# Functional testing TEST

Investigating products, systems and services to assess behaviour and whether this meets specified or unspecified functional requirements and characteristics.

|  |
| --- |
| **Guidance Notes:**  The scope of functional testing includes technology, system components, configurations, packages and their interfaces which are intended to deliver specific functionality.  This skill is applicable to all testing methodologies, which can be delivered using predictive (plan-driven) approaches or adaptive (iterative/agile) approaches.  Activities may include, but are not limited to:   * planning, designing, managing, executing and reporting of functional tests * functional testing of capabilities or features * static testing and static analysis * managing risks associated with testing and taking preventative action when needed * adopting and adapting testing methods including waterfall, incremental or agile approaches * conforming to agreed process standards, industry-specific regulations and data protection legislation * engineering, using and maintaining testware to measure and improve the quality of the software being tested * promoting productivity through test automation, tools and best practices * developing scalable and reliable automated tests and frameworks.   Examples of the risks addressed by Functional testing:   * functions do not perform as specified, causing errors in the system * user interactions do not produce the expected results * integration points between system components fail * functions fail under specific conditions or inputs * inconsistencies in data processing and handling * non-compliance with functional requirements and user expectations. |

## Level 1

Executes given manual test scripts under supervision.   
Uses basic automated testing tools.   
Records results and reports issues.   
Develops an understanding of the role of testing as a tool for design improvement and a validation process.

## Level 2

Designs test cases, creates test scripts and test data, and automates repeatable tasks working to the requirements or specifications provided.  
Defines test conditions for given requirements.   
Executes and records manual and automated testing in accordance with test plans.  
Analyses and reports on test activities, results, issues and risks.

## Level 3

Designs test cases and test scripts under own direction, mapping back to pre-determined criteria, recording and reporting test outcomes.   
Participates in requirement, design and specification reviews, and uses this information to design test plans and test conditions.   
Applies agreed standards to specify and perform manual and automated testing. Automates testing tasks and builds test coverage through existing or new infrastructure.   
Analyses and reports on test activities, results, issues and risks.

## Level 4

Selects appropriate testing approach, including manual and automated testing.  
Develops and executes test plans and test cases. Implements scalable and reliable automated tests and frameworks.   
Collaborates across parties involved in product, systems or service design and development to enable comprehensive test coverage. Identifies improvements in requirements, design or specification processes to increase the effectiveness and efficiency of testing.  
Analyses and reports on test activities, results, issues and risks, including the work of others.

## Level 5

Plans and drives testing activities across all stages and iterations of product, systems and service development.   
Provides authoritative advice and guidance on any aspect of test planning and execution. Adopts and adapts appropriate testing methods, automated tools and techniques to solve problems in tools and testing approaches.   
Measures and monitors applications of standards for testing. Assesses risks and takes preventative action.  
Identifies improvements and contributes to the development of organisational policies, standards, and guidelines for testing.

## Level 6

Develops organisational policies, standards, and guidelines for testing.   
Plans and leads strategic, large and complex testing activities. Leads activities to manage risks and opportunities associated with testing.   
Adapts or develops organisational testing capabilities and methods to solve complex business and engineering problems in tools and testing.   
Promotes a culture of quality throughout the organisation and drives adoption of and adherence to testing policies and standards.