



Scalable Facial Recognition
Server Platform Able to
Process Multiple Real-
Time Video Streams

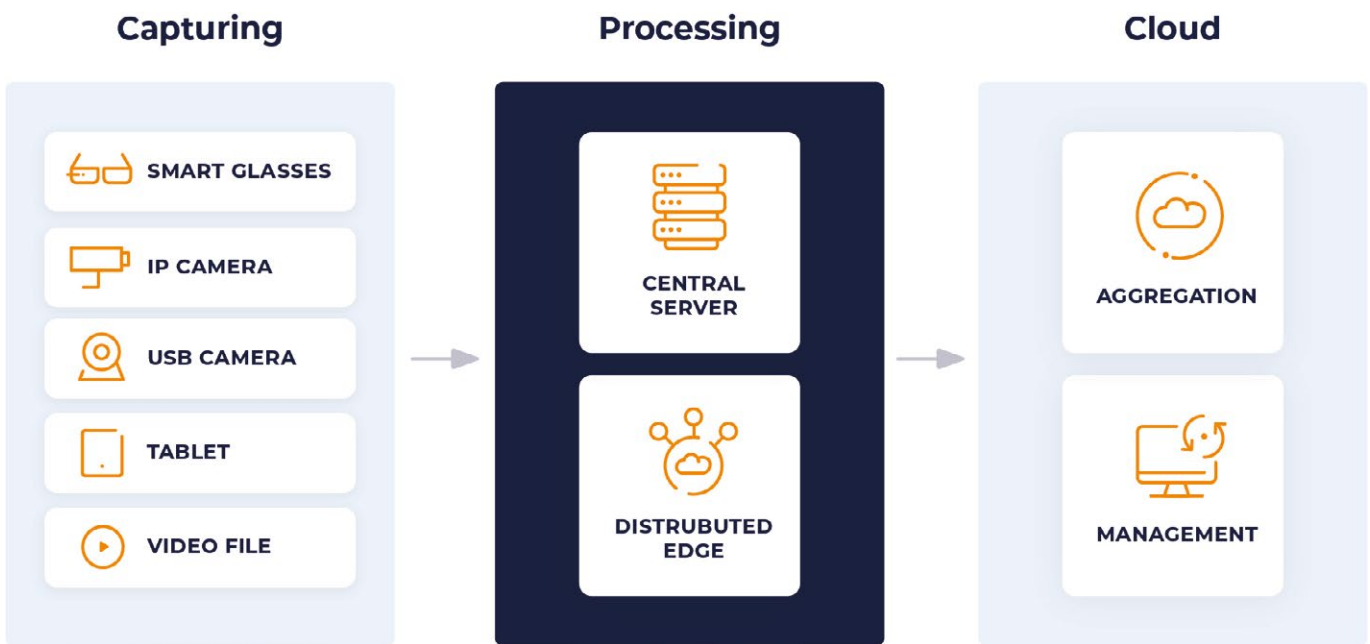
Datasheet

SmartFace Platform

Pre-Emptive Security / Access Control / Video Investigation



SmartFace is a scalable facial recognition platform able to detect and identify faces and human appearance across multiple camera streams with top accuracy in real time. The power of our high-quality facial recognition algorithms supports any instant identification scenario for access control, pre-emptive security, video investigation, and retail analytics.



Facial Recognition for Real-Time Assessment of Security Risk

Through multiple watchlists and smart notifications, SmartFace can prevent security incidents from happening or accelerate the time-to-action in smart cities, airports, shopping centers, public transportation, stadiums, and other frequented places.

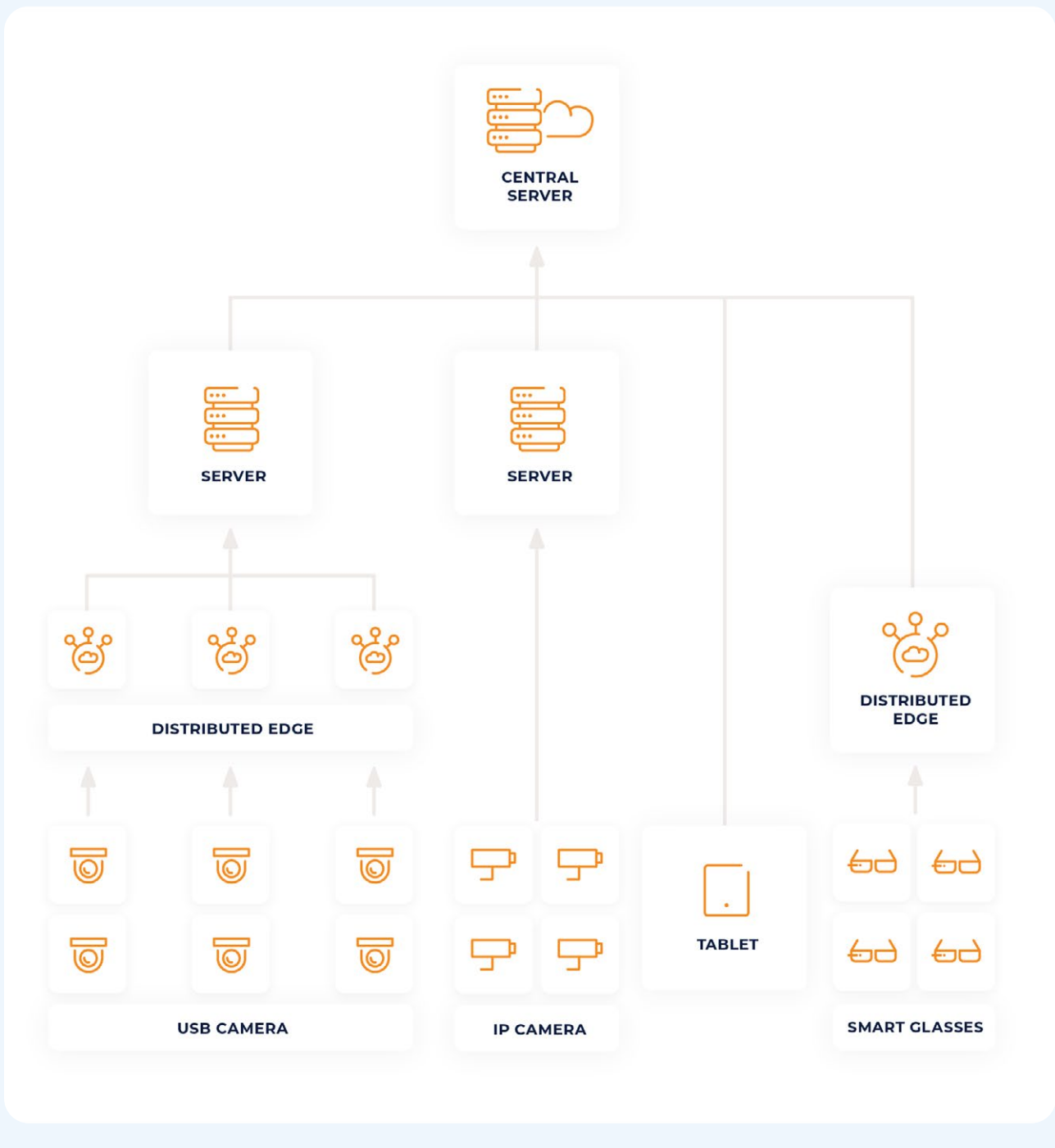
Innovatrics' face recognition ecosystem supports complete access control and security use cases, combining various deployment options including on-premise or edge-to-cloud cascaded architecture.

Novel Architecture to Support Unlimited Number of Cameras

Leveraging SmartFace’s unique cascaded architecture, the security of public areas can be ensured by real-time video analysis. With the ability to process video feeds from an unlimited number of cameras in a particular public area, security incidents can be timely intervened or even prevented.

Edge-to-Cloud Architecture

- Video streams are pre-processed on edge devices at/or near each camera’s location
- Dramatic reduction of bandwidth requirements and savings on server resources required at the central site
- Easily scalable



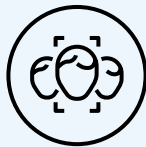
Complete Feature Set for Any Facial Recognition Use Case

We have designed the SmartFace Platform to be extremely fast while providing reliable facial recognition capabilities in real time.



Accurate Face Identification

Our proprietary facial recognition works precisely even on low-quality images or images made in subpar lighting conditions. SmartFace also accurately recognizes faces in different positions or partially obscured by hair, hands, or objects.



Tracking and Grouping

SmartFace can track a person through multiple frames and store all faces detected during the tracking of the same person in a single entity called tracklet.



Watchlist Autolearn

Over time, the biometric template of a person is automatically and dynamically updated, ensuring exceptional accuracy even with a face mask on or when an individual's face attributes gradually change over time.



Face Mask Detection

SmartFace can accurately detect a face mask and can notify the person to wear the facemask correctly, or reject access in case a person is not wearing a facemask. SmartFace works well also in degraded lighting conditions or recognizes people wearing sunglasses and hats.



Smart Notifications

Monitoring a number of screens is exhausting, inefficient, and time-consuming. Our SmartFace notification mechanism allows the precise configuration of events and situations that will trigger a notification or an alert that are worth an operator's attention. Alerts can be sent to other systems like smartphone applications or emails.



Face Search

Our facial biometric algorithm can perform a highly accurate search among all detected faces even if the reference image is of poor quality. It can subsequently track the movement of the subject across monitored areas.

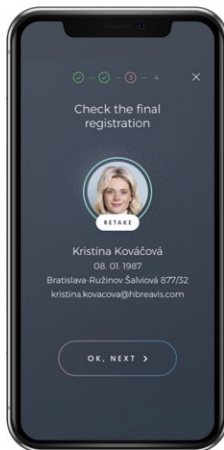
Easy-to-Integrate Platform

With SmartFace Platform modules, you can set up facial recognition solutions tailored to your needs. You can easily access the database through the REST and OData API, real-time information, and live notifications. Likewise, you can simply install and use our dedicated front-end applications to support your access control and pre-emptive security solutions.

SmartFace for Access Control

SmartFace gives you a full set of components and tools to create contactless access control systems using accurate and fast facial biometric identification.

Access Registration App



Granting Entry Permissions Remotely

To provide easy registration to the SmartFace-driven access system, our smart mobile app lets visitors and new users enroll remotely, making the process fast and friendly.

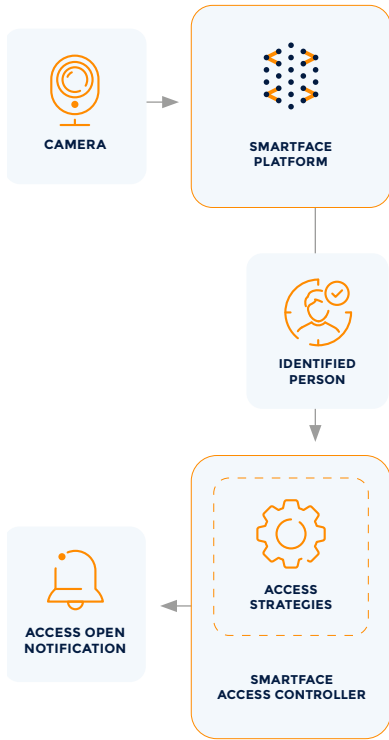
Access Station



Web App For Your Security Personnel

A web application for receptionists or security personnel can be used to control access points and entrances into buildings, facilities, or grounds. Its easy-to-use interface provides all the information about detected, identified, or unidentified people who attempt to access the premises.

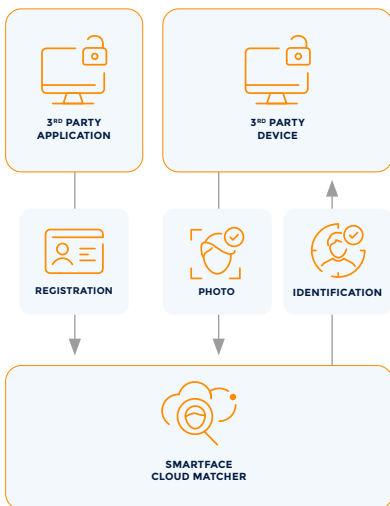
Access Controller



Ensuring the Seamless Opening of Access Points

Access Controller uses a customizable strategy to open access barriers while ensuring only an authorized person closest to the access point is allowed to pass.

Cloud Matcher



Lightweight Face Matching Service

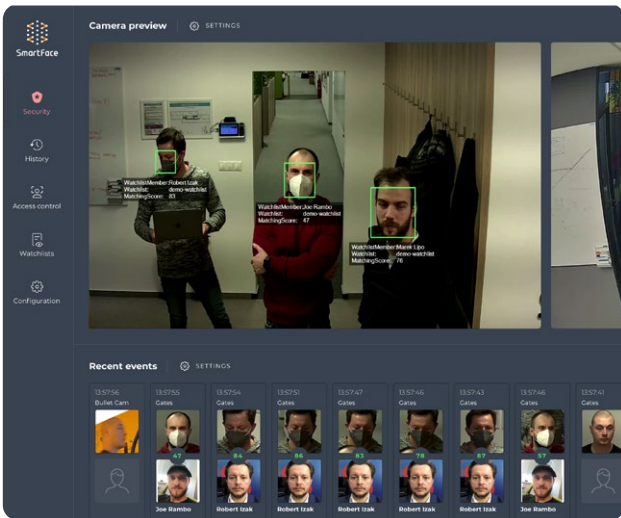
Cloud Matcher is a cloud service that allows quick identification of a person among millions of images. With this lightweight version of SmartFace Platform, you save both hardware and maintenance costs.

SmartFace for Public Security

Monitor public places to control and prevent crime with the use of blocklists and instant notifications.

Machine Learning-Powered Video Processing

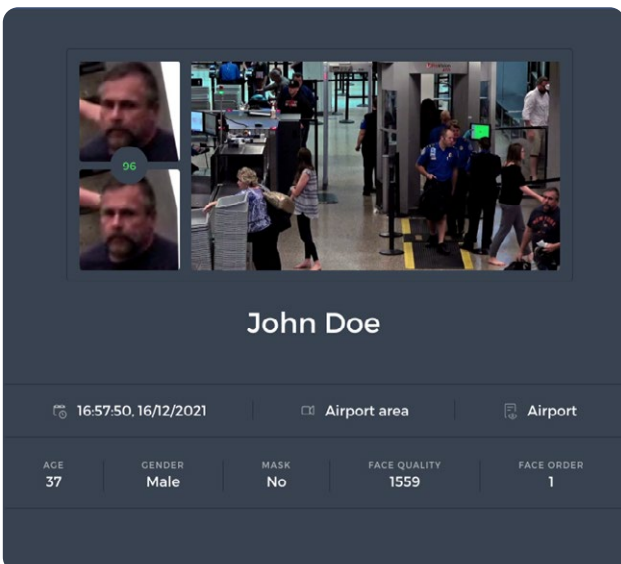
Accurate face identification in real time and user interface enables you to timely intervene or prevent security incidents at airports, shopping centers, public transportation, or any other public areas.



- Face and appearance detection
- Face and appearance tracking
- Accurate 1:N face identification

Watchlists and Notifications

Our easy-to-use watchlist management helps prevent security incidents by swiftly blocklisting unwanted persons and sending alerts about their presence. Instant notifications for a detected and matched person or body minimize the time-to-action.



- Multiple watchlists can contain hundreds of thousands of faces recorded on a single server
- Smart notifications allow configuration of the events and situations that will trigger a notification or an alert
- Scale by adding more RAM and CPU or GPU to achieve optimal performance

Review and Investigate with Video Analytics

SmartFace History view with robust filtering and search functionality provides powerful insights into entity relations that would otherwise stay hidden and significantly shortens security incidents investigation.

The screenshot displays the 'History events' interface in the SmartFace platform. It features a table with 4 results, each showing a face image, a filter score, date and time, camera location, watchlist, name, and other details. On the right, there is a 'Selected' panel with filters like 'Face filter' and 'Today', a search bar, and a 'Date & time' section with a 'TIME RANGE' dropdown set to 'Today'.

	DATE & TIME	FACE FILTER SCORE	CAMERA	WATCHLIST	NAME	OTHERS
1.	21/12/2021 14:01:37	77	Gates Side	demo-watchlist	Robert Izak	Male, 40 years No mask
2.	21/12/2021 13:59:19	42	Office	demo-watchlist	Robert Izak	Male, 35 years No mask
3.	21/12/2021 12:57:47	30	Office	demo-watchlist	Robert Izak	Male, 32 years No mask
4.	21/12/2021 09:12:07	44	Office	demo-watchlist	Robert Izak	Male, 30 years No mask

- Filtering - trim down large amounts of metadata with quick filters without having to process the video recordings
- Face Search - search among all detected faces with high accuracy, even if the reference image is of poor quality

SmartFace Embedded

SmartFace Embedded is our proprietary face recognition engine customized to be easily ported on any hardware. It can efficiently run time-critical operations such as face detection, facial landmarks, and face template extraction through on-edge or on-chip processing.

Facial Biometrics for OEM & Edge Devices

SmartFace Embedded can process video streams with the ability to detect faces in large crowds or low light environments. It has been optimized for the recognition of covered and obscured faces from very low-quality inputs.

Making Every Camera Smart

Our easy-to-use watchlist management helps prevent security incidents by swiftly blocklisting unwanted persons and sending alerts about their presence. Instant notifications for a detected and matched person or body minimize the time-to-action.



Small footprint with high performance



HW and SW agnostic



Custom approach and portability



Flexible licensing



Integrated with Innovatrics SmartFace ecosystem

Hardware & Software Agnostic

SmartFace Platform supports standard legacy OS such as Windows and Linux, as well as supporting various edge devices including NVIDIA Jetson, Ambarella, and Blaize.

SmartFace does not require a GPU, but can also utilize it to increase performance and run on as many devices as possible.

API Integration

SmartFace can be used out of the box or can be integrated into your existing architecture and systems using an API. It comes with detailed product technical documentation and a well-documented API to ease integration.

HW & SW Requirements

Operating system

Windows Server 2016 (x64)
 Windows Server 2019 (x64)
 Windows 10
 Linux (any distribution supporting Docker containers)
 Nvidia Jetson Xavier NX and Jetson AGX Xavier

Database

MS SQL Server 2016+
 Postgre SQL 13.2+
 Minio DB

Sizing recommendation

Minimum 2 GB for SmartFace + approx. 10 MB/camera/day

Supported cameras

All IP cameras supporting RTSP
 Web cameras
 Mobile phone cameras

Supported video formats

All standard video formats

Supported GPU

CUDA compatible, min. 4 GB RAM

Sizing Recommendations

- RAM per camera*
3GB
- CPU per camera*
1x 2,6GHz CPU physical core
- Bandwidth per camera*
4 – 8 Mbps
- Multiple faces tracking
Yes

*1 HD camera (1280x720 px), 25fps

Integration

Interface

REST API

Message notifications

ZeroMQ

Integrated VMS

- Nx Witness VMS
- Milestone XProtect VMS

Integrated ACS

- Inner Range ACS

About us

We are an independent EU-based provider of multimodal biometric solutions. Our algorithms consistently rank among the fastest and most accurate in fingerprint and face recognition. Since 2004, we have partnered with all types of organizations to build trusted and flexible biometric identification solutions. Our products are being used in more than 80 countries, benefiting more than a billion people worldwide.

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