



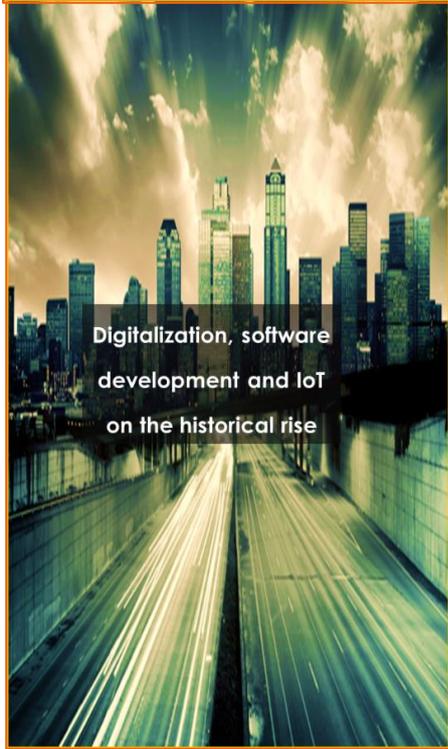
AI & automation testing
the necessity of
Fast & Effective & Competitive R&D



Smart & connected
devices



The power of
integration



Digitalization, software
development and IoT
on the historical rise

QA+ BEE

the future of system testing automation



Executive Overview

The growth of new technologies and demand for faster release cycles are driving the standard quality software through the roof.

The speed of digital changes is forcing companies to change their development, testing and launching procedures. The goal is to become **faster in development** and **flawless** in providing customer or **user experience**.

Testing automation, fast validation and **intelligent, behaviour driven decision-making capabilities** are expected to change the business landscape in the near future. This is perfect opportunity for QA+ BEE implementation.



the system testing automation platform

QA+ BEE is modelling system behaviour in development environment. It helps companies to speed up development, to save money and to enable flawless user experience.

The main purpose of QA+ BEE platform is to bridge the gap between the electronics and software development. The gap is becoming wider as more integrated and complex solutions are being developed.

QA+ BEE **automated system testing** platform offers many benefits. When manual system testing is being upgraded to automated one testing costs drop significantly. Automated testing is the enabler of **real time testing**. Real time testing results are giving instant development feedback on system performance enabling developers to fix bugs as they emerge.

The best thing about the QA+ BEE is that it stimulates **cooperation among different R&D stakeholders**. It speaks many software languages making the system testing platform easy to use. It is **plug and play designed**, keeping implementation stress level at the minimum.

QA+ BEE is used by companies and development teams when they lack manpower, knowledge or skills to perform system testing. It is the preferred testing partner as the platform is flexible and as it adopts clients wishes and needs.

The main goal of QA+ BEE is to ensure quality criteria of a system to fulfil customers' and users' needs and expectations.

QA+ BEE is making your **development agile, fast, efficient and effective**.

KEY BENEFITS



System testing automation platform



Faster & effective development



Low cost continuous testing



Discover and fix bugs much faster



Fill QA knowledge and manpower gap



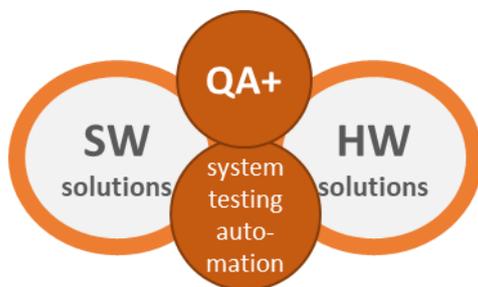
Ensure flawless customer, user experience

QA+ BEE is the system testing automation platform

QA+ BEE IS BENEFICIAL FOR YOUR BUSINESS

QA+ BEE is the platform enabling system testing automation to boost development, to meet end users' expectations and to perform continuous system testing at low cost.

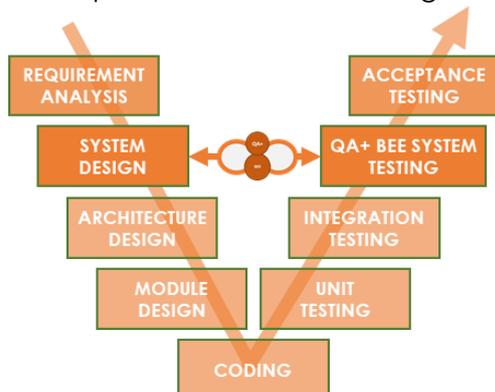
BRINGING TOGETHER BEST OF INTEGRATED SOLUTIONS



QA+ BEE speaks the language of your test subjects. It is overcoming the barrier of using different tools to test different solutions. It serves as testing junction of different R&D stakeholders and different solution providers.

THE SYSTEM TESTING PLATFORM

It validates end to end functionality of integrated software/hardware solution against deliverable system specifications and requirements and business goals.

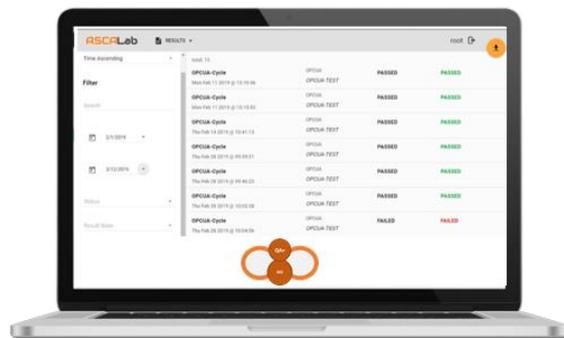


THE POWER OF QA+ BEE SYSTEM TESTING AUTOMATION

QA+ BEE is bringing the benefits of automation, well known in integration and unit testing, on the next level of testing – the system testing.

The main goal of automation is to widen the bottleneck of development, the manual system testing, to make system solutions development fast, effective and efficient.

Another goal of automation is to take the workload of the development teams, allowing them to focus on future development rather than focusing on bug-fixing.

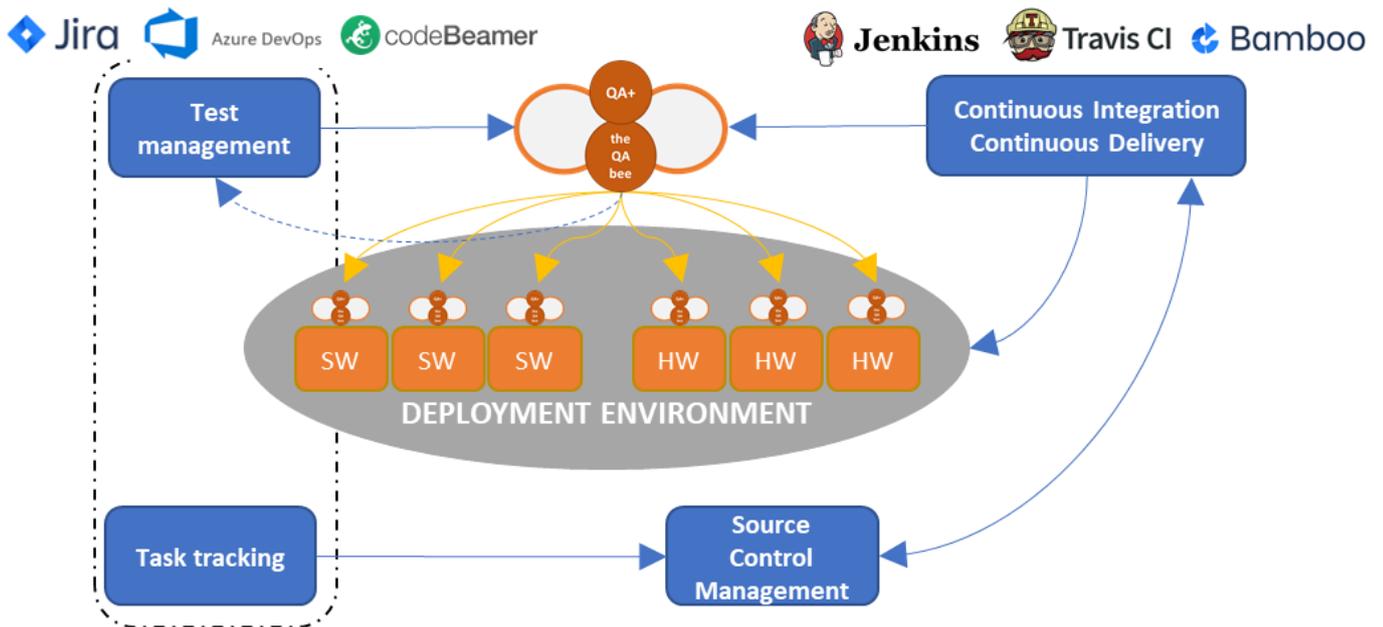


Complete solution for test automation and implementation of system testing in your company.

The earlier you include QA in the system development lifecycle, the **more you can bake quality** into the product. Rather than tack it on after. *Dan Kirk, QA at UBER*

End-user satisfaction is the top objective of QA and testing strategy. *World Quality Report 2018-19*

QA+ BEE Automated System Testing process



Driven by the goal to unify, development & testing automation a user friendly and customizable QA + BEE platform became the tool to improve development efficiency.

QA+ BEE platform is built on the modern web technologies as a web application with an intuitive UI. The platform can be easily deployed on premise as a virtual appliance or Docker container.

The QA+ BEE Architecture

With its flexible architecture the QA+ BEE platform can be customized and extended as needed. The platform comes with modules that can be enabled or disabled by the administrator. QA+ BEE platform allows integration with 3rd party tools like Jira, Azure Dev Ops - TFS, Jenkins and many more through its own APIs.

QA+ BEE consists of a web user interface, the core component and test executors (called workers). The core component contains a database for storing data that are essential for performing tests. It is used for test and user management, test execution scheduling and assignment to workers and reporting.

The workers can be deployed on separated location to be close to a test subject. They communicate to the core using an internal REST API which allows the deployment behind firewalls. A worker is usually deployed on a small computer (like Raspberry Pi) which is physically connected to the test subject.

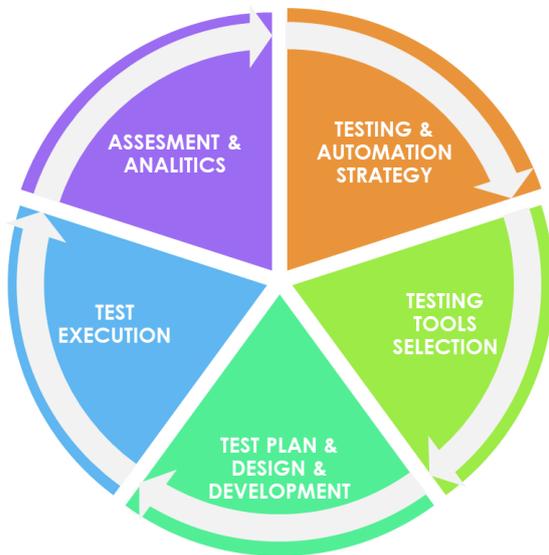
Does your company fit in the list of industries being impacted the most by system testing automation?

Banking & finance	Automotive & Self driving	Defense and Aerospace	Healthcare & Life Sciences	Insurance	Retail & E-commerce
Telco	IT	Manufacturing	Logistics and Transportation	Energy & Utilities	Marketing & Advertising

QA+ BEE Testing automation strategy

5-STEP STRATEGIC APPROACH TO SYSTEM TESTING AUTOMATION

The key to a successful testing automation is preparation of testing and automation strategy: defining testing objectives, dependences & risks, testing models, approaches, methods, scope and repetitiveness of testing.



The testing tool selection are listed at this step, such as defect tracking, performance or security. Testing plan includes hardware & environment requirements specification, test schedules, control procedures, roles & responsibilities, KPIs & approvals. Test execution can be done on-site or near-shore or in a hybrid way combining the two executions. Test results include overview of the test execution flow, including pie charts, screenshots, dashboards, and detailed bug logs. The reports can be customized to fit clients' needs, are easy to understand and read and can be distributed via different communication channels.

QA+ BEE IN ACTION BEST PRACTICE CASE

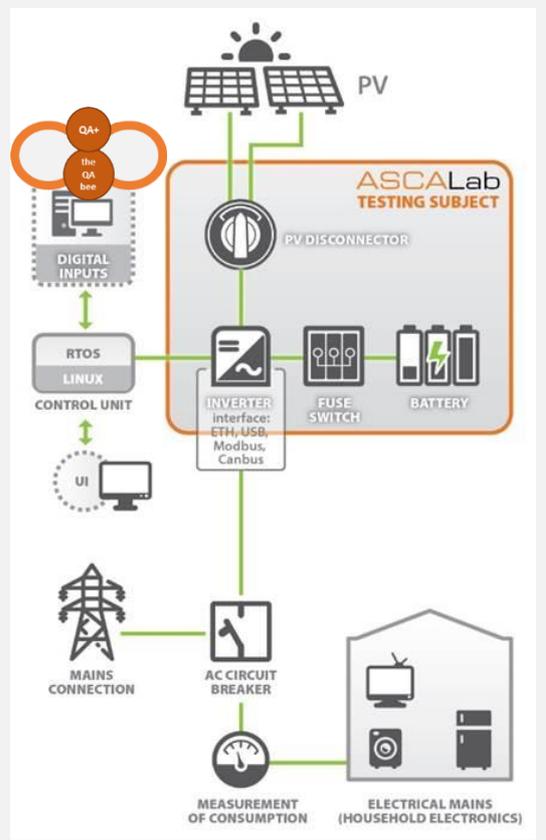
REDUCING RECLAMATION CLAIMS FROM 10% TO 1%

Photovoltaic solution producer was facing severe issues after using 10 year free of charge guarantee as market competitive advantage.

When hardware solution was connected to other hardware and software, such as different energy trading platforms, the number of reclamation rose to 10% and started to kill the business.

The QA testing was done manually, making it impossible to fix the issues.

QA+ BEE automated testing solution was implemented. The results were above the expectations. Number of reclamation claims dropped from 10% to less than 1%. Clients were satisfied and business started to flourish.



WHY IS QA+ BEE such a good choice?

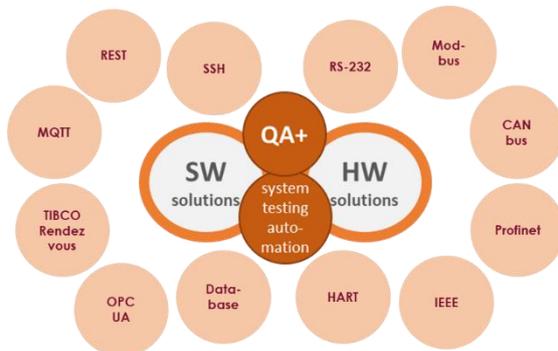
1. AUTOMATED, CONTINUOUS, LOW COST TESTING

The QA+ BEE system testing is fully automated to make system compliance with its specified requirements fast & easy to use.

It enables continuous testing to obtain immediate feedback on the business risks associated with a release candidate. It is designed to make system testing high performing and low cost.

2. PLUG & PLAY ALL-KIND DEVICES AND SOFTWARE

QA+ BEE speaks many software languages. QA+ BEE can overcome communication barriers by joining multiple testing systems, languages and environments into one, easy to use system testing platform. It is plug and play designed, keeping implementation stress level at the minimum.



3. SIMULATED DEVELOPMENT ENVIRONMENTS & AVATARS

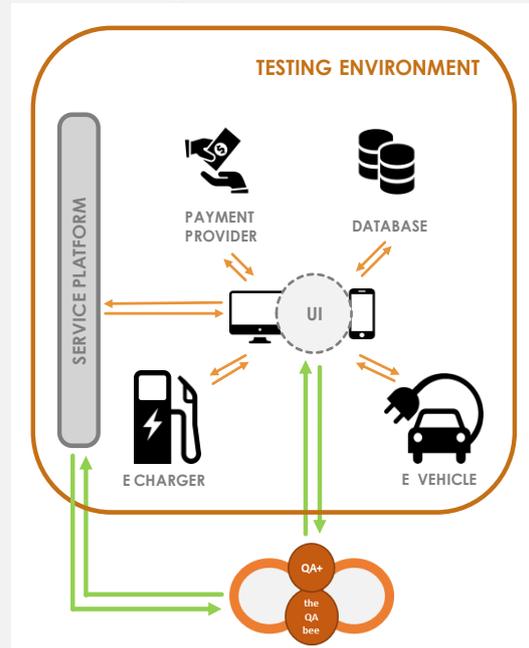
QA+ BEE offers a special cloud-based simulation environment to enable system testing prior to delivery and integration of all finished system's components and solutions. A virtual test room and device avatars are created to enable this feature.

QA+ BEE IN ACTION BEST PRACTICES CASES

FLAWLESS CUSTOMER EXPERIENCE ON MULTI SYSTEM INTEGRATION SOLUTION

A big energy company was facing challenges how to assure flawless customer experience when introducing AC/DC chargers for e-vehicles.

The AC/DC charger system is very complex, integrating different modules from hardware charger solution to energy provider, payment and billing, customer loyalty scheme and others. Each module was tested for itself and the results were good. But when all modules were integrated together the charging system failed. Customers were very disappointed and company was suffering from bad reputation.



The implementation of QA+ BEE system enabled the energy company to detect bugs in integrated system and to fix them. Automated testing is now making it easy for the company to test the system regardless of constant software and hardware upgrades of single modules.

4. ON SITE, NEAR-SHORE AND REMOTE TESTING

The QA+ BEE team experts are here to support the development by joining in-house development or testing teams, by being testing outsource unit or by setting up a hybrid model. What suits yours, our clients' needs at the most.



5. SUPPORTS CONTINUOUS DEVELOPMENT

QA+ BEE enables developers to work and test in real time. It detects bugs quickly and reports to developers to implement necessary changes. It will perform best, when embed at the beginning of development process.

6. INDEPENDENT, EXPERT & API DRIVEN

QA+ BEE works as an independent agent, offering management an impartial view on development efficiency, by independent behaviour driven experts. API enables to verify requirements independent of their GUI implementation.

7. LOW MAINTENANCE & PRICING FLEXIBLE

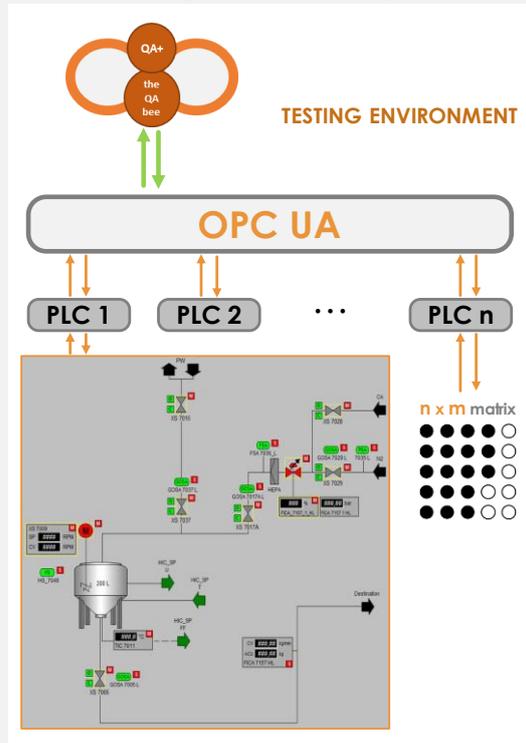
QA+ BEE offers monthly project testing licences. This allows clients to pay only as much of QA+ BEE licence as they use for testing. No hidden fees and no extra charges. Pure fair relationship.

QA+ BEE IN ACTION BEST PRACTICE CASES

PHARMACEUTICAL PRODUCER NEW LEANER PROCESS IMPLEMENTATION

Pharmaceutical producer was introducing a new, leaner production processes. A new software for controlling the production process and new hardware were ready to be implemented.

The issue was how to test the new system. Many testing parameters, numerous contingency scenarios, lengthy and costly real-life testing cycles made it clear that manual system testing was not an option.



QA+ BEE system testing automation was a perfect solution. Complexity of new system was simulated in virtual testing environment, making system testing easy, fast and cost effective.

QA+ BEE made implementation of a new production solutions smooth and all pharmaceutical producer's quality standards were met.

The client now enjoys all benefits of new leaner production.

ASCALAB TESTING CENTRE

ON SITE, NEAR-SHORE AND REMOTE TESTING

ASCALAB Testing Center is the partner to boost quality performance.

The ASCALAB Quality Assurance team offers expertise, knowledge and skills of testing to make development better, faster and more efficient. The QA+ BEE team is a bundle of strategists, architects, engineers, developers and data scientists. The effectiveness of our QA team comes from mixture of IT development veterans and young prosperous talents.

ASCALAB Testing Center offers flexible cooperation models.

- ▶ **On-site testing** is provided to companies that have large quantity of development projects, that need to share different IT infrastructure and testing environments. The need to partially in-source the QA team experts is high.
- ▶ Companies that lack knowledge, skills or manpower for performing real time testing, to assure quality performance go for **Near-shore testing** cooperation. The model offers flexible in-house and out-house testing, depending on client's needs.
- ▶ **Remote testing** is the service for companies and development teams with high level of testing knowledge and expertise. They have clearly defined testing objectives, strategy and KPIs and need "Extra Pair of Brain & Muscles" to assure quality.

Core competences of ASCALAB Testing Centre

Services	Testing Phases	Testing Types
<ul style="list-style-type: none"> • Testing consulting & management & execution • Testing Automation • Test Planning • Full-Cycle Testing • Client/Server Application Testing • Standalone Application Testing • Web & Mobile Testing • Embedded Software Testing 	<ul style="list-style-type: none"> • Unit Testing • Integration Testing • Test Automation • End-To-End Testing • Regression Testing • User Acceptance Testing 	<ul style="list-style-type: none"> • Functional Testing • Performance Testing • Security Testing • Stress Testing • Usability Testing • Compatibility Testing • Localization Testing

About ASCALAB

We offer highest standards of business, project management and software engineering processes with the knowledge of innovative technologies and value-added engineering on all platforms. We have experience in Manufacturing, Healthcare, Metrology, Telemedicine, Insurance, Security industry. The company was founded in 2012 by software experts with proven track of successfully developed and implemented projects in various industries and markets.

Clients and partners:



THANK YOU FOR YOUR ATTENTION

TO START USING



QA+ BEE

the future of system testing automation

PLEASE CONTACT US

ASCALab

ASCALab d.o.o.

Cesta v mestni log 88a
1000 Ljubljana | Slovenia
Tel: +386 40 649 101
E-mail: info@ascalab.com



QA Systems GmbH

Roggenstrasse 11
71334 Waiblingen Stuttgart | Germany
Tel: +49 (0)711 138183 -0
Fax: +49 (0)711 138183 -10
E-mail: info@qa-systems.de