Tattile

PIONEERING NEW TECHNOLOGIES

In the Intelligent Transport System (ITS) we create innovative solutions for demanding environments

What makes Tattile solutions unique

- Tattile, since 1988, has been a **pioneering company** in the ITS industry.

- **We understand the customer** need, and we know how to embed them into our cameras

- We offer **ITS solution** natively born to be integrated into third-party systems

- Our R&D team develops the entire solution to ensure the best marriage between hardware & AI applications

- **AI is widely embedded** to bring our performances to the most demanding level without external servers

- We offer **IoT solutions** with the highest standard of Security and Privacy

- Our products are designed, **manufactured, and tested in Italy** to the highest standards

- **65.000** of Tattile cameras are quietly but effectively performing their task in tracking, tolling and enforcement applications worldwide!

member of: ASSOCIATION NATIONALE DE LA VIDÉOPROTECTION   **ATEC ITS** FRANCE   **TTS** ITALIA

R&D: Pioneering New Technologies

We are 40 young & dynamic talents focused on making an idea successful.
We innovate the everyday work experience by being open-minded, fair, constantly communicating and exploring new technologies.
We embrace Artificial Intelligence, developing innovative Hardware and new Software tools focusing on products effectiveness and time to market.

Sales: Young & Eager

Totally focused on customer needs. We are organized to support our partners from the very beginning and during all project phases, ensuring continuous support.
Specs definitions, technical alignment with partner's R&D department, PoC, and go live phase are all the critical moments where we assure pro-active and professional assistance, aiming to provide the best elements to allow our partner to be successful.

Operation:
100% made in Italy

All our cameras are manufactured in Italy conform to the highest quality standard achieved thanks to a fully integrated design – manufacturing – testing process, which allows us to have a complete production control without penalizing flexibility.

Our history and values

Tattile is a **pioneering enterprise** in the vision-tech industry with a clear international scope.
Already back in 1988, Tattile engineers successfully developed embedded License Plate Reader (ANPR/ALPR) cameras and later added application software for the ITS, Mobility & Smart City markets to the portfolio.
Since then, Tattile has become a world leader in intelligent traffic monitoring systems.

We are fully engaged in creating high-tech, cutting-edge ANPR (ALPR) and vehicles identifications applications mainly based on AI (Artificial Intelligence).
These systems fulfill the most demanding applications in the ITS and Big Data Analysis markets.

We are a **globally acting company** that became **part of the TKH group in 2018**.
Our team of internal engineers counts on a vast network of global skilled System Integrators and top-class local partners who contribute to making Tattile a leading company worldwide.

Team spirit counts at Tattile. The average team age is 36years, an impressive 40% of the team works in R&D, making Innovation, Customer Orientation, and Flexibility are the core company **values**.

All Tattile traffic cameras, free-flow tolling, and speed enforcement systems are in compliance with strict quality standards, ensuring reliability and cost-efficiency.

Sales Mix

Italy = 20%

Rest of the world = 50%
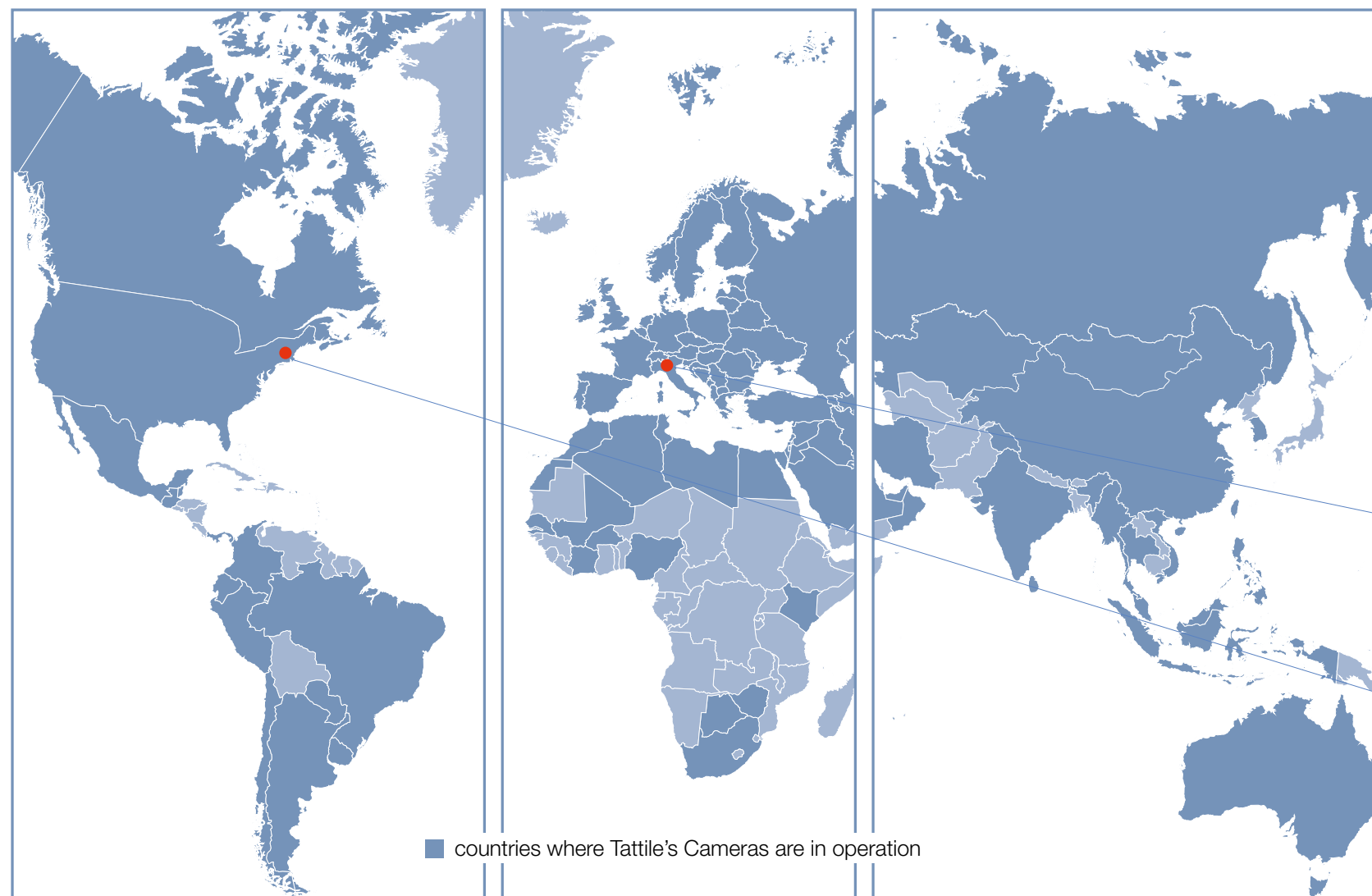
Rest of Europe = 30%
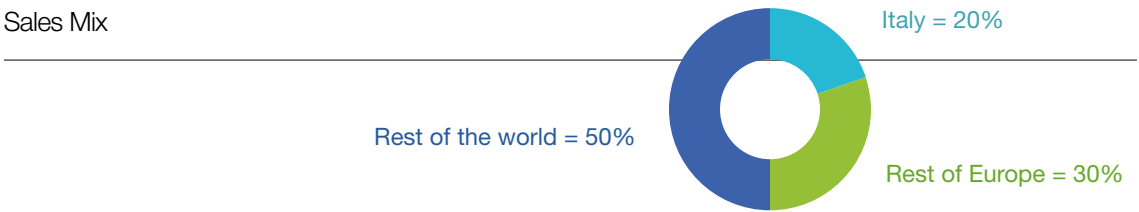
Where we come from, where we are going

1988
1988 Tattile's Foundation year; based in Brescia, Italy, the original team consisted of 4 visionary engineers (one of them still working at Tattile)

2004
First ANPR Mobile camera for NYC Police Force, the image processing module was separated from the camera; in NY, these cameras are still on duty

2005
Tutor: first innovative average speed enforcement system deployed on the Italian highways

2010
Vega 2HD: double head B&W camera, with embedded processing capacity, working at 75 FPS, with an innovative auto trigger system included

2012
Tattile was acquired by investment fund Ambienta SGR, which brought new energies, discipline, and capital to support the future double-digit growth

2015
ANPR Mobile camera, with embedded image processing capacity, working at 100FPS especially developed for worldwide police applications

2016
Smart & Basic families launch, new modular platform with outstanding embedded processing capacity

2018
Tattile becomes member of stock listed company TKH, a step forward in the consolidation process

2021
Axle counter: the fully optical system, running on the edge, dedicated to axles detection and counting, 99+ accuracy without external trigger, specially developed for free flow applications

2022
Vega 11 and Vega 33 cameras launch, high-end cameras conceived to host top-performing AI algorithms and Neural Networks

Worldwide

International presence

65.000+ cameras since 2012 successfully in operation

countries where Tattile's Cameras are in operation

Massachusetts
Connecticut
Cheshire
New York

OCR

- Worldwide presence

- 360° support from specs definition until aftersales support

- Support during the performance evaluation phase

- Customizable solutions

- Our internal software team develops all Tattile's OCR

- Tattile offers more than 110 OCR libraries

- New OCR libraries can be developed and tested upon request

- Tattile can handle more than one OCR library onboard each ANPR (ALPR) camera; for instance, 28 European countries embedded in one single library

Milan · **Verona**
Turin
Brescia
Mairano
Venice
Genoa
Florence

Tolling

All tolling systems have in common that they should process as many vehicles as reliably as possible in the shortest time possible combined with the option to register and trace the passing vehicles. Tattile is committed to these criteria and assembles the most suitable combination of its AI-driven cameras with the proper software support for each tolling project.

Free Flow

A completely automated ANPR/ALPR solution, the Free Flow (FF) tolling system, is used extensively in electronic tolling collection and in monitoring transit on expressways; allowing drivers to travel without barriers and thus to save travel time.

Stop & Go

The embedded solution for tollbooths guarantees an automatized, easy-to-use monitoring system with on-board OCR and no necessary external devices as well as a stand-alone function in case of disruption in the data connection.

Axle Counter

Axle Counter System fills the missing link of providing all relevant vehicle information automatically to, e.g., determine the correct toll for a given vehicle.

Pay by Plate

One major step towards contactless and automatic payment upon connection of the bank dates with the license plate, common in the automatic carwash and fueling industry.

LTZ & Congestion Charge

City authorities increasingly implement congestion charge systems as an efficient tool to steer and limit traffic volume.

People Counting

Inside inspection for high occupancy vehicle (HOV) applications.

Tracking

The objectives and requirements in vehicle tracking can be multifaceted. This includes stationary solutions and a growing number of mobile systems that enable to patrol and follow possible criminals. Number plate recognition and additional vehicle features are the main prerequisites, together with a server connection for real-time matching.

Security Surveilliance

Our Number Plate Reading ANPR (ALPR) solution for urban transit analysis in modern smart cities. OCR on board with real-time transit detection and Double Head Tattile system with color context camera as functional alternative to the integration with external CCTV cameras.

BCCM

This optional add-on for Tattile cameras with no integration efforts delivers brand, class, color, and model and, together with the license plate, creates the so-called vehicle fingerprint in one single report.

Inside Inspection

Tattile systems enable identifying the number of passengers sitting in the front of the vehicle; information can be used for preferred lanes applications to check if the vehicle uses the correct lane.

Parking

AI-supported Tattile software quickly learns to identify access features of vehicles.

Counting and Occupancy management

Wherever there are limitations in terms of parking slots or vehicles in a tunnel, Tattile solutions reliably assist occupancy management.

Enforcement

Enforcement

Traffic enforcement requires valid proof of the offense and measurement equipment that operates reliably in all weather conditions.
Tattile Speed and Red Light Smart cameras can be adjusted to all possible enforcement scenarios.

Seat Belt
A feature to facilitate enforcement by automatically checking if the passengers wear the seat belt as required.

Radar Speed
Tattile Smart Speed systems are the easiest to install and operate speed enforcement systems on the market. They are genuine vehicle identification systems equipped with multi-tracking radar and number plate recognition.

Average Speed
Section control or average speed systems are the number one solution for speed enforcement within a distance and preferred choice, particularly in tunnels applications.

Railway crossing monitoring
Intelligent railroad crossing systems with Tattile smart ANPR cameras guard previously unsupervised railroad crossings and record violations.

WIM
The combination of weight sensors and Tattile smart cameras in weight in motion (WIM) systems acts as an early warning system in the stability of the infrastructure and as enforcement system for over-weight vehicles.

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Software

Hardware

Stark Platform
## Modular architecture for demanding AI applications

The Standard Tattile Architecture (Stark) is an application framework layer common to all new generation Tattile cameras; it is built to support a modular software structure, fast development, and easy integration of new features and edge algorithms.

- Stark provides scalability over a wide range of Tattile devices and its modular design can be extended to meet all the application needs
- Continuous integration and testing of the whole system even in the worst working conditions to guarantee stability and reliable results
- Stark is built on the latest technology, and it is optimized for high-performance processing

- Standard, legacy, and fully customizable communication protocols are supported, including API REST for seamless integration with third-party Back-office systems.
- Modern and intuitive web interface with easy camera deployment and configuration
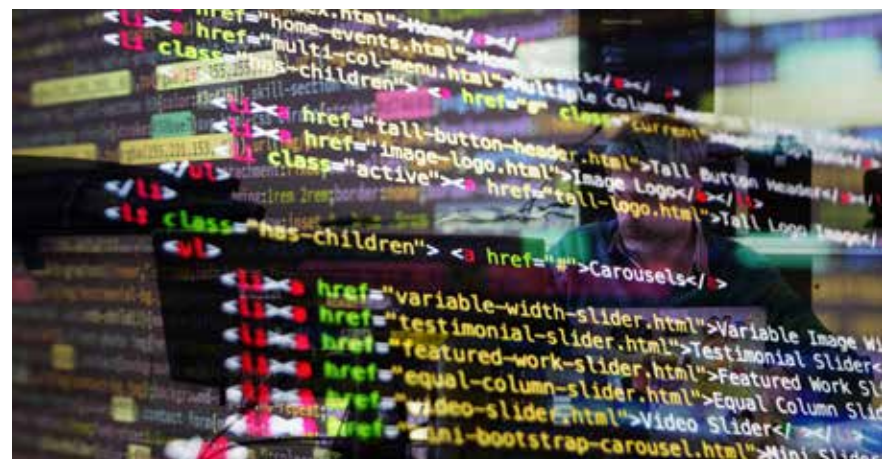
Features:

- Responsive interface
- Quick configuration wizard
- Intuitive access to device functionalities
- Configuration self-check and diagnostic report
- Quick performance and results overview
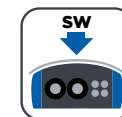
Inside Inspection
Deep inside analysis above expectations

Inside Inspection solution provides vehicle frontal occupants detection and counting.

- AI algorithm for best performance in detection and recognition of vehicle occupancy
- On-edge front vehicle seat occupancy detection
- Optional on-edge face detection
- Seat belt and phone use identification for front occupants

- Identification of all passing vehicles without an external trigger
- API REST and standard interfacing provides easy integration and fast deploy
- Fully customizable message format and protocol
- Optional triggered operating mode

Applications:

- High occupancy vehicle tolling enforcement
- Seat belt and phone use enforcement
- Statistical data collection for safe driving behavior
- Security

Tasc
Containerized distributed average speed system

Tattile Section Control (Tasc) is a complete average speed enforcement solution and data collection system, providing exhaustive transit data and violation candidates to enforcement and security agencies.

- Scalable solution to support thousands of cameras and thousands of transits per hour
- Supports multiple Tattile camera models and configurations, with ANPR capability in many regions and countries
- Welmec 7.2 compliancy for software-equipped measuring device

- Increased privacy level thanks to on-edge data encryption, digital signature, and configurable data access policy
- Fully configurable system to adapt to local regulations
- Web-based intuitive configuration interface
- API REST interface allows easy integration with multiple Back-office Software
  - Self-diagnostic and camera diagnostic data collection for maximum system reliability
  - Configurable and extensible storage given the expected traffic flow and expected storage time
  - Optional licensing for additional features such as Brand Color Class Model recognition, double-timing, instant speed

Applications:

- Average speed enforcement
- Data collection for security and crime prevention

Container
An open door to third-party onboard software

Container is an add-on conceived to support third-party applications. System Integrator's proprietary applications can be deployed in the camera in a separate environment, ensuring incredible customizability to Tattile cameras.

- Support of user-defined additional applications, libraries, web interface, encryption methods, with lightweight and fast deployment on the camera
- The user application has access to defined camera resources such as local storage, persistent configuration, network, camera processing results
- The System Integrator has complete control on processing results, data management, with user-defined communication protocols and storage policies.

- Thanks to Container, customers can reduce bandwidth requirements by implementing user post-processing on-edge
- Using Container, the System Integrator configures the backup, and replication on other cameras, via a build-in camera web interface
  - Container needs an additional SSD to be installed inside Tattile camera

Linux Container
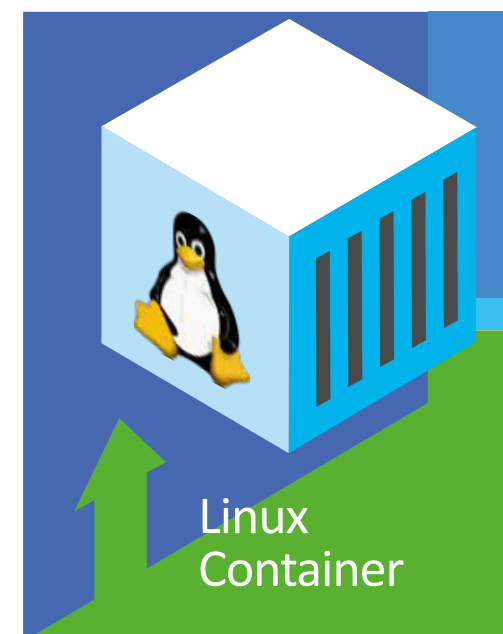
Applications:

- Limited traffic zone customized list management, rules, customized back-office interfacing
- Interfacing with local devices (triggering systems, classification devices,…)
- Customized local security and privacy policies

ADR / ADR empty
Dangerous goods recognition at top level

- Read dangerous goods ADR codes (Kemler codes) providing UN identification number and hazard identifier
- Capability to detect and provide empty ADR code presence
- Add-on for Smart Family cameras: Smart, Smart Freeflow, and Smart Speed
- Fully on-edge solution on Tattile Cameras
- Automatic plate reconciliation incorporating in the same transit message: plate reading, trailer plate, and ADR code
- Can run together with optional Brand Color Class and Model recognition on the same camera to provide complete vehicle identification

Applications:

- Tunnels and motorways safety and prompt response
- Traffic monitoring in smart cities
- Forbidden lane enforcement
- Infrastructure monitoring
- Terminals and port logistics
- Parking lot management
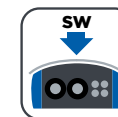
BCCM
The complete vehicle identification

- On-edge vehicle Brand, Class, Color, and Model recognition algorithm
- Optional add-on for Tattile cameras with no need for external software or processing hardware
- No integration efforts
- License plate, brand, class, color, and model create the so-called vehicle fingerprint in a single report
- The camera provides all the vehicle data in a fully customizable message format and protocol
- Vehicle classification in multiple vehicle classes is operative during the day and optionally during the night
- Hundreds of brands and more than a thousand models provide detailed and reliable vehicle information

Applications:

- Security and vehicle investigation
- Crime enforcement
- Reported vehicle tracking
- Vehicle fingerprinting for tolling
- Smart city vehicle classification
- Reserved lane enforcement

Inspector
User-friendly event management software

- Inspector is a scalable platform able to centralize the data acquired from different cameras distributed on the field.
- The system is scalable and extensible to provide transit data analysis platform for security applications, traffic statistics, and access control.
- Inspector can analyse collected data according to configurable rules and undertake a number of actions based on the results: opening gates, sending emails, posting messages on variable message panels.

- Inspector generates detailed reports based on multiple filters and search criteria.
- Inspector does not need to be installed on client machines, the SW can easily be accessed with any browser; the multi-user software manages multiple connections and queries at the same time.
- Safe login to the system using credentials (username and password), leaving the Possibility to set up different user profiles.
- Possibility to embed the software in the user's apps (or third parties) thanks to Web Service calls.
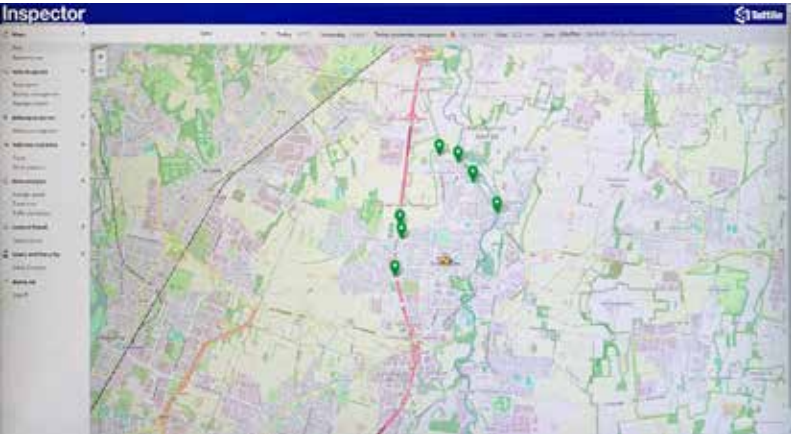
Applications:

- Reported vehicles control with configurable local or remote database
- Origin-destination matrix
- Geo-referenced map with devices and vehicles movement
- Customizable traffic statistics reports, alerts and visualization
- Dangerous goods tracking
- Access control

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Hardware

Smart Family

Scalable hardware
architecture
to meet
increasing
workloads

- ⬧ Embedded multicore processors

- ⬧ LTE and GPS available as optionals

- ⬧ SSD from 128GB up to 1TB according to
   customer needs

- ⬧ Smart design

- ⬧ IP68 protection grade

- ⬧ Extended temperature range
   (-40°/+ 60°C | -40°/+140°F external temperature)

- ⬧ The hardware system has been designed using a modular
   approach ensuring future CPU evolutions for state of the
   art performances.

- ⬧ Modular Platform designed to include various sensors in
   order to match all the applications required by the most
   challenging scenarios.

- ⬧ Scalable HW architecture to include different FPGA
   modules and to ensure high-speed image processing in
   extreme situations.

- ⬧ Use of FPGA grants a huge processing capability for
   real-time image processing and ANPR analysis.

- ⬧ Modular architecture allows easy customization of
   the HW platform according to the complexity of the
   application.

- ⬧ Devices able to detect and read non-reflective license
   plate, without any external illuminator.

- ⬧ Extra sensitive sensor mounted on Smart 2HD's
   context camera ensures quality images also in low light
   conditions (from 25 Lux).

Smart 2HD

Next-generation Tattile ITS system pushes limits from ANPR to the true vehicle identification

The Smart 2HD is built on a high-performance base allowing high scalability for high-end, multivehicle per second and multiple lane applications.

With embedded license plate recognition, image analysis software, high-resolution sensors, low power consumption and a web server on-board, the Smart2HD camera allows performing innovative applications.

The camera can be integrated and connected to external devices and can receive vehicle's class data from external classifier (laser-scanner, radar, loops, etc.), tag identifier from RFID antenna and vehicle's axle information.

The local buffering system and optional local storage let the system work even in case of disruption of data connection, providing safe temporary storage and automatic retrieval of stored data.

The user can optionally run its software within the Container in the camera itself, expanding integration and communication capabilities to any need.

	SMART HD	SMART 2HD
Software features and Performance		
Lane Detected	2	
Max Vehicle Speed	250 km/h - *155 mph*	
Working Distance	Up to 35 m - *Up to 115 ft*	
Detection	99%	
Reading	>95%	
OCR	ANPR (ALPR) engine on board	
Third party OCR	optional	
Capture rate	Up to 75 fps	
Classification	NA	optional
Vehicle Color	NA	optional
Vehicle Brand	NA	optional
Vehicle Model	NA	optional
AES256	Yes	
SHA2	Yes	
Compression	JPG	
Streaming	NA	Video streaming via standard RTSP protocol
Configuration		
Web Server	Installation and configuration by Web Server on board	
TCP/IP Server	Configuration and monitoring through TCP/IP protocol. (SDK provided)	
Date and Hour	Synchronization via NTP protocol, IEEE1588, GPS	
Software Update	Upgrading via Web Interface and SDK	
Data Transmission		
FTP	FTP Client to FTP Server mode for remote data transmission; Multiple IP servers addressable	
TCP/IP	Tattile TCP/IP open protocol; (SDK provided)	
Standard protocols	XML; SNMP; NTCIP; DATEX2; UTMC; ONVIF; MODBUS	
Serial Port	Insulated RS485	

	SMART HD	SMART 2HD
Op. Mode		
Free Run	Continuous processing with automatic vehicle detection, even without plate.	
Triggered	Image capture and processing triggered by Ethernet command or digital signal	
System		
ANPR (ALPR) camera	5 MPX BW	
	5 MPx Color (Color Version)	
Context camera	NA	2.3 Megapixel color CMOS sensor
Illuminator	12 high power LEDs	
Lenses	C-Mount. Many focal lengths available.	
Operating System	Linux Operating System	
Digital i/o	6 Optoisolated input - 4 Relay Output – 1 Strobe output	
Connectors	Waterproof circular connector	
IP Protection	Waterproof IP68	
Ethernet	GigaBit Ethernet 10/100/1000	
Storage	uSD up to 128 GB	
	Optional HD/SSD	
GPS	Optional	
LTE	Optional	
Technical Data		
Operating & Storage Temperature	From -40° to +60° C - *From -40° to +140° F*	
Operating & Storage Humidity	Up to 95% non condensing	
Dimensions	290 x 127 x 235 mm - *11.4 x 5 x 9.25 in* (WxHxL)	
Weight	5.5 kg - *12.12 lbs*	
Power supply voltage	24 Vdc	
Power consumption	50 W (max)	

Part Numbers

Smart HD	
F01760	Smart HD
F01767	Smart HD Non Reflective Plates

Smart 2HD	
F01761	Smart 2HD
F01768	Smart 2HD Non Reflective Plates

Smart Color HD	
F01762	Smart Color HD

Smart Color 2HD	
F01765	Smart Color 2HD

Smart Speed

Smart Speed is an advanced system, radar-based, for speed violations detection

◈ **Real time detection of violations with OCR on board**

◈ Embedded multi-tracking radar

◈ No post-processing required

◈ Detection of vehicles exceeding average speed or punctual speed limits

◈ Ability to recognise every plate passing under the camera and not only violators. This is very useful for security or statistical purposes

◈ All transit plates are recorded and available for further analysis

	SMART SPEED
Software features and Performance	
Lane Detected	2
Max Vehicle Speed	300 km/h - *186 mph*
Working Distance	Up to 35 m - *Up to 115 ft*
Detection	99%
Reading	>95%
OCR	ANPR (ALPR) engine on board
Third party OCR	optional
Capture rate	Up to 75 fps
Classification	optional
Vehicle Color	optional
Vehicle Brand	optional
Vehicle Model	optional
AES256	Yes
SHA2	Yes
Compression	JPG
Streaming	Video streaming via standard RTSP protocol
Configuration	
Web Server	Installation and configuration by Web Server on board
TCP/IP Server	Configuration and monitoring through TCP/IP protocol. (SDK provided)
Date and Hour	Synchronization via NTP protocol, IEEE1588, GPS
Software Update	Upgrading via Web Interface and SDK
Data Transmission	
FTP	FTP Client to FTP Server mode for remote data transmission; Multiple IP servers addressable
TCP/IP	Tattile TCP/IP open protocol; (SDK provided)
Standard protocols	XML; SNMP; NTCIP; DATEX2; UTMC; ONVIF; MODBUS
Serial Port	Insulated RS485

	SMART SPEED
Op. Mode	
Free Run	Continuous processing with automatic vehicle detection, even without plate
Triggered	Image capture and processing triggered by Ethernet command or digital signal
System	
ANPR (ALPR) camera	5 MPX BW
Context camera	2.3 Megapixel color CMOS sensor
Illuminator	12 high power LEDs, InfraRed @ 850 nm
Lenses	C-Mount. Many focal lengths available
Operating System	Linux Operating System
Digital i/o	6 Optoisolated input - 4 Relay Output – 1 Strobe output
Connectors	Waterproof circular connector
IP Protection	Waterproof IP68
Ethernet	GigaBit Ethernet 10/100/1000
Storage	uSD up to 128 GB
	Optional HD/SSD
GPS	Yes
LTE	Optional
LTE	Optional
Technical Data	
Operating & Storage Temperature	From -40° to +60° C - *From -40° to +140° F*
Operating & Storage Humidity	Up to 95% non condensing
Dimensions	404 x 127 x 235 mm - *15.9 x 5 x 9.25 in* (WxHxL)
Weight	7.4 kg - *16.31 lbs*
Power supply voltage	24 Vdc
Power consumption	50 W (max)

Part Numbers

Smart Speed	
F01766	Smart Speed

Smart Traffic Light

The new concept of red-light enforcement cameras, entirely based on image analysis

The new concept to safeguard the intersections

Smart Traffic Light allows the red light status identification through image analysis.
Red light violation detected by image analysis (without external sensors), no external device required and reduced installation and maintenance costs.

The system is able to manage different kinds of traffic installations (one or two lanes, one traffic light each lane or every two lanes)

Ability to recognise every plate passing under the camera and not only violators. This is very useful for security or statistical purposes

All transit plates are recorded and available for:
- Red light enforcement
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

	SMART TRAFFIC LIGHT
Software features and Performance	
Lane Detected	2
Max Vehicle Speed	250 km/h - *155 mph*
Working Distance	Up to 25 m - *Up to 82 ft*
Detection	99%
Reading	>95%
OCR	ANPR (ALPR) engine on board
Third party OCR	optional
Capture rate	Up to 75 fps
Classification	optional
Vehicle Color	optional
Vehicle Brand	optional
Vehicle Model	optional
AES256	Yes
SHA2	Yes
Compression	JPG
Streaming	Video streaming via standard RTSP protocol
Configuration	
Web Server	Installation and configuration by Web Server on board
TCP/IP Server	Configuration and monitoring through TCP/IP protocol. (SDK provided)
Date and Hour	Synchronization via NTP protocol, IEEE1588, GPS
Software Update	Upgrading via Web Interface and SDK
Data Transmission	
FTP	FTP Client to FTP Server mode for remote data transmission; Multiple IP servers addressable
TCP/IP	Tattile TCP/IP open protocol; (SDK provided)
Standard protocols	XML; SNMP; NTCIP; DATEX2; UTMC; ONVIF; MODBUS
Serial Port	Insulated RS485

	SMART TRAFFIC LIGHT
Op. Mode	
Free Run	Continuous image capture and processing
Triggered	Image capture and processing triggered by Ethernet command or digital signal
System	
ANPR (ALPR) camera	5 MPX BW
	5 MPx Color (color version)
Context camera	2.3 Megapixel color CMOS sensor
Illuminator	12 high power LEDs, InfraRed @ 850 nm
Lenses	C-Mount. Many focal lengths available
Operating System	Linux Operating System
Digital i/o	6 Optoisolated input - 4 Relay Output – 1 Strobe output
Connectors	Waterproof circular connector
IP Protection	Waterproof IP68
Ethernet	GigaBit Ethernet 10/100/1000
Storage	uSD up to 128 GB
	Optional HD/SSD
GPS	Yes
LTE	Optional
Technical	
Operating & Storage Temperature	From -40° to +60° C - *From -40° to +140° F*
Operating & Storage Humidity	Up to 95% non condensing
Dimensions	290 x 127 x 235 mm - *11.4 x 5 x 9.25 in* (WxHxL)
Weight	5.5 kg - *12.12 lbs*
Power supply voltage	24 Vdc
Power consumption	50 W (max)

Part Numbers

Smart Traffic Light	
F01764	Smart Traffic Light
F01769	Smart Traffic Light Non Reflective Plates

Vega Family

An advanced
modular platform
born to host
AI applications,
being performant
and flexible

- The hardware platform is designed with the scalability needed to adapt to multiple applications; it supports different computing needs, even the most challenging, thanks to internal extensibility.

- The new STARK Software architecture creates a solid foundation for Vega, providing high stability, software modularity, intuitive and responsive web interface.

- Vega family comes with easy-to-integrate protocols for seamless and cost-effective adoption.

- Simple installation and connection with cable glands and PoE+ for selected devices

- Internal sensors for anti-tampering and advanced camera diagnostic management

- Highly sensitive imaging sensors and high-quality components to maximize performances lifecycle and reduce downtime to zero

- Pre-configured multiple lens options to provide the best image quality and no additional installation efforts

- Extended temperature range and weather-proof housing (-40°/+ 60°C | -40°/+140°F external temperature, IP-68)

- Additional optional internal SSD storage from 128GB up to 1TB according to customer needs

- Precise positioning with optional integrated GPS module

- Optional LTE module for continuous connectivity and operating in remote locations

Axle Counter

The Axle Counter is a compact axle counting
system based on Artificial Intelligence (AI)

The new concept of axle counting based on Artificial Intelligence.

The Axle Counter is targeted to free flow tolling applications; with above-ground layout, no road works are needed for installation and maintenance and no distraction for the drivers, thanks to the infrared illumination.

An on-board dedicated neural network processor allows fast image processing capability to detect vehicles and their characteristics, such as axles, raised axles status and speed estimation, at any time of the day and of the night. The system doesn't require external

triggering, it detects transits by image analysis thanks to its processing capability. Optionally, the Axle Counter can be triggered by different triggering sources, allowing flexible interfacing with existing devices and perfect integration with Tattile devices.

The Axle Counter provides the resulting metadata together with the reconstructed image of the vehicle, giving evidence of the transit to the tolling operators.

- Onboard AI processing
- Self-triggering
- Vehicle reconstructed image
- Fully customizable
- Rich user interface
- REST compliant

Optional: Expandable local storage / GPS / WIFI

AXLE COUNTER	
Software features and Performance	
Processed Lane	
Installation	Gantry
Max Vehicle Speed	Up to 250km/h - 155mph
Installation height	7m (typical) - 23ft
Detection accuracy	99%
Managed vehicles	Up to 2400 v/hour
Axles counting accuracy	>95% over 4 classes (2,3,4,5+ axles)
Raised axles detection	Yes
Speed estimation	Yes
Processing	Onboard processing
AES256	Yes
SHA2	Yes
Data buffering and storage	Yes
Compression	JPG
Configuration	
Web Server	Installation and configuration with on board Web Application
Integration	REST and binary protocol available
Date and Hour	Synchronization via NTP protocol or optional internal GPS
Software Update	Upgrading via Web Application and integration protocols

AXLE COUNTER	
Data Transmission	
FTP	FTP Client mode for remote data transmission
Standard protocols	REST and binary protocol
Configuration	Actions and content customizable
Serial Port	Insulated RS485
Operating Mode	
Autotrigger	Self triggering based on image analysis
Trigger Ethernet	Image capture and processing triggered by Ethernet with start and stop message
Trigger Input	Image capture and processing triggered with start and stop digital signal
System	
Image capture sensor	2 Megapixels grayscale
Illuminator	Infrared External Illuminator
Lenses	Fixed lens configuration
Operating System	Linux Operating System
Digital I/O	2 Inputs – 2 Outputs – 1 Strobe output
IP Protection	IP68
Ethernet	Gigabit Ethernet 10/100/1000
Storage	uSD up to 128 GB
Vandal proof Connector	Yes
Antitamper sensor	Yes
Internal SSD	Optional, up to 1TB
GPS	Optional
Wifi	Optional
Technical Data	
Operating & Storage Temperature	From -40° to +60° C - From -40° to +140° F
Operating & Storage Humidity	Up to 95% non condensing
Dimensions	
Weight	3,6kg
Power supply voltage	24 Vdc
Power consumption	24W

Part Numbers

AXLE COUNTER SYSTEM	
F02002	Axle Counter Camera
F01920	External IR Illuminator

SINGLE LANE TRACKING | CONGESTION CHARGE

Vega11   Vega33

Newborn Vega family, expressly developed to host Artificial Intelligence (AI) algorithms for very demanding applications

◊ The new generation of AI-based ANPR cameras

With full onboard image capture and processing, Vega camera provides outstanding performances and flexibility for all ANPR and vehicle identification tasks.

The device automatically detects vehicles thanks to its internal advanced image processing algorithms.

The camera has a high-power integrated infrared illuminator to support demanding performances such as multiple countries plate recognition with optimal reading performances even in high complexity scenarios (reflective, non-reflective, colored plates with multiple charset support).

Thanks to its design, together with the IP68-rating, high-temperature range, optional LTE, and expandable local storage, the camera can operate in remote and harsh environmental conditions.

Integration in Back-office Software and Video Management Systems can be easily achieved with REST API interfacing, multiple configurable protocols, metadata, and image options.

- ◊ Built-in self-triggering based on image processing
- ◊ Low energy consumption with PoE+ on selected models for an easy installation
- ◊ Easy integration with REST API interface
- ◊ Optional Brand Class Color and Model recognition
- ◊ Internal buffering and optional storage for off-line operations
- ◊ Optional high-quality video streaming

	VEGA 10	VEGA 11	VEGA 30	VEGA 33
Software features and Performance				
Lane Detected	1		Up to 2, depending on layout	
Max Vehicle Speed	180 km/h - 112 mph		200 km/h - 125 mph	
Working Distance	Up to 25m - 83 ft		Up to 35m - 115 ft	
Detection	99%			
Reading	>95%			
OCR	ANPR (ALPR) engine on board			
Third party OCR	Optional			
Classification	No	Optional	No	Optional
Vehicle Color	No	Optional	No	Optional
Vehicle Marker	No	Optional	No	Optional
Vehicle Model	No	Optional	No	Optional
Video Streaming	No	Color video streaming via standard RTSP protocol	No	Color video streaming via standard RTSP protocol
AES256	Yes			
SHA2	Yes			
Compression	JPG			
Configuration				
Web Server	Installation and configuration with on board Web Application			
Integration	REST and binary protocol available			
Date and Hour	Synchronization via NTP protocol		Synchronization via NTP protocol or optional internal GPS	
Software Update	Upgrading via Web Application and integration protocols			
Data Transmission				
FTP	FTP Client mode for remote data transmission			
Standard protocols	REST and binary protocol, XML, SNMP, NTCIP, Customizable message format			
Configuration	Configurable events/actions and metadata			
Wiegand	Optional		No	
Serial Port	Insulated RS485 / RS422			
Operating Mode				
Free Run	Self triggering based on image analysis, even without plates			
Trigger mode	Image capture and processing triggered by Ethernet or digital signal			

	VEGA 10	VEGA 11	VEGA 30	VEGA 33
System				
ANPR (ALPR) camera	2 Megapixels Grayscale		3 Megapixels Grayscale	
			3 Megapixels Color (Color Version)	
Context camera	No	2 Megapixels Color	No	3 Megapixels Color
Illuminator	8 high power LEDs, InfraRed @ 850 nm		12 high power LEDs, InfraRed @ 850 nm or white	
Lenses	Fixed lens configuration			
Operating System	Linux Operating System			
Custom software	No		Optional	
Digital i/o	2 Optoisolated input - 2 Relay Output – 1 Strobe output			
IP Protection	IP68			
Ethernet	GigaBit Ethernet 10/100/1000			
Storage	uSD up to 128 GB			
Vandal proof Connector	Yes			
Antitamper sensor	Yes			
Internal SSD	No		Optional up to 1TB	
GPS	No		Optional	
LTE	no		Optional	
WiFi	Optional			
Technical Data				
Operating & Storage Temperature	From -40° to +60° C - *From -40° to +140° F*			
Operating & Storage Humidity	Up to 95% non condensing			
Dimensions	225 x 244 x 132 mm - 8.6 x 9.6 x 5.2 in			
Weight	3,6 kg - 8 lbs			
Power supply voltage	24 Vdc, PoE+		24Vdc	
Power consumption	25W		30W	

Part Numbers

Vega 10-11		Vega 30-33	
F02010	Vega 10	**F02001**	Vega 30
F02011	Vega 11	**F02000**	Vega 33

Basic Family

The Basic family is built
around a small case
for big reliability
in ANPR applications

- Mainly targeted to stop & go tolling, parking and access control systems, with a maximum input power of 13W, the Basic line features a Power-over-Ethernet (POE) interface for minimizing the installation and maintenance time

- Extra compact size to reduce the installation impact

- New generation full HD sensor for reading reflective and non-reflective plates

- Stand alone: thanks to local buffering of information, the system is able to function also in case of disruption in the data connection

- The Basic is easy to install and does not require an external IR lighting

- Vandal-proof connectors

Basic Family Applications

- Stop & Go tolling
- Parking
- Access control
- Urban road tracking
- Congestion charge
- Access control to limited traffic areas

Basic Short & Basic Long

Heavy-duty cameras for reliable access control and stop & go tolling applications

The Basic Family is built around a small and compact case

- POE allows a single wire connection
- Optionals can be installed upon request
- Impressive capability to keep the device always updated
- Available in BW and Color version

Basic Short Range

can read up to 8 meters - *26 ft far at 70km/h-44 mph max speed*

Basic Long Range

can read up to 25 meters - *82 ft far at 150km/h-93 mph max speed*

	BASIC SHORT RANGE	BASIC LONG RANGE
Software features and Performance		
Lane Detected	1	
Max Vehicle Speed	70 km/h - 44 mph	150 km/h - 93 mph
Working Distance	Up to 8 m - Up to 26 ft	Up to 25m - Up to 82 ft
Detection	99%	
Reading	>95%	
OCR	ANPR (ALPR) engine on board	
Capture rate	Up to 60 fps	
AES256	Yes	
SHA2	Yes	
Compression	JPG	
Configuration		
Web Server	Installation and configuration by Web Server on board	
TCP/IP Server	Configuration and monitoring through TCP/IP protocol. (SDK provided)	
Date and Hour	Synchronization via NTP protocol, IEEE1588	
Software Update	Upgrading via Web Interface and SDK	
Data Transmission		
FTP	FTP Client to FTP Server mode for remote data transmission; Multiple IP servers addressable	
TCP/IP	Tattile TCP/IP open protocol; (SDK provided)	
Wiegand	Yes	
Standard protocols	XML; SNMP; NTCIP; DATEX2; UTMC; MODBUS	
Serial Port	Insulated RS485	

	BASIC SHORT RANGE	BASIC LONG RANGE
Op. Mode		
Free Run	Continuous image capture and processing	
Triggered	Image capture and processing triggered by Ethernet command or digital signal	
System		
ANPR (ALPR) camera	2 MPX BW	
	2 MPx Color (Color Version)	
Illuminator	8 high power LEDs, InfraRed @ 850 nm	
Lenses	C-Mount. Many focal lengths available	
Operating System	Linux Operating System	
Digital i/o	2 Optoisolated input - 2 Relay Output – 1 Strobe output	
IP Protection	Waterproof IP67	
Ethernet	GigaBit Ethernet 10/100/1000	
Storage	uSD up to 128 GB	
Vandal proof Connector	Yes	
Technical Data		
Operating & Storage Temperature	From -40° to +60° C - From -40° to +140° F	
Operating & Storage Humidity	Up to 95% non condensing	
Dimensions	178 x 90 x 133 mm - 7 x 3.5 x 5.2 in (WxHxL)	
Weight	1.5 kg - 3.3 lbs	
Power supply voltage	24 Vdc, PoE	
Power consumption	12 W (max)	

Part Numbers

Basic	
F01750	Basic short range
F01752	Basic long range

Basic Color	
F01751	Basic color short range
F01753	Basic color long range

ANPR Mobile

Tattile ANPR Mobile is ready to use solution to prevent crime, offered as an aid to Police Forces

ANPR Mobile is the smart solution to prevent crime, offered as an aid to Police Forces.

It is an evolved and modern license plate reading system, installed on the cars of specialized operational departments and/or intelligence services, as support to surveillance and protection, serving as a tireless watchful eye on the road.

ANPR Mobile is the latest generation system with Megapixel sensors that can scan up to 60 frames per second, front and rear, in any light condition.

It is part of the sophisticated Tattile ANPR/ALPR (Automatic Number Plate Reader) All On Board camera family, to read license plates in movement.

- Wi-Fi data transmission from the unit to the pc/tablet
- GPS on board
- Embedded licence plate analysis (OCR on board)
- Real-time processing: up to 60 fps

Software Features

	ANPR Mobile
Licence Plate Recognition	
OCR	ANPR (ALPR) engine on board
Capture rate	Up to 60 fps
Configuration	
Web Server	Installation and configuration by Web Server on board
TCP/IP Server	Configuration and monitoring through TCP/IP protocol
Date and Hour	Synchronization via SNTP protocol or GPS
Software Update	Upgrading via Web Interface and SDK
Data Transmission	
FTP	FTP Client to FTP Server mode for remote data transmission; two IP address management
TCP/IP	Tattile TCP/IP open protocol; two IP address management
Streaming	Video streaming via standard RTSP protocol
Operating Mode	
Free Run	Continuous processing with automatic plate detection

Technical Data

	ANPR Mobile
System	
ANPR (ALPR) camera	1920 x 1080 Monochrome CMOS sensor
Context camera	1920 x 1080 Color CMOS sensor
Illuminator	Short range: 6 LEDs High power infrared @ 850nm
	Medium/long range: 10 LEDs High power infrared @ 850nm
Lenses	C-Mount. Many focal length available
Operating System	Linux
Connectors	Waterproof circular connector
Network	Fast Ethernet 10/100 and WiFi 802.11 b/g/n
Storage	Up to 128 GB
Environment, Size, Power	
Operating & Storage Temperature	From -30° to +60° C / -22° to +140° F
Operating & Storage Humidity	Up to 95% non condensing
Dimensions	178 x 76 x 141 mm - 7 x 3 x 5.5 in (WxHxL)
Weight	1,650 Kg - 3.63 lbs
Protection	Waterproof IP66/IP67
Power supply voltage	12 Vdc
Power consumption	15 W

Part Numbers

ANPR Mobile	
F01710	ANPR MOBILE SYSTEM short range
F01845	ANPR MOBILE SYSTEM medium range
F01696	ANPR MOBILE SYSTEM long range

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