operating tests and acceptance procedures
Defining interfaces, and potential changes to components so that they can be integrated	If necessary, modifies or creates new components Configures and creates interfaces
Delivering the developed system to the Operations Integrator	Along with the Business Project Manager, drafts tutorials Documents the delivered system Delivers the software solution to the Operations Integrator

COMPETENCES *(taken from the European e-Competence Framework)*

A5. architecture Design		Level 3
A. PLAN	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.	<i>Exploits specialist knowledge to define relevant ICT technology and specifications to be deployed in the construction of multiple ICT projects, applications or infrastructure improvements.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

3.4 Applications Architect

COMPETENCES (continued)

A. PLAN	A6. Application Design	Level 1
	Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.	<p><i>Contributes to the design and general functional specification and interface</i></p> <p>Or Level 3</p> <p><i>Accounts for own and others actions in ensuring that the application is correctly integrated within a complex environment and complies with user/customer needs</i></p>
B. BUILD	B2. Systems Integration	Level 4
	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Exploits wide ranging specialist knowledge to create a process for the entire integration cycle, including the establishment of internal standards of practice. Provides leadership to marshal and assign resources for programmes of integration.</i>
	B3. Testing	Level 2
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.</i>
	B4. Solution Deployment	Level 1
	Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Performs under guidance and in accordance with detailed instructions, the removal or installation of individual components</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



3.4 Applications Architect

COMPETENCES (continued)

B. BUILD	B5. Documentation Production	Level 2
	Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- An operable, documented applications system.

PERFORMANCE INDICATORS

- Success rate of non-regression tests and loading tests
- Production incidents rate

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +3 yrs. to 5 yrs. with experience in research and development	Preferably from a technical background (research and development); must have extensive experience of the various technologies to be put into place.

TRENDS AND FACTORS INFLUENCING CHANGE

Strong demand for Applications Architect:

- for software package type components in projects
- because of the complex nature and proliferation of technologies and components to master



3.5 Software Configuration Officer

1/3

ERP Configuration Officer

Expert Module

MISSION

On request from the IT Project Manager, or Business Project Manager, and based on functional specifications, the Software Configuration Officer analyses, configures, and creates prototypes of new software package components, and makes changes as necessary to components, in compliance with standards and procedures.

Provides assistances, and expertise on software packages and connected modelling processes.

ACTIVITIES AND TASKS

Analysis	<p>Creates prototypes in coordination with the functional expert, and Database Administrator</p> <p>Accounts for the gap between user needs, and software package standards</p> <p>Carries out the functional analysis of needs, and creates interfaces with other applications in the company's Information Systems</p>
Development	<p>Adapts and configures software package components</p> <p>Models processes according to the appropriate methodology for the software package.</p> <p>Participates in creating interfaces</p> <p>Drafts corresponding documents</p> <p>Participates in creating user guides.</p>
Qualification and testing	<p>Configures test cases for integration and unit tests</p> <p>Tests internal software developments, and products supplied by software developers</p> <p>Identifies and corrects malfunctions</p>
Maintenance	<p>Carries out ongoing and corrective maintenance with tools and resources from software developers</p> <p>Monitors product progress, and actions taken, in a database</p>

COMPETENCES *(taken from the European e-Competence Framework)*

A6. Application Design		Level 1
A. PLAN	<p>Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.</p>	<p><i>Contributes to the design and general functional specification and interfaces.</i></p>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

3.5 Software Configuration Officer

COMPETENCES (continued)

B. BUILD	B1. Design and Development	Level 2
	<p>Designs and engineers software and/ or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces. Performs unit and system testing to ensure requirements are met.</p>	<p><i>Systematically develops small components.</i></p>
		And Level 3
		<p><i>Acts creatively to develop and integrate components into a larger product.</i></p>
		And Level 4
		<p><i>Handles complexity by developing standard procedures and architectures in support of cohesive product development.</i></p>
	B2. Systems Integration	Level 2
	<p>Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.</p>	<p><i>Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.</i></p>
	B3. Testing	Level 2
	<p>Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.</p>	<p><i>Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.</i></p>
B4. Solution Deployment	Level 2	
<p>Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.</p>	<p><i>Acts systematically to build or deconstruct system elements. Identifies non performing components and establishes root cause of failure within the overall solution. Provides support to less experienced colleagues</i></p>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



3.5 Software Configuration Officer

COMPETENCES (continued)

B. BUILD	B5. Documentation Production	Level 2
	<p>Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.</p>	<p><i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i></p>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Operational software package

PERFORMANCE INDICATORS

- User satisfaction levels
- Compliance with deadlines

CAREER PATH

PROFILE	EXPERIENCE
<p>Baccalaureate +2 yrs. or 3 yrs. or Business users moving towards the Information Systems Department</p>	<p>First experience in software development, or a similar project.</p>
<p>Potential for becoming a mainframe developer.</p>	

TRENDS AND FACTORS INFLUENCING CHANGE

- Limited job mobility (especially to other specific software development roles).
- Must take into account new standards concerning service oriented architecture (SOA), and Web 2.0.

4. MAKING AVAILABLE AND IN-SERVICE SUPPORT OF INFRASTRUCTURES

This family groups together the roles related to infrastructures.

It also includes roles linked to the Information Systems Department's

This family comprises the following roles:

- 4.1 Backoffice Technician
- 4.2 Desktop Technician
- 4.3 Network & Telecom Technician
- 4.4 Networks / Tools / Systems Administrator
- 4.5 Database Administrator
- 4.6 Production Systems Integrator
- 4.7 Operations Controller
- 4.8 Operating Systems Expert
- 4.9 Network & Telecom Expert
- 4.10 Technical Architect

4.1 Backoffice Technician



1/2

IT Operator	Operator/ console Operator	Operating employee
IT Platform Manager	Resources Controller	

MISSION

The Backoffice Technician ensures everyday management of operations (off-network), in compliance with deadlines and expected quality standards. Monitors the running of logical and physical IT equipment, according to standards frameworks, operating methods and safety procedures.

ACTIVITIES AND TASKS

Operations	<ul style="list-style-type: none"> Carries out IT work, and passes on production results in compliance with expected delivery and quality standards Supervises printing Monitors how on-site resources are operating Monitors the operation of production systems and tools Monitors applications operations Inspects the management and quality of products
Incident and security management	<ul style="list-style-type: none"> Manages operating incidents (diagnostics, action taken, alerts) Carries out applications maintenance for frontline troubleshooting Informs users Monitors any action taken Participates in ensuring that IT equipment and premises are safe and secure
	<ul style="list-style-type: none"> Ensures that data is sufficiently protected, in terms of archiving and backup Manages magnetic mediums (disks, robots, automatons) Manages the necessary material resources

COMPETENCES *(taken from the European e-Competence Framework)*

	B2. Systems Integration	Level 2
B. BUILD	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.</i>
	C1. User Support	Level 1
C. RUN	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Routinely interacts with users, applies ICT-product, basic knowledge and skill to respond to user requests. Solves simple incidents, following prescribed procedures.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.1 Backoffice Technician

COMPETENCES (continued)

C. RUN	C3. Service Delivery	Level 1
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Acts under guidance to record and track reliability data</i>
C. RUN	C4. Problem Management	Level 2
	Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Identifies and classifies incident types and service interruptions. Records incidents cataloguing them by symptom and resolution.</i>
E. MANAGE	E8. Information Security Management	Level 2
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Operations monitoring reports

PERFORMANCE INDICATORS

- Compliance with Service Level Agreements (SLA)

CAREER PATH

PROFILE	EXPERIENCE
Baccaureate (A-level equivalent) with IT module Baccaureate +2 yrs..	Past experience not strictly necessary.

TRENDS AND FACTORS INFLUENCING CHANGE

Staff numbers in this Business are being reduced, due to:

- server consolidation
- a reduction in the number of datacenters
- subcontracting
- outsourcing

4.2 Desktop Technician



1/4

Personal Computing Technician	Maintenance support Technician	Personal Computing Assistant
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MISSION

During software deployment projects, ensures that IT or telephony equipment (software or hardware) linked to workstations is well installed, and fully operational. Upon request by users, maintains equipment (on-site or remotely), and deals with incidents.

ACTIVITIES AND TASKS

Installation, testing and acceptance	<ul style="list-style-type: none"> Carries out initial installation of IT or telephony equipment (applications, personal computing hardware, telephony hardware or accessories) Installs updates Deploys software remotely, according to a deployment plan Carries out testing and acceptance of IT and/or telephony equipment
Operations	<ul style="list-style-type: none"> Remotely deals with incidents with personal computers, networks, messaging or telephony services Manages incident response plans Carries out incident diagnostics, and deals with them Manages IT equipment linked to the network
Maintenance, administration, and security	<ul style="list-style-type: none"> Monitors equipment over time Administers messaging services for the client portion of workstations (connections, operations). Defines data for remote distribution (targets, dependency, profiles, etc.) and remote maintenance Checks that equipment is compliant with guidelines
Support	<ul style="list-style-type: none"> Provides support for users of installed equipment and software

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
B. BUILD	B2. Systems Integration	Level 2
	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.2 Desktop Technician

COMPETENCES (continued)

B. BUILD	B3. Testing	Level 1
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Performs simple tests in strict compliance with detailed instructions</i>
	B4. Solution Deployment	Level 1
	Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Performs under guidance and in accordance with detailed instructions, the removal or installation of individual components.</i>
	B5. Documentation Production	Level 1
	Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Uses and applies standards to define document structure.</i>
C. RUN	C1. User Support	Level 2
	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Systematically interprets user problems identifying the solutions and possible side effects. Uses experience to identifying user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents to senior experts. Records and tracks user support procedures from outset to conclusion.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.2 Desktop Technician

COMPETENCES (continued)

C. RUN	C2. Change Support	Level 2
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>During change, acts systematically to respond to day by day operational needs and react to them, avoiding service disruptions and maintaining coherence to service level agreement (SLA).</i>
	C3. Service Delivery	Level 1
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Acts under guidance to record and track reliability data</i>
E. MANAGE	C4. Problem Management	Level 2
	Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Identifies and classifies incident types and service interruptions. Records incidents cataloguing them by symptom and resolution.</i>
	E8. Information Security Management	Level 2
Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Operational workstations
- Incident reports

PERFORMANCE INDICATORS

- Client satisfaction levels



4.2 Desktop Technician

4/4

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate Pro level (BTEC equivalent) or Baccalaureate +2 yrs.	

TRENDS AND FACTORS INFLUENCING CHANGE

To industrialise maintenance processes, call centres are set up so that Technicians can carry out diagnostics, frontline support, or possibly escalation procedures, or take on-site action.

Technician roles will also change with the introduction of new equipment, increasingly complex facilities, procedures, tests and incident causes (interconnections, increase in the number of external devices, etc.).

A role which is increasingly affected by technological changes: regular training is required.

A role requiring more and more competences relating to customer services.

4.3 Network & Telecom Technician



1/4

Telecommunications Technician

Network Maintenance Technician

Network & telecommunications
Technician

MISSION

The Networks & Telecoms Technician ensures that the networks or telecoms they are responsible for run smoothly, and are available.

They prevent network or telecoms malfunctions, and contribute to the smooth running of Information Systems.

ACTIVITIES AND TASKS

Installation and testing	<ul style="list-style-type: none"> Installs the active part of connectors (hubs, bridges, routers), IT equipment (connected workstations and servers), and network software Adheres to hardware and software installation and connection procedures Installs updates Tests network equipment
Operations	<ul style="list-style-type: none"> Manages incident responses Deals with incidents with the telephony or IT networks Monitors resources (hubs, network printers, servers, connected workstations, etc.)
Administration and security	<ul style="list-style-type: none"> Installs security, backup and metrology tools Checks that security procedures for access to technical premises are complied with, and reports any anomalies Manages and maintains technical infrastructures (routers, hubs, concentrators, wiring, etc.) Monitors equipment over time Operates and administers the network under his control Checks that equipment is compliant with reference frameworks

COMPETENCES *(taken from the European e-Competence Framework)*

B. BUILD	B2. Systems Integration	Level 2
	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.</i>
B. BUILD	B3. Testing	Level 1
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Performs simple tests in strict compliance with detailed instructions</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.3 Network & Telecom Technician

COMPETENCES (continued)

B. BUILD	B4. Solution Deployment	Level 1
	Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Performs under guidance and in accordance with detailed instructions, the removal or installation of individual components.</i>
B. BUILD	B5. Documentation Production	Level 1
	Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Uses and applies standards to define document structure.</i>
C. RUN	C1. User Support	Level 2
	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Systematically interprets user problems identifying the solutions and possible side effects. Uses experience to identifying user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents to senior experts. Records and tracks user support procedures from outset to conclusion.</i>
C. RUN	C2. Change Support	Level 2
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>During change, acts systematically to respond to day by day operational needs and react to them, avoiding service disruptions and maintaining coherence to service level agreement (SLA).</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.3 Network & Telecom Technician

COMPETENCES (continued)

C. RUN	C3. Service Delivery	Level 2
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Systematically analyses performance data and communicates findings to senior experts. Escalates potential service level failures and recommends actions to improve service reliability. Tracks reliability data against service level agreement.</i>
C. RUN	C4. Problem Management	Level 2
	Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Identifies and classifies incident types and service interruptions. Records incidents cataloguing them by symptom and resolution.</i>
E. MANAGE	E8. Information Security Management	Level 2
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Network equipment they are responsible for
- Incident reports

PERFORMANCE INDICATORS

- Compliance with SLAs

4.3 Network & Telecom Technician



CIGREF

4/4

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +2 yrs.. Specialised in networks and telecoms	No experience necessary.

TRENDS AND FACTORS INFLUENCING CHANGE

To industrialise maintenance processes, call centres are set up so that Networks & Telecoms Technicians can carry out assessments and frontline support, and possibly take on-site action or initialise escalation procedures.

The Networks & Telecoms Technician role will also change along with:

- the introduction of new equipment
- the increasing complexity of facilities, procedures, tests and incident causes (interconnections, increase in the number of external devices, etc.)
- convergence of voice technology towards IT

4.4 Networks / Tools / Systems Administrator



1/4

Groupware Administrator	Lan Administrator	Voice Communications Administrator
E-mail Administrator	EDI Administrator	Systems Analyst

MISSION

Sets up, administers and operates the IT resources of one or more IT sites.

Helps Information Systems to run correctly by ensuring the maintenance of the various tools and/or infrastructures of systems software and/or communications infrastructures (on-site, global, voices, images, centralised architecture or client/server), thus improving quality, productivity and security.

ACTIVITIES AND TASKS

Administration	<ul style="list-style-type: none"> Ensures that tools, systems or networks he is responsible for operate at optimum capacity Sets up tools to ensure data consistency Has an up-to-date overview of Information Systems, and knows the company well Sets up a permanent inventory, and manages the various components of the various networks Monitors and analyses performances; implements measures liable to improve the tool's quality or productivity Establishes the tool's usage rules, in compliance with the company's standards and norms, and SLAs. Documents, promotes and checks their implementation Organises and optimises the resources in his area
Operations	<ul style="list-style-type: none"> Authorises the implementation and integration of new tools (systems, networks, telecoms) into the production environment Manages server and application access rights according to staff profiles Deals with incidents or anomalies, starting with internal requests: incident diagnostics, identification, formulating and carrying out remedial action
Support	<ul style="list-style-type: none"> Takes part in corrective maintenance actions, and ensures they are of the highest quality Suggests improvements to optimise and organise existing resources Provides procedural technical assistance to operating teams, transfers competences to them, and potentially trains them
Maintenance and security	<ul style="list-style-type: none"> Controls access to IS resources (in general) Manages changes to, and maintenance of hardware, software, and Information Systems Manages performances (alert thresholds, optimising the use of department resources and products)
Studies	<ul style="list-style-type: none"> Carries out studies on implementation requirements for adapted hardware, tools, and software Monitors the technologies used in the various areas of communications and systems infrastructures (hardware, software, architecture, protocols, transfer modes)

4.4 Networks / Tools / Systems Administrator



2/4

COMPETENCES (taken from the European e-Competence Framework)

B. BUILD	B2. Systems Integration	Level 3
	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Accounts for own and others actions in the integration process. Complies with appropriate standards and change control procedures to maintain integrity of the overall system functionality and reliability.</i>
	B3. Testing	Level 2
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.</i>
	B4. Solution Deployment	Level 2
Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Acts systematically to build or deconstruct system elements. Identifies non performing components and establishes root cause of failure within the overall solution. Provides support to less experienced colleagues.</i>	
B5. Documentation Production	Level 2	
Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.4 Networks / Tools / Systems Administrator



CIGREF

3/4

COMPETENCES (continued)

C. RUN	C1. User Support	Level 2
	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Systematically interprets user problems identifying the solutions and possible side effects. Uses experience to identifying user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents to senior experts. Records and tracks user support procedures from outset to conclusion.</i>
	C2. Change Support	Level 2
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>During change, acts systematically to respond to day by day operational needs and react to them, avoiding service disruptions and maintaining coherence to service level agreement (SLA).</i>
		And Level 3
		<i>Ensures the integrity of the system by controlling the application of functional updates, software or hardware additions and maintenance activities. Complies with budget requirements.</i>
	C3. Service Delivery	Level 2
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Systematically analyses performance data and communicates findings to senior experts. Escalates potential service level failures and recommends actions to improve service reliability. Tracks reliability data against service level agreement.</i>
C4. Problem Management	Level 2	
Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Identifies and classifies incident types and service interruptions. Records incidents cataloguing them by symptom and resolution. .</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.4 Networks / Tools / Systems Administrator



4/4

COMPETENCES (continued)

D. ENABLE	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure.</i>
E. MANAGE	E8. Information Security Management	Level 2
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Technical, documented systems map of tools, and telecoms and Information Systems.

PERFORMANCE INDICATORS

- Technical incident rate for administered tools.
- Response capacity when dealing with anomalies.

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +2 yrs. to Baccalaureate +4 yrs.	3 to 5 years experience in a production, operations or support environment.
Possibility of becoming an Backoffice Technician.	

TRENDS AND FACTORS INFLUENCING CHANGE

The increasing interconnectivity of platforms, and the proliferation of system and network tools in production environments require more and more Administrators, whose competences differ from those of an Backoffice Technician or engineer.-

4.5 Database Administrator



1/4

DBADM, DBA

MISSION

Manages and administrates the company's database management systems, makes sure they are consistent, secure, and of a high standard.

Takes part in establishing and implementing databases and software packages chosen by the company.

ACTIVITIES AND TASKS

Administration	<p>Chooses which databases to implement</p> <p>Creates databases in coordination with the relevant Systems Administrator and project Managers</p> <p>Implements database management software Adapts, administers and maintains this software</p> <p>Sets up data servers (administration, automation, procedural development, security and access authorisations, optimising data processing and queries, etc.).</p> <p>Upon request by departments or facilities, creates specific tools to aid operations</p>
Operations	<p>Ensures the integrity of existing databases by securing hardware (backup procedures, data recovery, logging, post-incident start-up, etc.) and electronic information (confidentiality, access)</p> <p>Implements monitoring tools</p> <p>Configures database parameters for optimal usage</p>
Support	<p>Provides assistance to users (training, technical queries, etc.)</p> <p>Carries out level 2 technical support for all databases</p> <p>Is a technical coordinator between project Managers and developers' technical support teams</p>
Assessments and inspections	<p>Monitors the technology used in DBMS, and software packages used by the company</p> <p>Monitors and inspects changes to existing databases and software packages used by the company</p> <p>For technical aspects, tests and validates all software and software packages.</p> <p>Sets the operating standards and norms for DBMS</p>

COMPETENCES *(taken from the European e-Competence Framework)*

B. BUILD	B1. Design and Development	Level 2
	<p>Designs and engineers software and/ or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces.</p> <p>Performs unit and system testing to ensure requirements are met.</p>	<p><i>Systematically develops small components.</i></p>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.5 Database Administrator

COMPETENCES (continued)

B. BUILD	B2. Systems Integration	Level 2
	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.</i>
	B3. Testing	Level 2
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.</i>
	B4. Solution Deployment	Level 2
Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Acts systematically to build or deconstruct system elements. Identifies non performing components and establishes root cause of failure within the overall solution. Provides support to less experienced colleagues.</i>	
B5. Documentation Production	Level 2	
Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.5 Database Administrator

COMPETENCES (continued)

C. RUN	C1. User Support	Level 2
	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Systematically interprets user problems identifying the solutions and possible side effects. Uses experience to identifying user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents to senior experts. Records and tracks user support procedures from outset to conclusion.</i>
	C2. Change Support	Level 3
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>Ensures the integrity of the system by controlling the application of functional updates, software or hardware additions and maintenance activities. Complies with budget requirements.</i>
D. ENABLE	C3. Service Delivery	Level 2
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Systematically analyses performance data and communicates findings to senior experts. Escalates potential service level failures and recommends actions to improve service reliability. Tracks reliability data against service level agreement.</i>
	C4. Problem Management	Level 2
Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Identifies and classifies incident types and service interruptions. Records incidents cataloguing them by symptom and resolution. .</i>	
D. ENABLE	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.5 Database Administrator

COMPETENCES (continued)

E. MANAGE	E8. Information Security Management	Level 3
	<p>Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.</p>	<p><i>Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches</i></p>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Databases with reasonable access times.
- Documentation on database structures, and operating and production procedures.

PERFORMANCE INDICATORS

- Production incidents rate
- Query response times

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +2 yrs. to Baccalaureate +4 yrs.	3 to 5 years experience in designing and implementing applications.

TRENDS AND FACTORS INFLUENCING CHANGE

The position of Database Administrator has become essential for all IT structures, even simple ones.

4.6 Production Systems Integrator

Head of software development	Production systems Integrator	Set-up contractor
Operating Analyst	Software Supervisor	

MISSION

Upon request by the Business Project Manager, and under the guidance of the head of IS operations, integrates and deploys software solutions delivered by the Applications Architect into the production environment.

ACTIVITIES AND TASKS

The Production Systems Integrator sets up new applications, or provides new versions of these applications.

Integrating software into production environments	Initiates acceptance, industrialisation and production procedures, in coordination with the Business Project Manager
Managing upgrades (updating deployed software)	Manages upgrades to applications in use Monitors production quality (performances, incidents), in compliance with SLAs
Implementing software onto servers	Checks if software solutions can be run on the servers Validates whether deployments and systems integrations are possible Potentially, puts remote maintenance tools in place
Integration of new applications and updates	Acts as production specialist for projects in certain areas of activity Plans and monitors integration activities in the relevant area, referring to studies Organises and sets up an IS quality assurance plan

COMPETENCES *(taken from the European e-Competence Framework)*

	B2. Systems Integration	Level 4
B. BUILD	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Exploits wide ranging specialist knowledge to create a process for the entire integration cycle, including the establishment of internal standards of practice. Provides leadership to marshal and assign resources for programmes of integration.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.6 Production Systems Integrator

2/3

COMPETENCES (continued)

B. BUILD	B3. Testing	Level 2
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.</i>
	B4. Solution Deployment	Level 2
Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Acts systematically to build or deconstruct system elements. Identifies non performing components and establishes root cause of failure within the overall solution. Provides support to less experienced colleagues.</i>	
B. BUILD	B5. Documentation Production	Level 2
	Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i>
C. RUN	C1. User Support	Level 2
	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Systematically interprets user problems identifying the solutions and possible side effects. Uses experience to identifying user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents to senior experts. Records and tracks user support procedures from outset to conclusion.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.6 Production Systems Integrator

COMPETENCES (continued)

C. RUN	C2. Change Support	Level 3
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>Ensures the integrity of the system by controlling the application of functional updates, software or hardware additions and maintenance activities. Complies with budget requirements.</i>
	C3. Service Delivery	Level 2
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Systematically analyses performance data and communicates findings to senior experts. Escalates potential service level failures and recommends actions to improve service reliability. Tracks reliability data against service level agreement.</i>
	C4. Problem Management	Level 2
	Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Identifies and classifies incident types and service interruptions. Records incidents cataloguing them by symptom and resolution. .</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Applications in use
- Documentation on processing systems, and action taken to correct incidents

PERFORMANCE INDICATORS

- Production incidents rate

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +2 yrs. to Baccalaureate +4 yrs.	2 to 3 years

TRENDS AND FACTORS INFLUENCING CHANGE

The proliferation of new technologies has meant that Production Systems Integrator must bring their technical skills up to date.

4.7 Operations Controller



1/2

Server Controller	Systems, Resources, Services Controller	Server Monitor
Resources Supervisor	IT Production Manager	Systems Administrator
Shift Supervisor	Capacity Planner	

MISSION

Constantly monitors IT resources and their operational management, ensuring that service standards and commitments are kept, alongside data processing standards, in compliance with the security and quality assurance plan.

ACTIVITIES AND TASKS

Analysis of messages received in the control unit	Assesses incidents if a problem is detected on the network or servers, or if a user alert is received
Monitoring	Carries out start-up, shut-down, and constant monitoring of resources, according to daily work schedules Sends out an alert, and takes action when incidents occur Initiates recovery plans or tools (manual recovery, resource reconfiguration, copying files, backup operations, etc.)
Potential alerts for higher level intervention	Re-launches work after problem resolution Inputs information into incident database Keeps control documentation up-to-date
Maintaining general production conditions	Ensures that physical resources (disk drives, robots, automatons, etc.) and logical resources (software, disk space, power, etc.) are always available

COMPETENCES *(taken from the European e-Competence Framework)*

B. BUILD	B5. Documentation Production	Level 1
	Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Uses and applies standards to define document structure.</i>
C. RUN	C3. Service Delivery	Level 1
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Acts under guidance to record and track reliability data .</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



4.7 Operations Controller

COMPETENCES (continued)

C. RUN	C4. Problem Management	Level 2
	Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Identifies and classifies incident types and service interruptions. Records incidents cataloguing them by symptom and resolution. .</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Operations monitoring reports.

PERFORMANCE INDICATORS

- Compliance with Service Level Agreements (SLAs).

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +2 yrs.	At least 2 or 3 years in the IT production field.

TRENDS AND FACTORS FOR CHANGE

The development of open systems has multiplied the number of controlled tools and servers, and increases the amount of remote control systems.

Due to increasing automation of monitoring activities and inspection procedures, control systems are grouped together, focusing on server monitoring activities.

Eventually, the development of sufficiently reliable systems will lead to the role being completely autonomous.

4.8 Operating Systems Expert



1/4

Systems Engineer

OS Expert

Systems specialist

MISSION

Provides advice, support, information, training and alerts. Can take direct action on all or part of a project which comes under his area of expertise.

The Operating Systems Expert monitors technology, takes part in examinations of general technical architecture, and how it develops, and in defining IT platforms.

ACTIVITIES AND TASKS

Participation in research and development	<ul style="list-style-type: none"> Carries out research to define systems according to needs Helps choose suppliers
Team support	<ul style="list-style-type: none"> Assists and advises when technical solutions are put in place Pinpoints malfunction causes, and suggests remedial action and alternative solutions. Informs teams about technical system developments Trains teams to use new systems
Forward planning	<ul style="list-style-type: none"> Monitors technologies Puts forward solutions to improve systems performance
Implementation and development	<ul style="list-style-type: none"> Is the acknowledged go-between for experts from other areas Establishes rules for the proper management of operating systems Defines systems from a functional and technical standpoint Checks that standards are implemented (IT security, quality, etc.) Certifies developed components and applications
Outside interaction	<ul style="list-style-type: none"> Takes part in conferences, forums, workshops Teaches, trains, publishes

COMPETENCES *(taken from the European e-Competence Framework)*

A5. architecture Design		Level 4
A. PLAN	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.	<i>Acts with wide ranging accountability to define the strategy to implement ICT technology compliant with business need. Takes account of the current technology platform, obsolescent equipment and latest technological innovations</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.8 Operating Systems Expert

COMPETENCES (continued)

A. PLAN	A6. Application Design	Level 1
	Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.	<i>Contributes to the design and general functional specification and interfaces.</i>
A. PLAN	A7. Technology Watching	Level 4
	Explores latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.	<i>Exploits wide ranging specialist knowledge of new and emerging technologies, coupled with a deep understanding of the business, to envision and articulate the solutions of the future. Provides expert guidance and advice, to the leadership teams in business and in technology, about potential innovations to support strategic decision-making.</i>
B. BUILD	B1. Design and Development	Level 3
	Designs and engineers software and/ or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces. Performs unit and system testing to ensure requirements are met.	<i>Acts creatively to develop and integrate components into a larger product.</i>
	B2. Systems Integration	Level 2
B. BUILD	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.8 Operating Systems Expert

COMPETENCES (continued)

B. BUILD	B3. Testing	Level 3
	<p>Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.</p>	<p><i>Exploits specialist knowledge to supervise complex testing programmes. Ensures tests and results are documented to provide input to subsequent process owners such as Designers, users or maintainers. Accountable for compliance with testing procedures including a documented audit trail</i></p>
	B4. Solution Deployment	Level 3
	<p>Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.</p>	<p><i>Accounts for own and others actions within solution provision activities including comprehensive communications with client. Exploits specialist knowledge to influence solution construction. Gives advice on aligning work processes and procedures with software upgrades.</i></p>
	B5. Documentation Production	Level 2
	<p>Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.</p>	<p><i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i></p>
C. RUN	C4. Problem Management	Level 3
	<p>Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.</p>	<p><i>Exploits specialist knowledge and in-depth understanding of the ICT infrastructure and problem management process to identify failures and resolve with minimum outage. Makes sound decisions in emotionally charged environments on appropriate action required to minimise business impact. Rapidly identifies failing component, selects alternatives such as repair, replace or reconfigure.</i></p>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



4.8 Operating Systems Expert

COMPETENCES (continued)

D. ENABLE	D3. Education and Training Provision	Level 2
	Defines and implements ICT training policy to address organisational skill needs and gaps. Structures, organises and schedules training programmes and evaluates training quality through a feedback process and implements continuous improvement. Adapts training plans to address changing demand.	<i>Organises the identification of training needs; collates organisation requirements, identifies, selects and prepares schedule of training interventions.</i>
E. MANAGE	E3. Risk Management	Level 2
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Understands and applies the principles of risk management and investigates ICT solutions to mitigate identified risks</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Information and recommendations for managed systems

PERFORMANCE INDICATORS

- Number of recommendations followed
- Number of requests to intervene in projects

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	At least 4 to 5 years experience.

TRENDS AND FACTORS FOR CHANGE

Varies greatly depending on technology development.

Depending on organisations, Systems Administrator and Expert roles may sometimes be merged.

4.9 Network & Telecom Expert



CIGREF

1/4

Telecommunications and Networks Engineer	Telecommunications and Networks Architect	Enterprise Networks Specialist
Telecoms Consultant	Networks Consultant	Network Specialist
Telecommunications Specialist	Voice Communications Specialist	

MISSION

Provides advice, support, information, training and alerts. Can directly intervene on all or part of a project which comes under his area of expertise.

The Network & Telecom Expert monitors technology, takes part in studying the general telecoms and networks infrastructure, and how it changes, and in defining network platforms.

ACTIVITIES AND TASKS

Research and development role	Carries out studies to define the network according to needs (digital data, voice, images, etc.) Helps choose suppliers
Team support	Assists and advises when technical solutions are put into place (messaging, workflow, e-commerce, technical data, etc.) Pinpoints malfunction causes, and suggests remedial action and alternative solutions Informs teams about telecoms and networks technical developments Trains teams to use new tools
Forward planning	Monitors technology, and forecasts potential technological developments
Implementation of changes and certifications	Acknowledged go-between for experts from other areas Defines addressing methods, plans and tools Defines protocol and network equipment implementation Checks that standards are implemented (IT security, quality, etc.) Certifies developed components and applications
Outside interaction	Takes part in conferences, forums, workshops Teaches, trains, publishes

4.9 Network & Telecom Expert

COMPETENCES (taken from the European e-Competence Framework)

A. PLAN	A5. architecture Design	Level 4
	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.	<i>Acts with wide ranging accountability to define the strategy to implement ICT technology compliant with business need. Takes account of the current technology platform, obsolescent equipment and latest technological innovations</i>
A. PLAN	A6. Application Design	Level 1
	Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.	<i>Contributes to the design and general functional specification and interfaces.</i>
A. PLAN	A7. Technology Watching	Level 4
	Explores latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.	<i>Exploits wide ranging specialist knowledge of new and emerging technologies, coupled with a deep understanding of the business, to envision and articulate the solutions of the future. Provides expert guidance and advice, to the leadership teams in business and in technology, about potential innovations to support strategic decision-making.</i>
B. BUILD	B1. Design and Development	Level 3
	Designs and engineers software and/ or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces. Performs unit and system testing to ensure requirements are met.	<i>Acts creatively to develop and integrate components into a larger product.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.9 Network & Telecom Expert

COMPETENCES (continued)

B. BUILD	B2. Systems Integration	Level 2
	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.</i>
	B3. Testing	Level 3
	Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Exploits specialist knowledge to supervise complex testing programmes. Ensures tests and results are documented to provide input to subsequent process owners such as Designers, users or maintainers. Accountable for compliance with testing procedures including a documented audit trail</i>
	B4. Solution Deployment	Level 3
Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Accounts for own and others actions within solution provision activities including comprehensive communications with client. Exploits specialist knowledge to influence solution construction. Gives advice on aligning work processes and procedures with software upgrades.</i>	
B5. Documentation Production	Level 2	
Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Determines documentation requirements taking into account the purpose and environment to which it applies.</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



4.9 Network & Telecom Expert

COMPETENCES (continued)

C. RUN	C4. Problem Management	Level 3
	Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.	<i>Exploits specialist knowledge and in-depth understanding of the ICT infrastructure and problem management process to identify failures and resolve with minimum outage. Makes sound decisions in emotionally charged environments on appropriate action required to minimise business impact. Rapidly identifies failing component, selects alternatives such as repair, replace or reconfigure.</i>
D. ENABLE	D3. Education and Training Provision	Level 2
	Defines and implements ICT training policy to address organisational skill needs and gaps. Structures, organises and schedules training programmes and evaluates training quality through a feedback process and implements continuous improvement. Adapts training plans to address changing demand.	<i>Organises the identification of training needs; collates organisation requirements, identifies, selects and prepares schedule of training interventions.</i>
E. MANAGE	E3. Risk Management	Level 2
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Understands and applies the principles of risk management and investigates ICT solutions to mitigate identified risks</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Recommendations and information on systems under his management

PERFORMANCE INDICATORS

- Number of recommendations followed
- Number of requests to intervene in projects

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	At least 4 to 5 years experience.

TRENDS AND FACTORS INFLUENCING CHANGE

Varies greatly depending on technology development.

Since changes in networks and tools are making them increasingly open and extensive, security is also increasingly important.

4.10 Technical Architect



1/4

Architect

Technical Planner

MISSION

Defines all or part of the Information System's technical architecture.

Ensures that IT systems are consistent and durable, by making full use of the potential of computer architecture, within the company's computer architecture and planning framework.

ACTIVITIES AND TASKS

Design	Defines Information Systems' technical architecture Checks and analyses the technical impacts of new IT solutions, and if they fit in with existing architecture
Administration	Defines and manages the IS reference framework in terms of: tools, procedures, standards, vocabulary, security, etc. Defines and manages technical standards
Recommendations	For all new projects or technologies, takes part in assessing the impact these will have on existing or planned architecture Recommends technical choices in order to maintain consistency throughout changes
Advice	Advises the planner on potential uses and implementations of telecoms and IT tools Organises technology monitoring choices
Communication	Works in a team with the Functional Architect Promotes technical architecture to IT workers

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A5. architecture Design	Level 4
	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.	<i>Acts with wide ranging accountability to define the strategy to implement ICT technology compliant with business need. Takes account of the current technology platform, obsolescent equipment and latest technological innovations</i>
	A7. Technology Watching	Level 5
	Explores latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.	<i>Provides strategic leadership. Envisions and articulates future solutions and directs the organisation to build and exploit them.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.10 Technical Architect



CIGREF

2/4

COMPETENCES (continued)

A. PLAN	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
B. BUILD	B1. Design and Development	Level 4
	Designs and engineers software and/ or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces. Performs unit and system testing to ensure requirements are met.	<i>Handles complexity by developing standard procedures and architectures in support of cohesive product development</i>
	B2. Systems Integration	Level 3
	Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.	<i>Accounts for own and others actions in the integration process. Complies with appropriate standards and change control procedures to maintain integrity of the overall system functionality and reliability.</i>
	B3. Testing	Level 3
Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.	<i>Exploits specialist knowledge to supervise complex testing programmes. Ensures tests and results are documented to provide input to subsequent process owners such as Designers, users or maintainers. Accountable for compliance with testing procedures including a documented audit trail</i>	
B5. Documentation Production	Level 3	
Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Adapts the level of detail according to the objective of the documentation and the targeted population.</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

4.10 Technical Architect



3/4

COMPETENCES (continued)

C. RUN	C2. Change Support	Level 3
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>Ensures the integrity of the system by controlling the application of functional updates, software or hardware additions and maintenance activities. Complies with budget requirements.</i>
D. ENABLE	D1. Information Security Strategy Development	Level 4
	Defines and makes applicable a formal organisational strategy, scope and culture to maintain safety and security of information. Provides the foundation for Information Security Management, including role identification and accountability (ref D.2). Uses defined standards to create objectives for information integrity, availability, and data privacy.	<i>Exploits depth of expertise and leverages external standards and best practices.</i>
E. MANAGE	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>
	E5. Process Improvement	Level 3
	Measures effectiveness of existing ICT processes. Researches and benchmarks ICT process design from a variety of sources. Follows a systematic methodology to evaluate, design and implement process or technology changes for measurable business benefit. Assesses potential adverse consequences of process change.	<i>Exploits specialist knowledge to research existing ICT processes and solutions in order to define possible innovations. Makes recommendations based on reasoned arguments</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Definition of operational technical architecture.
- architecture reference framework (technical map of Information Systems)
- Information and recommendations

PERFORMANCE INDICATORS

- How flexible and reactive the technical infrastructure is to a particular change (implementation time and costs for a technical change)

4.10 Technical Architect



CIGREF

4/4

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	At least 5 to 10 years. (Project management, operations, development).

TRENDS AND FACTORS INFLUENCING CHANGE

Systems becoming more complex and rapidly changing, both functionally and technically.

The need to integrate exogenous components into the Information System (software packages, integrated platforms, etc.).

The need to control the risk of losing system integrity, while changes happen increasingly quickly (changes in organisation, competition, technology, etc.).

5. USER SUPPORT AND ASSISTANCE

This family groups together the roles oriented towards the IS user in terms of **assistance and supervision**.

This family comprises the following roles:

- 5.1 User Liaison Officer
- 5.2 Help Desk Technician



5.1 User Liaison Officer

Software Support Assistant	Software and Applications Support Contractor	User Liaison Officer
IT Liaison Officer	Functional Applications Controller	Field Analyst

MISSION

User liaison : helps the end user to use software, during deployment periods or normal operations, and helps resolve any problems which the user may encounter.

Helps to manage changes.

Reports requests for change, and malfunctions, to project stakeholders.

Relatively specialised in one Business or process; provides help and advice to the end user on how to properly use software tools.

At the meeting point of the Information Systems Department (IT Project Manager) and the client (management, Business Project Manager, users) he works directly with users.

ACTIVITIES AND TASKS

Managing and planning for change	<p><i>During the implementation of new Business or office software:</i></p> <ul style="list-style-type: none"> Helps to plan and carry out training Assists users Capitalises on the sharing of experiences
Assisting and advising the end user	<p><i>During normal operations:</i></p> <ul style="list-style-type: none"> Advises users Detects users experiencing problems Identifies and carries out requested functional improvements Carries out frontline support during incidents, drawing on the necessary resources (internal or external)
Checking operational performance and quality of the applications in their IS area	<ul style="list-style-type: none"> Inspects and monitors files before passing them on to Businesses Ensures that responses to user requests are consistent and of the highest quality Carries out qualitative and quantitative analyses of actions taken in area of responsibility



5.1 User Liaison Officer

COMPETENCES *(taken from the European e-Competence Framework)*

B. BUILD	B4. Solution Deployment	Level 1
	Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.	<i>Performs under guidance and in accordance with detailed instructions, the removal or installation of individual components.</i>
C. RUN	C1. User Support	Level 2
	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Systematically interprets user problems identifying the solutions and possible side effects. Uses experience to identifying user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents to senior experts. Records and tracks user support procedures from outset to conclusion.</i>
	C2. Change Support	Level 2
	Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).	<i>During change, acts systematically to respond to day by day operational needs and react to them, avoiding service disruptions and maintaining coherence to service level agreement (SLA).</i>
	C3. Service Delivery	Level 2
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Systematically analyses performance data and communicates findings to senior experts. Escalates potential service level failures and recommends actions to improve service reliability. Tracks reliability data against service level agreement.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

5.1 User Liaison Officer

COMPETENCES (continued)

D. ENABLE	D3. Education and Training Provision	Level 2
	Defines and implements ICT training policy to address organisational skill needs and gaps. Structures, organises and schedules training programmes and evaluates training quality through a feedback process and implements continuous improvement. Adapts training plans to address changing demand.	<i>Organises the identification of training needs; collates organisation requirements, identifies, selects and prepares schedule of training interventions.</i>
	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Suggestions for changes to software
- Training suggestions

PERFORMANCE INDICATORS

- The rate of incidents dealt with during a set time period
- User satisfaction levels regarding assistance provided

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +2 yrs.	Two possible profiles : <ul style="list-style-type: none"> • experienced user, interested in IT. • or a developer wanting to get away from IT.

TRENDS AND FACTORS INFLUENCING CHANGE

Role which often already exists, or is well defined for “Business” software; often less formal for “office” software.



5.2 Help Desk Technician

Client Support Assistant	Frontline Support assistant	Hotline Assistant
Hotline Support Technician	Help Desk Analyst	

MISSION

Ensures that incidents (failure to deliver services as usual), or problems flagged by users are recorded. Assigns their resolution to the appropriate resources.

Provides frontline support to resolve incidents impeding the quality or continuity of service.

Contrary to the Functional Assistant, deals with all kinds of incidents, and is not always free to deal with users.

ACTIVITIES AND TASKS

Reception of user queries following malfunctions	Takes calls from users Records flagged incidents or operational anomalies Produces a preliminary diagnostic and definition
Resolution or initiation of corresponding support actions	Deals with frontline anomalies or incidents: diagnostics, identification, information, resolution, formulation If necessary, transfers user calls to competent entities Alerts superiors to any "abnormal" incident
Incident monitoring	Monitors how user calls are dealt with Uses the incident database : follow-up, consolidation, trends analysis Send requests for background preventive action

COMPETENCES (taken from the European e-Competence Framework)

	C1. User Support	Level 2
C. RUN	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Systematically interprets user problems identifying the solutions and possible side effects. Uses experience to identifying user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents to senior experts. Records and tracks user support procedures from outset to conclusion.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



5.2 Help Desk Technician

COMPETENCES (continued)

C. RUN	C3. Service Delivery	Level 1
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Acts under guidance to record and track reliability data .</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Incidents recorded in the database
- Remedial actions recorded in the database

PERFORMANCE INDICATORS

- Rate of frontline incidents resolved in allotted timeframes
- Number of recommendations for preventive actions that are followed

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +2 yrs.	Past experience not strictly necessary.

TRENDS AND FACTORS INFLUENCING CHANGE

Consolidation of multi-department support functions (IT, logistics, etc.).

6. Methods, quality and security support

This family groups together all roles related to the definition, establishment, inspection and audit of quality, methods and security standards and reference frameworks, in line with Information Systems Department governance.

This family comprises the following roles:

- 6.1 Security/Quality/Tools and Methods Expert
- 6.2 Contract Manager
- 6.3 Chief Information Security Officer- CISO

6.1 Security/Quality/Tools and Methods Expert



1/5

Telecoms and IT Security Engineer	IT methods Engineer	Quality Engineer
Quality Assurance Engineer	Security Specialist	Disaster Recovery Specialist

MISSION

Provides advice, support, information, training and alerts. Can directly intervene on all or part of a project which comes under their area of expertise.

Monitors the technology in their area, and suggests changes which are deemed to be necessary.

The acknowledged representative for external experts (suppliers, partners, etc.).

ACTIVITIES AND TASKS

Usually, these are different roles, which have been grouped together for simplicity's sake, and are roles which could be filled by different people, depending on the organisation.

Advises and supports teams	<ul style="list-style-type: none"> Offers advice and assistance on choosing and using method Provides information on changes and developments Trains people to use new technologies and systems Takes part in research and development, and conducts occasional studies
Implementation of changes and certifications	<ul style="list-style-type: none"> Defines and manages standards, methods, tools, and reference frameworks Implements and checks standards, methods, and tools Certifies developed components and applications
Outside interaction	<ul style="list-style-type: none"> Monitors technology, and forecasts potential technological developments Takes part in conferences, forums, workshops Teaches, publishes

COMPETENCES *(taken from the European e-Competence Framework)*

A7. Technology Watching		Level 4
A. PLAN	Explores latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.	<i>Exploits wide ranging specialist knowledge of new and emerging technologies, coupled with a deep understanding of the business, to envision and articulate the solutions of the future. Provides expert guidance and advice, to the leadership teams in business and in technology, about potential innovations to support strategic decision-making.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

6.1 Security/Quality/Tools and Methods Expert



2/5

COMPETENCES (continued)

A. PLAN	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
B. BUILD	B5. Documentation Production	Level 3
	Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.	<i>Adapts the level of detail according to the objective of the documentation and the targeted population.</i>
D. ENABLE	D1. Information Security Strategy Development	Level 4
	Defines and makes applicable a formal organisational strategy, scope and culture to maintain safety and security of information. Provides the foundation for Information Security Management, including role identification and accountability (ref D.2). Uses defined standards to create objectives for information integrity, availability, and data privacy.	<i>Exploits depth of expertise and leverages external standards and best practices.</i>
	D2. ICT Quality Strategy Development	Level 4
	Defines, improves and refines a formal strategy to satisfy customer expectations and improve business performance (balance between cost and risks). Identifies critical processes influencing service delivery and product performance for definition in the ICT quality management system (ref D.4). Uses defined standards to formulate objectives for service management, product and process quality. Identifies ICT quality management accountability.	<i>Exploits wide ranging specialist knowledge to leverage and authorise the application of external standards and best practices.</i>
	D3. Education and Training Provision	Level 3
	Defines and implements ICT training policy to address organisational skill needs and gaps. Structures, organises and schedules training programmes and evaluates training quality through a feedback process and implements continuous improvement. Adapts training plans to address changing demand.	<i>Acts creatively to analyse skills gaps; elaborates specific requirements and identifies potential sources for training provision. Has specialist knowledge of the training market and establishes a feedback mechanism to assess the added value of alternative training programmes.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



6.1 Security/Quality/Tools and Methods Expert

COMPETENCES (continued)

D. ENABLE	D9. Personnel Development	Level 2
	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Briefs/ trains individuals and groups, holds courses of instruction.</i>
D. ENABLE	D10. Information and Knowledge Management	Level 5
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Correlates information and knowledge to create value for the business. Applies innovative solutions based on information retrieved.</i>
E. MANAGE	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>
E. MANAGE	E4. Relationship Management	Level 2
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Positively interacts with clients.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



6.1 Security/Quality/Tools and Methods Expert

COMPETENCES (continued)

E. MANAGE	E5. Process Improvement	Level 3
	Measures effectiveness of existing ICT processes. Researches and benchmarks ICT process design from a variety of sources. Follows a systematic methodology to evaluate, design and implement process or technology changes for measurable business benefit. Assesses potential adverse consequences of process change.	<i>Exploits specialist knowledge to research existing ICT processes and solutions in order to define possible innovations. Makes recommendations based on reasoned arguments</i>
		And Level 4
		<i>Provides leadership and authorizes implementation of innovations and improvements that will enhance competitiveness or efficiency. Demonstrates to senior management the business advantage of potential changes</i>
E6. ICT Quality Management	Level 2	
Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.	<i>Communicates and monitors application of the organisations quality policy</i>	
	And Level 3	
	<i>Evaluates quality management indicators and processes based on ICT quality policy and proposes remedial action</i>	
	And Level 4	
	<i>Assesses and estimates the degree to which quality requirements have been met and provides leadership for quality policy implementation. Provides cross functional leadership for setting and exceeding quality standards</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



6.1 Security/Quality/Tools and Methods Expert

COMPETENCES (continued)

E. MANAGE	E8. Information Security Management	Level 2
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance</i>
		And Level 3
		<i>Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches</i>
		And Level 4
		<i>Provides leadership for the integrity, confidentiality and availability of data stored on Information Systems and complies with all legal requirements</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Training manuals
- Reference frameworks for area of expertise

PERFORMANCE INDICATORS

- Number of requests to intervene in projects

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	At least 4 to 5 years experience.
Some companies have introduced a "Specialist" role, below the Expert role. The "Specialist" is an acknowledged Expert, but who has a smaller scope of influence, and can only act within the company, while the "Expert" can act within and outside of the company.	

TRENDS AND FACTORS INFLUENCING CHANGE



6.2 Contract Manager

Head of Supplier Contracts

Supplier Controller

MISSION

Coordinates supplier relationships (software developers, service providers) in terms of strategy and operational monitoring. Scope of action includes:

- Technical or intellectual IT services, applications or techniques contracts, third-party applications maintenance, IT resources outsourcing.
- Contracts with software developers, manufacturers, and/or distributors.

ACTIVITIES AND TASKS

Strategy	Participates in defining outsourcing policy for IT services, and monitors its implementation and operating efficiency Implements company policy on sub-contracting Participates in IT contract negotiations strategy
Contract management	Manages technical specifications during the drawing-up of contracts Monitors contract management during the operational period
Communication	Represents the department for intellectual services sub-contracting Is the primary go-between for the purchasing department
Defining resources and services	Optimises the number of services and service providers, and related costs Assists purchasing advisors in writing up specifications Performs benchmarking Monitors and makes recommendations about sub-contractors.
Implementing resources and ensuring their proper operation	Controls the installation and inspection of the architecture necessary for the work of service providers (to avoid bargaining issues) Organises and coordinates contract committees with major suppliers Participates in formalisation, and ensures compliance with Quality Assurance plans and Service Agreements linked to contracts Publishes and manages management charts for service quality

COMPETENCES (taken from the European e-Competence Framework)

A. PLAN	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

6.2 Contract Manager

COMPETENCES (continued)

D. ENABLE	D4. Purchasing	Level 2
	Applies a consistent procurement procedure, including deployment of the following sub processes: specification requirements, supplier identification, proposal analysis, evaluation of the energy efficiency and environmental compliance of products, suppliers and their processes, contract negotiation, supplier selection and contract placement. Ensures that the entire purchasing process is fit for purpose and adds business value to the organisation.	<i>Understands and applies the principles of the procurement process; places orders based on existing supplier contracts. Ensures the correct execution of orders, including validation of deliverables and correlation with subsequent payments.</i>
D. ENABLE	D8. Contract Management	Level 4
	Provides and negotiates contract in accordance with organisational processes. Ensures that supplier deliverables are provided on time, meet quality standards and comply with agreed service levels. Addresses non-compliance escalates significant issues, drives recovery plans and if necessary amends contracts. Maintains budget integrity. Assesses and addresses supplier compliance to legal, health and safety and security standards. Actively pursues regular supplier communication.	<i>Provides Leadership for supplier contract compliance and is the final escalation point for issue resolution.</i>
E. MANAGE	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>
E. MANAGE	E4. Relationship Management	Level 4
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Provides leadership for large or many client relationships. Authorises investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Service agreements with service providers

PERFORMANCE INDICATORS

- Service quality
- Cost reduction



6.2 Contract Manager

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	5 to 10 years in studies or operations. Initially more of an IT role than legal role.

TRENDS AND FACTORS INFLUENCING CHANGE

Role which is becoming increasingly important, in particular due to the growing international dimension of companies.
Could move on to management positions within the Information Systems Department.

6.3 Chief Information Security Officer- CISO



CIGREF

1/3

MISSION

Primary mission: to define Information Systems security policy and to ensure it is implemented.

The CISO fulfils an advisory, support, information and alert training role. May intervene directly in all or part of the IT and telecoms systems in their entity.

ACTIVITIES AND TASKS

Definition of security policy	<ul style="list-style-type: none"> Defines the objectives and requirements linked to the company's Information Systems Defines and implements procedures linked to IS security Contributes to the organisation of the company and to its security policy
Risk analysis	<ul style="list-style-type: none"> Evaluates risks, threats and consequences Assesses resources, ensuring their security and proper use Establishes the prevention plan
Introduction and training on security issues	<ul style="list-style-type: none"> Informs and raises awareness among general management Trains the operational departments and businesses Participates in drawing up the company's security charter Ensures the promotion of the IT security charter among users
Studies of resources and recommendations	<ul style="list-style-type: none"> Technical validation of security tools Defines security standards
Audits and inspections	<ul style="list-style-type: none"> Inspects and ensures that principles and rules for IS security are applied by teams Audits how vulnerable the company is Launches crisis units in case of IS security incidents
Monitoring of existing and potential technology	<ul style="list-style-type: none"> Monitors regulatory and technical changes within their domain Monitors developments necessary to ensure data and physical security of the IS in its entirety

6.3 Chief Information Security Officer- CISO



2/3

COMPETENCES (taken from the European e-Competence Framework)

A. RUN	A7. Technology Watching	Level 4
	Explores latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.	<i>Exploits wide ranging specialist knowledge of new and emerging technologies, coupled with a deep understanding of the business, to envision and articulate the solutions of the future. Provides expert guidance and advice, to the leadership teams in business and in technology, about potential innovations to support strategic decision-making.</i>
D. ENABLE	D1. Information Security Strategy Development	Level 5
	Defines and makes applicable a formal organisational strategy, scope and culture to maintain safety and security of information. Provides the foundation for Information Security Management, including role identification and accountability (ref D.2). Uses defined standards to create objectives for information integrity, availability, and data privacy.	<i>Provides strategic leadership to embed information security into the culture of the organisation.</i>
	D9. Personnel Development	Level 4
	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Takes proactive action and develops organisational processes to address the development needs of individuals, teams and the entire workforce.</i>
	D10. Information and Knowledge Management	Level 4
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Integrates the appropriate information structure into the corporate environment.</i>
E. MANAGE	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



6.3 Chief Information Security Officer- CISO

COMPETENCES (continued)

E. MANAGE	E4. Relationship Management	Level 4
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Provides leadership for large or many client relationships. Authorises investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships.</i>
	E8. Information Security Management	Level 4
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Provides leadership for the integrity, confidentiality and availability of data stored on Information Systems and complies with all legal requirements</i>
	E9. IT Governance	Level 4
	Defines, deploys and controls the management of Information Systems in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.	<i>Provides leadership for IT governance strategy by communicating, propagating and controlling relevant processes across the entire IT infrastructure.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- IT security charter
- Results of internal security audits
- Results of audits imposed by legislation (for instance SOX)
- Reporting and management charts for IS security

PERFORMANCE INDICATORS

- Number of intrusions recorded over a given period
- Measurement of the level of compliance with security policy by users

CAREER PATH

PROFILE	EXPERIENCE
Engineering diploma or Baccalaureate +5 yrs. equivalent in IT	10 years experience, IT experience in security field.

TRENDS AND FACTORS INFLUENCING CHANGE

Increasing levels of expertise in IT networks.
 Changing ideas about data security for systems: sustained campaign to raise awareness about data security among users.
 Increasing need for understanding and taking into account security issues linked to new uses and behaviours;

7. OPERATIONAL MANAGEMENT

This family groups together all the roles with line management responsibility for human resources, budget, decision-making or determination of scope.

This family comprises the following roles:

- 7.1 Chief Information Officer
- 7.2 IT Entity Manager
- 7.3 Head of Telecoms
- 7.4 Head of Operations
- 7.5 Head of Studies & Development

Data sheet 7.2 is a generic description, which sheets 7.3, 7.4, and 7.5 will refer to. These last three sheets will specify the particular characteristics of each described role.



7.1 Chief Information Officer

ICT Director

MISSION

Ensures the alignment of the Information Systems with company strategy. Responsible for the design, implementation and maintenance, repair and overhaul, and quality of the Information System. Decides on and validates the company's major IT developments. Anticipates necessary developments in accordance with company strategy, and manages the costs thereof.

Evaluates and makes recommendations for investment according to the technological advances required. Ensures effective risk management for the Information System.

ACTIVITIES AND TASKS

Definition, supervision and implementation of IS policy	<ul style="list-style-type: none"> Defines the company's strategic orientation for the Information Systems Advises on and defines the company's Information Systems policy Monitors all Information Systems Department activity Mediates Information Systems Department resources (studies, resources, budgets, investments, etc.)
Promotion of quality in relationships with partners	<ul style="list-style-type: none"> Organizes, coordinates and monitors meetings and dialogue between General Management and Information Systems Managers Ensures the quality of customer-supplier relationships Defines and ensures compliance with Service Level Agreements
Definition and implementation of a "Make or Buy" policy	<ul style="list-style-type: none"> Negotiates, manages and monitors contracts and their implementations Conducts market analysis, evaluates contract offers and makes proposals to the General Management Analyses performance and monitors quality of contractors
Internal communications, motivation and coordination of Information Systems Department personnel	<ul style="list-style-type: none"> Defines and supervises the general management and organisation of the Information Systems Department Manages and mediates inter-disciplinary projects involving participants in different locations Implements actions to provide support to IT personnel during changes
Supervision of relationships with external service providers and partners	<ul style="list-style-type: none"> Manages relationships with IT partners Manages relationships with external partner organisations
Ensuring IT security	<ul style="list-style-type: none"> Defines and implements Information Systems risk management policy Ensures the reliability, confidentiality and integrity of Information Systems



7.1 Chief Information Officer

COMPETENCES *(taken from the European e-Competence Framework)*

A. PLAN	A1. IS and Business Strategy Alignment	Level 5
	Anticipates long term business requirements and determines the IS model in line with organisation policy. Makes strategic IS policy decisions for the enterprise, including sourcing strategies.	<i>Provides IS strategic leadership to reach consensus and commitment from the management team of the enterprise.</i>
	A2. Service Level Management	Level 4
	Defines, validates and makes applicable Service Level Agreements (SLA) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of customers and business.	<i>Provides leadership to amend the enterprise strategy with respect to Service Level Agreements (SLA) in order to achieve forecasted results.</i>
D. ENABLE	A3. Business Plan Development	Level 5
	Addresses the design and structure of a business or product plan including the identification of alternative approaches as well as return on investment propositions. Considers the possible and applicable sourcing models. Presents cost benefit analysis and reasoned arguments in support of the selected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests, including SWOT analysis.	<i>Applies strategic thinking and organisational leadership to exploit the capability of Information Technology to improve the business.</i>
	A8. Sustainable Development	Level 4
E. MANAGE	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Defines objective and strategy of sustainable IS development in accordance with the organisation's sustainability policy.</i>
	D9. Personnel Development	Level 4
E. MANAGE	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Takes proactive action and develops organisational processes to address the development needs of individuals, teams and the entire workforce.</i>
	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.1 Chief Information Officer

COMPETENCES (continued)

E. MANAGE	E4. Relationship Management	Level 4
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Provides leadership for large or many client relationships. Authorizes investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships.</i>
	E7. Business Change Management	Level 5
	Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Applies pervasive influence to imbed organisational change</i>
	E8. Information Security Management	Level 3
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches</i>
E9. IT Governance	Level 5	
Defines, deploys and controls the management of Information Systems in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.	<i>Defines and aligns the IT governance strategy incorporating it into the organisations corporate governance strategy. Adapts the IT governance strategy to take into account new significant events arising from legal, economic, political, business or environmental issues.</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- The company's Information Systems

PERFORMANCE INDICATORS

- ROI from projects
- Effectiveness of Information Systems, at minimum cost



7.1 Chief Information Officer

4/4

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs. High-level Manager	Management of large organisations in a national and international environment. Management of IT systems, or large company-wide projects.

TRENDS AND FACTORS INFLUENCING CHANGE

Definition and implementation of a “Make or Buy” policy, and the impact of that policy on the Information Systems Department (change management, quality assurance, security, HR policy, understanding of costs and cost management, etc.)

Taking into account IS flexibility, and the increase in user requirements and expectations.

Highly dependent on company strategy.



7.2 IT Entity Manager

Head of IT Department or Section	IT Services Manager	IT Services Manager
Head of IT and Telecoms	Head of an IS and IT Entity	

MISSION

Directs, coordinates and manages an IT entity to meet objectives set within the context of the strategy defined for that entity.

Suggests major developments to the IS within the scope of the strategy determined by the Information Systems Department. Participates in defining and implementing a « Make or Buy » policy.

Responsible for ensuring that IT services are produced to the required quality levels, at optimal cost.

ACTIVITIES AND TASKS

Supervision, coordination	<ul style="list-style-type: none"> Coordinates and manages staff in the entity Assigns workloads in terms of volume and time-frame, according to planned changes to staff and competences within the entity Directs, organises, plans and monitors entity activities
Scheduling, organisation, management	<ul style="list-style-type: none"> Establishes and monitors workload planning Negotiates the objectives and resources of the entity Controls financial management (recurrent and project) while ensuring compliance with budgetary procedures Ensures that projects and applications within their scope of responsibility are consistent with those in other areas Establishes and monitors management charts Analyses and proposes solutions for the continuous improvement of entity productivity
Quality, security	<ul style="list-style-type: none"> Controls the implementation and monitoring of IS quality assurance and security procedures and processes
Communications	<ul style="list-style-type: none"> Communicates with Business departments and Business Project Managers who are customers of the entity Communicates within the entity (corporate communications, IT development communications, etc.)

COMPETENCES (taken from the European e-Competence Framework)

A. RUN	A8. Sustainable Development	Level 3
	<p>Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.</p>	<p><i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i></p>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.2 IT Entity Manager

COMPETENCES (continued)

D. ENABLE	D9. Personnel Development	Level 4
	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Takes proactive action and develops organisational processes to address the development needs of individuals, teams and the entire workforce.</i>
E. MANAGE	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>
	E4. Relationship Management	Level 3
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Accounts for own and others actions in managing a limited client base.</i>
	E6. ICT Quality Management	Level 3
	Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.	<i>Evaluates quality management indicators and processes based on ICT quality policy and proposes remedial action</i>
E7. Business Change Management	Level 4	
Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Provides leadership to plan, manage and implement significant IT led business change</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

7.2 IT Entity Manager

COMPETENCES (continued)

E. MANAGE	E8. Information Security Management	Level 3
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches</i>
	E9. IT Governance	Level 4
	Defines, deploys and controls the management of Information Systems in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.	<i>Provides leadership for IT governance strategy by communicating, propagating and controlling relevant processes across the entire IT infrastructure.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- A suite of services which comply with delivery, quality and customer satisfaction criteria (users internal or external to the company)
- Suitability of skills within the entity for the service required

PERFORMANCE INDICATORS

- Compliance with deadlines and budgets
- Progressive development of the entity's competences

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	10 years experience in the IS field, including 3 to 4 years managing a team.

TRENDS AND FACTORS INFLUENCING CHANGE

This role requires ever-increasing skills as an Administrator and Manager, an understanding of the functional requirements of customers, and an international dimension.

It is nevertheless subject to modifications to the environment and the operation of the company, as well as changes in expectations relating to customer service.

Professionalisation required for customer-supplier relationships (Service Level Agreements etc.).

Industrialisation of entity activities (increasingly specific integration into process type approaches)

Anticipation of the impact of technological changes.



7.3 Head of Telecoms

MISSION

The Head of Telecoms and Networks is responsible for defining and applying the company's telecoms and networks strategy, within the framework of the IT master plan.

Can act upon data services, and potentially voice services; linked to the data section of the Information Systems Department, telephony is often locally managed by a country or organisation.

ACTIVITIES AND TASKS

This function is no longer exclusively technical. It increasingly requires coordination and managerial activities, as described in sheet 7.2; they will not be repeated in this section.

Definition and design of telecoms architecture	<ul style="list-style-type: none"> Defines telecoms and networks architecture requirements and choices Validates choices, and their compatibility with IT architecture and the technological standards of the group and its partners
Service continuity	<ul style="list-style-type: none"> Responsible for the operation and administration of added-value components and services Draws up a management chart on network service quality Provides support and assistance to voice and data communication service users In charge of implementing security and operating policy for security logbooks
Monitoring, forward planning and advice	<ul style="list-style-type: none"> Advises and assists project teams from Information Systems Departments, or operational sections Orients and organizes technological monitoring Monitors new offers and newcomers Monitors pricing regulations
Calls for tender, and purchase of telecom services	<ul style="list-style-type: none"> Defines specifications (scope, services, etc.) Examines tenders Chooses and monitors equipment, services, operators and external bodies In charge of purchases, negotiations and contracts made with purchasing, legal, and financial services
Business Project Manager-IT Project Manager relationship	<ul style="list-style-type: none"> In charge of defining requirements Sets and ensures data and voice network service levels Coordinates telecoms and networks projects, ensuring their consistency
Management inspections and audits	<ul style="list-style-type: none"> Responsible for optimising and managing telecoms costs Inspects the quality of services provided by operators Draws up management charts Validates and monitors the telecoms and networks budget



7.3 Head of Telecoms

COMPETENCES (taken from the European e-Competence Framework)

A. PLAN	A5. architecture Design	Level 3
	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.	<i>Exploits specialist knowledge to define relevant ICT technology and specifications to be deployed in the construction of multiple ICT projects, applications or infrastructure improvements.</i>
	A7. Technology Watching	Level 4
	Explores latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.	<i>Exploits wide ranging specialist knowledge of new and emerging technologies, coupled with a deep understanding of the business, to envision and articulate the solutions of the future. Provides expert guidance and advice, to the leadership teams in business and in technology, about potential innovations to support strategic decision-making.</i>
	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
B. BUILD	B1. Design and Development	Level 5
	Designs and engineers software and/ or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces. Performs unit and system testing to ensure requirements are met.	<i>Has ultimate responsibility for strategic direction of product, technical architecture or technology development</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.3 Head of Telecoms

COMPETENCES (continued)

C. RUN	C1. User Support	Level 3
	Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.	<i>Manages the support process and is accountable for ensuring that agreed service levels are met. Plans resource allocation to ensure that the support is available with respect to the defined service level. Acts creatively, and seeks opportunities for continuous service improvement by analysing root causes. Manages the budget of the support function.</i>
C. RUN	C3. Service Delivery	Level 3
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Programme the schedule of operational tasks. Manage costs and budget according to the internal procedures and external constraints. Identify people requirements to resource the operational management of the ICT infrastructure</i>
D. ENABLE	D9. Personnel Development	Level 3
	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Monitors and addresses the development needs of individuals and teams.</i>
	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure</i>
E. MANAGE	E2. Project and Portfolio Management	Level 3
	Implements plans for a programme of change. Plans and directs a single or portfolio of ICT projects to ensure co-ordination and management of interdependencies. Orchestrates projects to develop or implement new, internal or externally defined processes to meet identified business needs. Defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. Develops contingency plans to address potential implementation issues. Delivers project on time, on budget and in accordance with original requirements. Creates and maintains documents to facilitate monitoring of project progress.	<i>Accounts for own and others activities, working within the project boundary, making choices and giving instructions; manages and supervises relationships within the team; plans and establishes team objectives and outputs and documents results.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.3 Head of Telecoms

COMPETENCES (continued)

E. MANAGE	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>
	E4. Relationship Management	Level 2
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Positively interacts with clients.</i>
	E6. ICT Quality Management	Level 3
	Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.	<i>Evaluates quality management indicators and processes based on ICT quality policy and proposes remedial action</i>
	E7. Business Change Management	Level 4
	Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Provides leadership to plan, manage and implement significant IT led business change</i>
E8. Information Security Management	Level 3	
Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.3 Head of Telecoms

COMPETENCES (continued)

E. MANAGE	E9. IT Governance	Level 4
	Defines, deploys and controls the management of Information Systems in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.	<i>Provides leadership for IT governance strategy by communicating, propagating and controlling relevant processes across the entire IT infrastructure.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- An operational, high-performance telecoms and network architecture

PERFORMANCE INDICATORS

- User satisfaction rate, especially for those who travel a lot or work from home
- Number of incidents flagged

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	4 to 5 years experience (preferably in an international context), either with a user, or a smaller supplier. Promotions within the company are also a possibility.

TRENDS AND FACTORS INFLUENCING CHANGE

The main challenges for heads of telecoms in today's world are:

- economic challenges: competition and deadlines for implementing solutions;
- technical challenges: finalising fixed-mobile convergence, and the convergence of voice, data, and multimedia technology; implementing broadband and data flows over the internet;
- organisational challenges: how to obtain and maintain the competences of telecoms teams, against a background of rapid development of infrastructures and equipment, while maintaining service quality?
- company challenges: globalisation, merger/acquisitions and their impact on the network, inter and intra-company mobility, client relationship management, e-commerce and outsourcing.
- operating challenges: how can you offer greater mobility, and allow users to pass from one network to another in a transparent way, yet in a way which is still secure for companies?



7.4 Head of Operations

Head of production

MISSION

Directs all activities and production facilities for their entity, and is responsible for the security and service quality levels, in compliance with user expectations.

Coordinates the activities of the different sectors within a datacenter, in such a way as to guarantee the optimum running of production units (scheduling, organisation, deadlines, standards, etc.)

ACTIVITIES AND TASKS

This function is no longer exclusively technical. It increasingly requires coordination and managerial activities, as described in sheet 7.2; they will not be repeated in this section.

IT production, maintenance	Supervises: <ul style="list-style-type: none"> all production: controls, system engineering and operations. maintenance of hardware, operational and basic applications, and optimisation of IT resources
Quality, security	Monitors the reliability of the system, the security of data, and if necessary defines emergency plans Implements emergency and backup plans Coordinates the completion of IT processes under conditions which best promote quality, delivery and cost
Communications	Organisation of information in case of abnormal situations, distribution of information necessary for business operations
Resource management	From a technical, economic and budgetary point of view, makes recommendations to: <ul style="list-style-type: none"> ensure the suitable technical maintenance of production resources anticipate technological developments and their impact on the sizing of production environments (for example, integration of new hardware, portfolio management) Monitors service contracts

COMPETENCES *(taken from the European e-Competence Framework)*

A8. Sustainable Development		Level 3
A. RUN	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.4 Head of Operations

COMPETENCES (continued)

C. RUN	C3. Service Delivery	Level 3
	Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).	<i>Programme the schedule of operational tasks. Manage costs and budget according to the internal procedures and external constraints. Identify people requirements to resource the operational management of the ICT infrastructure</i>
D. ENABLE	D9. Personnel Development	Level 3
	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Monitors and addresses the development needs of individuals and teams.</i>
D. ENABLE	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure</i>
E. MANAGE	E2. Project and Portfolio Management	Level 3
	Implements plans for a programme of change. Plans and directs a single or portfolio of ICT projects to ensure co-ordination and management of interdependencies. Orchestrates projects to develop or implement new, internal or externally defined processes to meet identified business needs. Defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. Develops contingency plans to address potential implementation issues. Delivers project on time, on budget and in accordance with original requirements. Creates and maintains documents to facilitate monitoring of project progress.	<i>Accounts for own and others activities, working within the project boundary, making choices and giving instructions; manages and supervises relationships within the team; plans and establishes team objectives and outputs and documents results.</i>
	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

7.4 Head of Operations

COMPETENCES (continued)

E. MANAGE	E4. Relationship Management	Level 2
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Positively interacts with clients.</i>
	E6. ICT Quality Management	Level 3
	Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.	<i>Evaluates quality management indicators and processes based on ICT quality policy and proposes remedial action</i>
	E7. Business Change Management	Level 4
	Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Provides leadership to plan, manage and implement significant IT led business change</i>
E8. Information Security Management	Level 3	
Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches</i>	
E9. IT Governance	Level 4	
Defines, deploys and controls the management of Information Systems in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.	<i>Provides leadership for IT governance strategy by communicating, propagating and controlling relevant processes across the entire IT infrastructure.</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.4 Head of Operations

DELIVERABLES

- An operational, high-performance IT production system

PERFORMANCE INDICATORS

- User satisfaction rate (functional compliance)
- Number of incidents flagged

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +5 yrs.	10 to 15 years experience, spread across various IT fields.

TRENDS AND FACTORS INFLUENCING CHANGE

Professionalisation of customer-supplier relationships (Service Level Agreements, etc.).
 Industrialisation of IT operating activities (increasingly specific integration into process type approaches).
 Anticipation of the impact of technological changes.

7.5 Head of Studies & Development

1/4

Director of Front Office Information Systems

Head of Research and Development

MISSION

Directs studies and development activities, which contribute to the development and maintenance of Information Systems. Work mainly concerns the company's Business processes.

ACTIVITIES AND TASKS

This function is not exclusively technical. It requires coordination and managerial activities, as described in sheet 7.2; they will not be repeated in this section.

Integration and automation of Business processes	Carries out studies and all new company projects (not be confused with the integration stage) Suggests functional, technical and organisational initiatives, to optimise the Business processes of user entities or structures Defines Service Level Agreements which are related to Business processes, and which involve the Information Systems Department
IS strategy	Participates in decisions relating to IS strategy, applications and technical architecture developments, software choices, and the organisation of the Information Systems Department and projects
Scheduling, organisation, management	Steers organisational and operational coordination with partners.
Supplier relationships	Maintains perfect control over supplier relationships, in particular with software developers, service providers, and consultancy firms which are involved in large-scale systems implementation projects

COMPETENCES *(issues du référentiel de compétence européen)*

A. PLAN	A1. IS and Business Strategy Alignment	Level 4
	Anticipates long term business requirements and determines the IS model in line with organisation policy. Makes strategic IS policy decisions for the enterprise, including sourcing strategies.	<i>Provides leadership for the construction and implementation of long term innovative IS solutions.</i>
	A2. Service Level Management	Level 4
	Defines, validates and makes applicable Service Level Agreements (SLA) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of customers and business.	<i>Provides leadership to amend the enterprise strategy with respect to Service Level Agreements (SLA) in order to achieve forecasted results.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.5 Head of Studies & Development

COMPETENCES (continued)

A. PLAN	A3. Business Plan Development	Level 4
	Addresses the design and structure of a business or product plan including the identification of alternative approaches as well as return on investment propositions. Considers the possible and applicable sourcing models. Presents cost benefit analysis and reasoned arguments in support of the selected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests, including SWOT analysis.	<i>Provides leadership for the creation of an Information System strategy which meets the requirements of the business.</i>
	A5. architecture Design	Level 3
	Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.	<i>Exploits specialist knowledge to define relevant ICT technology and specifications to be deployed in the construction of multiple ICT projects, applications or infrastructure improvements.</i>
D. ENABLE	A8. Sustainable Development	Level 3
	Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.	<i>Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.</i>
	D9. Personnel Development	Level 3
	Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.	<i>Monitors and addresses the development needs of individuals and teams.</i>
	D10. Information and Knowledge Management	Level 3
	Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.	<i>Analyses Business processes and associated information requirements and provides the most appropriate information structure</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.5 Head of Studies & Development

COMPETENCES (continued)

E. MANAGE	E2. Project and Portfolio Management	Level 3
	Implements plans for a programme of change. Plans and directs a single or portfolio of ICT projects to ensure co-ordination and management of interdependencies. Orchestrates projects to develop or implement new, internal or externally defined processes to meet identified business needs. Defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. Develops contingency plans to address potential implementation issues. Delivers project on time, on budget and in accordance with original requirements. Creates and maintains documents to facilitate monitoring of project progress.	<i>Accounts for own and others activities, working within the project boundary, making choices and giving instructions; manages and supervises relationships within the team; plans and establishes team objectives and outputs and documents results.</i>
	E3. Risk Management	Level 3
	Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.	<i>Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment</i>
	E4. Relationship Management	Level 2
	Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.	<i>Positively interacts with clients.</i>
	E6. ICT Quality Management	Level 3
Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.	<i>Evaluates quality management indicators and processes based on ICT quality policy and proposes remedial action</i>	
E7. Business Change Management	Level 4	
Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach	<i>Provides leadership to plan, manage and implement significant IT led business change</i>	

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.



7.5 Head of Studies & Development

COMPETENCES (continued)

E. MANAGE	E8. Information Security Management	Level 3
	Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.	<i>Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches</i>
	E9. IT Governance	Level 4
	Defines, deploys and controls the management of Information Systems in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.	<i>Provides leadership for IT governance strategy by communicating, propagating and controlling relevant processes across the entire IT infrastructure.</i>

The list of knowledge and skills corresponding to the competences selected for this role is provided in the annex.

DELIVERABLES

- Applications solutions, and related maintenance

PERFORMANCE INDICATORS

- Compliance with SLAs defined at the beginning

CAREER PATH

PROFILE	EXPERIENCE
Baccalaureate +4 yrs. or +5 yrs.	Good technical background in relation to Information Systems, full understanding of new challenges (architecture, integration), knowledge of the various market players (developers, IT consultancies, etc.).
Ingénieur, Business School	Good experience in managing large-scale projects, with experience in IT consultancy roles (Manager, Mission Director, Project Director)

TRENDS AND FACTORS INFLUENCING CHANGE

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ANNEX 1: SUMMARY OF ROLES/COMPETENCES MATRIX

CIGREF's HR group has worked to distribute the competences from the e-Competence Framework amongst the roles from their HR nomenclature.

The following table displays this distribution succinctly.

- IT competences are in blue.
- IT roles are in orange.
- Green squares represent the allocation of a competence to a role.
- The competence level for each role is displayed in the green square.

e-Competence Framework		A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5.	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6	D7	D8	D9.	D10.	E1	E2	E3	E4	E5	E6	E7	E8	E9		
		IS and Business Strategy Alignment	Service Level Management	Business Plan Development	Product or Project Planning	Architecture Design	Application Design	Technology Watching	Sustainable development	Design and Development	Systems Integration	Testing	Solution Deployment	Documentation Production	User Support	Change Support	Service Delivery	Problem Management	Information Security Strategy Development	ICT Quality Strategy Development and Training Provision	Purchasing	Sales Proposal Development	Channel Management	Sales Management	Contract Management	Personnel Development	Information and Knowledge Management	Forecast Development	Project and Portfolio Management	Risk Management	Relationship Management	Process Improvement	ICT Quality Management	Business Change Management	Information Security Management	IT Governance			
4.4	NETWORKS / TOOLS / SYSTEMS ADMINISTRATOR									3	2	2	2	2	2	2-3	2	2										3									2		
4.5	DATABASE ADMINISTRATOR								2	2	2	2	2	2	2	3	2	2										3										3	
4.6	PRODUCTION SYSTEMS INTEGRATOR									4	2	2	2	2	2	3	2	2																					
4.7	OPERATIONS CONTROLLER													1			1	2																					
4.8	OPERATING SYSTEMS EXPERT				4	1	4		3	2	3	3	2					3			2										2								
4.9	NETWORK & TELECOM EXPERT				4	1	4		3	2	3	3	2					3			2									2									
4,10	TECHNICAL ARCHITECT				4		5	3	4	3	3		3		3			4												3		3							
5.1	USER LIAISON OFFICER												1		2	2	2				2							3											
5.2	HELP DESK TECHNICIAN														2		1																						
6.1	SECURITY/QUALITY/TOOLS AND METHODS EXPERT					4	3							3				4	4	3							2	5			3	2	3-4	2-4			2-4		
6.2	CONTRACT MANAGER						3														2					4				3	4								
6.3	CHIEF INFORMATION SECURITY OFFICER- CISO					4												5									4	4		3	4						4	4	
7.1	CHIEF INFORMATION OFFICER	5	4	5			4																				4			3	4					5	3	5	
7.2	IT ENTITY MANAGER						3																				4			3	3			3	4	3	4		
7.3	HEAD OF TELECOMS				3		4	3	5						3		3										3	3		3	3	2		3	4	3	4		
7.4	HEAD OF OPERATIONS						3										3											3	3		3	3	2		3	4	3	4	
7.5	HEAD OF STUDIES & DEVELOPMENT	4	4	4		3		3																				3	3		3	3	2		3	4	3	4	

ANNEX 2: EUROPEAN E-COMPETENCE FRAMEWORK

The following information is from the European e-Competence Framework. For each dimension, it describes all levels, knowledge, and skills.

Information on the framework and its structure and usage are available on the European website: <http://ecompetences.eu>

Dimension 1	A. PLAN				
Dimension 2	A1. IS and Business Strategy Alignment Anticipates long term business requirements and determines the IS model in line with organisation policy. Makes strategic IS policy decisions for the enterprise, including sourcing strategies.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	not applicable	Provides leadership for the construction and implementation of long term innovative IS solutions.	Provides IS strategic leadership to reach consensus and commitment from the management team of the enterprise.
Dimension 4	Knowledge			Skills	
	K1 business strategy concepts K2 trends and implications of ICT internal or external developments for own organisation K3 the potential and opportunities of relevant business models K4 the business aims and organisational objectives K5 the issues and implications of sourcing models			S1 analyse future developments in business process and technology application S2 determine requirements for processes related to ICT services S3 identify and analyses long term user/customer needs S4 contribute to the development of ICT strategy and policy S5 contribute to the development of the business strategy	

Dimension 1	A. PLAN				
Dimension 2	A2. Service Level Management Defines, validates and makes applicable Service Level Agreements (SLA) and underpinning contracts for services offered. Negotiates service performance levels taking into account the needs and capacity of customers and business.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Influences and prepares the final Service Level Agreement (SLA) and accounts for the final content.	Provides leadership to amend the enterprise strategy with respect to Service Level Agreements (SLA) in order to achieve forecasted results.	not applicable
Dimension 4	Knowledge			Skills	
	K1 service level agreement documentation K2 how to compare and interpret management data K3 the elements forming the metrics of Service Level Agreements K4 how service delivery infrastructures work K5 impact of service level non-compliance on business performance			S1 analyse service provision records S2 evaluate service provision against service level agreement S3 negotiate realistic service level targets S4 use relevant quality management techniques S5 anticipate and mitigate against potential service disruptions	

Dimension 1	A. PLAN				
Dimension 2	A3. Business Plan Development Addresses the design and structure of a business or product plan including the identification of alternative approaches as well as return on investment propositions. Considers the possible and applicable sourcing models. Presents cost benefit analysis and reasoned arguments in support of the selected strategy. Ensures compliance with business and technology strategies. Communicates and sells business plan to relevant stakeholders and addresses political, financial, and organisational interests, including SWOT analysis.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Exploits specialist knowledge to provide analysis of market environment etc.	Provides leadership for the creation of an Information System strategy that meets the requirements of the business.	Applies strategic thinking and organisational leadership to exploit the capability of Information Technology to improve the business.
Dimension 4	knowledge			Skills	
	K1 business plan elements and milestones K2 the present and future market size and needs K3 competition and SWOT analysis techniques (for product features and also the external environment) K4 value creation channels K5 profitability elements K6 the issues and implications of sourcing models K7 financial planning and dynamics			S1 address and identify essential elements of product or solution value propositions S2 define the appropriate value creation channels S3 build a detailed SWOT analysis S4 generate short and long term performance reports (e.g. financial, profitability, usage and value creation) S5 identify main milestones of the plan	

Dimension 1	A. PLAN				
Dimension 2	A4. Product or Project Planning Analyses and defines current and target status. Estimates cost effectiveness, points of risk, opportunities, strengths and weaknesses, with a critical approach. Creates structure plans; establishes time scales and milestones. Manages change requests. Defines delivery quantity and provides an overview of additional documentation requirements. Specifies correct handling of products.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Acts systematically to document standard and simple elements of product or project.	Exploits specialist knowledge to create and maintain complex documents of the project or product.	Acts with wide ranging accountability to take responsibility for complete project or product plan.	not applicable
Dimension 4	Knowledge			Skills	
	K1 effective frameworks for project governance K2 typical KPI (key performance indicators) K3 basic decision-making methods			S1 identify all potential targets for the product or project S2 define the communication plan; identify key users and create related documentation S3 produce project and quality plans including milestones S4 ensure and manage adequate information for decision makers S5 manage the change request process	

Dimension 1	A. PLAN				
Dimension 2	A5. architecture Design Specifies, refines, updates and makes available a formal approach to implement solutions, necessary to develop and operate the IS architecture. Manages the relationship with the business stakeholders to ensure that the architecture is in line with business requirements. Identifies the need for change and the components involved; hardware, software, applications, processes, information and technology platform. Ensures that all aspects take account of interoperability, scalability usability and security.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Exploits specialist knowledge to define relevant ICT technology and specifications to be deployed in the construction of multiple ICT projects, applications or infrastructure improvements.	Acts with wide ranging accountability to define the strategy to implement ICT technology compliant with business need. Takes account of the current technology platform, obsolescent equipment and latest technological innovations	not applicable
Dimension 4	knowledge			Skills	
	K1 architecture frameworks and systems design tools K2 systems architecture requirements: performance, maintainability, extendibility, scalability, availability, security and accessibility K3 costs, benefits and risks of a system architecture K4 the company's enterprise architecture and internal standards			S1 provide expertise to help solve complex technical problems and ensures best architecture solutions are implemented S2 use knowledge in various technology areas to build and deliver the enterprise architecture S3 understand the business objectives/divers that impact the architecture component (data, application, security, development etc). S4 assist in communication of the enterprise architecture and standards, principles and objectives to the application teams S5 develop design patterns and models to assist system Analysts in designing consistent applications	

Dimension 1	A. PLAN				
Dimension 2	A6. Application Design Defines the most suitable ICT solutions in accordance with ICT policy and user/customer needs. Accurately estimates development, installation and maintenance of application costs. Selects appropriate technical options for solution design, optimising the balance between cost and quality. Identifies a common reference framework to validate the models with representative users.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	Contributes to the design and general functional specification and interfaces.	Organises the overall planning of the design of the application	Accounts for own and others actions in ensuring that the application is correctly integrated within a complex environment and complies with user/customer needs	not applicable	not applicable
Dimension 4	knowledge		Skills		
	K1 requirements modelling and need analysis techniques K2 software developments methods and their rationale (e.g. prototyping, agile methods, reverse engineering, etc.) K3 metrics related to application development K4 user interface design principles K5 languages for formalising functional specification K6 existing applications and related architecture K7 DBMS, Data Warehouse, DSS ... etc		S1 identify customers, users & stakeholders S2 collect, formalise and validate functional and no-functional requirements S3 apply estimation models and data to evaluate costs of different software lifecycle phases S4 evaluate the use of prototypes to support requirements validation S5 design, organise and monitor the overall plan for the design of application S6 design functional specification starting from defined requirements S7 evaluate the suitability of different application development methods for the current scenario		

Dimension 1	A. PLAN				
Dimension 2	A7. Technology Watching Explores latest ICT technological developments to establish understanding of evolving technologies. Devises innovative solutions for integration of new technology into existing products, applications or services or for the creation of new solutions.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	not applicable	Exploits wide ranging specialist knowledge of new and emerging technologies, coupled with a deep understanding of the business, to envision and articulate the solutions of the future. Provides expert guidance and advice, to the leadership teams in business and in technology, about potential innovations to support strategic decision-making.	Provides strategic leadership. Envisions and articulates future solutions and directs the organisation to build and exploit them.
Dimension 4	knowledge			Skills	
	K1 emerging technologies and the relevant market applications K2 market needs K3 relevant sources of information (e.g. magazines, conferences and events, newsletters, opinion leaders, etc.) K4 the rules of discussions in web communities			S1 monitor sources of information and continuously follow the most promising S2 identify vendors and providers of the most promising solutions; evaluates, justifies and proposes the most appropriate. S3 identify business advantages and improvements of adopting emerging technologies S4 create a proof of concept	

Dimension 1	A. PLAN				
Dimension 2	A8. Sustainable Development Estimates the impact of ICT solutions in terms of eco responsibilities including energy consumption. Advises business and ICT stakeholders on sustainable alternatives that are consistent with the business strategy. Applies an ICT purchasing and sales policy which fulfils eco-responsibilities.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Promotes awareness, training and commitment for the deployment of sustainable development and applies the necessary tools for piloting this approach.	Defines objective and strategy of sustainable IS development in accordance with the organisation's sustainability policy.	not applicable
Dimension 4	knowledge			Skills	
	K1 metrics and indicators related to sustainable development K2 Corporate social responsibility (CSR) of stakeholders within the IT infrastructure			S1 monitor and measures the IT energy consumption S2 apply recommendations in projects to support latest sustainable development strategies S3 master regulatory constraints and international standards related to IT sustainability	

Dimension 1	B. BUILD				
Dimension 2	B1. Design and Development Designs and engineers software and/ or hardware components to meet required specifications, including energy efficiency issues. Follows a systematic methodology to analyse and build the required components and interfaces. Performs unit and system testing to ensure requirements are met.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Systematically develops small components.	Acts creatively to develop and integrate components into a larger product.	Handles complexity by developing standard procedures and architectures in support of cohesive product development.	Has ultimate responsibility for strategic direction of product, technical architecture or technology development
Dimension 4	knowledge			Skills	
	K1 appropriate software programs/ modules, DBMS and programming languages K2 hardware components, tools and hardware architectures K3 functional & technical designing K4 state of the art technologies K5 programming languages K6 Power consumption models of software and/or hardware			S1 explain and communicate the design/development to the customer S2 perform and evaluate test results against product specifications S3 apply appropriate software and/or hardware architectures S4 design and develop hardware architecture, user interfaces, business software components and embedded software components S5 manage and guarantee high levels of cohesion and quality in complex software developments S6 use data models	

Dimension 1	B. BUILD				
Dimension 2	B2. Systems Integration Installs additional hardware, software or sub system components into an existing or proposed system. Complies with established processes and procedures (e.g. configuration management), taking into account the specification, capacity and compatibility of existing and new modules to ensure integrity and interoperability. Verifies system performance and ensures formal sign off and documentation of successful integration.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Acts systematically to identify compatibility of software and hardware specifications. Documents all activities during installation and records deviations and remedial activities.	Accounts for own and others actions in the integration process. Complies with appropriate standards and change control procedures to maintain integrity of the overall system functionality and reliability.	Exploits wide ranging specialist knowledge to create a process for the entire integration cycle, including the establishment of internal standards of practice. Provides leadership to marshal and assign resources for programmes of integration.	not applicable
Dimension 4	knowledge		Skills		
	K1 old, existing and new hardware components/ software programs/ modules K2 the impact that system integration has on existing system/ organisation K3 interfacing techniques between modules, systems and components K4 integration testing techniques		S1 measure system performance before, during and after system integration S2 document and record activities, problems and related repair activities S3 match customers' needs with existing products S4 verify that integrated systems capabilities and efficiency match specifications S5 secure/ back-up data to ensure integrity during system integration		

Dimension 1	B. BUILD				
Dimension 2	B3. Testing Constructs and executes systematic test procedures for IT systems or customer usability requirements to establish compliance with design specifications. Ensures that new or revised components or systems perform to expectation. Ensures meeting of internal, external, national and international standards; including health and safety, usability, performance, reliability or compatibility. Produces documents and reports to evidence certification requirements.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	Performs simple tests in strict compliance with detailed instructions	Organises test programmes and builds scripts to stress test potential vulnerabilities. Records and reports outcomes providing analysis of results.	Exploits specialist knowledge to supervise complex testing programmes. Ensures tests and results are documented to provide input to subsequent process owners such as Designers, users or maintainers. Accountable for compliance with testing procedures including a documented audit trail	not applicable	not applicable
Dimension 4	knowledge		Skills		
	K1 techniques, infrastructure and tools to be used in the testing process K2 the lifecycle of a testing process K3 the different sorts of tests (functional, integration, performance, usability, stress etc.) K4 national and international standards defining quality criteria for testing		S1 create and manage a test plan S2 manage and evaluate the test process S3 design tests of ICT systems S4 prepare and conduct tests of ICT systems S5 report and document tests and results		

Dimension 1	B. BUILD				
Dimension 2	B4. Solution Deployment Following predefined general standards of practice carries out planned necessary interventions to implement solution, including installing, upgrading or decommissioning. Configures hardware, software or network to ensure interoperability of system components and debugs any resultant faults or incompatibilities. Engages additional specialist resources if required, such as third party network providers. Formally hands over fully operational solution to user and completes documentation recording all relevant information, including equipment addressees, configuration and performance data.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	Performs under guidance and in accordance with detailed instructions, the removal or installation of individual components.	Acts systematically to build or deconstruct system elements. Identifies non performing components and establishes root cause of failure within the overall solution. Provides support to less experienced colleagues.	Accounts for own and others actions within solution provision activities including comprehensive communications with client. Exploits specialist knowledge to influence solution construction. Gives advice on aligning work processes and procedures with software upgrades.	not applicable	not applicable
Dimension 4	knowledge		Skills		
	K1 performance analysis techniques K2 techniques related to problem management (operation, performance, compatibility) K3 software packaging and distribution methods and techniques K4 the impacts of deployment on the current architecture K5 the technologies and standards to be used during the deployment		S1 organise deployment workflow and product roll-out activities S2 organise and plan beta-test activities, testing solution in its final operational environment S3 configure components at any level to guarantee correct overall interoperability S4 identify and engage expertise needed to solve interoperability problems S5 organise and control initial support service provision including user training during system start-up S6 organise population of data bases and manage data migration		

Dimension 1	B. BUILD				
Dimension 2	B5. Documentation Production Produces documents describing products, services, components or applications to establish compliance with relevant documentation requirements. Selects appropriate style and media for presentation materials. Creates templates for document-management systems. Ensures that functions and features are documented in an appropriate way. Ensures that existing documents are valid and up to date.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	Uses and applies standards to define document structure.	Determines documentation requirements taking into account the purpose and environment to which it applies.	Adapts the level of detail according to the objective of the documentation and the targeted population.	not applicable	not applicable
Dimension 4	knowledge		Skills		
	K1 tools for production, editing and distribution of professional documents K2 tools for multimedia presentation creation K3 different technical documents required for designing, developing and deploying products, applications and services		S1 observe and deploy effective use of corporate standards for publications S2 prepare templates for shared publications S3 organise and control content management workflow S4 keep publications aligned to the solution during the entire lifecycle		

Dimension 1	C. RUN				
Dimension 2	C1. User Support Responds to user requests and issues; records relevant information. Resolves or escalates incidents and optimises system performance. Monitors solution outcome and resultant customer satisfaction.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	Routinely interacts with users, applies ICT-product, basic knowledge and skill to respond to user requests. Solves simple incidents, following prescribed procedures.	Systematically interprets user problems identifying the solutions and possible side effects. Uses experience to identifying user problems and interrogates database for potential solutions. Escalates complex or unresolved incidents to senior experts. Records and tracks user support procedures from outset to conclusion.	Manages the support process and is accountable for ensuring that agreed service levels are met. Plans resource allocation to ensure that the support is available with respect to the defined service level. Acts creatively, and seeks opportunities for continuous service improvement by analysing root causes. Manages the budget of the support function.	not applicable	not applicable
Dimension 4	knowledge		Skills		
	K1 relevant ICT User applications K2 database structures and content organisation K3 corporate escalation procedures K4 software distribution methods and procedures for fix application and file transmission methodologies applicable to software fixes K5 sources of information for potential solutions		S1 effectively interrogate users to establish symptoms S2 analyse symptoms to identify broad area of user error or technical failure S3 deploy support tools to systematically trace source of error or technical failure S4 clearly communicate with end users and provide instructions on how to progress issues S5 record and code issues to support growth and integrity of online support tools		

Dimension 1	C. RUN				
Dimension 2	C2. Change Support Implements and provides guidance for the evolution of an IT solution. Efficiently controls and schedules software or hardware modifications to prevent multiple upgrades creating unpredictable outcomes. Minimises service disruption as a consequence of changes and adheres to defined service level agreement (SLA).				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	During change, acts systematically to respond to day by day operational needs and react to them, avoiding service disruptions and maintaining coherence to service level agreement (SLA).	Ensures the integrity of the system by controlling the application of functional updates, software or hardware additions and maintenance activities. Complies with budget requirements.	not applicable	not applicable
Dimension 4	knowledge		Skills		
	K1 functional specifications of the Information System K2 the existing ICT application technical architecture K3 how business processes are integrated and their dependency upon ICT applications K4 change management tools and techniques		S1 share functional and technical specifications with ICT teams in charge of the maintenance and evolution of ICT solutions S2 manage communications with ICT teams in charge of the maintenance and the evolution of Information Systems solutions S3 analyse the impact of functional/technical changes on users S4 anticipate all actions required to mitigate the impact of changes (training, documentation, new processes...)		

Dimension 1	C. RUN				
Dimension 2	C3. Service Delivery Takes proactive steps to ensure a stable and secure application and ICT infrastructure. Updates operational document library and logs all operational events. Maintains monitoring and management tools (i.e. Scripts, Procedures...).				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	Acts under guidance to record and track reliability data.	Systematically analyses performance data and communicates findings to senior experts. Escalates potential service level failures and recommends actions to improve service reliability. Tracks reliability data against service level agreement.	Programme the schedule of operational tasks. Manage costs and budget according to the internal procedures and external constraints. Identify people requirements to resource the operational management of the ICT infrastructure	not applicable	not applicable
Dimension 4	knowledge		Skills		
	K1 how to interpret IT service delivery requirements K2 best practices and standards in IT service delivery. K3 how to monitor service delivery K4 how to record service delivery actions and able to identify failures		S1 apply the processes which comprise the organisations IT service delivery strategy S2 fill in and complete documentation used in IT service delivery S3 analyse service delivery provision and report outcomes to senior colleagues		

Dimension 1	C. RUN				
Dimension 2	C4. Problem Management Identifies and resolves the root cause of incidents. Takes a proactive approach to the root cause of ICT problems. Deploys a knowledge system based on recurrence of common errors.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Identifies and classifies incident types and service interruptions. Records incidents cataloguing them by symptom and resolution.	Exploits specialist knowledge and in-depth understanding of the ICT infrastructure and problem management process to identify failures and resolve with minimum outage. Makes sound decisions in emotionally charged environments on appropriate action required to minimise business impact. Rapidly identifies failing component, selects alternatives such as repair, replace or reconfigure.	Provides leadership and is accountable for the entire problem management process. Schedules and ensures well trained human resources, tools, and diagnostic equipment are available to meet emergency incidents. Has depth of expertise to anticipate critical component failure and make provision for recovery with minimum downtime. Constructs escalation processes to ensure that appropriate resources can be applied to each incident.	not applicable
Dimension 4	knowledge			Skills	
	K1 the organisations overall ICT infrastructure and key components K2 the organisations reporting procedures K3 the organisations critical situation escalation procedures K4 the application and availability of diagnostic tools K5 the link between system infrastructure elements and impact of failure on related business processes.			S1 monitor progress of issues throughout lifecycle and communicate effectively S2 identify potential critical component failures and take action to mitigate effects of failure S3 conduct risk management audits and act to minimise exposures S4 allocate appropriate resources to maintenance activities, balancing cost and risk S5 communicate at all levels to ensure appropriate resources are deployed internally or externally to minimise outages	

Dimension 1	D. ENABLE				
Dimension 2	D1. Information Security Strategy Development Defines and makes applicable a formal organisational strategy, scope and culture to maintain safety and security of information. Provides the foundation for Information Security Management, including role identification and accountability (ref D.2). Uses defined standards to create objectives for information integrity, availability, and data privacy.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	not applicable	Exploits depth of expertise and leverages external standards and best practices.	Provides strategic leadership to embed information security into the culture of the organisation.
Dimension 4	knowledge			Skills	
	K1 the potential and opportunities of relevant standards and best practices K2 the impact of legal requirements on information security K3 the information strategy of the organisation K4 possible security threats			S1 develop and critically analyse the company strategy for information security S2 define, present and promote an information security policy for approval by the senior management of the organisation S3 apply relevant standards, best practices and legal requirements for information security S4 anticipate required changes to the organisations information security strategy and formulate new plans S5 propose effective contingency measures	

Dimension 1	D. ENABLE				
Dimension 2	D2. ICT Quality Strategy Development Defines, improves and refines a formal strategy to satisfy customer expectations and improve business performance (balance between cost and risks). Identifies critical processes influencing service delivery and product performance for definition in the ICT quality management system (ref D.4). Uses defined standards to formulate objectives for service management, product and process quality. Identifies ICT quality management accountability.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	not applicable	Exploits wide ranging specialist knowledge to leverage and authorise the application of external standards and best practices.	Provides strategic leadership to embed ICT quality (i.e. metrics and continuous improvement) into the culture of the organisation.
Dimension 4	knowledge			Skills	
	K1 the major information technology industry frameworks - COBIT, ITIL, CMMI, ISO - and their implications for corporate ICT governance K2 the information strategy of the organisation			S1 define an ICT quality policy to meet the organisations standards of performance and customer satisfaction objectives S2 identify quality metrics to be used S3 apply relevant standards and best practices to maintain information quality	

Dimension 1	D. ENABLE				
Dimension 2	D3. Education and Training Provision Defines and implements ICT training policy to address organisational skill needs and gaps. Structures, organises and schedules training programmes and evaluates training quality through a feedback process and implements continuous improvement. Adapts training plans to address changing demand.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Organises the identification of training needs; collates organisation requirements, identifies, selects and prepares schedule of training interventions.	Acts creatively to analyse skills gaps; elaborates specific requirements and identifies potential sources for training provision. Has specialist knowledge of the training market and establishes a feedback mechanism to assess the added value of alternative training programmes.	not applicable	not applicable
Dimension 4	knowledge		Skills		
	K1 appropriate pedagogical approaches and education delivery methods e.g. classroom, online, text, dvd.. K2 the competitive market for educational offering K3 training needs analysis methodologies		S1 organise training and education schedules to meet market needs S2 identify and maximise use of resources required to deliver a cost effective schedule S3 promote and market education and training provision S4 analyse feedback data and use it to drive continuous improvement of education and training delivery S5 design curricula and training programmes to meet client ICT education needs		

Dimension 1	D. ENABLE				
Dimension 2	D4. Purchasing Applies a consistent procurement procedure, including deployment of the following sub processes: specification requirements, supplier identification, proposal analysis, evaluation of the energy efficiency and environmental compliance of products, suppliers and their processes, contract negotiation, supplier selection and contract placement. Ensures that the entire purchasing process is fit for purpose and adds business value to the organisation.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Understands and applies the principles of the procurement process; places orders based on existing supplier contracts. Ensures the correct execution of orders, including validation of deliverables and correlation with subsequent payments.	Exploits specialist knowledge to deploy the purchasing process, ensuring positive commercial relationships with suppliers. Selects suppliers, products and services by evaluating performance, cost, timeliness and quality. Decides contract placement and complies with organisational policies.	Provides leadership for the application of the organisations procurement policies and makes recommendations for process enhancement. Applies experience and procurement practice expertise to make ultimate purchasing decisions.	not applicable
Dimension 4	knowledge		Skills		
	K1 typical purchase contract Terms and conditions K2 own organisation purchasing policies K3 financial models e.g. discount structures K4 the current market for relevant products or services K5 the issues and implications of outsourcing services		S1 interpret product/service specifications S2 negotiate terms, conditions and pricing S3 analyse received proposals/ offers S4 manage the purchasing budget S5 lead purchase process improvement S6. Analyse the energy efficiency and environmental-related aspects of a proposal		

Dimension 1	D. ENABLE				
Dimension 2	D5. Sales Proposal Development Develops technical proposals to meet customer solution requirements and provide sales personnel with a competitive bid. Underlines the energy efficiency and environmental impact related to a proposal. Collaborates with colleagues to align the service or product solution with the organisations capacity to deliver.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Organises collaboration between relevant internal departments, for example, technical, sales and legal. Facilitates comparison between customer requirement and available 'off the shelf' solutions.	Acts creatively to develop proposal incorporating a complex solution. Customises solution in a complex technical environment and ensures feasibility and technical validity of customer offer.	Interprets and influences customer needs and the reference business contexts, proposes consultancy projects, in order to provide the ideal customer solutions, i.e. behaves as a "consultative seller"	not applicable
Dimension 4	knowledge			Skills	
	K1 customer needs K2 internally adopted sales and marketing techniques K3 legal requirements K4 internal business practices K5 product or service unique selling points			S1 construct the framework for proposal documentation S2 co-ordinate and facilitate multidiscipline teams contributing to the proposal S3 interpret the terms and conditions of the tender documentation S4 evaluate the strengths and weaknesses of potential competitors S5 ensure that a proposal is of high quality and is submitted on time S6 Communicates the energy efficiency and environmental-related aspects of a proposal	

Dimension 1	D. ENABLE				
Dimension 2	D6. Channel Management Develops the strategy for managing third party sales outlets. Ensures optimum commercial performance of the value-added resellers (VAR) channel through the provision of a coherent business and marketing strategy. Defines the targets for volume, geographic coverage and the industry sector for VAR engagements and structures incentive programmes to achieve complimentary sales results.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Acts creatively to influence the establishment of a VAR network. Manages the identification and assessment of potential VAR members and sets up support procedures. VARs managed to maximise business performance.	Exploits wide ranging skills in marketing and sales to create the organisations VAR strategy. Establishes the processes by which VARs will be managed to maximise business performance	not applicable
Dimension 4	knowledge			Skills	
	K1 the competition (what and where) K2 the market distribution across the field K3 sales channel typologies (e.g. direct sales, VAR, web marketing) K4 incentive policies K5 user experience of each channel type			S1 choose the best sales channel according to the product or solution being delivered S2 define discounts according to the competitive environment S3 select value added retailers based on thorough analyses, plan and make contacts S4 monitor and supervise channel performances in line with sales forecast and able to define corrective actions if necessary S5 apply web marketing methods	

Dimension 1	D. ENABLE				
Dimension 2	D7. Sales Management Drives the achievement of sales results through the establishment of a sales strategy. Demonstrates the added value of the organisations products and services to new or existing customers and prospects. Establishes a sales support procedure providing efficient response to sales enquiries, consistent with company strategy and policy. Establishes a systematic approach to the entire sales process, including understanding client needs, forecasting, prospect evaluation, negotiation tactics and sales closure.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Contributes to the sales process by effectively presenting products or services to clients.	Assesses and estimates appropriate sales strategies to deliver company results. Decides and allocates annual sales targets and adjusts incentives to meet market conditions.	Assumes ultimate responsibility for the sales performance of the organisation. Authorises resource allocation, prioritises product and service promotions, advises board directors of sales performance.
Dimension 4	knowledge			Skills	
	K1 customer organisation (needs, budget allocation and decision makers) K2 company specific processes (sales, ITIL, etc.) K3 market trends and own service offering portfolio K4 legal, financial and contractual rules K5 project management procedures K6 current market imperatives e.g. risks, changes, innovation			S1 develop strong co-operation between customers and own organisation S2 keep abreast of market news e.g. risks, changes, innovations and communicate to internal business units, to improve service and product portfolio S3 react proactively to customer business changes and communicate them internally S4 generate sustainable customer relationships S5 analyse sales performance to build forecasts and develop a tactical sales plan	

Dimension 1	D. ENABLE				
Dimension 2	D8. Contract Management Provides and negotiates contract in accordance with organisational processes. Ensures that supplier deliverables are provided on time, meet quality standards and comply with agreed service levels. Addresses non-compliance escalates significant issues, drives recovery plans and if necessary amends contracts. Maintains budget integrity. Assesses and addresses supplier compliance to legal, health and safety and security standards. Actively pursues regular supplier communication.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Acts systematically to monitor contract compliance and promptly escalate defaults.	Evaluates supplier contract performance by monitoring performance indicators. Assures performance of the complete supply chain. Influences the terms of contract renewal.	Provides Leadership for supplier contract compliance and is the final escalation point for issue resolution.	not applicable
Dimension 4	knowledge			Skills	
	K1 applicable Service Level Agreements K2 company policy for contract management K3 legal regulations applicable to ICT contracts			S1 foster positive relationships with suppliers and customers S2 negotiate contract terms and conditions S3 apply judgment and flexibility in contract negotiations compliant with internal rules and policies	

Dimension 1	D. ENABLE				
Dimension 2	D9. Personnel Development Diagnoses individual and group competence, identifying skill needs and skill gaps. Reviews training and development options and selects appropriate methodology taking into account the needs of the individual and the business. Coaches and/ or mentors individuals and teams to address learning needs.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Briefs/ trains individuals and groups, holds courses of instruction.	Monitors and addresses the development needs of individuals and teams.	Takes proactive action and develops organisational processes to address the development needs of individuals, teams and the entire workforce.	not applicable
Dimension 4	knowledge			Skills	
	K1 competence development methods K2 competence and skill needs analysis methodologies K3 learning and development support methods (e.g. coaching, teaching) K4 ICT technologies and processes with an overview perspective			S1 identify competence and skill gaps S2 identify and recommend work based development opportunities S3 incorporate within routine work processes, opportunities for skills development S4 coach on learning processes	

Dimension 1	D. ENABLE				
Dimension 2	D10. Information and Knowledge Management Identifies and manages structured and unstructured information and considers information distribution policies. Creates information structure to enable exploitation and optimisation of information for business benefit. Understands appropriate tools to be deployed to create, extract, maintain, renew and propagate business knowledge in order to capitalise from the information asset.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Analyses Business processes and associated information requirements and provides the most appropriate information structure.	Integrates the appropriate information structure into the corporate environment.	Correlates information and knowledge to create value for the business. Applies innovative solutions based on information retrieved.
Dimension 4	knowledge			Skills	
	K1 methods to analyse unstructured information and business processes K2 IT devices and tools applicable for the storage and retrieval of data			S1 gather internal and external knowledge and information needs S2 formalise customer requirements S3 translate/ reflect business behaviour into structured information S4 make information available	

Dimension 1	E. MANAGE				
Dimension 2	E1. Forecast Development Interprets market needs and evaluates market acceptance of products or services. Assesses the organisations potential to meet future production and quality requirements. Applies relevant metrics to enable accurate decision making in support of production, marketing, sales and distribution functions.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Exploits skills to provide short-term forecast using market inputs and assessing the organisations production and selling capabilities	Acts with wide ranging accountability for the production of a long-term forecast. Understands the global marketplace, identifying and evaluating relevant inputs from the broader business, political and social context	not applicable
Dimension 4	knowledge			Skills	
	K1 market size and relevant fluctuations K2 accessibility of the market according to current conditions (e.g. government policies, emerging technologies, social and cultural trends, etc.) K3 the extended supply chain operation K4 large scale data analysis techniques (data mining)			S1 apply what-if techniques to produce realistic outlooks S2 generate sales forecasts in relation to current market share S3 generate production forecasts taking into account manufacturing capacity S4 compare sales and production forecasts and analyse potential mismatches S5 interpret external research data and analyse information	

Dimension 1	E. MANAGE				
Dimension 2	E2. Project and Portfolio Management Implements plans for a programme of change. Plans and directs a single or portfolio of ICT projects to ensure co-ordination and management of interdependencies. Orchestrates projects to develop or implement new, internal or externally defined processes to meet identified business needs. Defines activities, responsibilities, critical milestones, resources, skills needs, interfaces and budget. Develops contingency plans to address potential implementation issues. Delivers project on time, on budget and in accordance with original requirements. Creates and maintains documents to facilitate monitoring of project progress.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Understands and applies the principles of project management and applies methodologies, tools and processes to manage simple projects.	Accounts for own and others activities, working within the project boundary, making choices and giving instructions; manages and supervises relationships within the team; plans and establishes team objectives and outputs and documents results.	Exploits wide ranging skills in project management to work beyond project boundary. Manages complex projects or programmes, including interaction with others. Influences project strategy by proposing new or alternative solutions. Takes overall responsibility for project outcomes, including finance and resource management. Is empowered to revise rules and choose standards.	Provides strategic leadership for extensive interrelated programmes of work to ensure that Information Technology is a change enabling agent and delivers benefit in line with overall business strategic aims. Applies extensive business and technological mastery to conceive and bring innovative ideas to fruition.
Dimension 4	knowledge			Skills	
	K1 a project methodology, including approaches to define project steps and tools to set up action plans K2 technologies to be implemented within the project K3 company business strategy and business processes K4 development and compliance to financial plans and budgets			S1 identify project risks and define action plans to mitigate S2 define a project plan by breaking it down into individual project tasks S3 communicate project progress to all relevant parties reporting on topics such as cost control, schedule achievements, quality control, risk avoidance and changes to project specifications S4 delegate tasks and manage team member contributions appropriately S5,manage external ,contracted resources to achieve project objectives S6 optimise project portfolio timelines and delivery objectives by achieving consensus on stakeholder priorities	

Dimension 1	E. MANAGE				
Dimension 2	E3. Risk Management Implements the management of risk across Information Systems through the application of the enterprise defined risk management policy and procedure. Assesses risk to the organisations business, and documents potential risk and containment plans.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Understands and applies the principles of risk management and investigates ICT solutions to mitigate identified risks	Decides on appropriate actions required to adapt security and address risk exposure. Evaluates, manages and ensures validation of exceptions; audits ICT processes and environment	Provides leadership to define and make applicable a policy for risk management by considering all the possible constraints, including technical, economic and political issues. Delegates assignments	not applicable
Dimension 4	knowledge			Skills	
	K1 corporate values and interests to apply risk analysis to K2 the return on investment compared to risk avoidance K3 good practices (methodologies) and standards in risk analysis			S1 develop risk management plan to identify required preventative actions S2 communicate and promote the organisations risk analysis outcomes and risk management processes S3 design and document the processes for risk analysis and management S4 apply mitigation and contingency actions	

Dimension 1	E. MANAGE				
Dimension 2	E4. Relationship Management Establishes and maintains positive business relationships between the client and provider (internal or external) deploying and complying with organisational processes. Maintains regular communication with client/partner/supplier, and addresses needs through empathy with their environment and managing supply chain communications. Ensures that client/partner/supplier needs, concerns or complaints are understood and addressed in accordance with organisational policy.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Positively interacts with clients.	Accounts for own and others actions in managing a limited client base.	Provides leadership for large or many client relationships. Authorises investment in new and existing relationships. Leads the design of a workable procedure for maintaining positive business relationships.	not applicable
Dimension 4	knowledge			Skills	
	K1 client or internal organisation processes including, decision making , budgets and management structure K2 client business objectives. K3 own organisation business objectives K4 how to measure and apply resources to meet customer requirements K5 customer business challenges and risks			S1 deploy empathy to customer needs S2 identify potential win win opportunities for client and own organisation S3 establish realistic expectations to support development of mutual trust S4 monitor ongoing commitments to ensure fulfilment S5 communicate good and bad news to avoid surprises	

Dimension 1	E. MANAGE				
Dimension 2	E5. Process Improvement Measures effectiveness of existing ICT processes. Researches and benchmarks ICT process design from a variety of sources. Follows a systematic methodology to evaluate, design and implement process or technology changes for measurable business benefit. Assesses potential adverse consequences of process change.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Exploits specialist knowledge to research existing ICT processes and solutions in order to define possible innovations. Makes recommendations based on reasoned arguments	Provides leadership and authorises implementation of innovations and improvements that will enhance competitiveness or efficiency. Demonstrates to senior management the business advantage of potential changes	not applicable
Dimension 4	knowledge			Skills	
	K1 research methods, benchmarks and measurements methods K2 evaluation, design and implementation methodologies K3 existing internal processes K4 relevant developments in ICT and the potential impact on processes			S1 compose, document and catalogue essential processes and procedures S2 propose process changes to facilitate and rationalise improvements	

Dimension 1	E. MANAGE				
Dimension 2	E6. ICT Quality Management Implements ICT quality policy to maintain and enhance service and product provision. Plans and defines indicators to manage quality with respect to ICT strategy. Reviews quality performance indicators and recommends enhancements to influence continuous quality improvement.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Communicates and monitors application of the organisations quality policy	Evaluates quality management indicators and processes based on ICT quality policy and proposes remedial action	Assesses and estimates the degree to which quality requirements have been met and provides leadership for quality policy implementation. Provides cross functional leadership for setting and exceeding quality standards	not applicable
Dimension 4	knowledge			Skills	
	K1 which methods, tools and procedure are applied within the organisation and where they should be applied K2 the IS internal quality audit approach K3 regulations and standards in energy efficiency and e-waste			S1 illustrate how methods, tools and procedures can be applied to implement the organisations quality policy S2 evaluate and analyse process steps to identify strengths and weaknesses S3 assist process owners in the choice and use of measures to evaluate effectiveness and efficiency of the overall process S4 monitor, understand and act upon quality indicators S5 perform quality audits	

Dimension 1	E. MANAGE				
Dimension 2	E7. Business Change Management Assesses the implications of new IT solutions. Defines the requirements and quantifies the business benefits. Manages the deployment of change taking into account structural and cultural issues. Maintains business and process continuity throughout change, monitoring the impact, taking any required remedial action and refining approach				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	Evaluates change requirements and exploits specialist skills to identify possible methods and standards that can be deployed	Provides leadership to plan, manage and implement significant IT led business change	Applies pervasive influence to imbed organisational change
Dimension 4	knowledge			Skills	
	K1 the implications on business of new ICT solutions K2 the implications on organisation and human resources issues of new ICT solutions K3 the impact of new ICT solutions on legal issues			S1 analyse costs and benefits of implementing new ICT solutions S2 select appropriate ICT solutions based upon benefit, risks and overall impact S3 construct and document a plan for implementation of process enhancements S4 apply project management standards and tools	

Dimension 1	E. MANAGE				
Dimension 2	E8. Information Security Management Implements information security policy. Monitors and takes action against intrusion, fraud and security breaches or leaks. Ensures that security risks are analysed and managed with respect to enterprise data and information. Reviews security incidents and makes recommendations for continuous security enhancement.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	Systematically scans the environment to identify and define vulnerabilities and threats. Records and escalates non-compliance	Evaluates security management measures and indicators and decides if compliant to information security policy. Investigates and instigates remedial measures to address any security breaches	Provides leadership for the integrity, confidentiality and availability of data stored on Information Systems and complies with all legal requirements	not applicable
Dimension 4	knowledge			Skills	
	K1 the organisations security management policy and its implications for engagement with customers, suppliers and subcontractors K2 the best practices and standards in information security management K3 the critical risks for information security management K4 the IS internal audit approach			S1 document the information security management policy, linking it to business strategy S2 analyse the company critical assets and identify weaknesses and vulnerability to intrusion or attack S3 establish a risk management plan to feed and produce preventative action plans S4 perform security audits	

Dimension 1	E. MANAGE				
Dimension 2	E9. IT Governance Defines, deploys and controls the management of Information Systems in line with business imperatives. Takes into account all internal and external parameters such as legislation and industry standard compliance to influence risk management and resource deployment to achieve balanced business benefit.				
Dimension 3	Level 1	Level 2	Level 3	Level 4	Level 5
	not applicable	not applicable	not applicable	Provides leadership for IT governance strategy by communicating, propagating and controlling relevant processes across the entire IT infrastructure.	Defines and aligns the IT governance strategy incorporating it into the organisations corporate governance strategy. Adapts the IT governance strategy to take into account new significant events arising from legal, economic, political, business or environmental issues.
Dimension 4	knowledge			Skills	
	K1 the IT infrastructure and the business organisation K2 the business strategy of the company K3 the business values K4 the legal requirements			S1 manage applicable governance models S2 analyse the business context of the company and its evolution S3 define and implement appropriate key performance indicators (KPI's) S4 communicate the value, risks and opportunities derived from the IS strategy	