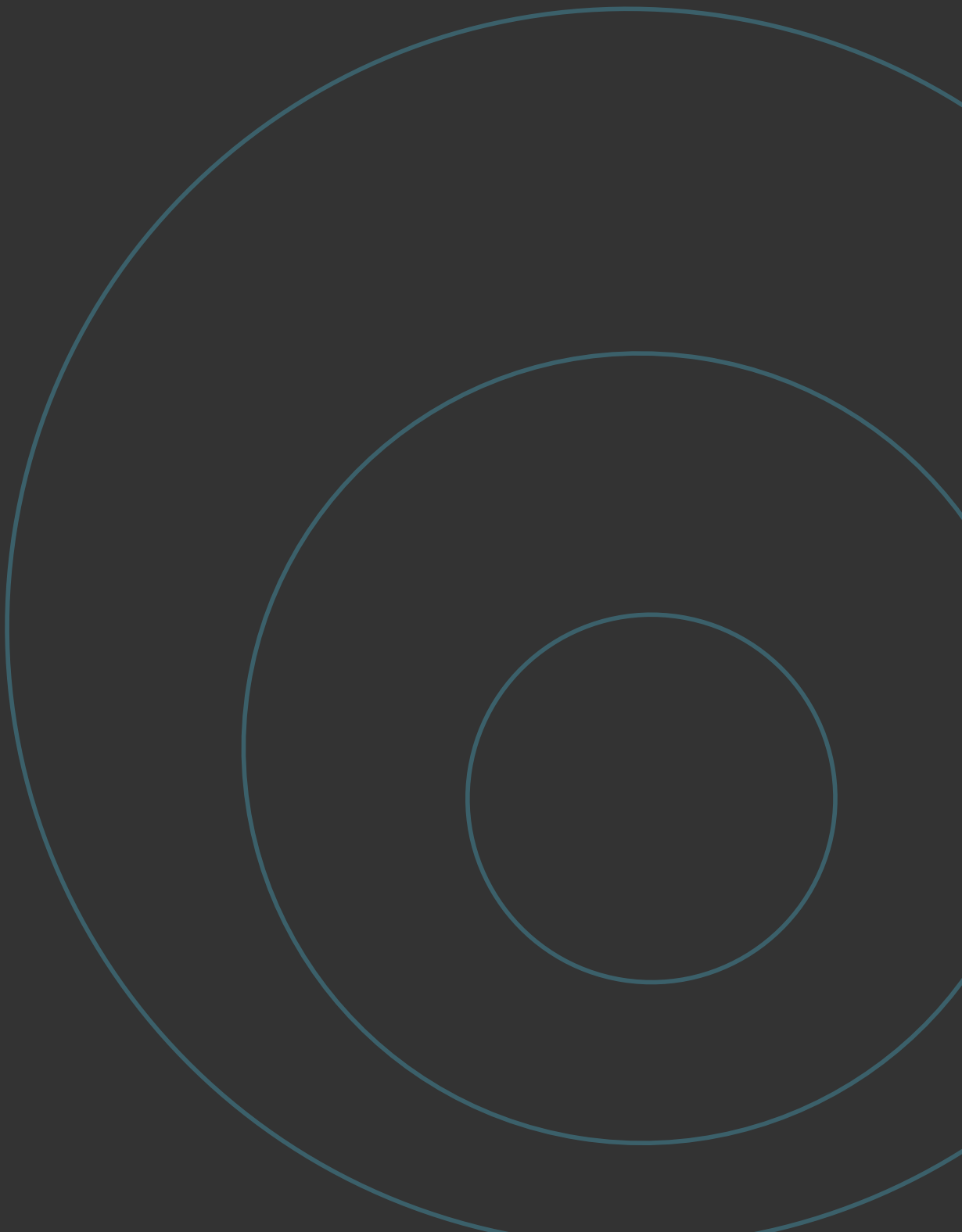




Smart Traffic





**MUCH MORE
THAN RADAR
TECHNOLOGY**

CAN YOU IMAGINE
A SMART AND
EFFICIENT
WORLD?



uRAD - Universal Radar - by Anteral

Anteral, under its brand uRAD, develops **microwave radar solutions** with the aim to bring closer radar technology to everyone. **Different standard radar boards** are already available at **three frequency bands**. These products are perfect to develop innovative applications for **industry, smart cities, automotive** and much more.

The easiest and most efficient way to monitor and optimise traffic

In addition to our standard products, we are very focused on some specific applications, mainly within the **Smart City** framework. We have different solutions, including hardware and software.

Discover the potential of uRAD Smart Traffic



Ayuntamiento de
Pamplona | Iruñeko
Udala

Thanks to uRAD Smart Traffic, Pamplona Council **monitors the bike lane** of the city to improve the routes.

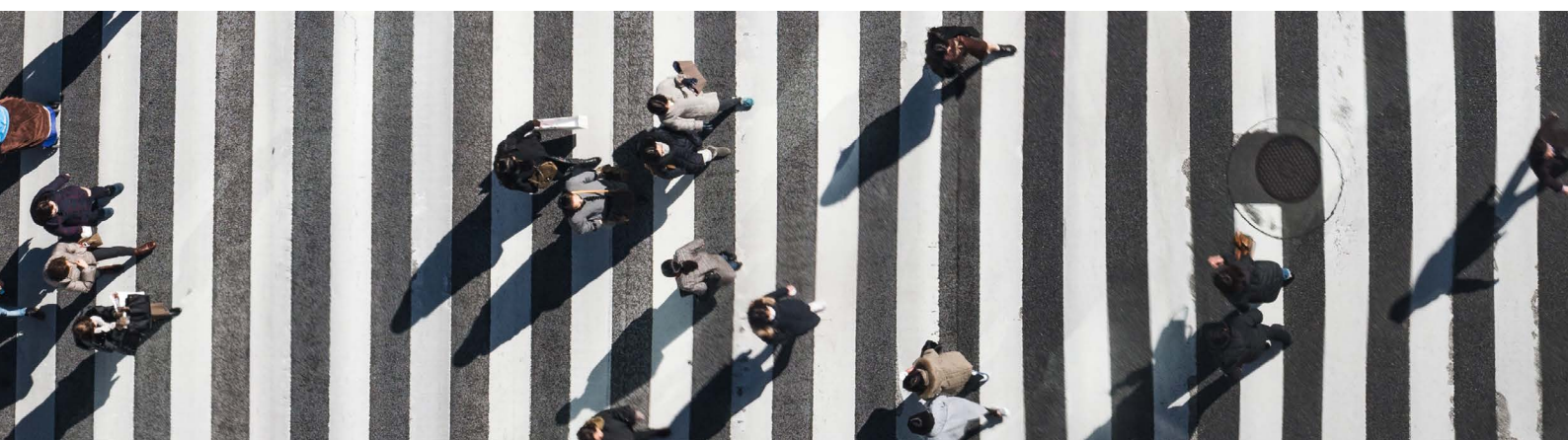


Ayuntamiento
Cartagena

Cartagena Council uses our solution to **optimise and re-organize the traffic** in troubled points of the city.



The UPNA Smart Cities Institute uses uRAD to **study the traffic and pedestrians** at different entrances to the city before carrying out works.



THE NEXT GENERATION OF CITIES



uRAD Smart Traffic

In addition to our standard products, we are very focused on some specific applications, mainly within the **Smart City** framework. uRAD Smart Traffic are specific solutions for **non-invasive traffic monitoring** in urban environments.

All our systems are **affordable, easy to install and configure**, very **versatile** since can be installed in any road, and outstandingly **accurate**, with an effectiveness higher than 99%.

USE CASES



Velocity measurement up to 180 Km/h.



Dense or light traffic scenarios.



Urban and interurban roads.



Up to 6 lanes monitoring with a single radar.

* Up to 3 lanes in each direction.



Counting vehicles with positive (go away) and negative (approach) velocity simultaneously.

VERSIONS AND MAIN FEATURES

SMART TRAFFIC SOLUTIONS

- Battery
- Wifi, 3G & 4G connectivity
- AC power supply
- Real time web application with traffic statistics
- Optional camera (license plate recognition or others).
- Vehicle discrimination

SMART TRAFFIC COMPACT

- Compact design
- Low consumption
- DC power supply
- RS 485 connectivity
- MODBUS communication protocol
- Vehicle discrimination



VEHICLE TYPE DISCRIMINATION

Beside vehicle counting and velocity measurements, uRAD Smart Traffic provides vehicle discrimination.

Four different types of targets are discerned:

- Regular vehicles
- Long vehicles (> 15 meters)
- Bicycles
- Pedestrians

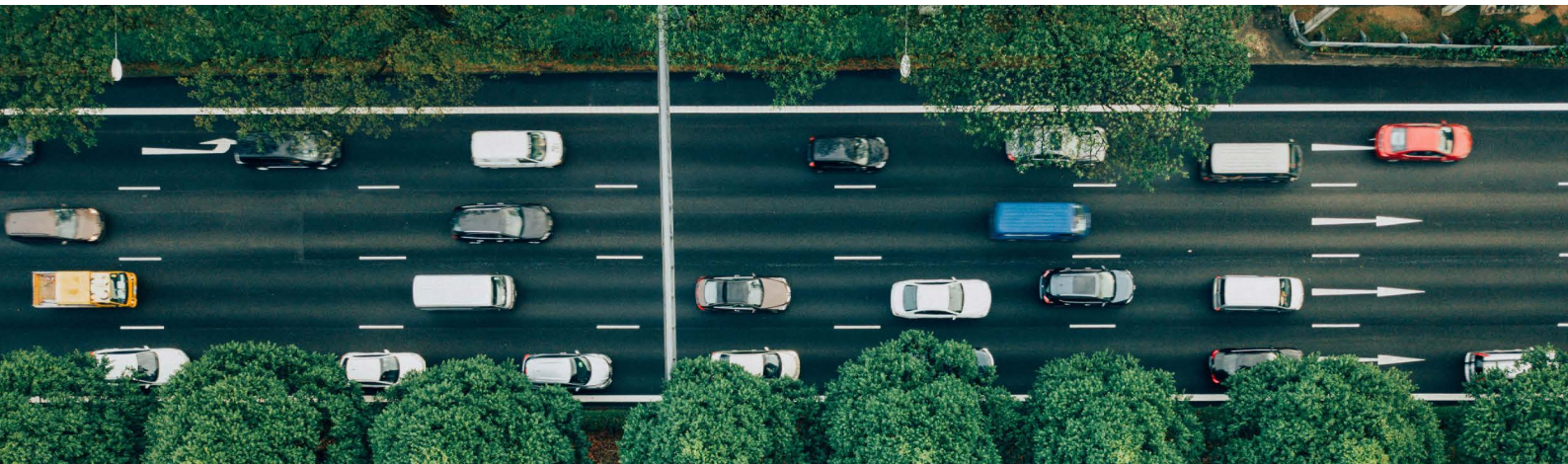
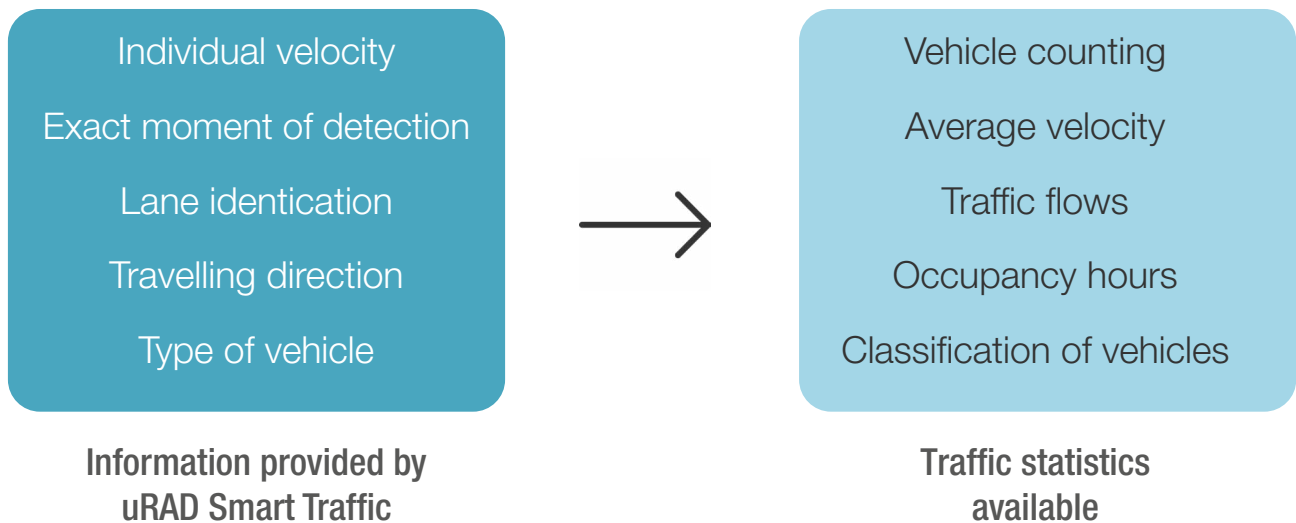
Therefore, our equipments are useful for much more than simply counting and for many kind of scenarios.

For example:

- Number of bikes that pass in rural paths.
- Number of trucks per hour in a specific interurban road.
- Percentage of regular vehicles and long trucks in a highway.

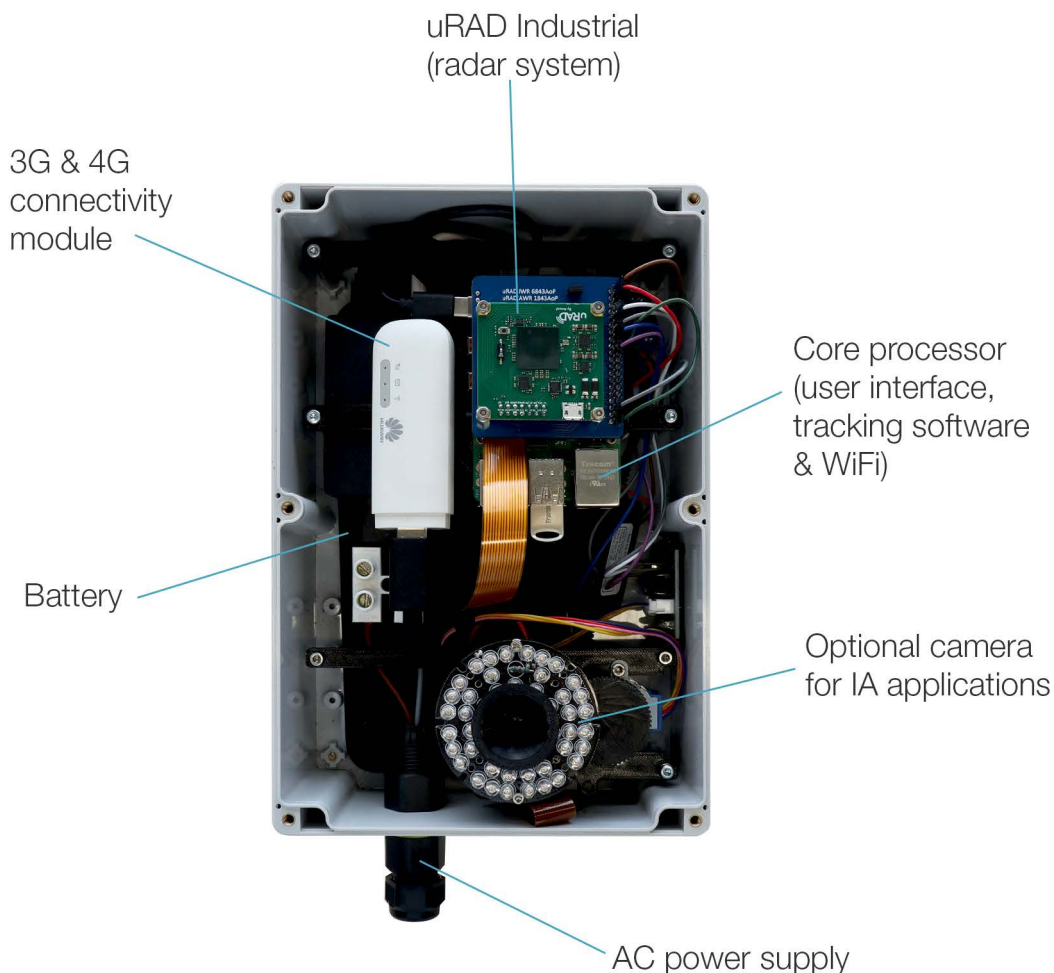
TRAFFIC STATISTICS

With the information provided by uRAD Smart Traffic you will be able to study, organise and optimise the traffic of a city or an interurban environment.



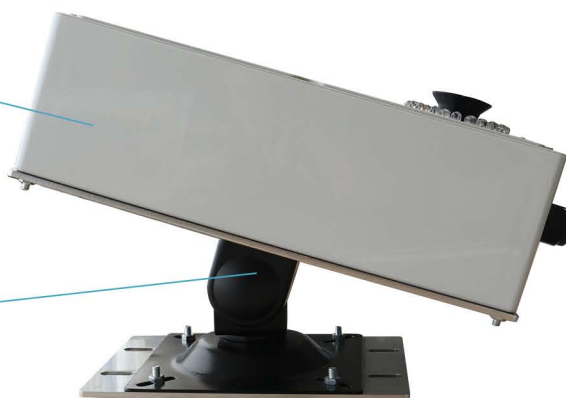
SMART TRAFFIC SOLUTIONS

These **finished customizable solutions for traffic monitoring** integrate our radars along with additional specific software and hardware.



Polycarbonate box with protection IP65, NEMA, 1,2,3,4x,12,13, UL-508 y UL94 HB

Brackets for vertical installation in streetlights, traffic lights, etc.



REAL TIME WEB APPLICATION

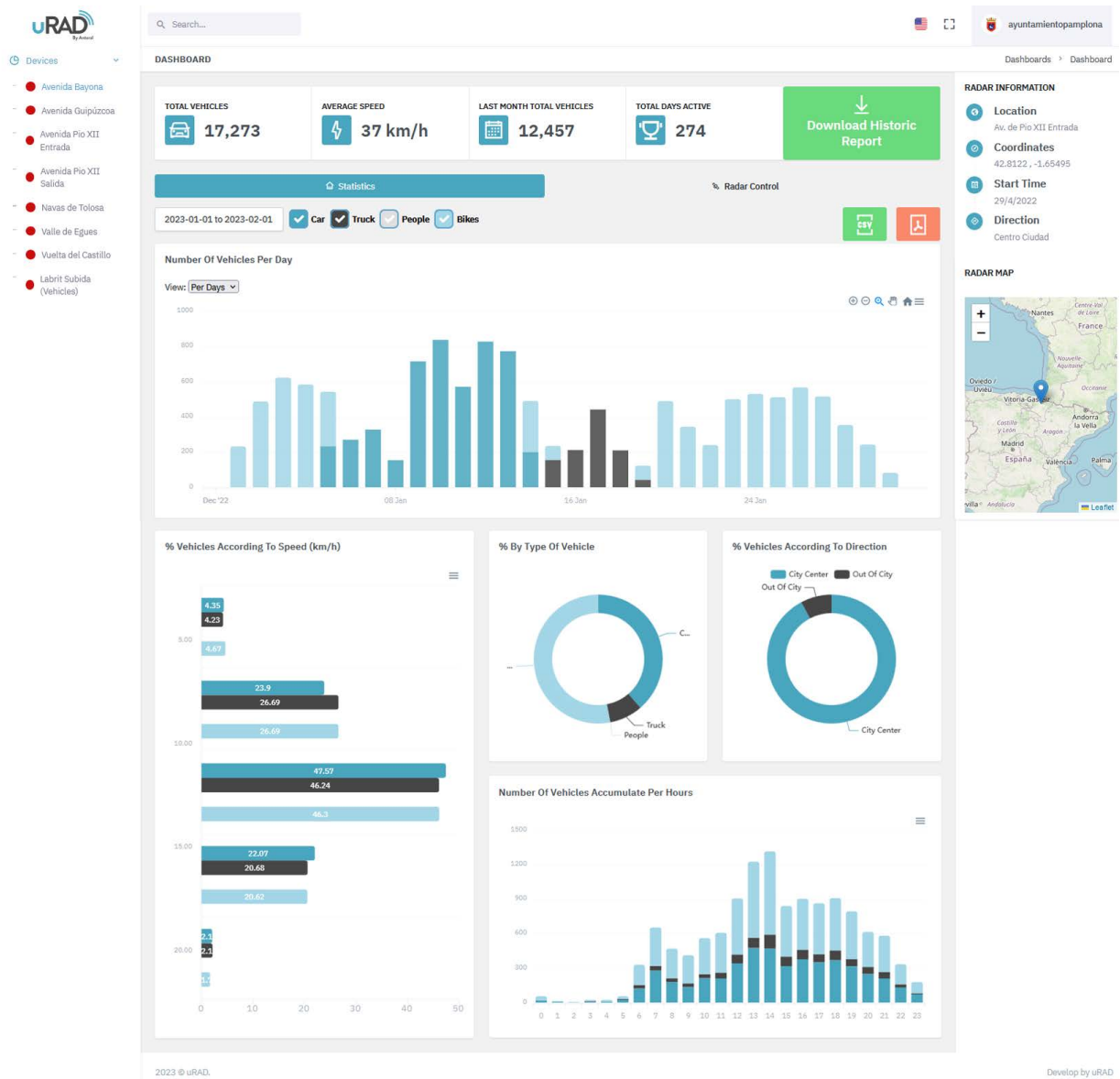
With Smart Traffic Solutions we also offer an **online platform to visualize real-time statistics** that is customizable to each client according to specific requirements. Users can also download **reports** with all the information in a quick and easy way.

CONTROL PANEL

- Device list of the installations, so the user can access to each one and visualize the particular information.
- Details about the status, location and installation parameters.

REAL-TIME TRAFFIC STATISTICS

- The number of vehicles per hour and per day (data period selectable).
- The percentage of vehicles according to velocity.
- Other global statistics such as total vehicles or average velocity.



RESULTS & REPORTS

The device contains a micro SD card where all detected information is saved in **.csv files**. For each detected target the information saved is:

Timestamp **Velocity** **Lane** **Vehicle_type**

All this plain information can be extracted from the device by **WiFi or 3G/4G connection**.

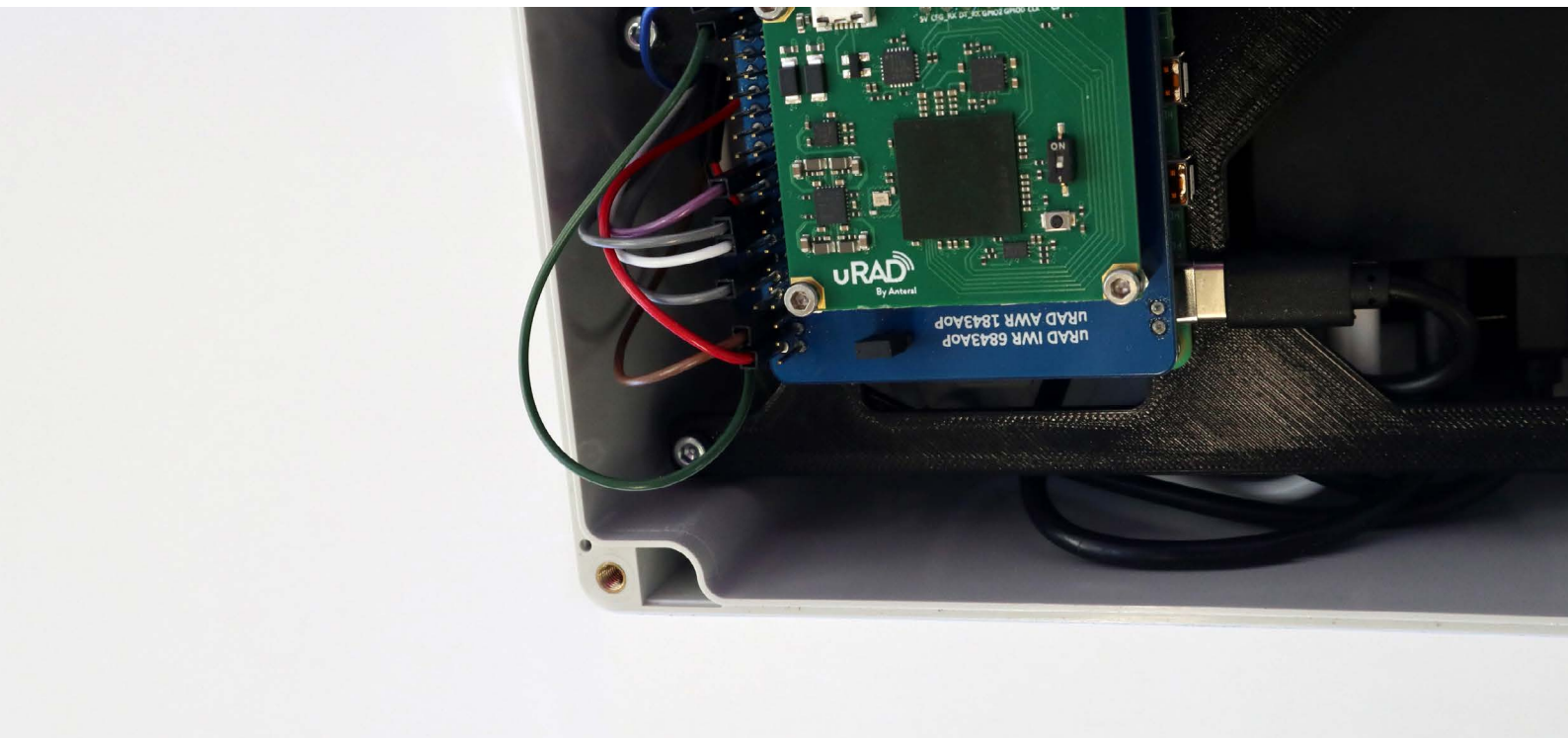
Moreover, we offer data processing services to create reports with the different traffic statistics that are of interest for each customer. In this way, our clients save the time to handle large data files and get only the most valuable information.

ARTIFICIAL VISION APPLICATIONS

Our most advanced solution integrates a **high-resolution camera** for **artificial vision** applications is needed. The system with camera also includes infrared LEDs for working at night and a motorized focusing mechanism in order to adjust the quality.

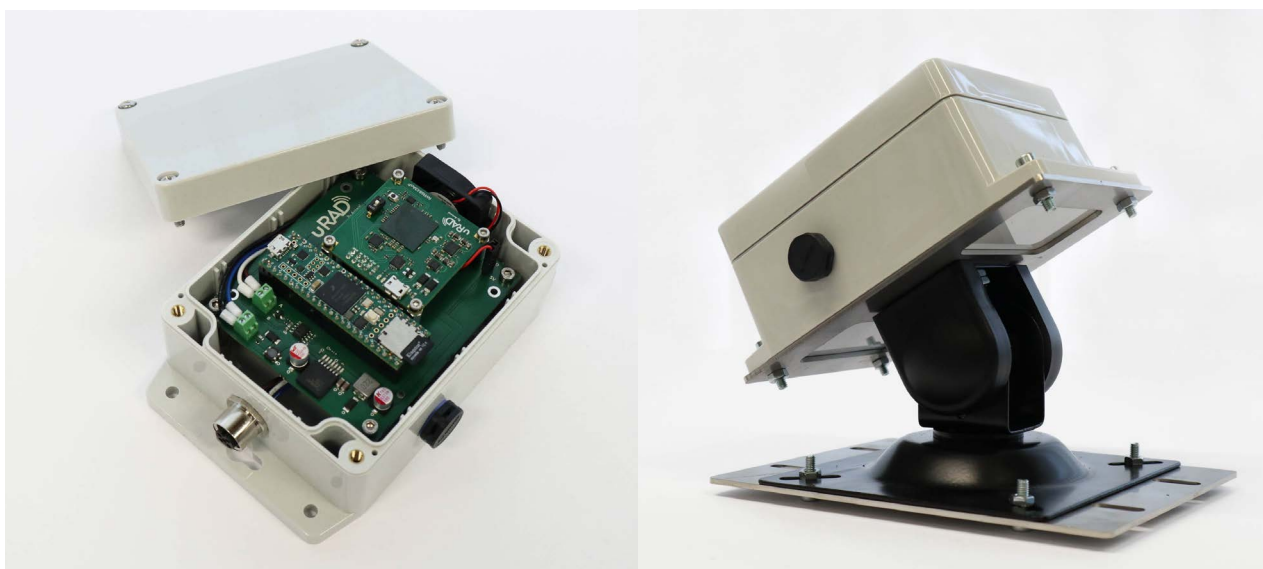
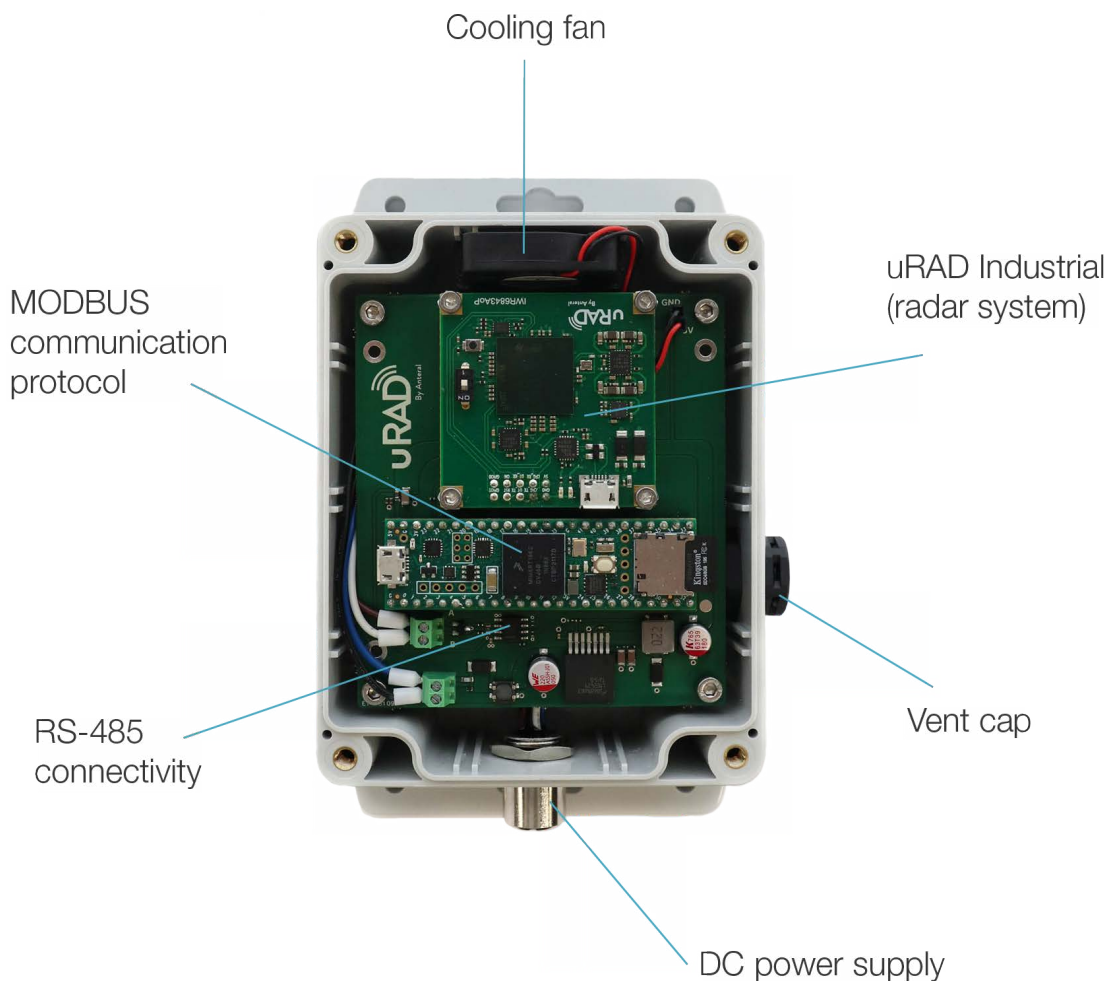
One of the use cases is **license plate recognition**, which is limited only to two lanes and maximum distance of 10 meters between license plate and device. The license plate recognition feature uses a licensed software that carries a monthly payment.

The optional camera added to Smart Traffic Solutions increase the versatility, since it can be used for plenty of applications where artificial vision is needed, such as verification and recognition of objects in different scenarios.



SMART TRAFFIC COMPACT

Smart Traffic Compact is the **most compact and low consumption version**, integrating MODBUS communication protocol and RS-485 connectivity with the most advanced uRAD radar hardware.



Smart Traffic Solutions VS Smart Traffic Compact

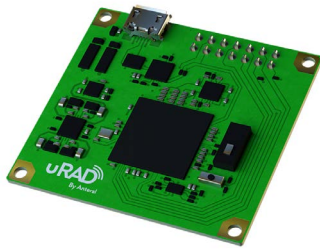
	ST SOLUTIONS	ST COMPACT
RF Parameters		
Frecuency	60 - 64 GHz	60 - 64 GHz
Modulation	FMCW	FMCW
Emitting power	15 dBm	15 dBm
Field of view	160 °	160 °
Power supply		
Voltage	AC 100 - 240 V, 50/60 Hz	DC 8 to 24 V
Connector	Three-pole IP68 waterproof connector	M12 female five-pole circular connector
Consumption	3.5 W	2.5 W
Battery	26800 mAh	-
Mechanical Parameters		
Dimensions	240 x 160 x 90 mm	115 x 90 x 65 mm
Material	Polycarbonate	Polycarbonate
Protection	IP68, NEMA 1,2,4,4X,12,13, UL-508	IP68, NEMA 1,2,4,4X,12,13, UL-508
Installation	Fastener included. Ball joint for vertical and horizontal orientation. Brackets for circular support.	Optional clamping structure. Ball joint for vertical and horizontal orientation. Brackets for circular supports.
Other parameters		
Core processor	Quad-core 64-bit ARM Cortex-A53, 1 GHz, 512 SDRAM	ARM Cortex-M7, 600 MHz, 1024K RAM
Operating temperature	-20°C a +80°C	-20°C a +80°C
Communication	WiFi and 4G	RS-485 with MODBUS-RTU
Operative system	Linux (Raspberry Pi OS)	-
Performance		
Maximum velocity	180 Km/h	180 Km/h
Maximum distance	60 m	60 m
Side distance	±15 m	±15 m
Others		
Web application	Yes	No
Camera for artificial vision	Optional	No



Do it yourself ! DIY traffic monitoring kit

Apart from the complete package, in case you want to integrate your own solution, we also offer the possibility of acquiring uRAD devices + the specific software to develop your application.

What do you need to easily develop your application?



uRAD Industrial



uRAD tracking software



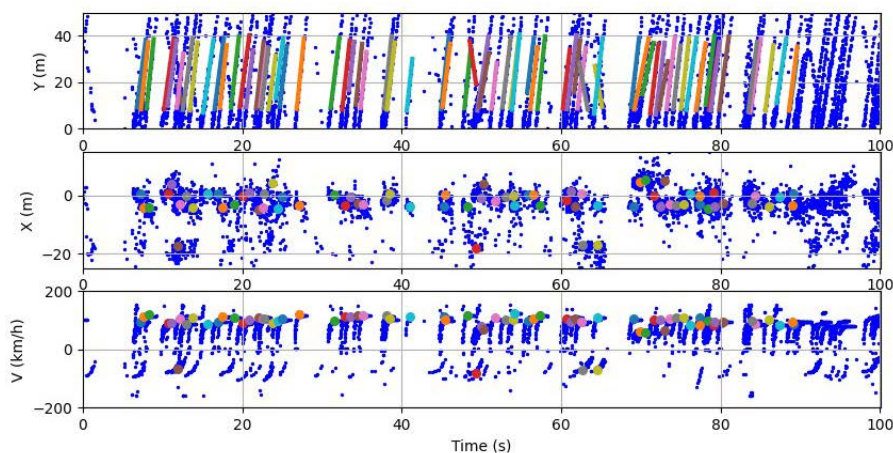
Raspberry Pi

TRACKING SOFTWARE

This proprietary software allows to count vehicles in multiple lanes, measuring the velocity and classifying them, with high accuracy and minimal configuration.

The **Tracking Software** consists of a **Python program** that has to be run in the master device (i.e. Raspberry Pi) that controls uRAD Industrial. This software together with the master device:

- Sends the corresponding configuration parameters to uRAD Industrial.
- Receives from uRAD Industrial the 3D point cloud with X, Y, Z space coordinates, velocity and SNR (Signal to Noise Ratio).
- Processes the point cloud to identify vehicles, extract their velocity and classify them.
- Saves a counting list with the relevant information.



BE PART OF THE CHANGE TO SMART CITIES



THE POWER OF
RADAR. THE
POWER OF YOU.



uRAD

