Test Automation Engineer

FF07 Software development and engineering · ISCO-08 2519 · CBS 0814 Software and application developers · seniority medior · Also known as: QA Automation Engineer, SDET, Automation Test Engineer

Builds and maintains automated tests and integrates them into the pipeline so regression becomes visible on every change.

The test automation engineer programmes the checks that run automatically on every delivery and keeps that test set fast and reliable. Unlike the tester, this is a build role, and unlike the developer the product delivered is confidence about the code rather than the code itself. Selection emphasises tooling, while the bottleneck is prioritising test risk: a large suite that is slow and flaky gets ignored by teams and then provides no confidence at all.

Key figures for this profile

25 skills · 3 competencies to measure · 5 knockout skills · centre of gravity: Digital, data and AI 59%, Cognitive ability and problem solving 24%, Collaboration and interpersonal effectiveness 5%

1 Competencies to measure

These are the behavioural and ability constructs in this profile. Each one shows which hrmforce questionnaire measures it.

Competencies to measure	Target level	hrmforce instrument	Assessment method	Behavioural anchor at target level
Abstract and figural reasoning	N4	Ability Scan	Cognitive ability test	Discovers the underlying rule in unfamiliar material with several changing features and uses it to explain deviations.

Competencies to measure	Target level	hrmforce instrument	Assessment method	Behavioural anchor at target level
Accuracy and attention to detail Competency (50-framework): Accuracy	N4	Big Fifty, 360 Feedback	Personality questionnaire	Builds check moments into the own process, keeps track of errors and prevents repetition by adjusting the method.
Working independently Competency (50-framework): Independence	N3	Big Fifty, 15PF, Competency Check	Personality questionnaire	Determines own approach for a full work package, consults colleagues purposefully when unclear and delivers on time without reminders.

2 Full skill profile

Every skill in this profile, sorted by weight. The behavioural anchor under each skill belongs to the target level.

T	Skill	Target level	Weight	Knockout	Assessment method	hrmforce instrument
V	Software testing and quality assurance Sets the organisation's test strategy and quality requirements and decides when software is not released.	N5	5	yes	Work sample test	Work sample test, Knowledge test (client-specific)
V	Problem analysis Splits a recurring complaint into possible causes, tests these with own data and names the most likely cause.	N4	5	yes	Assessment centre	Competency Check, Ability Scan
V	Programming Independently builds a function or module from the requirement, chooses suitable structures and keeps the code readable and tested.	N4	5	yes	Work sample test	Work sample test, Knowledge test (client-specific)
A	Abstract and figural reasoning Discovers the underlying rule in unfamiliar material with several changing features and uses it to explain deviations.	N4	4	no	Cognitive ability test	Ability Scan

T	Skill	Target level	Weight	Knockout	Assessment method	hrmforce instrument
V	Modelling and abstraction Builds a diagram of a work process independently, names the assumptions and tests the model against real cases.	N4	4	no	Work sample test	Work sample test, Portfolio
G	Accuracy and attention to detail Builds check moments into the own process, keeps track of errors and prevents repetition by adjusting the method.	N4	4	no	Personality questionnaire	Big Fifty, 360 Feedback
V	Quality control Draws up a control plan for the own process, measures the quality and discusses the outcomes with those involved.	N4	4	no	Work sample test	Competency Check, Work sample test
T	Version control and collaboration workflow Manages branches and merges independently, resolves conflicts and reviews colleagues' changes on substance.	N4	4	yes	Work sample test	Work sample test
V	API integration Independently builds an interface between two systems, handles errors and documents the data exchange for support staff.	N4	4	no	Work sample test	Work sample test

T	Skill	Target level	Weight	Knockout	Assessment method	hrmforce instrument
V	Release management and deployment Draws up a rollout plan with a fallback option, aligns with stakeholders and verifies after rollout that the service works.	N4	4	no	Work sample test	Knowledge test (client-specific), Work sample test
V	Process automation Describes a process in steps, automates the repeatable steps and builds in checks on errors and exceptions.	N4	4	no	Work sample test	Work sample test, Portfolio
V	Secure development Recognises vulnerabilities in design and code, resolves them and includes security tests in own way of working.	N3	4	yes	Work sample test	Work sample test, Knowledge test (client-specific)
V	Defining and managing requirements Elicits requirements from various stakeholders, makes them testable, prioritises together with them and manages changes traceably.	N3	4	no	Work sample test	Work sample test, Structured interview
V	multidisciplinary collaboration Maps the issue with specialists from different disciplines and formulates a joint approach with a clear division of roles.	N3	3	no	Assessment centre	360 Feedback, Competency Check

T	Skill	Target level	Weight	Knockout	Assessment method	hrmforce instrument
V	Working in projects Draws up project plan, schedule and risk list for a medium sized project and reports periodically to the sponsor.	N3	3	no	Work sample test	Knowledge test (client-specific), Work sample test, Competency Check
G	Working independently Determines own approach for a full work package, consults colleagues purposefully when unclear and delivers on time without reminders.	N3	3	no	Personality questionnaire	Big Fifty, 15PF, Competency Check
V	Professional currency and specialist literature Tracks sources and guidelines structurally, weighs their quality and adapts the own working method to new insights.	N3	3	no	Portfolio or evidence	Portfolio, Knowledge test (client-specific)
V	Data modelling Designs a logical data model for a defined domain, normalises where needed and discusses choices with users and developers.	N3	3	no	Work sample test	Knowledge test (client-specific), Work sample test
V	Software design and architecture Produces a design for a defined application, records the main choices and alternatives and reviews it with colleagues.	N3	3	no	Work sample test	Work sample test, Portfolio

T	Skill	Target level	Weight	Knockout	Assessment method	hrmforce instrument
V	Writing technical documentation Writes complete documentation for a system or process, tests it with an unfamiliar reader and maintains versions.	N3	3	no	Work sample test	Work sample test, Portfolio
V	Using cloud platforms Independently configures cloud services for an application, arranges permissions and backups and keeps costs and usage in view.	N3	3	no	Knowledge test	Knowledge test (client-specific)
V	Prompting and task delegation to AI Splits a work task into steps, decides which step AI does and which not and improves the instruction based on outcomes.	N3	3	no	Work sample test	Work sample test, Portfolio
V	Written expression Independently writes texts with opening, core and closing, chooses a tone per audience and applies fixed terms consistently.	N3	2	no	Work sample test	Work sample test, Competency Check
V	Evaluating and verifying AI output Determines per task which checks are needed, spots incorrect or fabricated parts and accounts for the result used.	N3	2	no	Work sample test	Work sample test, Knowledge test (client-specific)

T	Skill	Target level	Weight	Knockout	Assessment method	hrmforce instrument
V	giving feedback Discusses unwanted behaviour with the person concerned, describes fact, effect and request, and agrees on a follow-up.	N3	1	no	Assessment centre	360 Feedback, Communication Styles

3 Levels per seniority

The same profile with the job family seniority adjustment applied. Target levels are clamped to 1 to 5.

Skill	medior	senior
Software testing and quality assurance	N5	N5
Problem analysis	N4	N5
Programming	N4	N4
Abstract and figural reasoning	N4	N5
Modelling and abstraction	N4	N5
Accuracy and attention to detail	N4	N5
Quality control	N4	N5
Version control and collaboration workflow	N4	N5
API integration	N4	N5
Release management and deployment	N4	N4
Process automation	N4	N5
Secure development	N3	N4
Defining and managing requirements	N3	N4
multidisciplinary collaboration	N3	N4
Working in projects	N3	N4
Working independently	N3	N4
Professional currency and specialist literature	N3	N4
Data modelling	N3	N4
Software design and architecture	N3	N3
Writing technical documentation	N3	N4
Using cloud platforms	N3	N4
Prompting and task delegation to AI	N3	N4
Written expression	N3	N4

Skill	medior	senior
Evaluating and verifying AI output	**N3**	**N4**
giving feedback	**N3**	**N4**

4 The proficiency scale

Level	Label	Autonomy	Complexity	Scope	Depth of knowledge
N1	**Guided**	works under supervision and follows instruction	routine, one variable at a time	own task	basic understanding of terminology
N2	**Applying**	works independently within set frameworks	familiar situations with limited variation	own role	working knowledge, applies standard approach
N3	**Proficient**	sets own approach and seeks input proactively	several variables, some ambiguity	own team or process	thorough knowledge, weighs alternatives
N4	**Advanced**	directs others and decides on the approach	complex, with conflicting interests	several teams or a department	in-depth knowledge, advises others
N5	**Leading**	sets the standard and the policy	strategic, under high uncertainty	organisation, value chain or profession	authority, advances the profession

5 Behavioural anchors per skill

Anchors sit at N1, N3 and N5. N2 and N4 are deliberately not anchored: raters interpolate between them, following the O*NET convention.

Skill	N1	N3	N5
Software testing and quality assurance Devises and runs tests on functionality and edge cases, records findings reproducibly and judges whether a solution can be released.	Works through a test script step by step and records every deviation with a screenshot and the steps taken.	Designs test cases including edge cases, automates repeatable tests and advises on release based on the findings.	Sets the organisation's test strategy and quality requirements and decides when software is not released.
Problem analysis Breaks a problem into parts, separates causes from effects and states which information is needed to move forward.	States precisely what deviates in a malfunction and which data are missing, and puts this to the supervisor.	Splits a recurring complaint into possible causes, tests these with own data and names the most likely cause.	Traces persistent organisational problems back to a few root causes and sets the analysis method that other teams will use.

Skill	N1	N3	N5
Programming Writes, reads and improves working program code in at least one language, splits a problem into steps and tests own solution.	Adjusts existing code as directed, runs it and reports error messages that cannot be resolved alone.	Independently builds a function or module from the requirement, chooses suitable structures and keeps the code readable and tested.	Sets programming standards and language choices for the organisation and reviews others' code for quality and maintainability.
Abstract and figural reasoning Recognises rules and patterns in figures, series or symbols without prior knowledge and applies those rules to new, unfamiliar tasks.	Finds the next step in a short series of figures and explains which rule was used for it.	Discovers the underlying rule in unfamiliar material with several changing features and uses it to explain deviations.	Unravels problems without a known example, formulates a new ordering and shapes it so that peers can build on it.
Modelling and abstraction Turns a real situation into a simplified representation, such as a diagram, formula or flow chart, with explicit assumptions and limits.	Fills in an existing diagram or template and names which part of the work belongs where.	Builds a diagram of a work process independently, names the assumptions and tests the model against real cases.	Develops models that several departments use, states their limits of validity and manages their versions and changes.
Accuracy and attention to detail Works carefully, checks own work for errors and keeps to agreements about completeness and correctness of data.	Goes through the own work with a checklist and repairs errors found before the work is passed on.	Builds check moments into the own process, keeps track of errors and prevents repetition by adjusting the method.	Sets the standards for completeness and correctness, has samples checked and addresses teams on structural sloppiness.
Quality control Tests products, data or services against defined requirements, records deviations and sets corrections or improvements in motion.	Checks a product or file on the prescribed points according to instruction and records deviations.	Draws up a control plan for the own process, measures the quality and discusses the outcomes with those involved.	Sets up the quality system for several departments, chooses the measurement standards and accounts for results to client and regulator.
Version control and collaboration workflow Works with a version control system, uses branches and merge requests and keeps the change history traceable for the team.	Commits changes with a clear description in the designated branch according to the team agreement.	Manages branches and merges independently, resolves conflicts and reviews colleagues' changes on substance.	Determines the way of working for version control and code review in the organisation and enforces it across teams.

Skill	N1	N3	N5
API integration Connects systems through programming interfaces, reads their documentation, handles errors and limits and tests the interface end to end.	Executes a prepared interface call following documentation and reports recurring error codes to the developer.	Independently builds an interface between two systems, handles errors and documents the data exchange for support staff.	Sets the organisation's integration standards and interface policy and decides on exposure to external parties.
Release management and deployment Plans and carries out the rollout of new versions, checks operation before and after and ensures a rollback stays possible.	Executes the steps of a rollout plan and reports immediately when a step does not give the expected result.	Draws up a rollout plan with a fallback option, aligns with stakeholders and verifies after rollout that the service works.	Sets the organisation's release policy, decides on rollout windows and structurally improves the lead time of changes.
Process automation Analyses a recurring work process, builds or commissions automation of its steps and checks that the outcome stays reliable.	Runs an existing automation and reports when the outcome differs from what was expected.	Describes a process in steps, automates the repeatable steps and builds in checks on errors and exceptions.	Determines the organisation's automation agenda and decides which processes are and are not automated.
Secure development Builds software in which input is validated, secrets are protected and known vulnerabilities are prevented, and verifies this with targeted tests.	Follows the secure coding guideline for own changes and asks when a guideline is unclear.	Recognises vulnerabilities in design and code, resolves them and includes security tests in own way of working.	Sets secure development requirements in the organisation and judges whether solutions meet them before release.
Defining and managing requirements Elicits requirements from users and clients, records them testably, tracks changes and checks whether the result meets them.	Records user needs in the agreed format and probes until every need is concrete.	Elicits requirements from various stakeholders, makes them testable, prioritises together with them and manages changes traceably.	Determines the requirements practice in the organisation and decides which requirements prevail when interests conflict.

Skill	N1	N3	N5
multidisciplinary collaboration Working with people from other disciplines by learning their language and methods and establishing shared starting points for the joint work.	Asks a colleague from another discipline what technical terms mean and summarises the answer back to them.	Maps the issue with specialists from different disciplines and formulates a joint approach with a clear division of roles.	Sets up lasting forms of collaboration between disciplines and settles conflicts between professional standards on the basis of the organisational interest.
Working in projects Delivering a defined result through phases, milestones and role division, controlling time, money, quality and risks and reporting at fixed moments.	Delivers assigned project tasks on time and updates the project plan with own progress.	Draws up project plan, schedule and risk list for a medium sized project and reports periodically to the sponsor.	Establishes the project approach of the organisation, decides on starting and stopping programmes and safeguards coherence between projects.
Working independently Carries out assigned work without ongoing direction, makes own choices within agreed boundaries and reports when consultation or a decision by others is needed.	Completes tasks as instructed and raises every deviation with the supervisor before continuing with the remaining work.	Determines own approach for a full work package, consults colleagues purposefully when unclear and delivers on time without reminders.	Designs the working method that lets teams operate autonomously and defines across the organisation which decisions are escalated and which are not.
Professional currency and specialist literature Follows developments in the own profession through literature, guidelines and networks and works relevant new insights into own practice.	Reads the professional information received and names which part matters for the own work.	Tracks sources and guidelines structurally, weighs their quality and adapts the own working method to new insights.	Assesses the state of the field, weighs conflicting research and determines which guidelines the organisation will follow from now on.
Data modelling Describes data and its relationships in a model with entities, attributes and keys that matches the work process.	Extends an existing data model with new fields following the applicable naming conventions and has the work reviewed.	Designs a logical data model for a defined domain, normalises where needed and discusses choices with users and developers.	Sets the organisation's modelling standards and core data model and decides on deviations from them.

Skill	N1	N3	N5
Software design and architecture Designs the structure of an application or interface, distributes functionality across components and weighs choices on maintainability, performance and security.	Elaborates a supplied design into components and asks questions when the design turns out to be incomplete.	Produces a design for a defined application, records the main choices and alternatives and reviews it with colleagues.	Sets the organisation's architecture principles and decides on designs that affect multiple systems.
Writing technical documentation Writes manuals, support documentation and decision records that a reader without prior knowledge can follow step by step and that stay current.	Completes a documentation template with the steps of a task and has the text checked by a colleague.	Writes complete documentation for a system or process, tests it with an unfamiliar reader and maintains versions.	Sets the organisation's documentation standard and ensures documentation is part of every delivery.
Using cloud platforms Sets up and manages services in a cloud environment, arranges permissions and costs and chooses between available service types based on requirements.	Uses existing cloud services as instructed and reports unusual behaviour or unexpected costs to the administrator.	Independently configures cloud services for an application, arranges permissions and backups and keeps costs and usage in view.	Determines the organisation's cloud strategy and decides which workloads are placed where.
Prompting and task delegation to AI Divides work between person and AI system, formulates task, context and required output format and adjusts based on the output.	Gives an AI tool a single task with a clear question and required format and uses the result after checking it.	Splits a work task into steps, decides which step AI does and which not and improves the instruction based on outcomes.	Develops organisation wide practices for dividing tasks with AI and trains others in effective and responsible instruction giving.
Written expression Putting thoughts into correct and readable text with a logical paragraph structure, fitting tone and word choice suited to the reader.	Writes short messages and reports free of language errors after using a checking tool and a review round by a colleague.	Independently writes texts with opening, core and closing, chooses a tone per audience and applies fixed terms consistently.	Draws up the writing guide and house style for the organisation, approves publications on content and develops the writing skill of teams.

Skill	N1	N3	N5
Evaluating and verifying AI output Checks AI output for accuracy, completeness and usefulness, verifies claims against sources and decides whether the output is used.	Checks facts and figures from AI output against a reliable source before passing the result on.	Determines per task which checks are needed, spots incorrect or fabricated parts and accounts for the result used.	Designs the organisation's verification policy and determines for which applications human review remains mandatory.
giving feedback Naming concrete behaviour and its effect to another person, with a request or proposal, at a moment and in a way that keeps dialogue possible.	States after a shared task what a colleague did well and gives a concrete example with it.	Discusses unwanted behaviour with the person concerned, describes fact, effect and request, and agrees on a follow-up.	Introduces feedback as a working method across several teams, trains managers in it and monitors whether unwanted behaviour is raised earlier.

6 Assessment methods and validity

The validities are the corrected meta-analytic estimates from Sackett, Zhang, Berry and Lievens (2022) in the Journal of Applied Psychology, which replace the older Schmidt and Hunter (1998) figures. The spread matters as much as the mean: with a high SD, validity varies strongly by context.

Assessment method	rho	SD	What it is
Work sample test	**0.33**	**0.09**	The candidate performs a representative work sample under standardised conditions.
Assessment centre	**0.29**	**0.09**	Multiple exercises, multiple assessors, dimension-wise scoring.
Cognitive ability test	**0.41**	**0.14**	Standardised test of verbal, numerical or abstract reasoning.
Personality questionnaire	**0.40**	**0.15**	Self-report of behavioural preferences. At hrmforce the Big Fifty and the 15PF.
Portfolio or evidence	**-**	**-**	A collection of prior work or results, assessed against fixed criteria.
Knowledge test	**0.40**	**0.13**	Test of declarative job knowledge, usually assembled per client.

7 Assessment instruments for this job

hrmforce instrument	Skills	What it measures
Work sample test	**17**	Representative work sample under standardized conditions
Knowledge test (client-specific)	**9**	Professional knowledge test, customized for each client
Competency Check	**6**	Behavioral-Level Competency Assessment
Portfolio	**6**	Evaluation of prior work against fixed criteria
360 Feedback	**3**	Multiple assessments based on behavioral anchors
Ability Scan	**2**	Aptitude Test: Verbal, Numerical, and Abstract Reasoning Skills
Big Fifty	**2**	Personality questionnaire, 150 items, 25 factors
Structured interview	**1**	Behavioral interview with a fixed structure
15PF	**1**	Personality Profile, a shorter alternative to the Big Fifty
Communication Styles	**1**	Preferred communication style

8 How to use this profile

1. Agree the profile with the hiring manager before the first candidate is measured. Weights shifted afterwards make the outcome indefensible.
2. Choose the assessment method per skill from the Assessment method column. Combine at most three methods per candidate.
3. Calibrate the assessors in a two-hour session using the anchors in chapter 5. Anchors without rater training deliver little.
4. Fill in the match calculator and discuss the gaps in the development conversation. Type A and type G are selection criteria, not one-quarter development goals.

Source: hrmforce Skills Framework 2.0, version 2.0.0, built 2026-09-08. Crosswalks to ESCO v1.2.1, O*NET 31.0, Lightcast Open Skills, SFIA 9, DigComp 3.0, EntreComp, LifeComp, GreenComp, AILit, WEF Future of Jobs 2025, ISCO-08 and the Dutch CBS occupational classification BRC 2014 edition 2025. This profile is a starting point, not a standard: align it with your own organisation before selecting on it.

hrmforce · hrmforce.com · FN0711