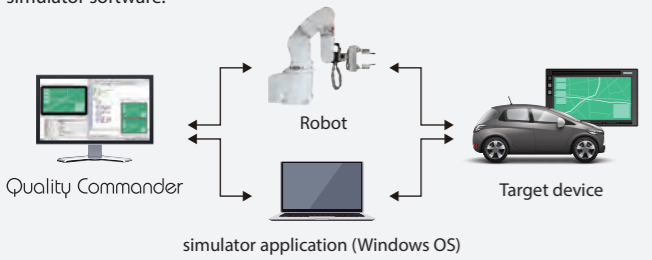


Automatic testing of applications

Automatic test of Windows application

The system externally controls PC with Windows OS and performs keyboard and mouse operation automatically. You can automate connected test for embedded device and PC. It can also be used for automatic operation of simulator software.

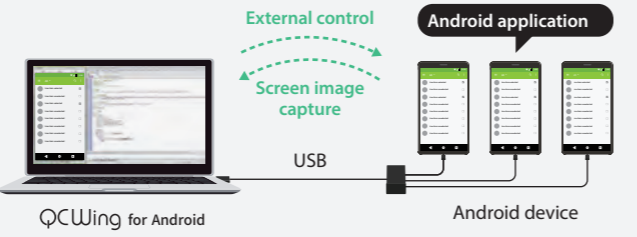


Quality Commander → Robot → Target device
simulator application (Windows OS)

External control of PC and mobile terminal

Automatic test of Android application

Android application is automatically tested by externally controlling the Android terminal connected to the system via USB.



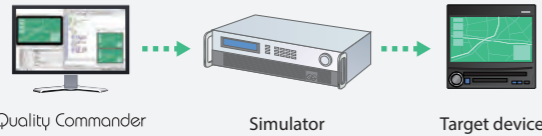
External control → Screen image capture → Android application
QCWing for Android → USB → Android device

Automatic test of in-vehicle device/car navigation system

CANoe cooperation/Programmable power supply cooperation

Using the linkage function of CANoe, the value of the environment variable defined in the simulation can be set by the Quality Commander. This allows you to automate cooperative tests such as checking the display change of the in-vehicle device accompanying the state change of CANoe generated.

By also controlling the programmable power supply, it is possible to perform power reset operation, check the screen condition after resetting, and so on.

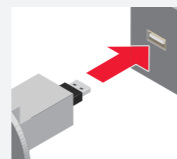


Quality Commander → Simulator → Target device

Six Axes Robot Unit

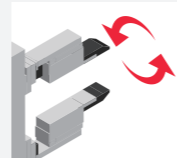
USB insertion and removal

USB connector can be automatically inserted/removed by replacing the arm with a special one. You can also change the arm automatically.



Multi-touch operation

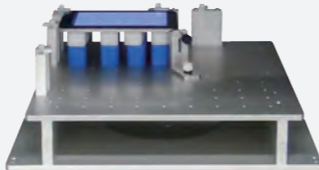
Multi-touch operation test such as pinch-in/pinch-out/rotation is possible.



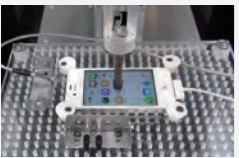
Automatic test of touch panel device (Approx. Screen size: maximum 16 inches)

Height adjustable block type adapter

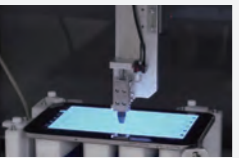
By stacking blocks, the difference in thickness of target device is absorbed. It is possible to handle touch panel device with a thickness of from about 50mm to thin tablet size device.



Three Axes Robot Unit



Smart phones



Tablet

Solid and secure support

Customer success is our driving force!

We will contribute to improve the quality of the customer's product with a quick and secured support.

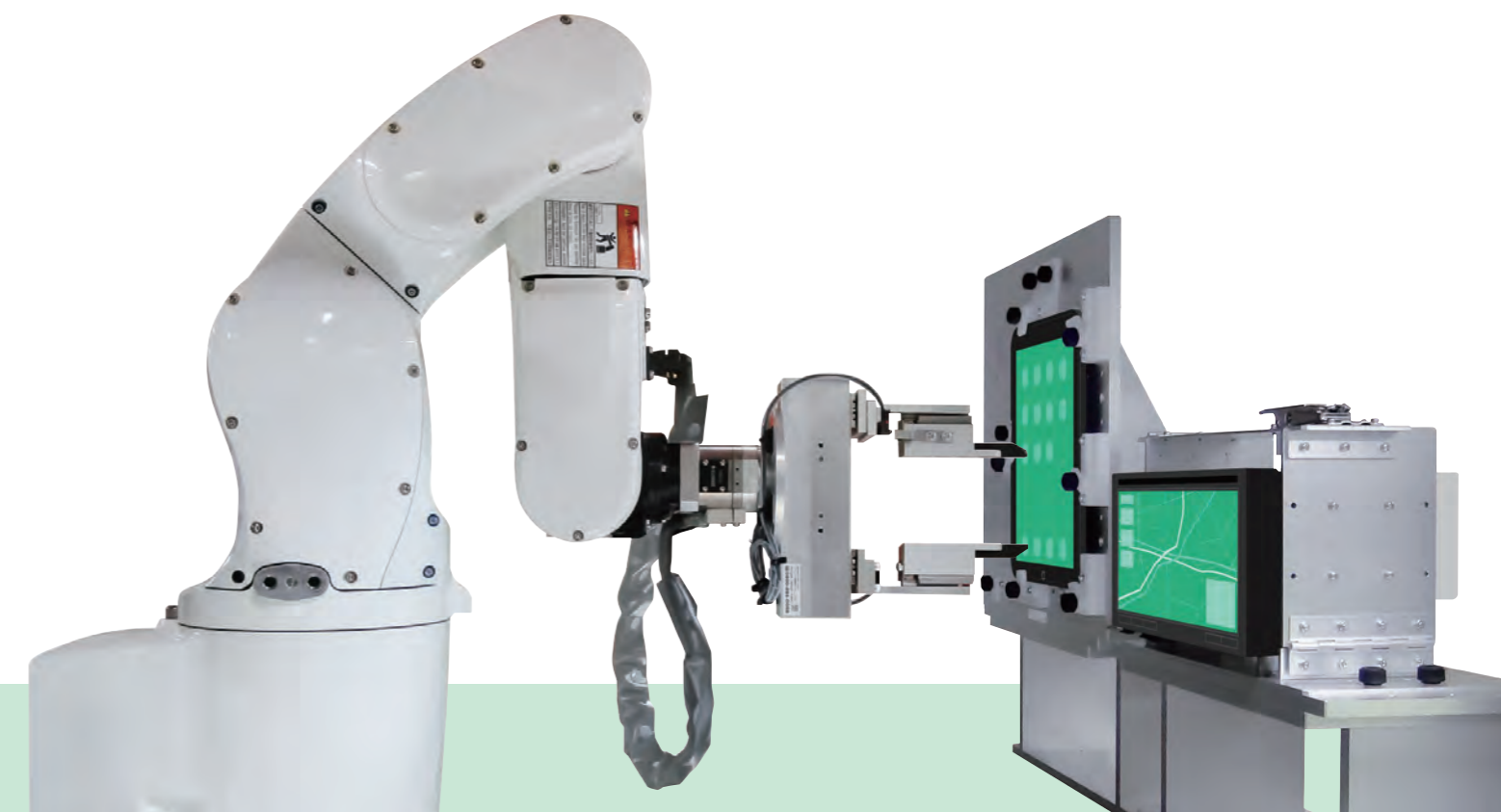
- Requested functionality can be implemented at a scheduled software version ups
- Technical support is provided by our expert engineers
- Technical support and maintenance is delivered all over Japan
- Within 24-hour response by Telephone or Email
- Provides replacing system when it is necessary

We also provide scenario creation and introduction support service.

To earn the effect of introducing Quality Commander, our staff who have plentiful experience of automation will provide a full range of launch support at the time of introduction. We will provide know-how, create test scenarios to start automated tests in a short period of time, and we will help you to get effective immediately.

Automated testing system for an embedded software

Quality Commander



Automated operation by robot and Automated judgment with operation result



For the details, visit <https://www.jnovel.co.jp/en/>

JNOVEL Japan Novel Corporation
Phone: +81-3-3927-8801 Fax: +81-3-3927-8802
2-30-2 Ohji Kita-ku, Tokyo 114-0002 Japan
e-mail: sales@jnovel.co.jp



Effective usage of the night time and weekend
Robot manipulator performs the test operation of the target device consistently and in high-speed. The result of the test is stored in DB and the duplication of the problem is easily carried out.

Improved quality with a precise operation avoiding a human error
High precision image judgment detects even a small difference and prevents an unexpected pass caused by a human error.

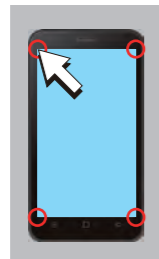
Registered patent
JPN : Patent 4489710
JPN : Patent 3714660
USA : Patent No : US7,646,193 B2
CHN : ZL 2005 8 0000110.7
KOR : Patent number : No.10-1146824

Awarded a Chairman prize of 2004 Information Month Promotion Conference
This product has been given a Chairman prize of 2004 Information System for Promotion of Information Technology at Information Month Promotion Conference.

1 Preparation

Creation of the environment setting file

The button location of the device and virtual image of the target device are defined as an environment setting file. When test is performed, you need to identify the specific environment setting file for the target device.



The case of touch screen device

It registers four angles on the touch screen which photographed with a camera in a mouse click, and touch screen operation is possible by letting a robot learn the same place.

2 Test Scenario creation

Easy operation with the mouse click

Test procedure is described in a test scenario. The operation command to push the button is inserted by clicking the mouse on the virtual device. Image capturing command is also inserted by 1 mouse click. The operation is so easy for the test engineer who does not have a programming expertise that he or she can get used to the system in a day.



Robot operates the same place on the actual device when clicking on the virtual screen.

3 Test execution

Fast and precise, 24H operation

The robot manipulator pushes the button along with the test scenario instead of human being. You can change the speed or timing for the pushing. Since the operation can last over 24H automatically, you can perform the test in the night or the weekend and testing time will be significantly reduced.



4 Automatic judgment

Robust automatic image judgment function

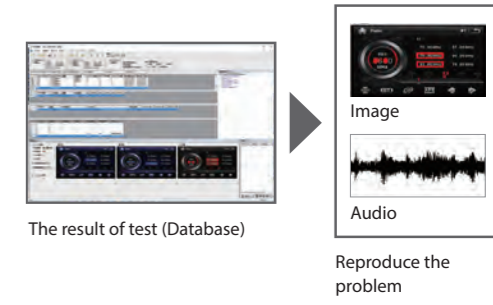
The captured image or recorded sound is automatically judged if it is a correct one. The captured image is adjusted about the spottiness or distortion with the robust adjustment algorithm and then automatic judgment is performed. The judgment function is also precise that dot (".") and comma (",") is distinguished correctly.



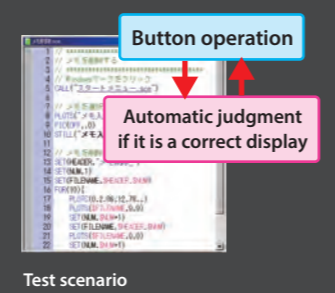
5 Result analysis

Easy duplication of the problem

The result of test which is stored in DB can be viewed in the result display and it is possible to duplicate the problem easily. Filtering function helps to display the concerned point of NG. Summary report can be output as CSV file or to the printer.



Test scenario
The test scenario is mainly consisted of a collection of a button operation and an automatic judgment. When scenario is executed, the judgment is performed if the display after the button operation is matched with the expected display or not. Simulator operation as a cooperative test could be added in the scenario and executed automatically.



Device holding adapter can be used for multiple models
Device holding adapter is adjustable for a different type of devices.

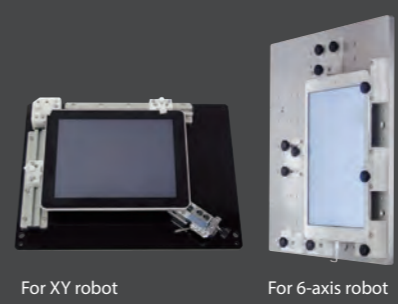
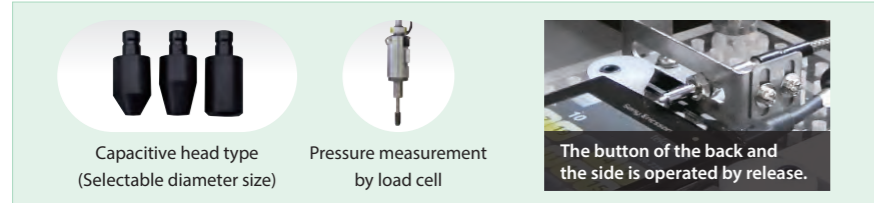


Image capture by camera
The same test is performed as the human beings do by capturing the image through a camera. If target device has an external output connector for the display, image is captured through an electrical signal instead of using camera.



Automatic Operation of Touch panel Automated by Robot and Auto-judgment of screen image

The tip part which operates a touch screen can be chosen from the type corresponding to an electric capacity system, etc. according to operation devices. It supports the push pressure measurement using the road cell by customization. As for the back and the lateral button, an automatic operation is possible by locating a release individually.

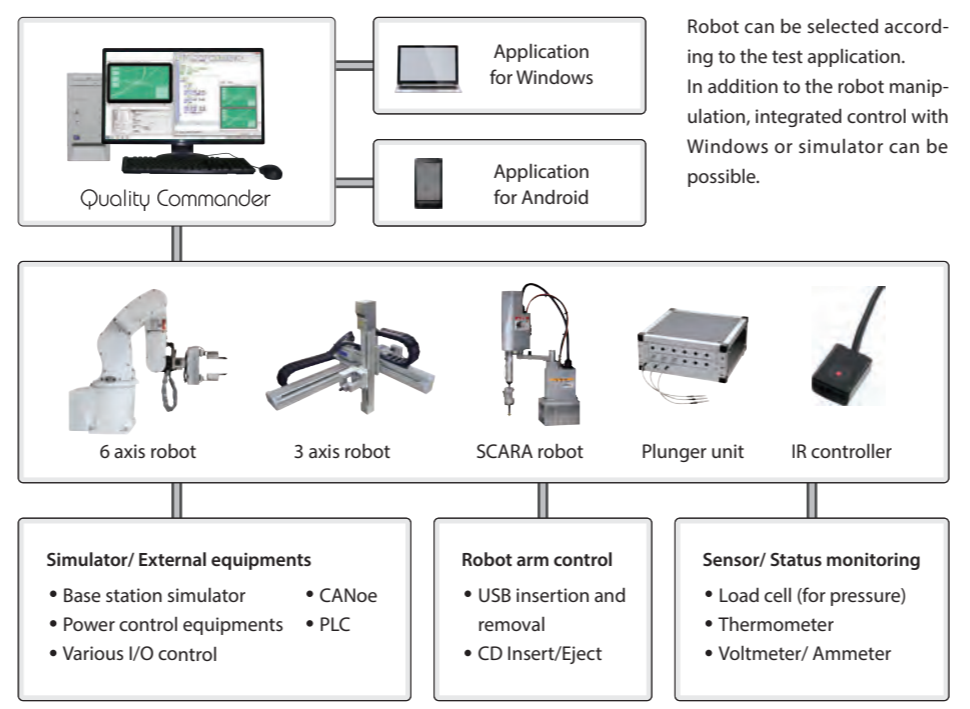


Dragging
A robot can drag a screen and possible to draw a graphical image consisted of straight lines.

Flicking
Robot can make a quick leaping up operation.

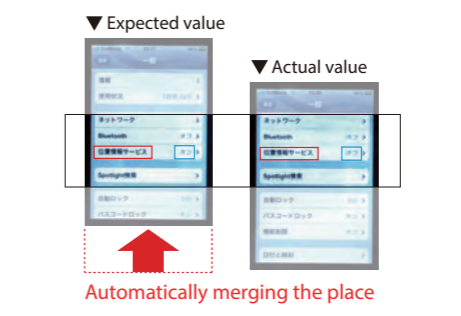
Pushing in search of a character or an icon
Character string or an icon is searched from the screen and pushed by the Robot. Automatic operation is set up by specifying the menu text.

A simulator is also operated at the same time, and increased productivity by the cooperative test



Automatic alignment of the judgment area OCR judgment is supported

SCSTL judgment (Search + Still image judgment)
Using an actually measured image, the judgment area for the expected value is adjusted automatically. It is also possible to judge pop-up and scroll menu.



High speed still image judgment
Maximum of 20 still image per second can be captured and judged automatically.

OCR (character recognition)
Recognizing as a character or a numerical value.

Sound judgment
Sound is recorded and judged with the expected sound. In addition to the method of judging by tone signal and frequency, there is "spoken word judgment" which can compare and judge human voice such as voice guidance.

Long-term condition monitoring is possible: "Always-on monitoring tool"
You can record movie data on your PC and quickly check the recorded image at every shooting time. Images taken can be viewed from the result screen of Quality Commander, and more detailed analysis at the time of defect can be performed.