OptoFidelity

Test Automation Product Portfolio

Modular, non-intrusive test systems for
Optomized™ *end-to-end testing and product quality control*

Optomized™ product quality and time-to-market benefits

User experience and the quality of the device, application and content are major differentiators in mobile business. In the end it's the user experience that matters. Product development equals more complex scenarios, feature interactions and increasing use cases.

Manufacturers and operators have to solve how to ensure maximal time-to-market benefit without compromising product quality or user satisfaction.

When the demands and features for the product are a result of contant changes, the testing of the final product won't guarantee full product quality. Improved end-user quality can only be assured testing components, applications and products during the entire R&D phase.
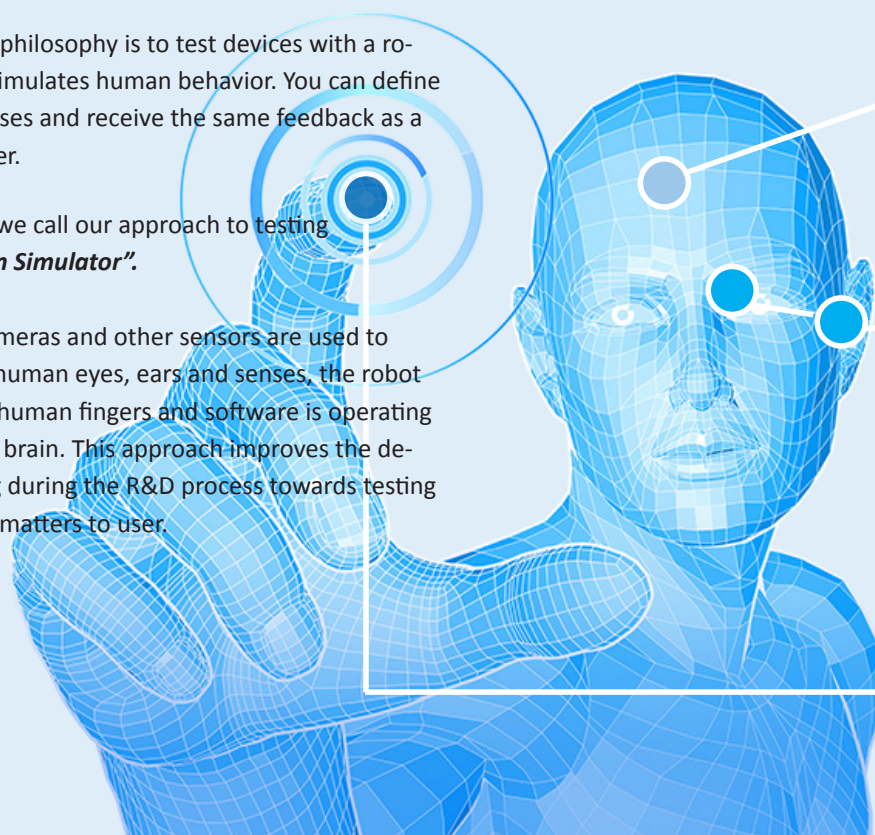
We at OptoFidelity believe that the best product quality, end-user satisfaction and loyalty can be only achieved by treating automated end-to-end testing as an integral part of R&D.

Human Simulator™ approach for testing

Our testing philosophy is to test devices with a robot which simulates human behavior. You can define your test cases and receive the same feedback as a real end-user.

That's why we call our approach to testing *"the Human Simulator".*

Multiple cameras and other sensors are used to operate as human eyes, ears and senses, the robot is acting as human fingers and software is operating as a human brain. This approach improves the device testing during the R&D process towards testing what really matters to user.

"BRAINS"
Touch & Test Suite and analysis software

"EYES AND EARS"
Sensors, cameras, microphones

"FINGERS"
Robotics

One platform - several Applications

Our test systems are based on modular thinking. The core platform, test tools and scalable turn-key systems are designed for end-to-end testing, from component to device level testing.

You can use the same platform for different purposes by upgrading or adding new applications around the basic system controller, Touch & Test Suite.

MODULE & COMPONENT LEVEL PERFORMANCE AND QUALITY

· Sensor Testing
· Power consuption
· Touch performance
· Display quality

DEVICE LEVEL PERFORMANCE AND QUALITY

· UI response
· Touch/Interaction
· Graphic performance
· Visual quality of display
· Service load time
· Video quality

DEVICE FUNCTIONALITY AND RELIABILITY

· Repeatability
· Functionality

Use of the OptoFidelity Touch&Test platform

Our systems are suitable for several test purposes with different devices or components. Scalable system architecture allows the building of diverse assemblies with different specifications and test cases.

USE RANGE OF THE SYSTEM		Test engineer	Test automation framework	Continuous build environments, CI	Quality Control					
TEST PURPOSE	Device and application UI performance	Device and application video playback performance	Functionl UI testing	Device touch accuracy and performance	Touch module accuracy and performance	Device 3D graphics	Device and application reliability and long period testing	Device and application stress testing	Windows HW pre-certification	
TOUCH&TEST APP. AND PRODUCTS		OptoFidelity TPPT	OptoFidelity HSUP	WHCK	TnT Python test cases	TnT C# test cases				
TOUCH&TEST CONTROLLER		Touch&Test Controller API		Touch gestures	Robot control	Effector changer control	Measurement control	DUT management	State Validation and UI navigation OCR/icon detection	
MEASUREMENT INSTRUMENTS	Audio & haptic latency WatchDog™	UI latency WatcDog™	Graphic scroll performance SPA	Device touch UI end-to-end latency P2I	Video Playback performance	3D graphic performance	Touch panel module performance	Touch panel device performance	Current consumption HAT	Display inspection tool DIT
ROBOTS		6-axis	Scara	Device types up to 7"	Device types up to 16"	Device types up to 28"	Delta			
EFFECTORS, TOOLS AND MECHANICS		One finger tool	Two finger tool	Multifinger effectors	One finger effectors	Effector changer automation	Touch changer automation	Customer specific tools and effectors	DUT video monitoring	
DEVICES UNDER TEST		Smart phones	Tablets	Laptops	All in One PC's	Infotainment systems	All touch UIs	Touch panel modules		

"Play the puzzle and choose the tools that fit your needs."

Modular and scalable systems

Our Test Systems are built on the idea of scalability and modularity. You can buy a ready turn-key system or build your own system with the same modular pieces. Our basic system products consist of a Touch & Test (TnT) Controller Solution Suite, test tool/application for required testing purpose, and a robot.

We also have several test instruments which can be used separately or for building a complete, fully automated tailor made test system. Our products are scalable and can also be integrated to the customers own testing automation system or our partners script test or software testing tools easily.

Basic system components

Touch & Test Suite
Server application, controller unit

Applications
(Several measurement applications: HSUP, TPPT, SPA, WHCK)

Robotics
Several robot types and sizes for devices up to 28"

Robot cell items
Test applications + finger tool options

Test instruments
Additional measurement devices

Support & maintenance

Upgrade your system with modular pieces

No matter what your first system setup is, you can upgrade and scale your system easily and cost effectively for different test purposes or for more systems.

System example & required components:
TPPT20 One finger test solution for touch sensor, device and module level testing

Touch&Test Suite   +   TPPT Application   +   Robot Cell 16 "   +   One finger tool option with camera   +   TPPT Test Aplication HW

Benefits of OptoFidelity test automation

Time and cost savings
- Automated testing routines
- Streamlined R&D process as a whole
- Shorter time-to-market cycle
- Shortened testing time saves time and money
- Flexible and adaptive Touch & Test Platform enables multifunctional testing
- Customer can focus on developing test cases

Quality improvements
- Unreliable manual testing replaced
- Enhanced high quality, repeatable and comparable measurements
- In-line scalable global test environment
- Improved overall quality thanks to end-to-end testing during the entire R&D phase

Higher end-customer satisfaction
- Improved productivity
- Improved brand image
- Reduced support and maintenance costs
- Improved user satisfaction due to better touch and UI performance of the device

Reported OptoFidelity Test Automation results from China Mobile, testing with the WatchDog™ UI performance test system:

Manual testing (HD camera) for one phone, each test case for 10 times: **Time spent 225 min**

WatchDog testing for one phone, each test case for 10 times: **Time spent 77 minutes**

Time saving per testing one phone 148 minutes

Support & Maintenance

OptoFidelity offers Support&Maintenance Packages that can be easily customized to meet your needs. OptoFidelity Technical Support is delivered through three levels for three categories. Each package ensures you get the most out of your system and that you remain protected against sudden minor or complex problems.

Standard, level 1 support is a basic package that is included in all product deliveries for one year at no extra cost.

Other Support packages are available for an additional fee and for a perido of 12 months at a time. Service levels provide different response and repair times and support methods for the customer.

TECHNICAL SUPPORT SERVICE	SOFTWARE SERVICE	HARDWARE SERVICE
Service level 1 Service level 2	Service level 1 Service level 2 Service level 3	Service level 1 Service level 2 Service level 3

OptoFidelity test system and instrument selection

Optofidelity Touch Panel Performance Test System Products

TPPT10	OptoFidelity One-finger Test Solution for device level testing
TPPT20	OptoFidelity One finger test solution for touch sensor, device and module level testing
TPPT30	OptoFidelity Two finger test solution for touch sensor, device and module level testing
TPPT40	OptoFidelity Two finger test solution for touch sensor, device and module level testing

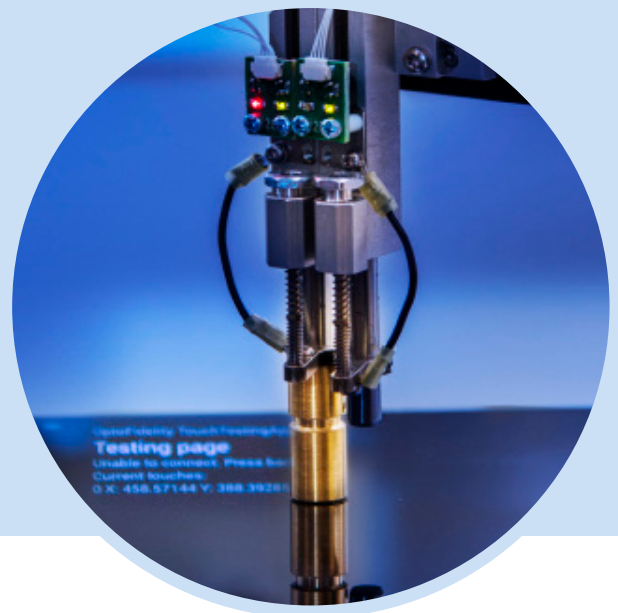## Optofidelity Human Simulator User Interface Performance Test Tool Products

HSUP10	One finger robot test automation solution for user interface graphic latency measurment
HSUP15	One finger robot test automation solution for user interface graphic, audio and haptic interaction latency measurement
HSUP20	Two finger robot test automation solution for user interface graphic interaction latency measurement
HSUP25	Two finger robot test automation solution for graphic user interface, audio ouput and haptic latency testing
HSUF	Robot test automation solution for electronic device user interface functional and non-functional test purpose

WatchDog Test System Products

WD10	Test System for UI visual latency measurements from user interaction
WD20	Test System with additional multimodal unit for audio and haptic latency measurements
SPA	Scroll Performance Analysis Application for UI playback performance measurements
Pen to Ink	UI end-to-end drawing latency measurement

OptoFidelity Test Instruments:

AV10	Perceptual Video Quality Test Platform
AV100	Video Analysis System
	Video Multimeter
TVG	OptoFidelity Test Video Generator
HAT Mk. 2	Hardware Accessory for Testing
	Acceleration sensor for HAT
	Optical sensor for HAT
	Audio sensor for HAT
	Current sensor for HAT
	Temperature sensor for HAT
	Display Inspection Tool for HAT

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