

# VECTOR

Protect your goods everywhere



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NEXTANT Applications & Innovative Solutions – NAIS was established at the end of 2006, as Italian private owned; It's an ICT System House based in Rome, classified as SME according to the European Commission classification (2003/361/EC).

Company mission is to develop and propose to the proper market sectors, innovative applications and services based on ICT technologies through Satellite Navigation, EO & Communication assets.

NAIS core competencies on Space & Defence market's domain plays a strategic role in the development of innovative application by enabling technologies. Passing through R&D Projects, product industrialization and commercialization, NAIS completing in this way the whole Technology Transfer Process.

It's Innovative applications and services are already available in the field of Smart-mobility (solution for both citizens and tourists transportation support and information), Emergency (mission management and resource planning), Cultural Heritage (safeguard, fruition and prevention), Maritime (search & rescue, mission management and access to harbour and docks), Defence (air defence systems radar), and Aeronautics (Air Traffic Management system 2D & 3D and flight information systems of General Aviation aircraft).

All research and innovation activities are performed with internal capital investment and through the participation in programs for the development of innovation, co-financed by national and international Institutions such as: Italian Space Agency – ASI, European Structural Fund (FSE & FERS) by National Operational Plan – PON/POR, operating by MIUR & MISE, European Space Agency – ESA, European Commission research programs (e.g. FP7 and Horizon 2020), Single European Sky ATM Research program - SESAR.

# VECTOR

is an advanced Real-time Monitor System, to safe the status of sensitive goods and protect it during their Transportation. Based on a Client-Server architecture including a Secure (https) WEB access. VECTOR is able to monitor microclimate and environmental data by wireless sensors installed in Buildings, Indoor or Outdoor Areas, Hard case or coupled to sensitive and/or valuable items such as: Dangerous or Sensitive Materials/Items, Art Works, Fresh and Frozen Food, on site as well as during their transport (Road, Maritime, Air).



The NAIS solution for the “real-time monitoring system for sensitive items transportation”.

The system, at the state of technology art, aims to monitor and control the integrity of “sensible goods” along their inter-modal transportation. Many economic sectors can take advantage from the easy to use,

# VECTOR

system technology applications such as: Cultural Assets, Fresh and Frozen Food, Dangerous Materials and Horses transport.

# VECTOR

With Technology and Customer Commercial Service is now possible to know, in real time on the mobile device such as Smartphone and Tablet (App.) or via the Web:





1.

the microclimate of the vehicle's loading room (Temperature, Humidity, Luminosity);



FRAGILE

2.

to detect vibrations and mechanical shocks;



3.

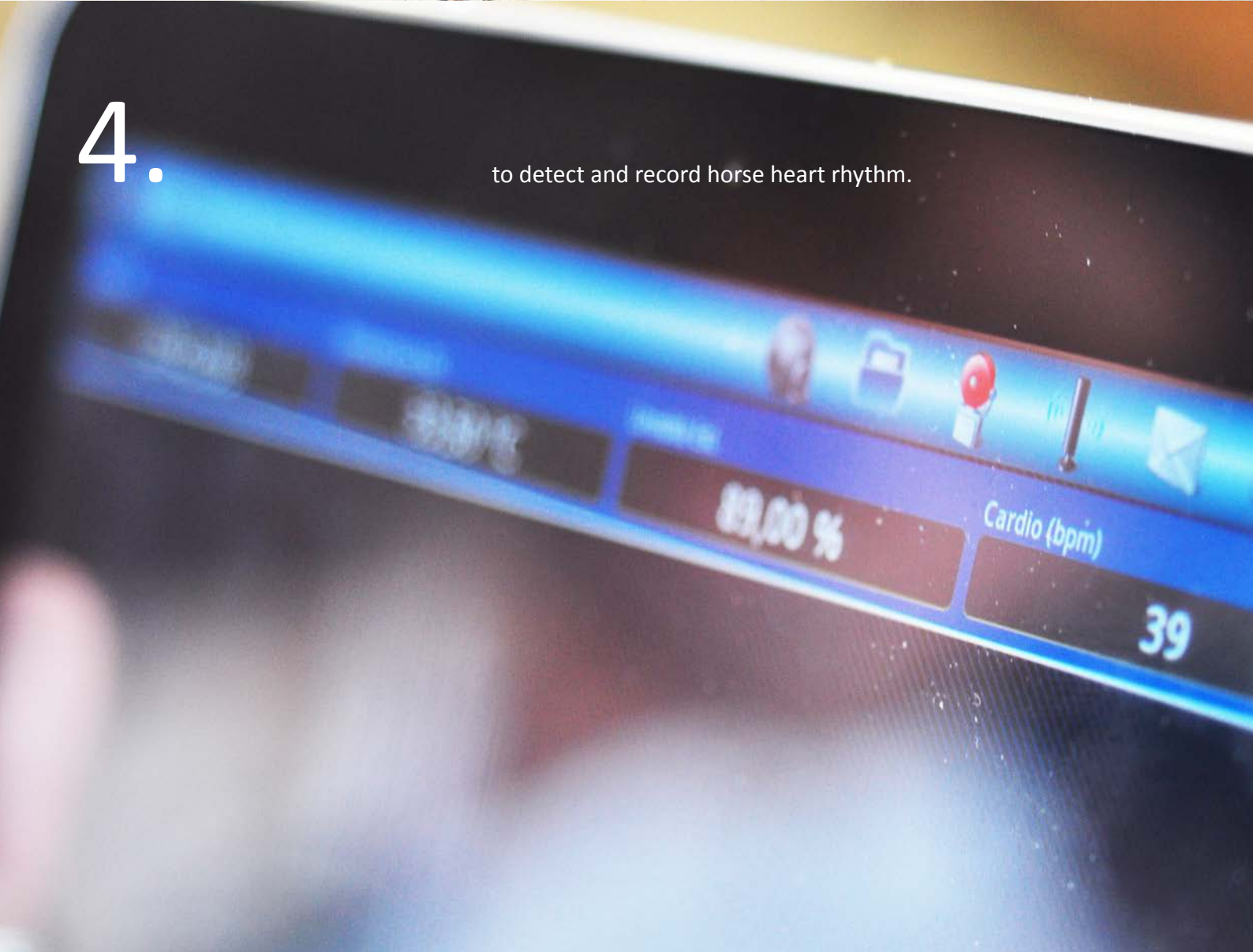
to know the exact position of the vehicle and other useful information related to a sensitive transport;





4.

to detect and record horse heart rhythm.





# VECTOR

is a useful system for:

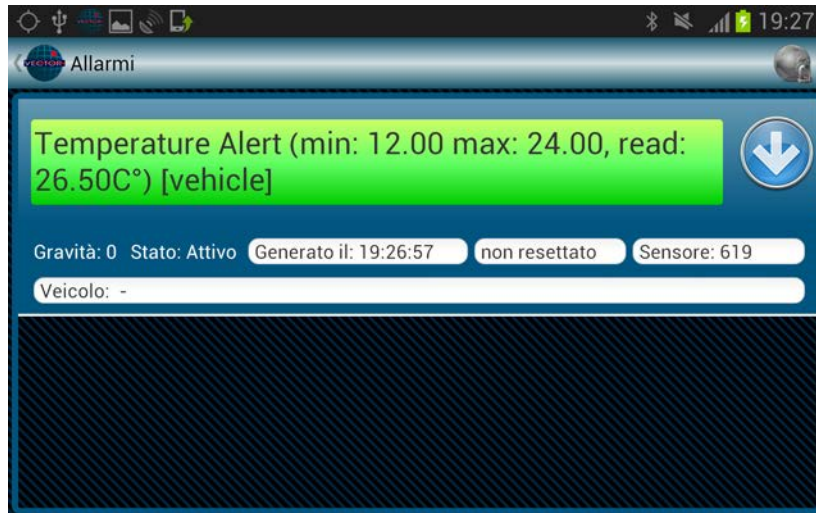
- *Institutional or Private Delivery*
- *Security Entities*
- *Goods Owners*
- *Insurance Companies*



By **VECTOR** they are able to access to the mission's data by means of a personalized, protected, simple but highly secure Internet connection, which will allow them to have, in real-time, all data related to the integrity status in terms of: Temperature, Humidity, Vibrations and mechanical shocks. Than to the geographic position of the goods and vehicle's route, stops, unexpected behaviors and emergency call. The App. on Smartphone and Tablet guarantees the monitoring of goods in mobility too. An early warning and alarms systems protect the goods against unpredicted events.

# VECTOR

Commercial Service is able to send the alarms on threshold violation of Temperature, Humidity, Vibrations and Mechanical shocks; it records punctual information, with time stamp, about all the transport's events, as well as the Route of the vehicle Europe wide, offering the highest level of safety, security and quality of transport service.



# VECTOR

technologies can be summarized as:

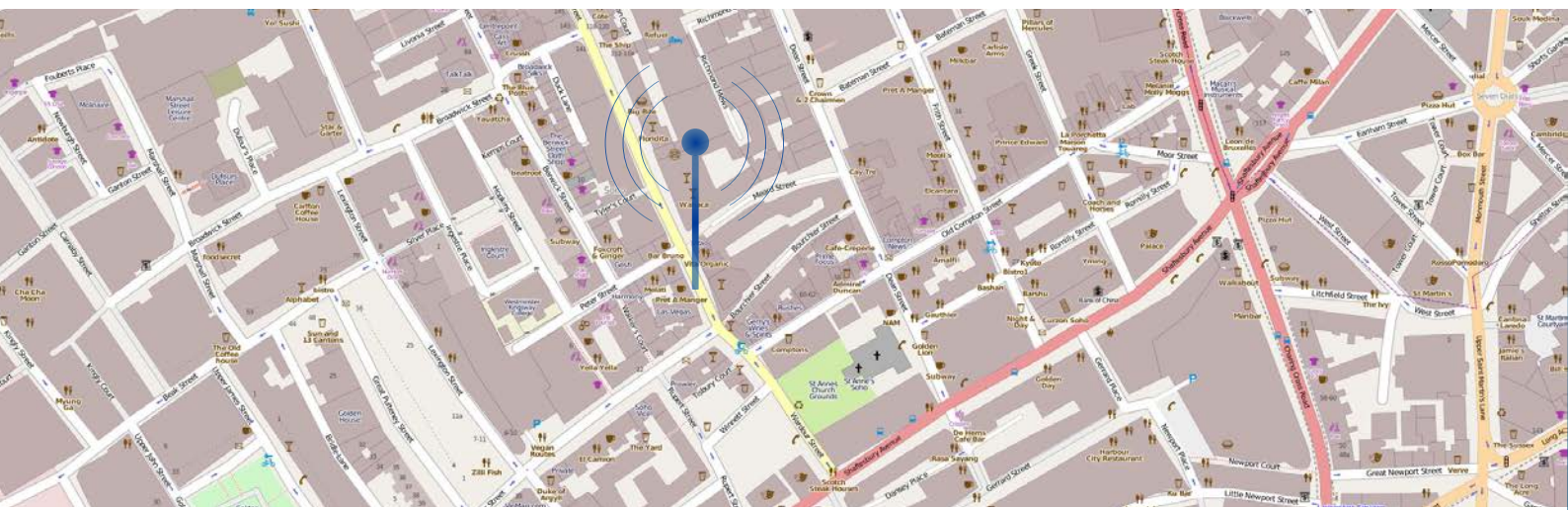
**WIRELESS SENSOR UNIT:** They are enclosed in one small single box, to detect Temperature, Humidity, Luminosity, Vibrations and Mechanical shocks acting on the Load along the transport, and can be installed everywhere in the loading room. The Wireless Sensor Unit has the CE and ECE/ONU Automotive Certification.

**ON BOARD UNIT:** Mobile devices such as Car navigator, Tablet and Smartphone, integrated: GPS and EGNOS receiver, Touch screen and Color display, to show in real time the status of the loading room and to report anomalous events. Through the On Board Unit it is also possible to exchange text message with the Web Monitoring Centre. Through the On Board Unit, the driver can:

- Perform Route Planning
- Receive visual and voice Route Guidance
- See the Sensors' data and alarms
- Exchange text messages with the WEB Monitoring Centre
- Trigger Emergencies (pressing the Panic Button)



**GNSS:** The vehicle is localized with precision, and the driver can perform Route Planning and receive both visual and voice Route Guidance.





**SECURE WEB**: The Transport Responsible or the authorized customer can access the transport data via a secure WEB page (https).



**WEB MONITORING CENTER**: Through a secure WEB page (HTTPS), the transport responsible can keep under control all the transport's parameters (Temperature, Humidity, Luminosity, Vibrations and Mechanical shocks acting on the load, vehicle's position, vehicle's stops), and receive eventual alarms (display and acoustic) concerning anomalous events.



# Application domain

*Art Works, transport to and from Museums and Galleries*



*Horses for international racing*





# ins & scenariuos:

*Sensitive and dangerous materials*



*Pharmaceutical products*



*Fresh and frozen food*



*Flowers and plants*



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