

# Technical Description

*EuroSkills Gdańsk 2023*  
*IT Software Solutions for Business (45)*

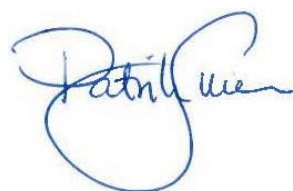
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# 1 Introduction

## 1.1 Name and description of the Skill Competition

### 1.1.1 The name of the Skills Competition is

IT Software Solutions for Business

### 1.1.2 Description of the associated work role(s) or occupation(s)

The rapid pace of globalization over the past decades has been largely driven by developments in Information and Communication Technology (ICT). IT specialists are increasingly in demand in several areas, one of which is providing software solutions for businesses.

The development of software solutions to improve business productivity encompasses many different skills and disciplines. Key to these is an awareness of the fast-changing nature of the industry and the ability to keep up with the rapid pace of change.

IT software solution professionals are software engineers and may work closely with clients and modify existing systems or create new systems. They often work as part of a team of software professionals responsible for the requirement specification, system analysis and design, prototyping, testing, implementation, as well as maintenance of a business software systems.

The tasks performed by IT software solution professionals include but are not limited to the following:

- Provide advice on how to optimise the use of existing tools and systems, make recommendations for the development and implementation of a business project or technological solution and contribute to project definitions
- Elicit and prioritise user requirements, produce and document software specifications, test their application, and review them during software development
- Implement or program all kinds of software systems based on specifications and designs by using programming languages, tools, and platforms
- Work in testing environments, assessing products, checking for quality and accuracy, or creating tests scripts

IT software solutions professionals can be employed in large, medium, and small enterprises, mostly in the following ESCO occupations:

- ICT consultant
- ICT system developer
- System configurator
- Software developer
- ICT application developer
- Software analyst
- ICT test analyst

## 1.2 The content, relevance and significance of this document

This document incorporates a Role Description and Occupational Standards which follow the principles and some or all of the content of the WorldSkills Occupational Standards. In doing so WSE acknowledges WorldSkills International's (WSI's) copyright. WSE also acknowledges WSI's intellectual property rights regarding the assessment principles, methods and procedures that govern the competition.

Every Expert and Competitor must know and understand this Technical Description.

In the event of any conflict within the different languages of the Technical Descriptions, the English version takes precedence.

### 1.3 **Associated documents**

Since this Technical Description contains only skill-specific information it must be used in association with the following:

- WSE – Competition Rules
- WSI – WorldSkills Occupational Standard framework
- WSE – WorldSkills Europe Assessment Strategy
- WSE – Online resources as referenced in this document
- WSE – Code of Ethics and Conduct
- Host Country – Health and Safety regulations

## 2 The Standards Specification

### 2.1 General notes regarding WSOS / WSEOS

Where appropriate WSE has utilised some, or all, of the WorldSkills International Occupational Standards (WSOS) for those Skills Competitions that naturally align between the two international competitions. Where the Skill is exclusive to the EuroSkills Competition, WorldSkills Europe has developed its own Occupational Standards (WSEOS) using the same principles and framework to that used for the development of the WSOS. For the purposes of this document the use of the words “Occupational Standards” will refer to both WSOS and WSEOS.

The Occupational Standards specifies the knowledge, understanding and specific skills that underpin international best practice in technical and vocational performance. It should reflect a shared global understanding of what the associated work role(s) or occupation(s) represent for industry and business. Helpfully, for the global consultation on the WSOS in 2014-2021, around 50 percent of responses came from European industry and business.

Each Skill Competition is intended to reflect international best practice as described by the Occupational Standards, and to the extent that it is able to. The Occupational Standards is therefore a guide to the required training and preparation for the Skill Competition.

In the Skill Competition the assessment of knowledge and understanding will take place through the assessment of performance. There will not be separate tests of knowledge and understanding.

The Occupational Standards are divided into distinct sections with headings and reference numbers added.

Each section is assigned a percentage of the total marks to indicate its relative importance within the Occupational Standards. The sum of all the percentage marks is 100.

The Marking Scheme and Test Project will assess only those Skills that are set out in the Occupational Standards. They will reflect the Occupational Standards as comprehensively as possible within the constraints of the Skill Competition.

The Marking Scheme and Test Project will follow the allocation of marks within the Occupational Standards to the extent practically possible. A variation of five percent is allowed, provided that this does not distort the weightings assigned by the Occupational Standards.

## 2.2 Occupational Standards

SECTION		RELATIVE IMPORTANCE %
1	Work organization and self-management	5

### The individual needs to know and understand:

- The principles and practices that enable productive work
- The principles and practices of organizing session's work in an efficient and productive manner
- How to research, evaluate, and apply new trends in the industry
- The importance of accurate and consistent version control

### The individual shall be able to:

- Plan each day's production schedule according to available time and take into account time limitations and deadlines
- Use GIT version control to support software development process
- Apply research techniques and skills to keep up-to-date with the latest industry guidelines
- Review own performance against the expectations and needs of clients and organizations

2	Communication and interpersonal skills	5
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### The individual needs to know and understand:

- The importance of listening skills
- The necessity of using discretion and confidentiality when dealing with clients
- The importance of resolving misunderstandings and conflicting demands
- The importance of establishing and maintaining client's confidence and productive working relationships
- The value of written and oral communication skills
- The importance of thoroughly documenting developed solutions

**SECTION**
**RELATIVE  
IMPORTANCE %**
**The individual shall be able to:**

- Use literacy skills to:
  - Provide technical documentation
  - Follow documented instructions from supplied guides
  - Interpret workplace instructions and other technical documents
  - Interpret and understand systems specification documents
  - Keep up-to-date with latest industry guidelines
- Use oral communication skills to:
  - Interact with other team members and other stakeholders
  - Gather and confirm clients' requirements
  - Keep clients updated regarding systems' progress
  - Negotiate with clients regarding project budgets and timelines

**3 Problem solving**
**10**
**The individual needs to know and understand:**

- The common types of problems which may occur within software development
- The common types of problem which may occur within a business organization
- Diagnostic approaches to problem solving
- Trends and developments in the industry including new platforms, languages, conventions, and technical skills

**The individual shall be able to:**

- Use analytical skills to:
  - Synthesize complex or diverse information
  - Determine the functional and non-functional requirements of specifications
- Use investigation and learning skills to:
  - Obtain user requirements (e.g. interviews, questionnaire, document search and analysis, joint application design, and observation)
  - Research encountered problems independently
- Use problem-solving skills to:
  - Identify and resolve problems in a timely manner
  - Gather and analyse information skilfully
  - Develop alternatives for decision making, select the most appropriate alternatives and produce the required solutions

SECTION	RELATIVE IMPORTANCE %
4 Analysis and design of software solutions	25

**The individual needs to know and understand:**

- The importance of considering all possible options and deriving the best solution based on sound analytical judgment and clients' best interests
- The importance of using system analysis and design methodologies (e.g. Unified Modelling Language, Model-View-Control (MVC) software framework, Design Patterns)
- The need to be up to date with new technologies and able to make judgements about the appropriateness of adopting them
- The importance of optimizing systems design with an emphasis on modularity and reusability
- The importance of the full software development life cycle, including coding standards, code reviews, source control management, build processes, testing, and operations

**The individual shall be able to:**

- Analyse systems using:
  - Use Case modelling and analysis (e.g. Use Case Diagram, Use Case Description, Actor Description, Use Case Package)
  - Structural modelling and analysis (e.g. Object, Class, Domain Class Diagram)
  - Dynamic modelling and analysis (e.g. Sequence Diagram, Collaboration Diagram, State Diagram, Activity Diagram)
  - Data modelling tools and techniques (e.g. Entity Relationship Diagram, Normalization, Data Dictionary)
- Design systems using:
  - Class Diagram, Sequence Diagram, State Diagram, Activity Diagram
  - Object design and package
  - Relational or object database design
  - Human-computer interface design
  - Security and controls design
  - Multi-tier application design



SECTION	RELATIVE IMPORTANCE %
5 <b>Development of software solutions</b>	50

**The individual needs to know and understand:**

- The importance of considering all possible options and deriving the best solutions to meet user requirements and clients' best interests
- The importance of using system development methodologies (e.g. object-oriented paradigm)
- The importance of considering all normal and abnormal scenarios, and exception handlings
- The importance of following standards (e.g. code convention, style guide, user interface designs, managing directories, and files)
- The use of existing codes as a basis for analysis and modifications
- The importance of selecting the most appropriate development tools from the available options

**The individual shall be able to:**

- Develop software solutions by studying information needs, conferring with users, and studying systems flow, data usage, and work processes
- Use database management systems to construct, store and manage the data for the required systems
- Use modern software development environments and tools to modify existing codes and write new codes of client-server-based software solutions
- Evaluate and integrate appropriate libraries and frameworks into the software solutions
- Build multi-tier applications
- Construct desktop, web and/or native mobile components of client-server-based systems
- Construct RESTful APIs

6 <b>Testing software solutions</b>	5
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**The individual needs to know and understand:**

- Troubleshooting methods for common software applications problems
- The importance of thoroughly tested solutions
- The importance of documenting testing

SECTION	RELATIVE IMPORTANCE %
<p><b>The individual shall be able to:</b></p> <ul style="list-style-type: none"> <li>• Plan testing activities (e.g. unit testing, volume testing, integration testing, acceptance testing, etc.)</li> <li>• Design test cases with data and check results of test cases</li> <li>• Debug and handle errors</li> <li>• Report on test processes</li> </ul>	
<p><b>Total</b></p>	<p><b>100%</b></p>

## 3 The assessment approach & principles

### 3.1 General guidance

**Note: this Section and Section 4 summarize a great deal of new information and guidance regarding assessment. Please refer to the Competition Rules for greater detail.**

The Competition Committee (CC) establishes the principles and techniques to which assessment at the EuroSkills Competition must conform.

Expert assessment practice lies at the heart of the EuroSkills Competition. For this reason it is the subject of continuing professional development and scrutiny. The growth of expertise in assessment will inform the future use and direction of the main assessment instruments used by the EuroSkills Competition: the Marking Scheme, Test Project, and Competition Information System (CIS).

Assessment at the EuroSkills Competition falls into two broad types: measurement and judgement. All assessments will be governed by explicit benchmarks, referenced to best practice in industry and business.

The Marking Scheme must include these benchmarks and follow the weightings within the Occupational Standards. The Test Project is the assessment vehicle for the Skill Competition, and also follows the Occupational Standards. The CIS enables the timely and accurate recording of marks, and has expanding supportive capacity.

The Marking Scheme, in outline, will lead the process of Test Project design. After this, the Marking Scheme and Test Project will be designed and developed through an iterative process, to ensure that both together optimize their relationship with the Technical Description and the principles for assessment as set out in the WSE Assessment Strategy. They will be agreed by the Experts and submitted to WSE for approval together, in order to demonstrate their quality and conformity with the Occupational Standards.

Prior to submission for approval to WSE, the Marking Scheme and Test Project will be reviewed by the WSE Skill Advisors in order to benefit from the capabilities of the CIS.

## 4 The Marking Scheme

### 4.1 General guidance

This Section describes the role and place of the Marking Scheme, how the Experts will assess Competitors' work as demonstrated through the Test Project, and the procedures and requirements for marking.

The Marking Scheme is the pivotal instrument of the EuroSkills Competition, in that it ties assessment to the standards that represent the skills to be tested. It is designed to allocate marks for each assessed aspect of performance in accordance with the weightings in the Occupational Standards.

By reflecting the weightings in the Occupational Standards, the Marking Scheme establishes the parameters for the design of the Test Project. Depending on the nature of the skill and its assessment needs, it may initially be appropriate to develop the Marking Scheme in more detail as a guide for Test Project design. Alternatively, initial Test Project design can be based on the outline Marking Scheme. From this point onwards the Marking Scheme and Test Project should be developed together.

Section 2.1 above indicates the extent to which the Marking Scheme and Test Project may diverge from the weightings given in the Occupational Standards, if there is no practicable alternative.

The Marking Scheme and Test Project may be developed by one person, or several, or by all Experts. The detailed and final Marking Scheme and Test Project must be approved by the whole Expert Jury prior to submission for independent quality assurance. The exception to this process is for those Skill Competitions which use an Independent Test Project designer for the development of the Marking Scheme and Test Project.

In addition, Experts are encouraged to submit their Marking Schemes and Test Projects for comment and provisional approval well in advance of completion, in order to avoid disappointment or setbacks at a late stage. They are also advised to work with the CIS Team at this intermediate stage, in order to take full advantage of the possibilities of the CIS.

In all cases the complete and approved Marking Scheme must be entered into the CIS at least **eight weeks** prior to the Competition using the CIS standard spreadsheet or other agreed methods.

In the interests of fairness and transparency, all experts should have the same knowledge of the Marking Scheme at any given time. If an expert, including the chief expert and deputy chief expert, is assigned some information on the Marking Scheme, it should be shared with the other experts without delay.

### 4.2 Assessment criteria

The main headings of the Marking Scheme are the Assessment Criteria. These headings are derived in conjunction with the Test Project. In some Skill Competitions the Assessment Criteria may be similar to the section headings in the Occupational Standards; in others they may be totally different. There will normally be between five and nine Assessment Criteria. Whether or not the headings match, the Marking Scheme must reflect the weightings in the Occupational Standards.

Assessment Criteria are created by the person(s) developing the Marking Scheme, who are free to define criteria that they consider most suited to the assessment and marking of the Test Project. Each Assessment Criterion is defined by a letter (A-I).

The Mark Summary Form generated by the CIS will comprise a list of the Assessment Criteria.

The marks allocated to each criterion will be calculated by the CIS. These will be the cumulative sum of marks given to each aspect of assessment within that Assessment Criterion.

## 4.3 Sub criteria

Each Assessment Criterion is divided into one or more Sub Criteria. Each Sub Criterion becomes the heading for a EuroSkills marking form.

Each marking form (Sub Criterion) has a specified day on which it will be marked.

Each marking form (Sub Criterion) contains Aspects to be assessed and marked by measurement or judgement. Some Sub Criteria have assessment by both measurement and judgement, in which case there is a separate marking form for each method

## 4.4 Aspects

Each Aspect defines, in detail, a single item to be assessed and marked together with the marks, or instructions for how the marks are to be awarded. Aspects are assessed either by measurement or judgement and appear on the appropriate marking form.

The marking form lists, in detail, every Aspect to be marked together with the mark allocated to it, the benchmarks, and a reference to the section of the Standards Specification.

The sum of the marks allocated to each Aspect must fall within the range of marks specified for that section of the Standards Specification. This will be displayed in the Mark Allocation Table of the CIS, in the following format, when the Marking Scheme is reviewed from C-8 weeks. (Section 4).

CRITERIA											TOTAL MARKS PER SECTION
		A	B	C	D	E	F	G	H	I	
OCCUPATIONAL STANDARDS SPECIFICATION SECTIONS	1										
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
TOTAL MARKS PER CRITERION											100

## 4.5 Assessment and marking

There is to be one marking team for each Sub Criterion, whether it is assessed and marked by judgement, measurement, or both. The same marking team must assess and mark all Competitors. Where this is impracticable (for example where an action must be done by every Competitor simultaneously, and must be observed doing so), a second tier of assessment and marking will be put in place, with the approval of the Competitions Management Team. The marking teams must be organized to ensure that there is no compatriot marking in any circumstances. (Section 4.6 refers.)

## 4.6 Assessment and marking using judgement

Judgement uses a scale of 0-3. To apply the scale with rigor and consistency, judgement must be conducted using:

- benchmarks (criteria) for detailed guidance for each Aspect (in words, images, artefacts or separate guidance notes)
- the 0-3 scale to indicate:
  - 0: performance below industry standard
  - 1: performance meets industry standard
  - 2: performance meets and, in specific respects, exceeds industry standard
  - 3: performance wholly exceeds industry standard and is judged as excellent

Three Experts will judge each Aspect, normally simultaneously, and record their scores. A fourth Expert coordinates and supervises the scoring, and checks their validity. They also act as a judge when required to prevent compatriot marking. Assessment and marking by measurement

## 4.7 Assessment and marking using measurement

Normally three Experts will be used to assess each aspect, with a fourth Expert supervising. In some circumstances the team may organize itself as two pairs, for dual marking. Unless otherwise stated, only the maximum mark or zero will be awarded. Where they are used, the benchmarks for awarding partial marks will be clearly defined within the Aspect. To avoid errors in calculation or transmission, the CIS provides a large number of automated calculation options, the use of which is mandated.

## 4.8 Assessment overview

For both measurement and judgement there will be three Experts in the assessment team.

Good practice in assessment comprises measurement and judgement applied both specifically and broadly. The final proportions of measurement and judgment, whether specific or broad, will be determined by the standards, their weightings and the nature of the Test Project.

## 4.9 Skill Assessment Strategy

Marking groups are formed in accordance with the Competition Rules.

The skill assessment criteria developed by the Independent Test Project Designer are clear concise aspect specifications which explain exactly how and why a particular mark is awarded.

There can be three different types of measurement criteria in the Test Project. The table below shows an explanation of the three types:

Type	Example	Max. Marks	Correct	Not Correct
Full marks or zero marks	The pie chart shows data labels as percentages	0.20	0.20	0
Deduct from full marks on a predetermined sliding scale	Report is formatted as specified (deduct 0.1 mark for each error)	0.5	0.5	0 – 0.4
Add to zero marks on a predetermined progressive scale	Solver criteria specified correctly (add 0.1 mark for each criterion)	1.0	1.0	0.0 – 0.9

In the development of marking, one should focus on appreciating the Competitor's work and not punishing what the Competitor missed to do. The approach should refer at least 50% using the "Add to zero marks on a predetermined progressive scale".

## 5 The Test Project

### 5.1 General notes

Sections 3 and 4 govern the development of the Test Project. These notes are supplementary.

Whether it is a single entity, or a series of stand-alone or connected modules, the Test Project will enable the assessment of the skills in each section of the Occupational Standards.

The purpose of the Test Project is to provide full and balanced opportunities for assessment and marking across the Occupational Standards, in conjunction with the Marking Scheme. The relationship between the Test Project, Marking Scheme and Occupational Standards will be a key indicator of quality.

The Test Project will not cover areas outside the Occupational Standards, or affect the balance of marks within the Occupational Standards other than in the circumstances indicated by Section 2.1.

The Test Project will enable knowledge and understanding to be assessed solely through their applications within practical work.

The Test Project will not assess knowledge of the EuroSkills Competition's rules and regulations.

This Technical Description will note any issues that affect the Test Project's capacity to support the full range of assessment relative to the Standard Specification. Section 2.1 refers.

### 5.2 Format/ structure of the Test Project

- Test Project assessed at end of Competition
- Test Project with separately assessed modules
- Test Project assessed in stages
- Series of standalone modules
- Other

If other, please specify here:

### 5.3 Test Project design requirements

The Test Project should not require any in-depth knowledge of the selected industry.

The Test Project should be designed so that at the end of each competition session, that session's work can be marked.

Where work carries over from one session to another, the Competitor's work is backed up for marking at the end of each session. For example, the Test Project might require development of a database – table definitions, data imports, and query construction. The Test Project might specify a certain number of deliverables to be completed in the first session of the day.



All deliverables (where applicable) must be conformed to the industrial standard. That means they must include readme or documentation files and must be given as copy deployments or similar solutions e.g., using installation programs as usually in customer environments.

Common data files are provided in English only and only an English version of the software is provided.

At the break, the solutions to those deliverables would be backed-up and marked. Any work done to those deliverables after the break would not be marked.

The expected output result is balanced across these platforms/categories:

- Windows desktop solution: 2 sessions
- Mobile solution (application running natively on Android): 1 session
- Web API / Database development: 1 session
- 1 session shall be a surprise session of Test Project design team's choice (something in accordance with the TD)

Marks will be allocated according to the WorldSkills Occupational Standards in section 3.

The Test Project will be developed for the following reference technology and framework (the related additional libraries are listed in the Infrastructure List):

- C# and ASP.NET (.NET Framework and Core)

Alternatively, the usage of the following technology is possible:

- Java

Some baseline development environments will cover:

- Visual Studio with Xamarin
- Eclipse
- Android Studio with Java and Kotlin (native android app development)
- Netbeans

Some of the proposed databases management systems are as follows:

- Oracle MySQL
- MS SQL Server

The software versions to be used at the Competition will be listed in the Infrastructure List following discussion between the Skill Competition Manager and Workshop Manager at Competition Preparation Week.

The Test Project design team will provide the following services:

- Prepare details of the scenario of the case study of the Test Project;
- Specify and document the deliverables of the system to be developed;
- Provide the test data;
- Provide sample solutions;
- Provide marking criteria in accordance with the specifications of the Technical Description and the CIS marking system;
- Provide the style guide and project overview;
- Provide the required network infrastructure and the provide the network guide (in co-ordination with the Workshop Manager)

The finalized version must be made available to all experts at least one (1) month prior to the Competition.

The network guide should be distributed one month prior to the Competition.

## 5.4 Test Project development

The Test Project MUST be submitted using the templates provided by WSE. Use the Word template for text documents and DWG template for drawings. Please contact [jordy.degroot@worldskillseurope.org](mailto:jordy.degroot@worldskillseurope.org) for guidance.

If the Test Project is designed by an Independent Test Project designer, then the Test Project must be designed in accordance with the WSE Independent Test Project Guide v1.1.

If your Skill wishes to have an Independent Test Project designer, you must ensure that WorldSkills Europe is made aware of this, so that it can be assured that there is proper funding in place, or that the Independent Test Project designer is aware that he/she will do this task free of charge.

### 5.4.1 Who develops the Test Projects or modules

The Test Project / modules are developed under the supervision of:

- All Experts
- Some Experts
- Nominated Experts
- Independent Test Project designer/ Third party
- Chief Expert, Deputy Chief Expert

Add information if needed:

It is preferred that Test Project be developed by the Independent Test Project designer/ Third party.  
However, if that is not possible, the Test Project will be developed by all experts.

### 5.4.2 How and where is the Test Projects or modules developed

The Test Project or modules are developed:

- Jointly on the Discussion Forum
- Independent Test Project designer
- Other:

It is preferred that Test Project be developed by the Independent Test Project designer/ Third party.  
However, if Test Project is going to be developed by all experts, it will be done jointly on the discussion forum.

### 5.4.3 When is the Test Project developed

The Test Project is developed according to the following timeline:

TIME	ACTIVITY
At the previous Competition	Experts submit their review of the passed Test Project and suggest changes
7 months prior to the Competition	EuroSkills will contact the Independent Test Project Designer to initiate the creation of the test project. Or Test Project development will be initiated on the forums by CE.
3 months prior to the Competition	If the Test Project is being written by the Independent Test Project Designer, at this time the finished Test Project is sent to EuroSkills. If the Test Project is being written by experts, at this time the finished Test Project is sent to EuroSkills.
2 months prior to the Competition	In case of Independent Test Project Designer, the Style Guidelines and Test Project overview are circulated on the EuroSkills website.
1 months prior to the Competition	The final VM to be used on the competition must be made available by the Workshop Manager on the Discussion Forum. The Network Guide is also put together by the Workshop Manager and is made available to all the Experts via the Discussion Forum.
At the Competition	The Test Project and Marking Scheme are presented to Experts. If developed by experts on the forum, changes will be made.

## 5.5 Test Project validation

If the Test Project is developed by the Independent Test Project designer/ Third party, then on C-3 all experts will validate the Test Project and Marking Scheme in order to ensure that the Test Project can be completed within the material, equipment, knowledge, and time constraints of Competitors.

If the Test Project is developed by all experts, no additional validation will be needed because the Test Project was continuously validated by all experts.

## 5.6 Test Project selection

- By vote of Experts at the previous Competition

- By vote of Experts on the Discussion Forums
- By vote of Experts at the upcoming Competition
- By random draw by the Competition Director, three months before the current Competition
- Test Project is designed by an Independent Test Project designer, therefore there is no selection process
- Other, please specify below:

If the Test Project is developed by the Independent Test Project designer/ Third party, no selection process will be done.

If the Test Project is developed by all experts, no selection process will be done as well because all experts will participate in 30% changes.

## 5.7 Test Project circulation

Please note that if a Test Project is known by the Chief- and/or Deputy Chief Experts, and/or any of the other Experts, it must be shared via the forums before the start of the Competition. This also means that this Test Project is subject to a 30% change before the start of the Competition.

The Test Project is circulated via the website as follows:

- Submitted to the Secretariat for circulation **XX** months before the current Competition
- Not circulated
- Other, please specify below:

If the Test Project is developed by the Independent Test Project designer/ Third party, the test project will be made available to Experts on C-3 and not before.

If the Test Project is developed by all experts, all experts will have access to the test project at all times and no additional circulation will be necessary.

## 5.8 Test Project coordination (preparation for competition)

Coordination of the Test Project will be undertaken by:

- Skill Management Team
- Chief Expert
- Chief Expert and Deputy Chief Expert
- Chief Expert and Workshop Manager
- Chief Expert with selected Experts
- Chief Expert with Competition Organizer
- All Experts

Other, please specify below:

## 5.9 Test Project change at the competition

If the Test Project is developed by the Independent Test Project designer/ Third party, 30% change is not applicable to this Skill.

If the Test Project is developed by all experts, all experts will make at least 30% changes at C-3.

## 5.10 Material or manufacturer specifications

Specific material and/or manufacturer specifications required to allow the Competitors to complete the Test Project will be supplied by the Host Organization and are available via the forums. However, note that in some cases details of specific materials and/or manufacturer specifications may remain secret and will not be released prior to the Competition. These items may include those for fault finding modules or modules not circulated.

## 6 Skill management and communication

### 6.1 Discussion forum

Prior to the EuroSkills Competition, all discussion, communication, collaboration, and decision making regarding the Skill Competition must take place on the skill specific Discussion Forum, which can be reached via [www.worldskillseurope.org](http://www.worldskillseurope.org). Skill related decisions and communication are only valid if they take place on the forum. The Chief Expert (or an Expert nominated by the Chief Expert) will be the moderator for this Forum. Refer to Competition Rules for the timeline of communication and competition development requirements.

### 6.2 Competitor information

All information for registered Competitors is available from the WorldSkills Europe website [www.worldskillseurope.org](http://www.worldskillseurope.org). Please contact [jordy.degroot@worldskillseurope.org](mailto:jordy.degroot@worldskillseurope.org) for guidance.

The information includes:

- Competition Rules
- Technical Descriptions
- Marking Schemes
- Test Projects
- Infrastructure List
- Health and Safety documentation
- Other Competition-related information
- List of material that can be used to build templates and not been provided by the host

### 6.3 Test Projects and Marking Schemes

Circulated Test Projects will be available at the WorldSkills Europe website from [www.worldskillseurope.org](http://www.worldskillseurope.org). Please contact [jordy.degroot@worldskillseurope.org](mailto:jordy.degroot@worldskillseurope.org) for guidance.

### 6.4 Day-To-Day management

The day-to-day management of the Skill Competition during the EuroSkills Competition is defined in the Skill Management Plan that is created by the Skill Management Team led by the Chief Expert. The Skill Management Team comprises the Jury President, Chief Expert and Deputy Chief Expert. The Skill Management Plan is progressively developed in the six months prior to the Competition and finalized at the Competition by agreement of the Experts. The Skill Management Plan can be viewed at [www.worldskillseurope.org](http://www.worldskillseurope.org). Please contact [jordy.degroot@worldskillseurope.org](mailto:jordy.degroot@worldskillseurope.org) for guidance.

## 7 Skill specific safety requirements

Refer to Host Country/Region Health and Safety documentation for Host Country/Region regulations. This document will be shared via the forums. One overall Health and Safety document will be published, as well as Skill specific safety requirements.

## 8 Materials and equipment

### 8.1 Infrastructure List

The Infrastructure List details all equipment, materials and facilities provided by the Competition Organizer.

The Infrastructure Lists will be available at the WorldSkills Europe website from [www.worldskillseurope.org](http://www.worldskillseurope.org). Please contact [jordy.degroot@worldskillseurope.org](mailto:jordy.degroot@worldskillseurope.org) for guidance.

The Infrastructure List specifies the items and quantities requested by the Experts for the next Competition. The Host Organization will progressively update the Infrastructure List specifying the actual quantity, type, brand, and model of the items.

At each Competition, the Experts must advise the Competition Manager of any increases in space and/or equipment.

At each Competition, the Technical Observer must audit the Infrastructure List that was used at that Competition.

The Infrastructure List does not include items that Competitors and/or Experts are required to bring and items that Competitors are not allowed to bring – they are specified below.

### 8.2 Competitors toolbox

WorldSkills Europe aims to minimize the sending of toolboxes as much as possible. We therefore ask you to keep this in mind when writing the section below. Please be advised that competitors should bring as little as possible and what they do bring **MUST** be true hand tools. Only items are allowed that would significantly affect their ability to perform the task and deliver the Test Project to a high standard.

Competitors are not allowed to send a toolbox to the Competition. All tools are provided by the Competition Organizer.

### 8.3 Materials, equipment and tools supplied by Competitors in their toolbox

Competitors are not allowed to bring any materials, equipment and tools to the Competition. The only exceptions are a keyboard, a mouse, and/or their headphones. Any piece of equipment brought by a Competitor must be wired and not have any storage and/or any kind of network communication capabilities (Bluetooth, wireless or other).

### 8.4 Materials, equipment and tools supplied by the Experts

Experts are not allowed to bring any materials, equipment, and tools.

### 8.5 Materials, equipment and tools prohibited in the Skill area

Competitors and Experts are prohibited to bring any materials or equipment not listed in section 8.3 and section 8.4.

The Competitor may definitely not bring:

- Additional software;
- Any portable communications devices such as mobile phones or smart watches;
- Portable digital devices (Tablet, PDAs, etc.);



- External storage devices (memory sticks, flash drives, etc.);
- Equipment must not have any access to the internal memory storage devices. The Competition Organizer will ensure that these are disabled;
- The Experts hold the right to disallow certain equipment brought into the Competition;
- The Competitors may be allowed Internet access in the Competition area. This is on designated computers and is limited to one 15-minute block per Competitor per session on a first come, first served basis. This time is to be included in the competition time. The Competitor cannot make any notes while using the Internet.

## 8.6 Proposed workshop and workstation

Workshop layouts from previous competitions are available by contacting the Competition and IT Coordinator at: [jordy.degroot@worldskillseurope.org](mailto:jordy.degroot@worldskillseurope.org). New Workshop Layouts will be communicated via the forums when completed.

Please be advised that you will have the opportunity to discuss your Workshop Layout proposal with the Host Organization during the Competition Preparation Meetings (CPM).

For workshop layout development, please refer to the forums.

## 9 Skill-specific rules

Skill-specific rules cannot contradict or take priority over the Competition Rules. They do provide specific details and clarity in areas that may vary from Skill Competition to Skill Competition. This includes but is not limited to personal IT equipment, data storage devices, Internet access, procedures and workflow, and documentation management and distribution. Breaches of these rules will be solved according to the Issue and Dispute Resolution procedure including the Code of Ethics and Conduct Penalty System.

### 9.1.1 Personal laptops – USB – memory sticks– mobile phones

The Competitors are not allowed to use personal laptops, tablets, memory sticks, USB devices, or mobile phones in the workshop area.

The Experts are allowed to use personal laptops, tablets, or mobile phones in the Experts room, except when there are documents or discussions relevant to the competition in the room.

The use of personal laptops and other communication devices while marking is prohibited.

None of these restrictions do not apply to the members of the SMT along with the WM.

### 9.1.2 Personal photo cameras – video taking devices

The Competitors are not allowed to use personal photo, audio, and video taking devices in the Skill area during the competition.

Experts are allowed to use personal photo, audio, and video taking devices in the Experts room, except when there are documents or discussions relevant to the competition in the room.

Competitors and Experts are allowed to use personal photo, audio, and video taking devices in the Skill area at the conclusion of the each competition day only.

WM, SCM, CE, and DCE are exempt from these rules.

### 9.1.3 Communication between compatriot experts and competitors

Communication between compatriot Experts and Competitors may not take place in the Skill area. The only exceptions are designated compatriot Expert-Competitor open communication time slots before each session. Compatriot Expert and Competitor are allowed to just talk to each other during the lunch, but without exchanging any written or drawn information (during the lunch break they are not allowed to use laptops, tablets, mobile phones, pens and papers, etc.)

## 10 Visitor and media engagement

Following is a list of possible ways to maximize visitor and media engagement, within the remit of the Competition Rules:

- Display screens;
- Test Project descriptions;
- Enhanced understanding of Competitor activity;
- Competitor profiles;
- Career opportunities;
- Daily reporting of competition status;
- A Speed-programming session may be held if time permits. This session will not provide any marks to Competitors but will be held purely for fun and visitor engagement.

## 11 Sustainability

This Skill Competition will focus on the sustainable practices below:

- Recycling;
- Use of “green” materials;
- Let Competitors use a PDF rather than printing, if such need arises in the Test Project.