

TECHNOLOGICAL SOLUTIONS
FOR SECURITY AND
MANAGEMENT AT **EVENTS**



TECHNOLOGICAL SOLUTIONS FOR SECURITY AND MANAGEMENT AT EVENTS

INTRODUCTION

Security in areas susceptible to crowds, such as those at events, is essential in preventing non-compliance with rules on capacity limits or social distancing which provide greater safety for attendees.

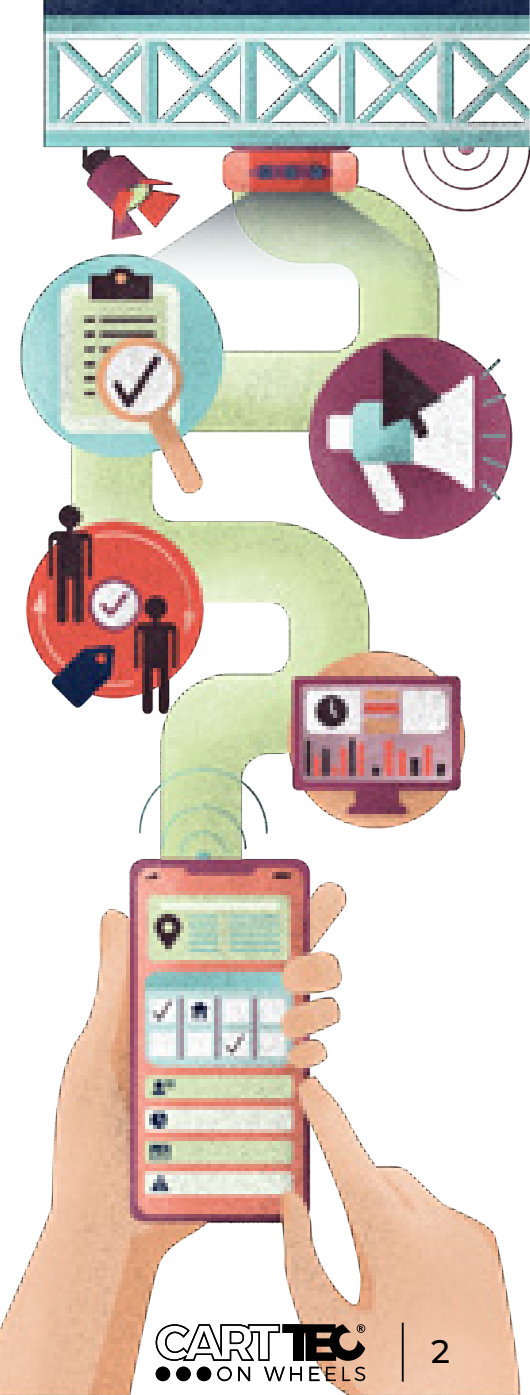
The placement of **crowd control cameras** can help organisers count and keep track on the crowd, through their use organisers will know in real time how many people are inside and can inform users when the interpersonal safety distance is not being met.

In addition, Carttec offers different possibilities for the **correct management** of enclosures, congress centres and events. With the help of **technology**, it is possible to obtain relevant **information about the behaviour of attendees or visitors** who come onto or into the place where the event is held.

FEATURES

What can we resolve?

1. Our technological solutions **improve the management of events and trade fairs**. With our solutions, you can get information on **where the exhibitors are**, the areas to **get statistics** on attendees and their passage through the different parts of the enclosure.
2. **In the application created for the event**, you can announce events that will take place at the different stands in the enclosure, generating **alerts to keep attendees informed**.
3. **Organisation of staff**. Knowing in real time where they are, the different work teams, such as cleaning staff or security personnel, can be directed to the areas where their presence is required.
4. **Provide exhibitors at the fair with information** on, among other things: Number of visitors per hour, number of visitors per day, peak times, heat map, etc.



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1. RFID

The large number of visitors, security measures and tight schedules mean that exhibition venues and congress centres now require even more organised management.

In these areas, **Carttec's intelligent management and control system**, by means of RFID technology, helps to create maintenance records and observe performance in manual operations.

Technical applications

1. Each attendee is assigned a **unique identification code** that incorporates specific individual information about each attendee, such as contact details and company.
2. The system enables you to know where attendees are and, in **real time**, to visualise their distribution at the fair.
3. You can create a **custom configuration** for each event and also access an **updated inventory, maintenance, attendee list, exhibitor list**, as well as **statistics** based on customer preferences.
4. Information on attendees and exhibitors in real time via **mobile terminals**.

Main functions

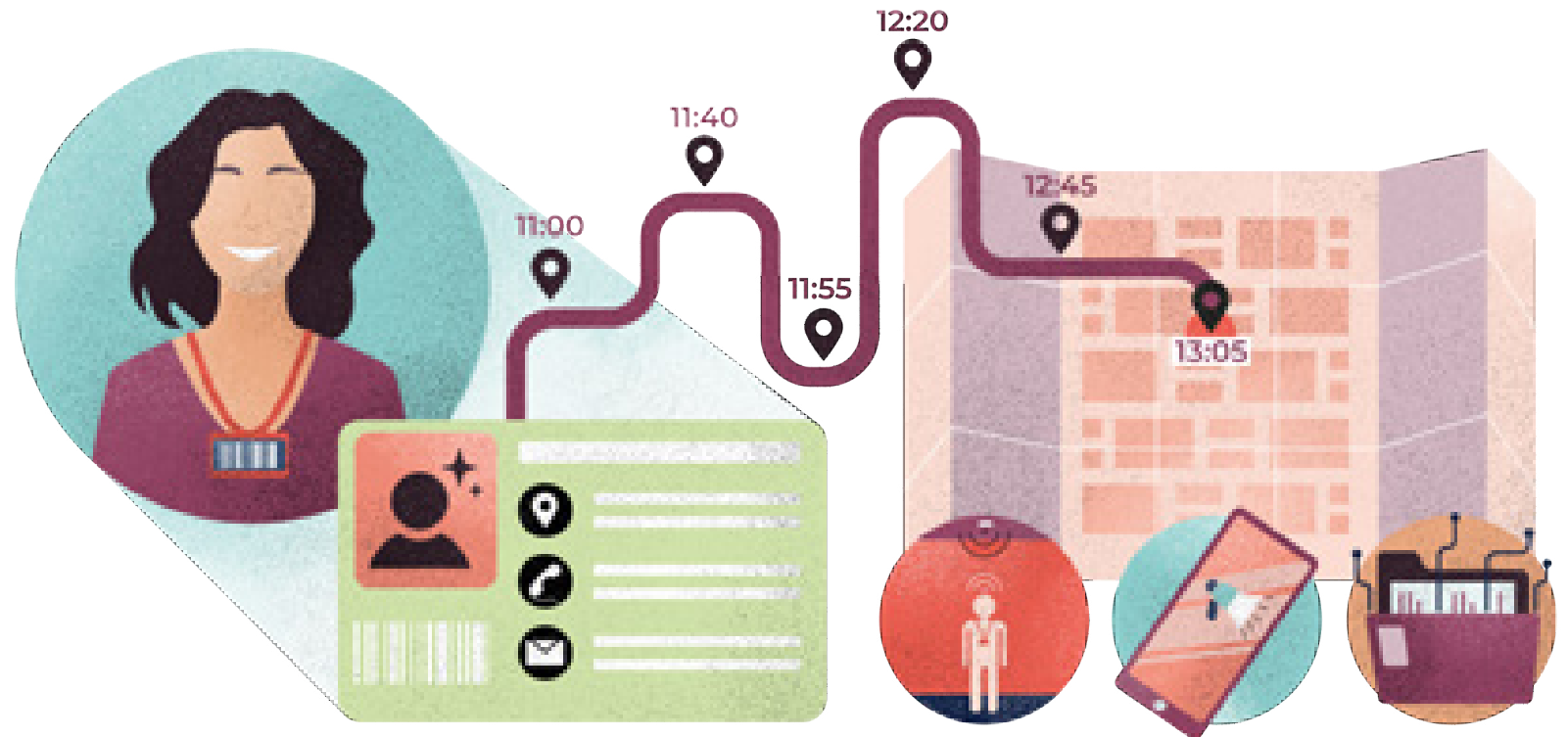
1. **Dynamic management:** Monitoring in real time
2. **Identity, sending and receiving:** Entry and exit data of attendees in the enclosure and in the stands.
3. **Statistics and analysis:** Attendee data stored in the cloud and statistics based on the preferences and requirements of each event or venue.



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System features

- A. Safety system:** The server storing the information is secured and backed up to maintain the integrity thereof.
- B. Progressive system:** The application of RFID technology makes a stable system possible. During operation, it supports both wireless and wired connections, and operations can be executed either by a single person or by teams working simultaneously.
- C. System reliability:** Carttec's intelligent management and control system uses precise and stable tools that are tried and tested and highly reliable.
- D. Practicality of the system:** With its simple and intuitive function buttons, menu configuration is very clear, these buttons facilitate the consultation of data and statistics with the operator being able to delve into user habits and behaviour.
- E. System efficiency:** Based on cloud-based data analysis, the system provides information about the position of attendees and creates warnings for event managers about possible incidents.



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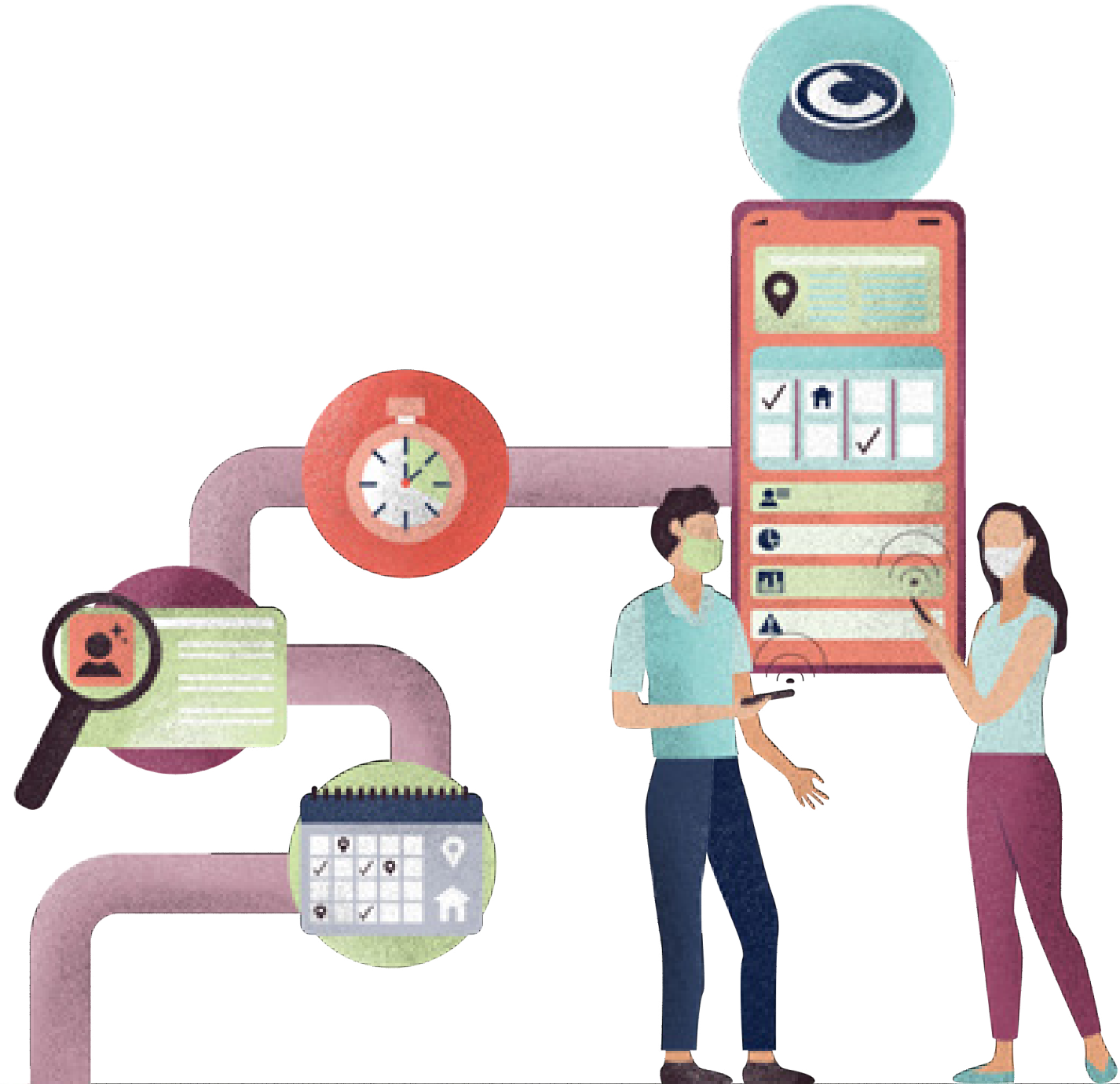
TECHNOLOGY FOR EVENT MANAGEMENT

2. BLE (Bluetooth Low Energy)

This intelligent management and control system from Carttec identifies attendees via BLE signal, assisting venue managers in daily monitoring and observing the performance of manual operations.

Technical applications

1. BLE is an **automatic remote identification system** based on active beacons with **Bluetooth Low Energy technology**.
2. It **identifies event attendees** through an app and obtains relevant information about them such as their location, contact details, etc.
3. A **Bluetooth beacon is placed on the stand** that automatically detects **the application** installed on users' mobile phones. It is small in size and so its presence goes completely unnoticed.
4. You can obtain information such as the **time spent** by users at the stand **and the contact details** of people who have spent a certain amount of time in the area.
5. The application can show attendees information such as **schedules, speakers, nearby hotels**, etc.



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3. HORUSTEC (UWB – Ultra Wide Band)

Horustec is Carttec's indoor traffic management and tracking system, developed from a platform that integrates the latest generation of **ultra-wideband (UWB)** technology with multiple functions that make it an innovative tool, very useful for events, congresses and enclosures.

It locates attendees in **real time**, collecting data on their routes and trajectories, and determines flows, hotspots and peak times in different areas of the venue.

This system can also **monitor other users**, such as cleaning or security personnel, which enables improved interior layout and space management, among other utilities.

What can we analyse?

1. **Horustec** lets you **know how many users are in each area of the site and their position** at any given time.
2. Possible formation of **crowds** in confined spaces.
3. Elapsed **length of stay or immobilisation** of each attendee.
4. Also **other mobile elements**, such as sweepers, the **cleaning route, time of use and daily cleaning time**, as well as the monitoring of elements such as bathroom soap, with the operator being able to know even when it runs out.
5. It is ideal for **medium-sized events or fairs**.



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What services does Horustec offer?

1. Customisable **alert** creation:

- When a **person stands still** in one place for a long period of time, Horustec sends a notification to the person in charge.
- If the **maximum number of attendees** at a stand or in a certain area is exceeded, an alert is generated.
- When the **battery is running low**, an alert is generated.

2. It collects **relevant information for exhibitors** on:

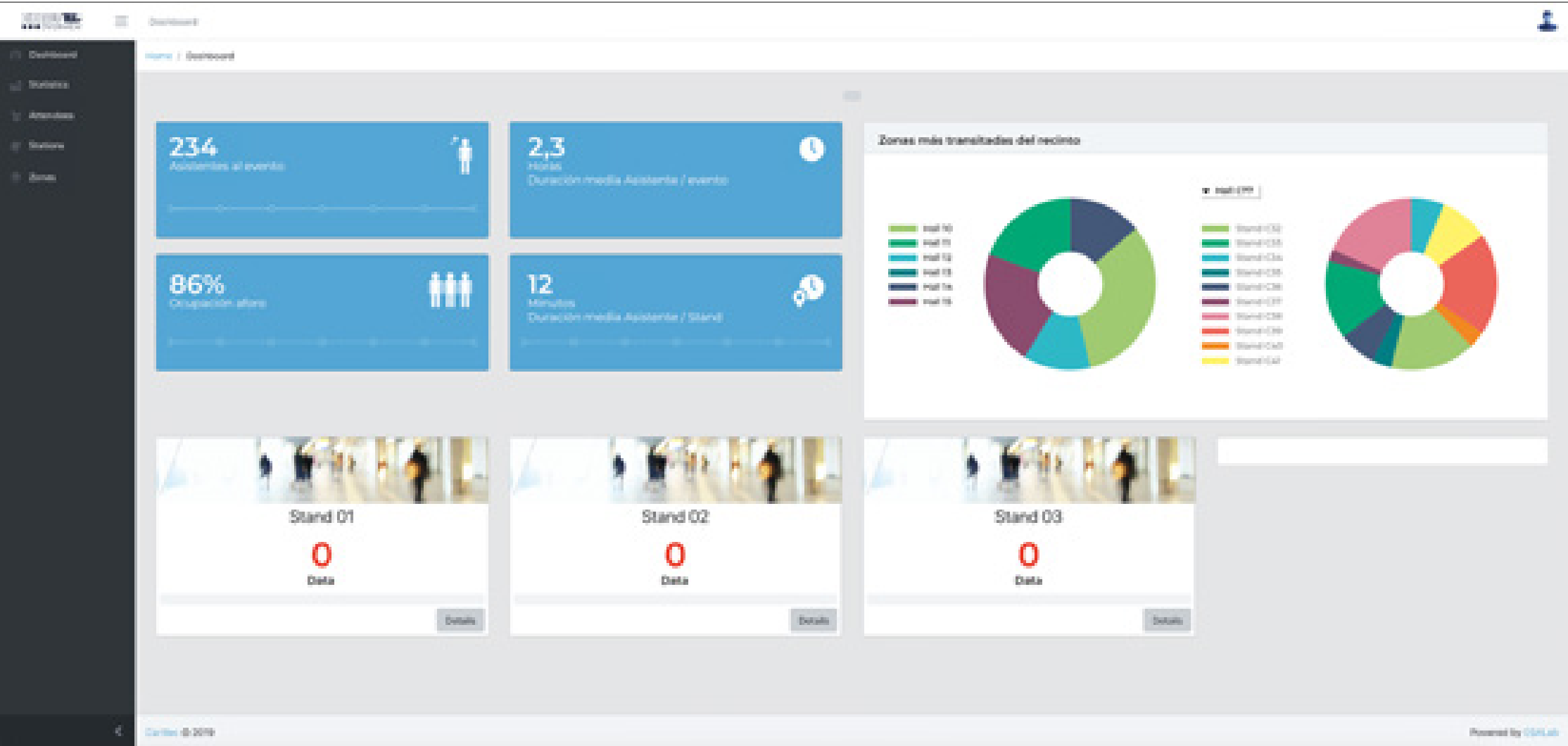
- **Users who have visited the stand** (Date, time, group and duration of the visit).
- **What other stands of other exhibitors the attendee has visited**, to find out their interests.

3. It collects **relevant information to the fair itself** on:

- Heat maps
- **Number of event attendees** at an overall and hall level.



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1. CAPACITY CONTROL BY CAMERAS MOUNTED AT HEIGHT

Description

Nowadays, **capacity control** has become a first order necessity. Any public space is **susceptible to crowds** and must be controlled both for the **peace of mind** of the users who move around in these spaces and for the **safety** produced for the enclosure staff.

The capacity control **cameras** are placed above the enclosure entrances, and from there in a synchronous fashion, they **count each person** who enters the interior, subtracting those who leave. These devices send information to the **screens** placed on the outside, which indicate whether it is possible to enter or not **according to the influx that has been recorded** so far and **considering the capacity limitation** determined.

The user clearly understands whether or not he/she is **allowed to enter** or not with a **traffic light** that appears on the screen: **green**, when the capacity is still less than that established in the event area and **red** when at full capacity and, therefore, he/she must wait to be able to enter. In addition, it emits an **acoustic signal** if someone enters when the enclosure is at full capacity.

In turn, it provides **precise** information on **the number of people inside** at that time and the number of people needed until the maximum permitted capacity is reached.



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Components

1. Screen. Screen at the entrance of the establishment that, in real time, indicates if the user can go in and provides information on capacity. It has different interfaces to the top version which can be customised by the customer.

2. Cameras mounted at the height. Camera placed over the entrance of the space where you want to measure and control capacity. It has an alarm that emits an acoustic signal when the restriction on passing through is not complied with.

Alternatives for placement at access points

Screens showing the public the status of capacity can be located at different access points using different supports:

1. Traditional monitor placed on the wall or suspended from the ceiling, displaying the traffic light application.

2. Monitor or tablet fitted into the Carttec Handstec hygiene station, which incorporates a dispenser for water-alcoholic gel, wipes and gloves, as well as a space reserved for disposing them. The traffic light application would appear on the screen in the same way.

3. Tablet fitted on a **pedestal**.

Main features

1. **Ethernet cable** operation
2. **Simultaneous and synchronised control** of several doors.
3. It is placed in the **centre of the entrance**.
4. **Control of people entering and leaving** the establishment, obtaining the total capacity of the enclosure.
5. **Height range** between 2.3 m and 3 m
6. **Width range** about 2 m
7. **Acoustic signal**.
8. **Easy installation**.
9. **Own software**.
10. **Efficiency between 92% and 98%**
11. Option: Several enclosures.



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2. SOCIALTEC

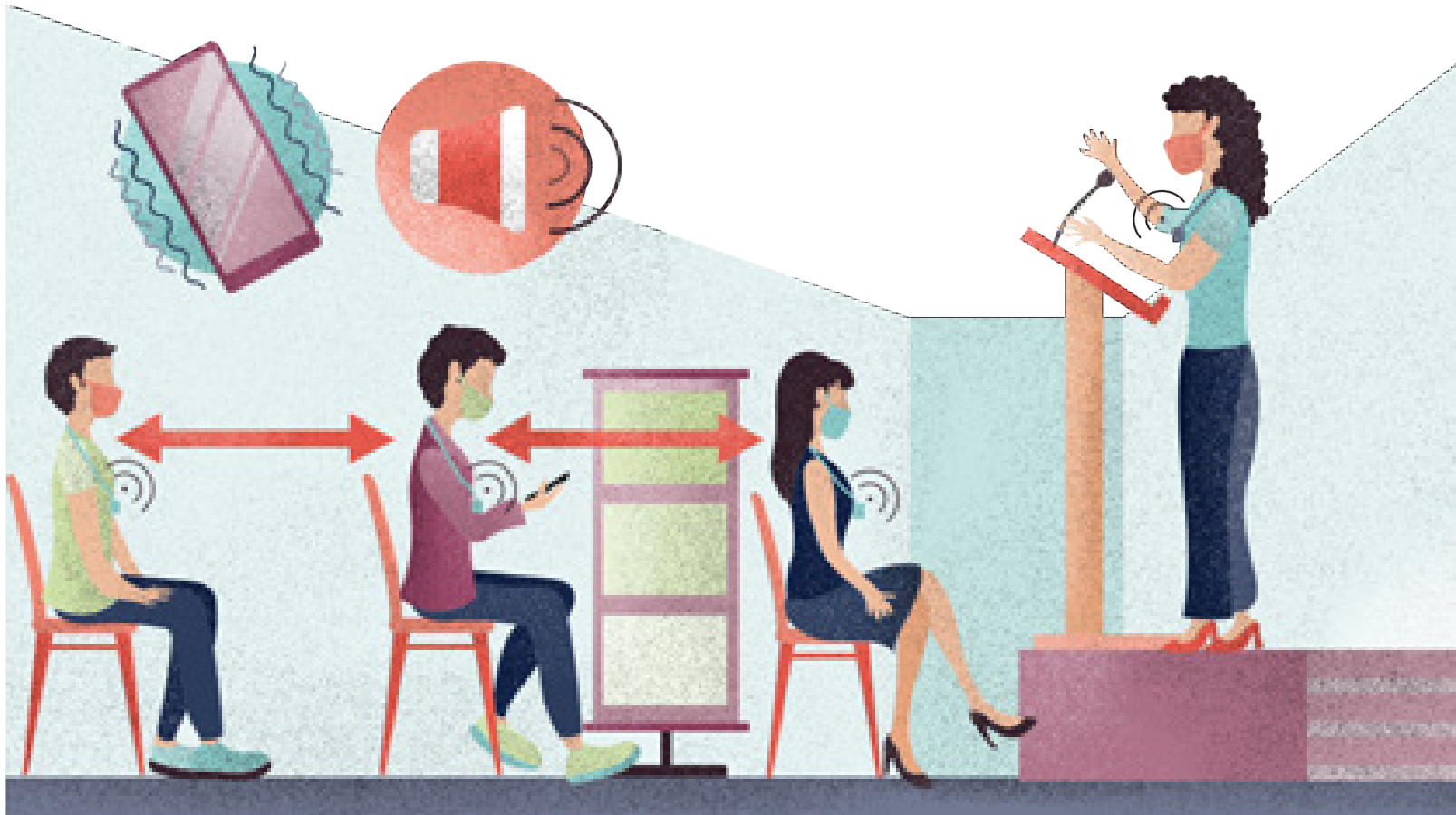
Introduction

Horustec is a platform that integrates state-of-the-art ultra-wideband (UWB) technology with various functions that make it an innovative and powerful tool, very useful for enclosures, congresses, exhibitions and events.

Faced with new circumstances, **Horustec** evolves to adapt to the situation at hand. Hence **Socialtec** was created, a technology that is concerned with the **control of the capacity of establishments** and, especially, with **social-distancing** compliance.

By means of **beacons**, it enables us to know where **people are** and the total capacity in real time within the established area guaranteeing peoples' peace of mind and security.

Socialtec adapts to any space where it is necessary to **control crowds**: fairs, events and entire enclosures.



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Description

It is a **localisation system**, focused on the prevention of the spread of infectious diseases, which are transmitted at a determinable distance between people or, directly, by physical contact.

This being its objective, the system bases its operation on the **use of a device**, which is provided by the enclosure during the user's stay and must be carried by them. This device **alerts** the user, by **acoustic** means and by **signals** given off as **vibrations**, in the event that he/she is at a **distance which is less than the safety distance** away. The parameters can be custom configured.

It is also possible to **register the incidences and approaches** that occur between users, in order to carry out **propagation and/or behaviour and mobility studies**. This system guarantees, technologically, that the current safety regulations are respected in order to prevent the spread of these diseases.

Carttec's **Socialtec** has an **interface** that allows you to see in real time the **locations** of each person, as well as the **total number** of people in the particular room or area at any given time. In addition, it **facilitates the configuration** of the devices so that **people in the same environment, such as families or work teams**, can be grouped together so that the system recognises these approaches as habitual and does not issue the corresponding alerts.



Anchor



Tag

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Coordinating capacity

1. **Socialtec**, has a software interface that can be projected on a screen placed at the entrance of the enclosure, to inform customers of the capacity and whether they are allowed to pass or not.
2. Its simple interface indicates you can pass with a traffic light: green allows access and red informs you that the capacity is full and that you must wait to enter.
3. It also indicates the total number of people allowed and people present at that time inside, giving customers the peace of mind that they will carry out their purchases with the utmost safety and at the recommended social distance.

What can Socialtec analyse?

1. **Real-time location** of users with an accuracy of 20 cm.
2. **Storage of historical** user behaviour and incidents.
3. **Validation of compliance with the regulations** in the enclosure, either to maintain distances or maximum permitted capacity.

What services does Socialtec offer?

1. The staff has access to control the capacity and to see the movements of users, which will appear **differentiated in the software**.
2. Socialtec has an **acoustic warning**, which alerts the user **when they are not respecting the established distance**.
3. Beacons are only activated within a **set perimeter**, which can be **custom configured** on a space-by-space basis.
4. A **configuration of beacons in pairs**, so that the user can be accompanied and an acoustic signal is not emitted due to the proximity of such companion.

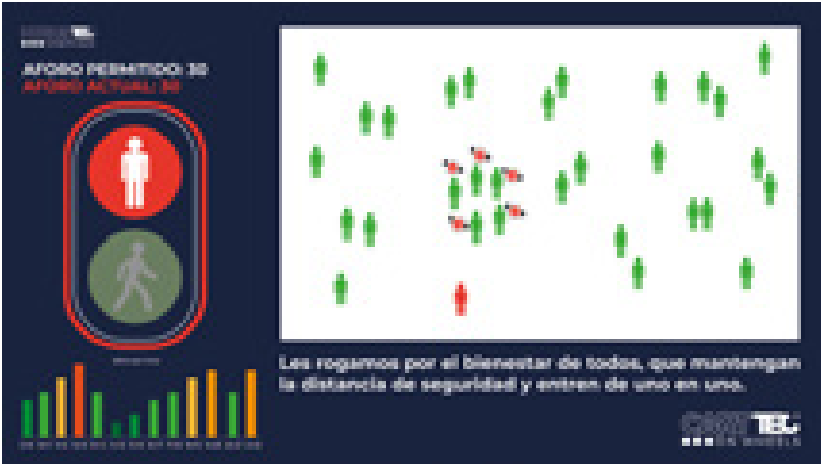
Benefits

1. Avoids confrontation between employees and users.
2. Avoids confrontation between security staff and users.
3. Real time capacity control, in a precise way and not through estimation as carried out by the other currently operational systems.
4. Control of the maintenance of social distancing.
5. The peace of mind of attendees is assured.
6. Establishments do not need signage on the ground about the distance allowed.
7. Prevents overcrowding.

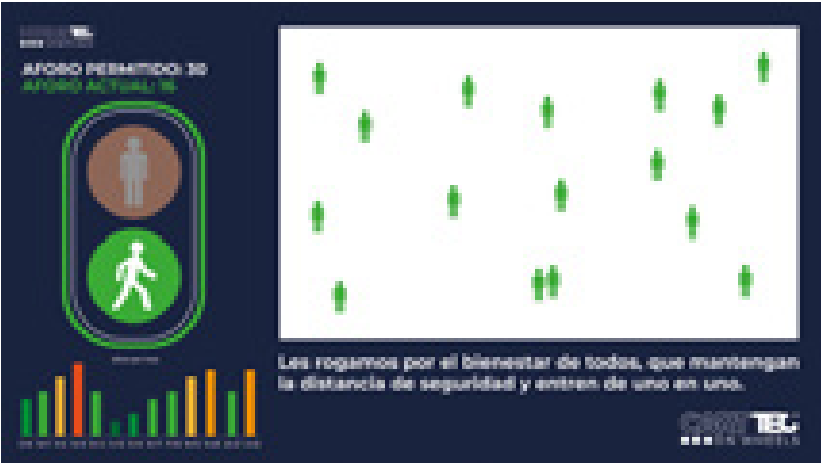
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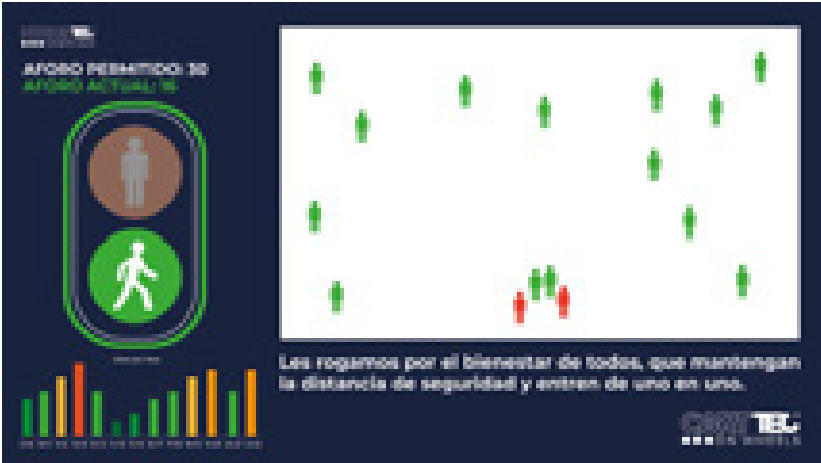
1. Full capacity



2. Displayed alert



3. Paired beacons for family members



4. Beacon pick-up and delivery area

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3. THERMAL CAMERA FOR TEMPERATURE CONTROL ACCESS

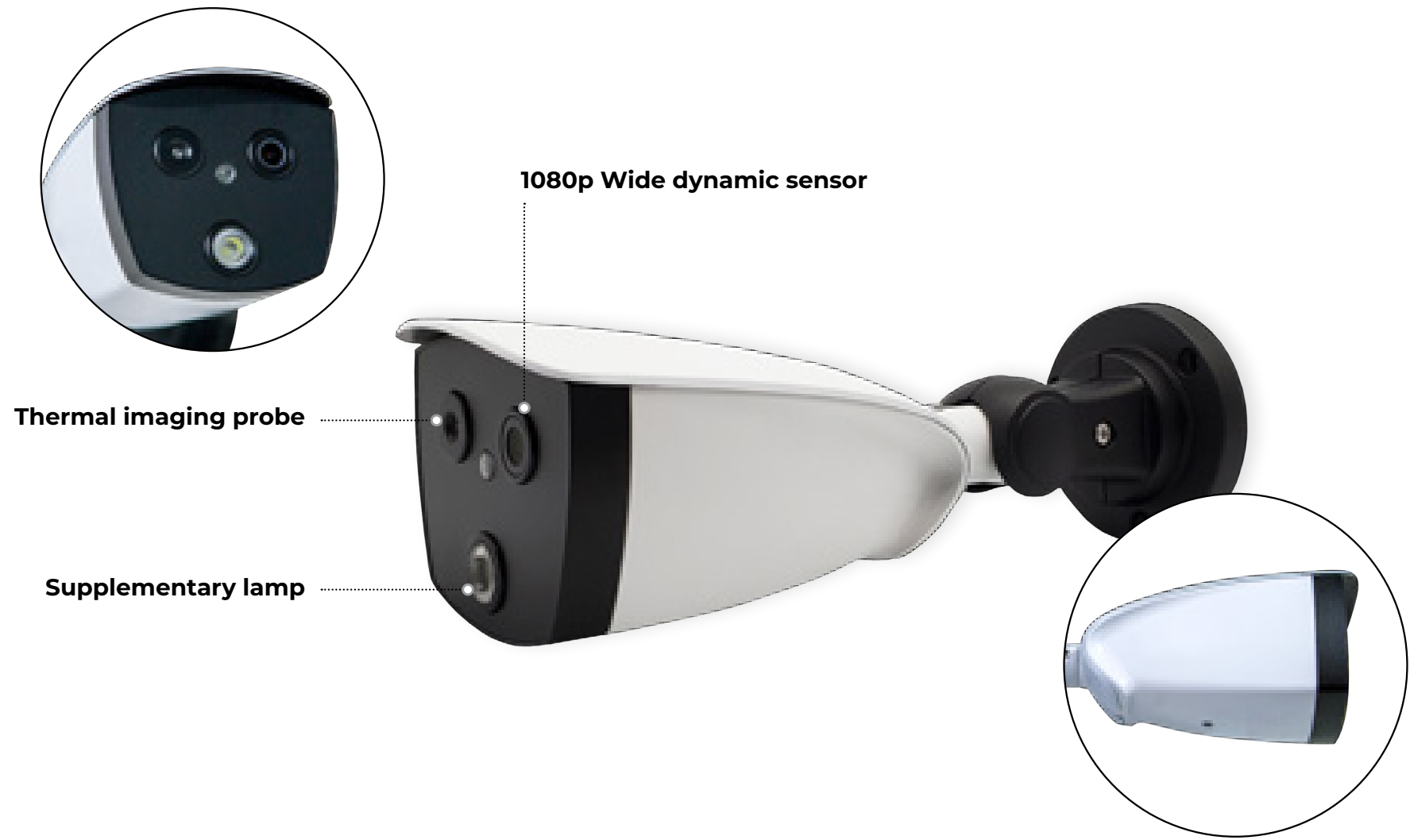
Temperature detection camera

Socialtec can include a camera to be installed at the entrance of any space that measures the body temperature of the people within its field of vision.

1. It allows to measure the temperature of several people at the same time, with a detection of 30 users per image.
2. It measures the temperature with a margin of error of less than ± 0.3 degrees.
3. It sets off an alarm on the control computer in case that any user is showing signs of fever.
4. The temperature is detected instantly and discreetly so that the flow of customers is not affected at the entrance of the establishment.
5. It allows to measure the temperature of the face, excluding other sources of heat and avoiding misinterpretations.
6. The optimal distance for temperature detection is 3 metres.
7. The real-time data from the different access points can be viewed from the control station.
8. The data collected by the camera is highly accurate and can be processed at a later time.
9. Quick Installation. It features an integrated perimeter intrusion system and leading thermal image processing technology: Adaptive AGC, DDE, DNR 3D.



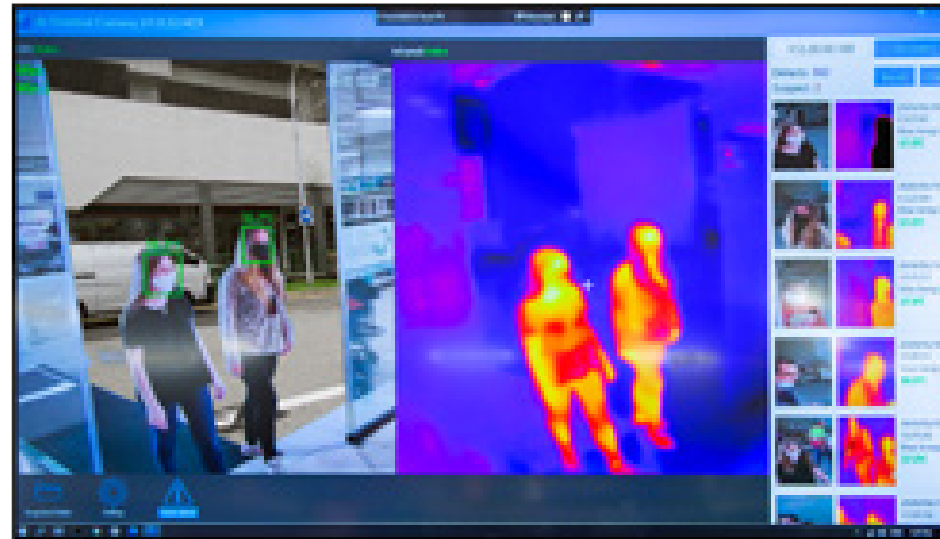
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General functions

1. The embedded depth learning algorithm supports the function of face capture, which can detect and capture 20-30 faces simultaneously.
2. Support for face tracking and scoring, multi-frame recognition, automatic filtering and output of the optimal face, and reduce repeated capture.
3. Built in 50,000 Face database.
4. Support H.265+ /H.265 / H.264 +MJPEG dual coding, Three-code stream
5. Support ONVIF, GB/T28181 and other network protocols, networking easier.
6. A single IP scheme, rich network expansion ability and easy access to various video surveillance platforms.
7. Open system, can provide Linux, Windows SDK development package and CGI protocol. Rapid secondary development.





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Carttec On Wheels



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