

# Removing Barriers and Reducing Risk in Technical Change

## Test Automation for SAP Platform Migration

**CLIENT**

WAKA KOTAHI NZ TRANSPORT AGENCY

**INDUSTRY**

GOVERNMENT

**TTC SOLUTION**

TRICENTIS TOSCA TEST AUTOMATION  
FOR SAP TEST AUTOMATION



# A tight timeframe, a needed change, and the need to ensure it works.

Waka Kotahi NZ Transport Agency (NZTA) is a major entity in New Zealand's transport infrastructure environment. NZTA is focused on providing one integrated land transport system that helps people get the most out of life and supports business. They look after the national transport system, working with partners both domestically and internationally. With some \$2.9b of annual expenditure (2019 Annual Report) on roading improvements and maintenance and \$53b of assets under management, the systems and applications that help NZTA monitor, maintain and support this environment are large, complex, and provide a vital role in the organisations ability to deliver.

One of the key applications at NZTA is SAP. Used to manage the processes around roading development and maintenance, SAP manages and maintains all transactions associated with land and property purchase and disposal, together with the project and financial management of roading projects. SAP is managed by the NZTA business team. Changes made to the SAP application were rigorously tested by the NZTA business team – manually and often with the impact of taking the NZTA business team away from their day to day activity for significant periods of time. Hosted within NZTA on an 'on premise' platform and used by a significant number of people both internal and external to NZTA, SAP is a core application supporting many of the NZTA business processes.

Like many SAP users, NZTA is facing the reality of a move to SAP S/4HANA soon. Along with the SAP modernisation, NZTA also wanted to modernise the platform which housed the SAP environment. New Zealand Government has been advocating a shift to on-shore cloud-based data centres for some time. In scheduling the upgrade to SAP S/4HANA, NZTA saw the opportunity to first modernise the SAP platform through a migration to cloud-based hosting ahead of the eventual SAP upgrade. Being a core system supporting real-time transactions and several third-party application interfaces NZTA understood that testing to confirm no loss of functionality was a key piece of successful migration planning.



## Implementing Change Without Impacting the Business

In an environment where the business owns the application, including the manual testing of all changes, the challenge to NZTA was the sheer impact on the business in testing the scale of change. Platform migration ahead of SAP application upgrade together with ongoing functional changes represented a significant burden of manual testing to the NZTA business community. Many of the tests were to be repeated through each step of the migration, upgrade, and functional change process so the necessity of business knowledge was not a significant element of the test execution.

Yet the proposed execution time of the manual tests was forecasted to not only impact business workloads and NZTA productivity, potentially timelines for the migration, upgrade and functional changes would be impacted as well. The business was up for the challenge and were ready to pitch in and help. But at what cost?

And that is when the NZTA's Quality Engineering team stepped up. Could their investment in Test Automation be the answer?

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## Leveraging Investment Made to Date

NZTA's Quality Engineering team have been investing in Test Automation for over two years. Primarily automating with Tricentis TOSCA, the team has also invested in open source technologies and frameworks, looking to leverage the right tool for the right use within NZTA. Through investment in people and tooling over the previous two years the Quality Engineering team within NZTA were able to see the benefits they could bring to both business productivity levels and project timeframes with a judicious approach to test automation.

By focusing on the high use / high risk (to the business) SAP transactions, the NZTA Quality Engineering team could provide confirmation that the SAP transactions were functioning correctly through the changes – quickly and repeatedly.



## TTC's Approach

TTC is a long-term supplier of Tricentis TOSCA support into NZTA. Through TTC, NZTA's Quality Engineering team have had support, training and implementation assistance for Tricentis TOSCA. Through this support NZTA Quality Engineering team are extremely proficient in the use of Tricentis TOSCA and are regular contributors back into the New Zealand Tricentis TOSCA user community.

Prior to taking on the automation of the SAP testing, TTC worked with NZTA to prove that Tricentis TOSCA would automate each of the SAP transactions across both the SAP GUI and the browser-based SAP interface. TTC involved Tricentis in the proof exercise, helping NZTA's Quality Engineering team identify and set the configurations across both SAP and Tricentis TOSCA to enable the test automation to work. This was verified through a sample set of NZTA SAP transactions across both the SAP client and the browser-based SAP interface. The requirement was not just that testing the SAP transactions could be automated, but that they could be automated and executed quickly providing a return on the test automation effort.

TTC and NZTA set the following goals:

- Confirmation that SAP transactions (both browser based, and SAP client based) could be tested using automation.
- That the NZTA Quality Engineering team could use their level of skills and experience to lead and do the test automation.
- That NZTA could undertake this work using the product licences that they had (no additional Tricentis TOSCA functionality or custom coding was required).
- That the automated tests – once created in one environment – could be deployed and successfully run in another environment.

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“The NZTA Quality Engineering team have automated a number of transactions across several other NZTA applications. Automating the SAP transactions was quite a daunting task. It had to work the first time to give the NZTA business the confidence that we had it in hand.”

– Rose Wapp, Manager Quality Engineering, NZTA

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## A Job Well Done

From a start of nil automated tests, in one month the NZTA Quality Engineering team proved, created, verified and executed a total of 31 automated tests for the SAP environment. Functions covered all inbound and outbound interfaces, Fuel Excise and Finance, Real Estate, Property Management, Business Reporting and Customer Relationship Management. Test execution time across all 31 tests is 1 hour and 20 minutes, replacing 15 person days of manual test effort excluding documenting the manual test results. The automated tests are repeatable with data being created at time of consumption. Created in the NZTA SAP 'on premise' environment the tests have been successfully deployed and re-executed in the 'in cloud' SAP environment and have confirmed the successful functioning of these key SAP transactions.

**"Within 1 month NZTA's Quality Engineering team has been able to make a real impact on maintaining NZTA business productivity levels and support what has proven to be an aggressive timeline for the SAP platform migration. It has been a real eye opener what can be achieved by way of business productivity."**

– Rose Wapp, Manager Quality Engineering, NZTA

SAP Move to Cloud	
Phase 1 - Interfaces	
Phase 2 - FED/ECC Processes	
Phase 3 - RE/TIO Sanity	
Phase 4 - PPM	
Phase 5 - BPC	
Phase 6 - CRMS	

SAP Move to Cloud		42		42:00:42
Phase 1 - Interfaces	17		09:35.936	17:00:17
Phase 2 - FED/ECC Processes	7		22:59.297	7:00:07
Phase 3 - RE/TIO Sanity	6		07:39.597	6:00:06
Phase 4 - PPM	2		11:27.365	2:00:02
Phase 5 - BPC	2		22:39.966	2:00:02
Phase 6 - CRMS	8		07:39.302	8:00:08

Through a combination of TTC's support and Tricentis TOSCA, NZTA successfully automated SAP transaction testing, enabling SAP platform change with minimal impact on the NZTA business community.

**"This was a tough start as far as building automation suites go, but I think our teamwork pulled this one out of the fire! The ability to steer multiple control types such as HTML, DotNet and SAP GUI in a seamless test was invaluable to us when completing end to end testing. It also integrated well with the other script technologies that we utilised for data set-up"**

– Andrew Meredith, Quality Engineer, NZTA

## Let's Talk

For more information, talk to a member of our team today.