

Orchestrating a brighter world

NEC

# NeoFace® Watch

High Performance Face Recognition



John Smith

Missing Person

Eva Christina

Person of Interest

# Answering the need for Robust Face Recognition

For real-time or post-event, handling the most complex and large-scale use cases

One platform for surveillance, search, identification and ID verification

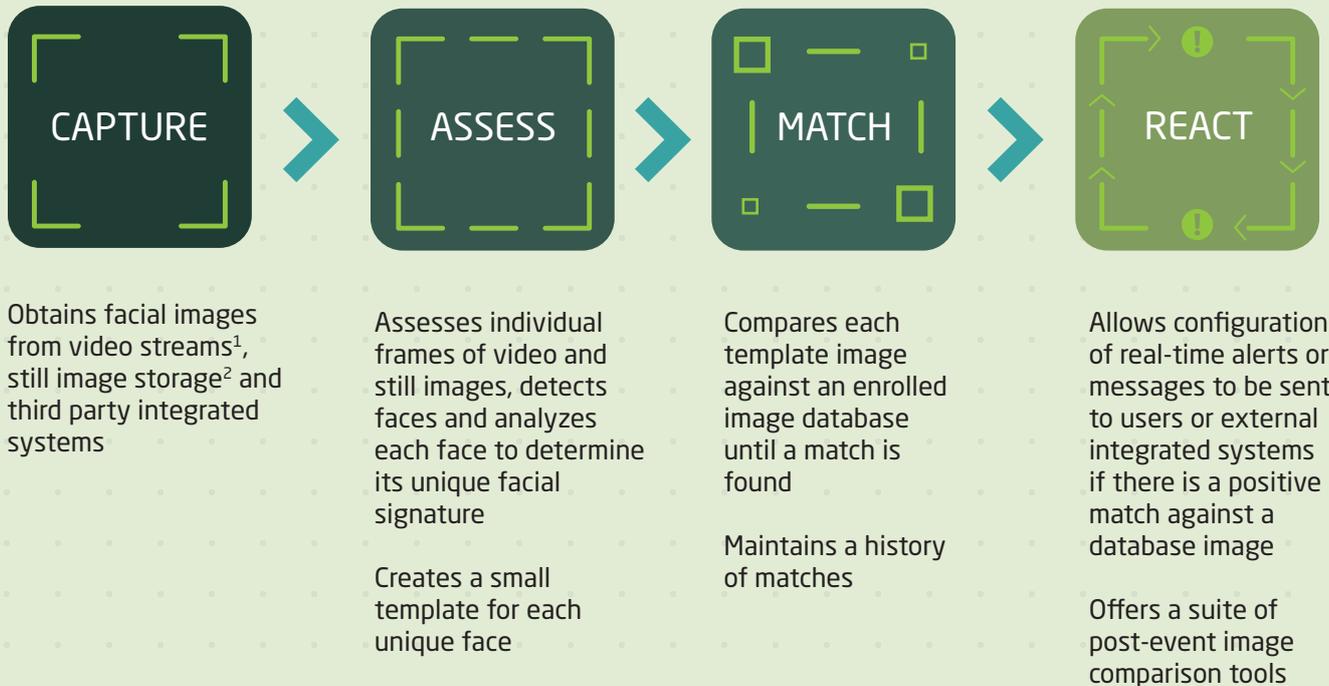
Most accurate and fastest face recognition software application available



**NeoFace® Watch** is a high performance, highly scalable face recognition software application, providing the most accurate and fastest results for the most demanding real-time or post-event face recognition use cases: large volumes of data throughput, large numbers of users, large numbers of devices, large scale deployments.

## How NeoFace® Watch Works

**NeoFace® Watch** has been proven to work in the real world, not just in the laboratory. A robust algorithm tested and improved over years in actual deployments, NeoFace® Watch overcomes challenges such as crowded environments, poor lighting, moving subjects and multiple variables as small yet significant as spectacles, hats and scarves.



1 CCTV surveillance cameras, mobile video cameras or archived video footage  
2 Mobile cameras, smart devices and digital databases

## Why NeoFace® Watch?

### High Performance

Independently evaluated by NIST's<sup>3</sup> Face In Video Evaluation (FIVE) 2017 testing on ability to perform under the most demanding real-world circumstances<sup>4</sup> at the highest level of accuracy<sup>5</sup>

### Easy to Implement

Uses common hardware including IP cameras, servers and existing infrastructure. Smart device applications (iOS / Android) are also available

### Easy to Integrate

Integrates with other systems<sup>6</sup> using web service APIs, offering an added dimension in facial recognition competency

### Scalable

Caters to a wide range of architectural configurations to suit your deployment conditions<sup>7</sup> and requirements<sup>8</sup>

### Flexible

Easy customization<sup>9</sup> for specific operational requirements and ensures continued optimal operation

<sup>3</sup> National Institute of Standards and Technology (USA)

<sup>4</sup> Moving people in crowded places (e.g. Detection of suspicious individuals at an indoor stadium)

<sup>5</sup> At 2.5 times more accurate than the nearest competitor as tested in NIST FIVE 2017

<sup>6</sup> Video management, customer relationship and security systems

<sup>7</sup> Multiple servers and across multiple sites

<sup>8</sup> Handle millions of faces, thousands of cameras, and simultaneous user interface sessions

<sup>9</sup> Using system configuration tools and monitoring utilities

# NEC NeoFace® - World's Most Accurate Face Recognition Technology



Fastest



Best with Low Quality Images



Most Accurate



Highest Tolerance to Situational Variables

In independent tests conducted by NIST over the years, NEC has been significantly ahead of other providers in terms of accuracy and speed – two key factors of success for a facial recognition system.

**NEC has been tops in all its benchmarks:**

Face In Video Evaluation (FIVE) 2017

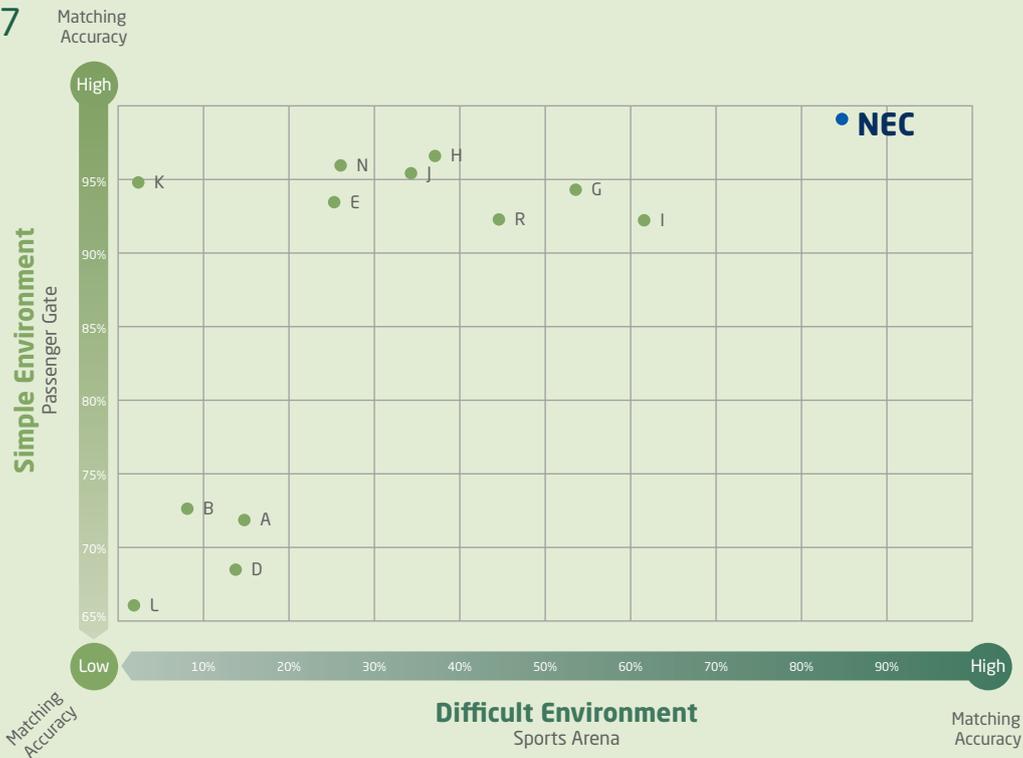
Multiple Biometrics Evaluation (MBE) 2010

Face Recognition Vendor Test (FRVT) 2013

Multiple Biometric Grand Challenge (MBGC) 2009

The tests position NEC's NeoFace® Watch as the most accurate face recognition software in situations of varying levels of difficulties that reflect real life scenarios. Independent tests also demonstrate that NeoFace® Watch provides the fastest matching capability that is the most resistant to variants in angle, age and race.

## FIVE2017 Results



	Simple Environment Entry-exit management at an airport passenger gate	Difficult Environment Detection of suspicious individuals at an indoor stadium
Accuracy	99.2%	85.5%
Error Rate	0.8% ( < 25% of next nearest competitor )	14.5% ( < 50% of next nearest competitor )

## Using NeoFace® Watch



### Real-Time

#### Video

Surveillance and monitoring to identify persons of interest from CCTV and mobile video cameras

#### Still Image

Searching images captured from mobile cameras and smart devices in real-time against databases of persons of interest



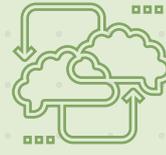
### Post-Event

#### Video

Analysis of recorded video to identify persons of interest very quickly

#### Still Image

Analysis of images captured from video stills, mobile cameras and smart devices against databases of persons of interest



### Integration

#### Integration with Other Systems

Obtaining video or still images from external systems and notifying those systems if a system alert is triggered

#### Matching Platform

Using the NeoFace® Watch matching platform to compare two images, or single images against a centrally held database of persons of interest, returning the match score generated

## NeoFace® Watch Verticals



### Police & National Security

Search for instances of persons of interest captured on camera, with analysis of their appearances across location and time



### Retail

Recognize and reward VIP customers who opt for improved, customized service whenever they arrive



### Transportation

Surveillance of public or restricted areas, alerts to be sent if suspicious persons are detected



### Gaming

Identify VIPs or members, and detect persons from a known list who are barred from gaming activities, generating automatic alerts



### Hospitality

Enable VIPs and high value customers to access premier services such as priority check-in, facilitate faster queue management and provide a personalized experience



### Mega Events

Detect potential troublemakers in large arenas, by analyzing their faces and identifying past offenders barred from such events



NEC Global Face Recognition Centre of Excellence  
Global Safety Division | Transportation and City Infrastructure Division  
■ [nec.com/safety](http://nec.com/safety) ■ [safety@gsd.jp.nec.com](mailto:safety@gsd.jp.nec.com)