

A decorative graphic consisting of a large, teal-colored arc on the right side, set against a background of a light blue and white circuit board pattern.

## Telemotive Test Automation at Nippon Seiki

An Interview with Ning Liu, System and Software Test Engineering Manager at Nippon Seiki (Europe) BV

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Nippon Seiki is a renowned system supplier for instrument clusters for cars and motorcycles. Moreover, they produce Head-Up displays for cars. In Germany, they supply their products to all premium automobile manufacturers.

In order to ensure maximum quality, all functionalities of the control units have to be tested repeatedly. For over one year, Nippon Seiki has been using the testing framework Telemotive Test Automation (TTA) and we want to know some more details about their application. To get answers to our questions, we talked to Mr. Liu, the Test Engineering Manager at Nippon Seiki.

## **Mr. Liu, how did you first get in touch with MAGNA Telemotive?**

Mr. Liu: We were already using the data loggers from MAGNA Telemotive. Then we were looking for a HMI (Human Machine Interface) Testing Tool, that's how we found Telemotive Test Automation.

## **What exactly do you use TTA for?**

Mr. Liu: We test the graphics that are generated by the ECU (electronic control unit). TTA receives the pictures and compares them via image processing and comparison algorithms with the reference picture. Discrepancies are uncovered and the test steps are marked accordingly. From this information, a detailed report of all test steps is created.

## **Now you have been working with TTA for quite some time. How did you test before?**

Mr. Liu: In the earlier projects, the test concept was originally developed and executed in Japan. Our mother company used a different solution to test the functionality of the software.

## **What difficulties did you face before using TTA?**

Mr. Liu: In another site of our group, we used a tool, which was previously used for another NSEU project. It had significant stability issues and was not documented very well. The internal test steps for the tool were fixed but there was no way to improve the tool at all. Support for the tool did not exist. The duration of a test for one image was around 1 minute, which is not acceptable for our business.

**How have these difficulties improved with the introduction of TTA?**

Mr. Liu: The degree of test automation has improved significantly. Compared to the existing solution, TTA was less cumbersome to set up for the project. The test effort and the execution time could be reduced significantly by the introduction of TTA and compared to the other solution.

**How did you prepare the implementation of TTA?**

Mr. Liu: We had to provide an additional DVI output for the frame grabber for the development boards. In addition, TTA had to be integrated into another tool that we are using and the TTA reporting structure had to be adapted to our continuous integration environment.

*(For more information about the continuous integration, read our whitepaper “Continuous Integration – How it helps to efficiently automate an Automotive Toolchain”)*

**What were the biggest hurdles when implementing TTA?**

Mr. Liu: First, all relevant parties within the company had to be convinced to switch from the prevalent software to TTA. Then, we had to train the test engineers in using the new environment. Moreover, MAGNA Telemotive had to develop some interfaces to industry standard tools from Nippon Seiki. We hope that they will continue to deliver connections to third party tools.

**How quickly did you or your employees understand how to use the tool?**

Mr. Liu: The training period was relatively short, since a comprehensible tutorial is included.

**Could you also apply the Continuous Integration process with TTA to other projects?**

Mr. Liu: Nippon Seiki will push the topic of continuous integration with TTA in order to integrate it in other projects as well.

**How satisfied are you with the tool and the support by MAGNA Telemotive?**

Mr. Liu: We are very satisfied with TTA and its simple operation; it is very easy to understand. The quality and quantity of the reference image analysis and DUT (device under test) image analysis is particularly convincing.

The support is also very good and the development process very agile. We have weekly meetings of 1 or 2 hours.

**How do you plan the future with TTA?**

Nippon Seiki Europe plans the rollout of TTA as a standard tool for HMI testing within the whole group.

**Thank you very much for your time, Mr. Liu. Let's continue to develop the future of test automation together!**



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