



LIGHT-SPEED
Artificial Intelligence for Life

SOLUTIONS FOR WINTER SPORTS

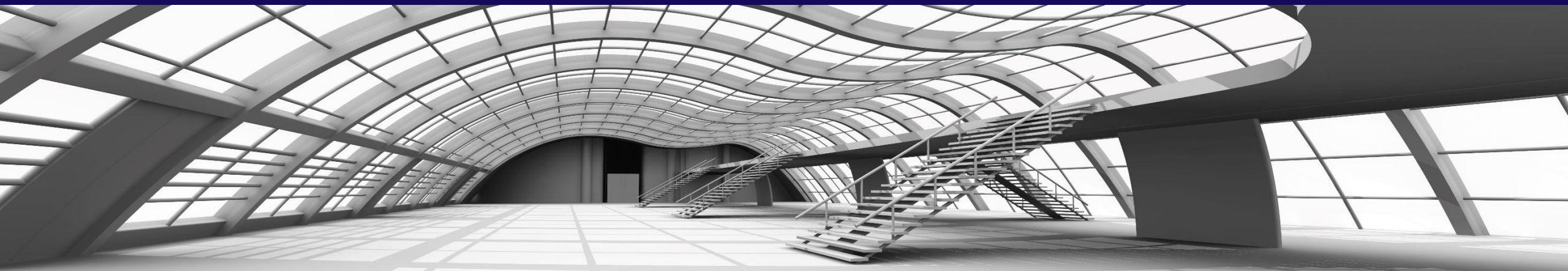
The monitoring of
ROPEWAYS and
SPORTS via
ARTIFICIAL
INTELLIGENCE

MADE IN ITALY 





THE LIGHTSPEED COMPANY



WHO WE ARE

- We are an innovative startup dedicated to research and development in Computer Vision, IoT and Artificial Intelligence.

WHAT WE DO

- We started the activity in the motorsport sector, to support or replace marshals through artificial intelligence applied to computer vision.
- We develop innovative software and solutions to support or replace human supervision in the monitoring of people, vehicles, infrastructures and the environment in order to improve safety, decorum, quality of life and environmental impact in public areas, means of transport, sports facilities.

THE ETHICS OF ARTIFICIAL INTELLIGENCE

- The algorithms that make decisions and produce information are not influenced by ethnicity, gender, class or ability.
- The system makes decisions in line with human values in recognizing dangerous situations to protect people's health and safety.
- Customers know the logic with which the algorithms make decisions and can modify it if appropriate.

PRIVACY PROTECTION

- The processed data describe the behavior of individuals but not the identity or sensitive data.



**IT ALL STARTED ON THE TRACK, WHERE REPLACING FLAG MARSHALS WITH
ARTIFICIAL INTELLIGENCE WE HAVE REDUCED THE RISK OF RUN OVERS**

EYE-TRACK



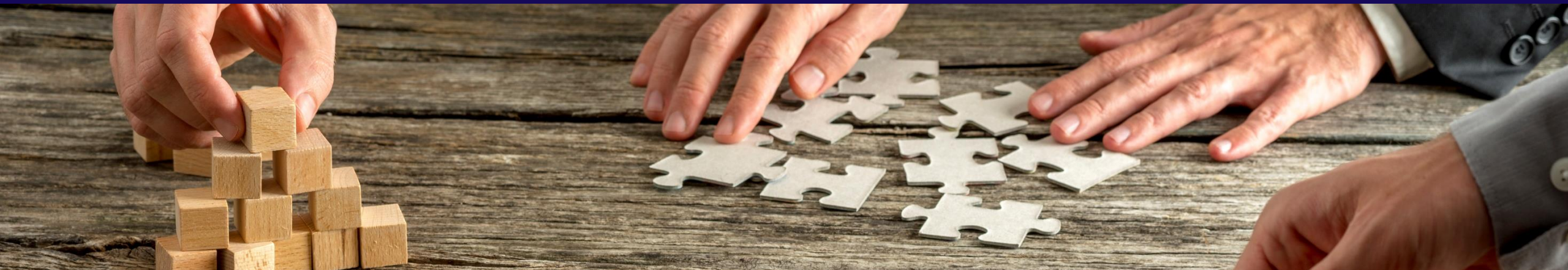
THE NINE TIMES WORLD CHAMPION TESTED OUR SAFETY SYSTEM

TONY CAIROLI

9 TIMES WORLD CHAMPION

RIDE SAFE WITH EYE-TRACK





WHAT IT DOES

- Automatically processes images from any existing cameras.
- Transforms camera images into metadata that describe the static and dynamic behavior of people and infrastructure.
- Generates automatic notifications and alarms when situations of interest or critical events for safety occur.

THE MANAGEMENT CENTER

- Through its own cloud infrastructure and specialized personnel, it performs the remote monitoring and management of the systems and the IoT network.

CHARACTERISTICS

- It uses an edge device, a Videosensor, not a PC with software.
- It provides information that human operators would not be able to obtain continuously in real time.
- It recognizes much more complex events than any smart camera on the market can handle.
- It creates augmented reality images highlighting the extracted data and the identified critical issues.
- It assists human operator supervision.
- It is factory customizable in order to detect new events and extract new information from cameras images.
- It can be integrated with the Customer's information system.



CHAIRLIFT SURVEILLANCE



WHAT IT DOES AT BOARDING

- Detects passengers sitting incorrectly or fallen.
- Check that the safety bar has been lowered.
- Measure the lateral sway of vehicles at the entrance of the station.
- Detects people in areas where access is not allowed.
- In the event of an alarm, activate a light and acoustic signal.
- It produces statistical data describing passenger numbers, stature and behavior, useful for prevention.
- Stores alarm events for a preconfigured time.

WHAT IT DOES AT UNBOARDING

- Detects stopped or fallen passengers in the unboarding area, or at the exit.
- Check that the safety bar has been lifted.
- Measure the lateral sway of vehicles at the entrance of the station.
- Detects people in areas where access is not allowed.
- In the event of an alarm, activate a light and acoustic signal.
- It produces statistical data describing passenger numbers, stature and behavior, useful for prevention.
- Stores alarm events for a preconfigured time.



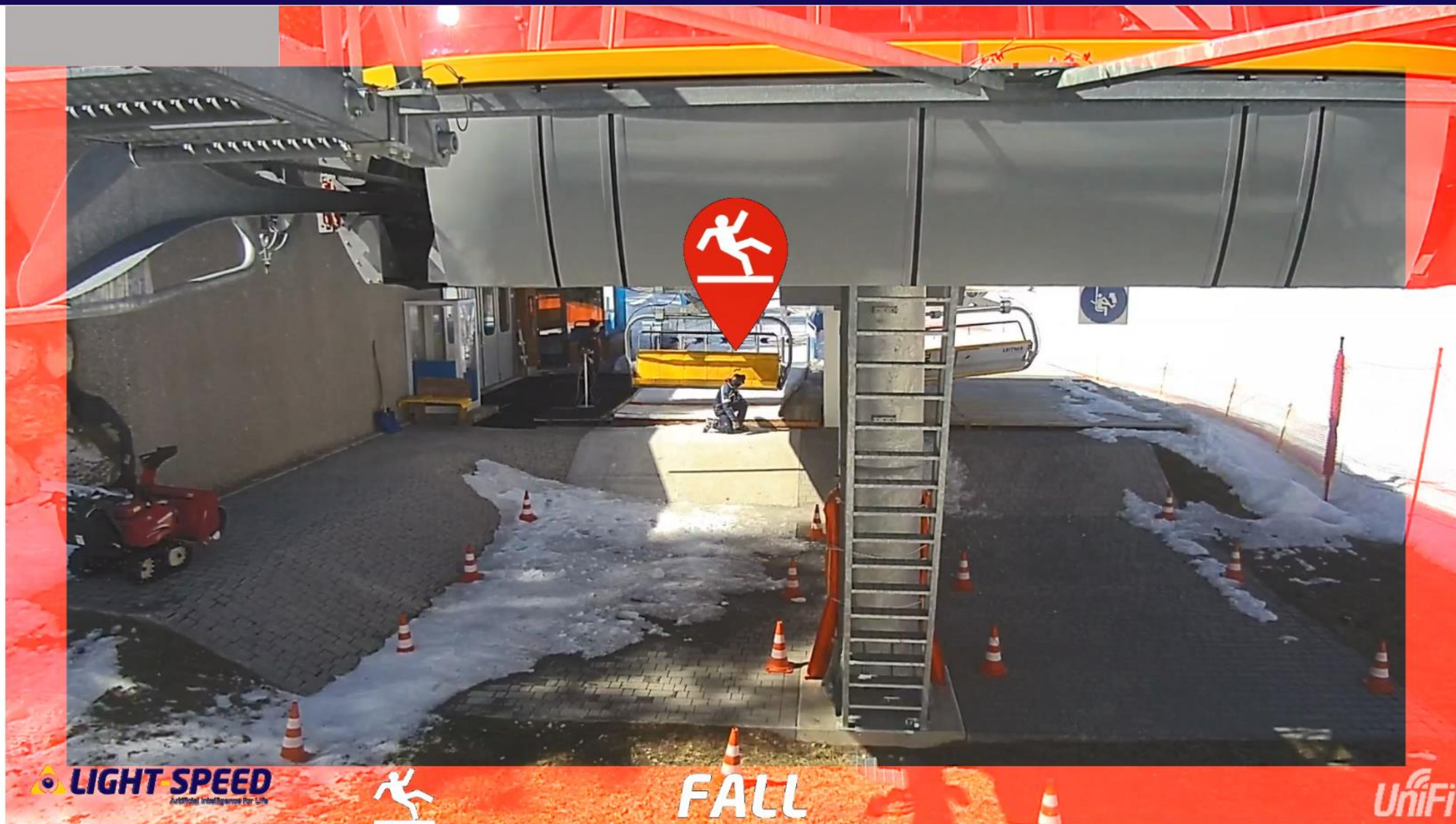
CHAIRLIFT MONITORING – ALARM EXAMPLE



FALL

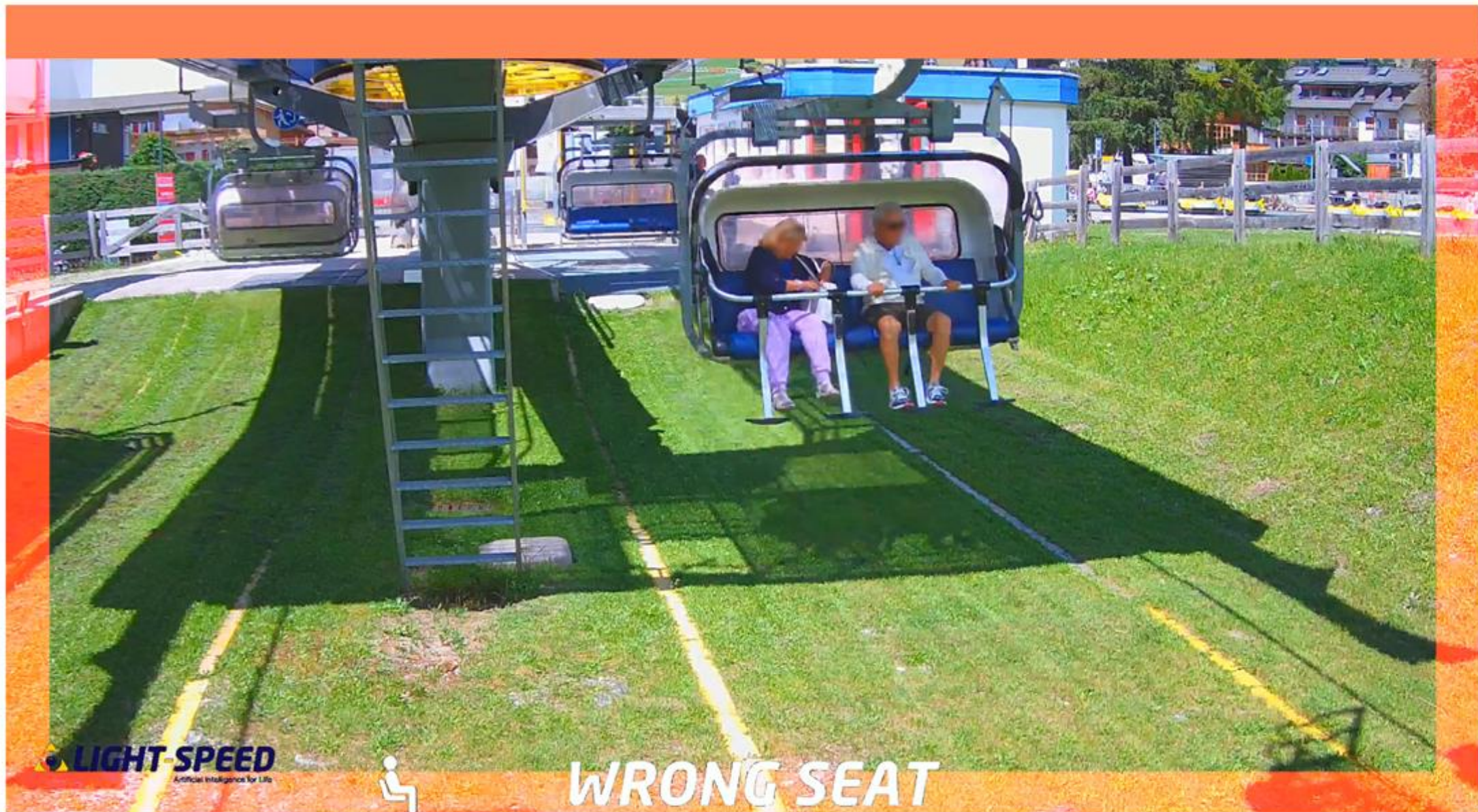


CHAIRLIFT MONITORING – ALARM EXAMPLE





CHAIRLIFT MONITORING – ALARM EXAMPLE





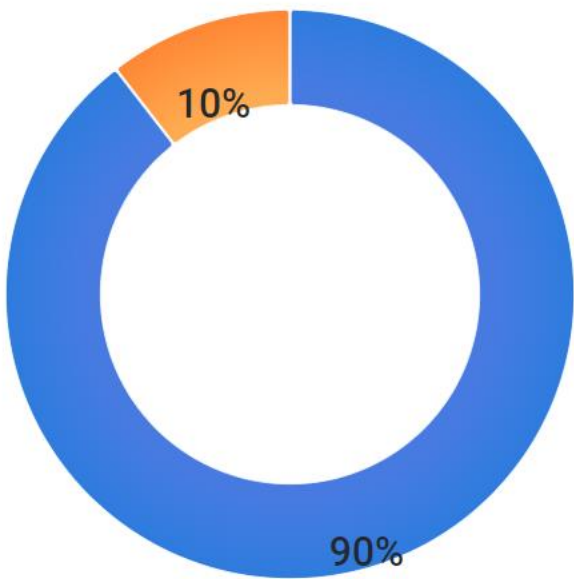
CHAIRLIFT MONITORING – ALARM EXAMPLE



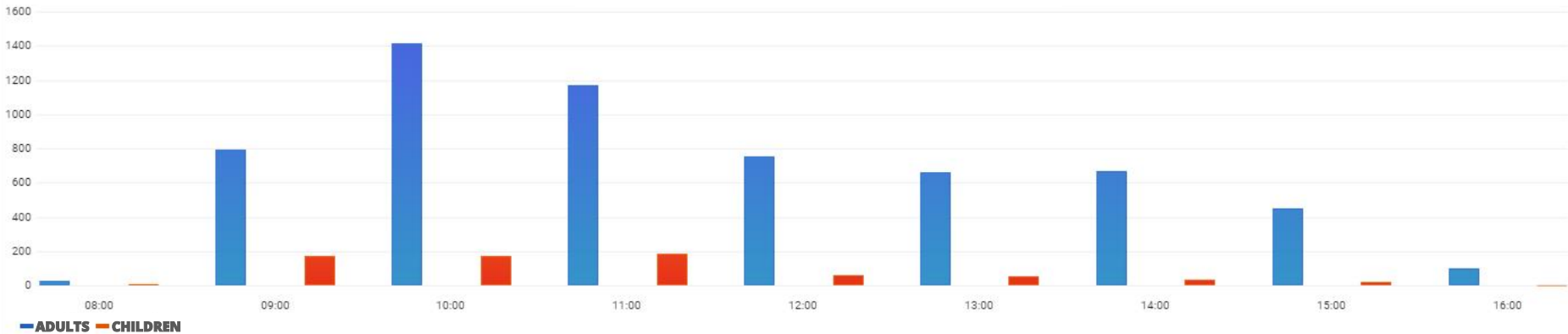


CHAIRLIFT MONITORING – REPORTING EXAMPLE

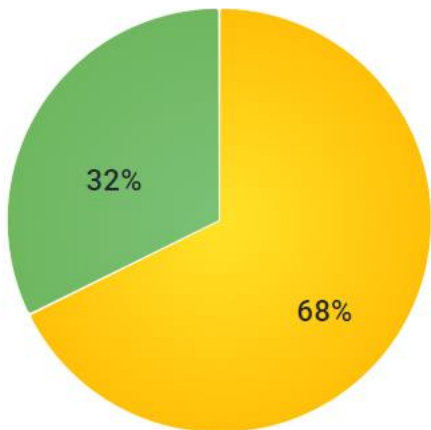
ADULTS / CHILDREN



PASSENGERS

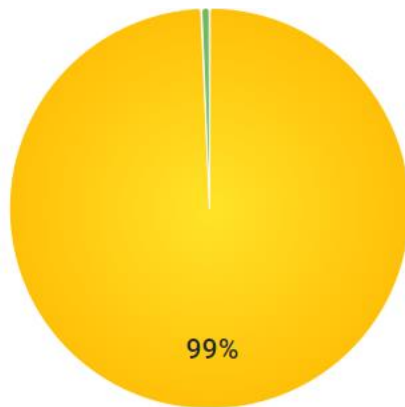


POSITION IN WHICH CHILDREN SIT



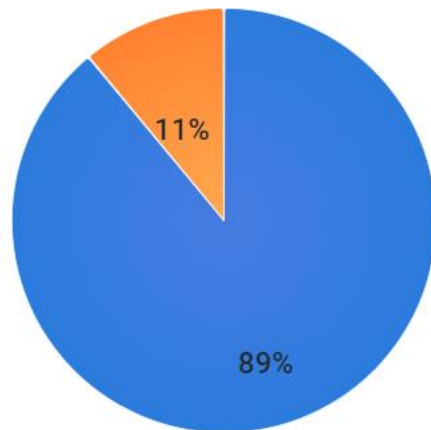
SIDEWAYS IN THE CENTER

POSITION OF PEOPLE IN RELATION TO THE FOOT REST



RIGHT
WRONG

ACCOMPANIED CHILDREN



ACCOMPANIED UNATTENDED



CABLE CAR STATION MONITORING



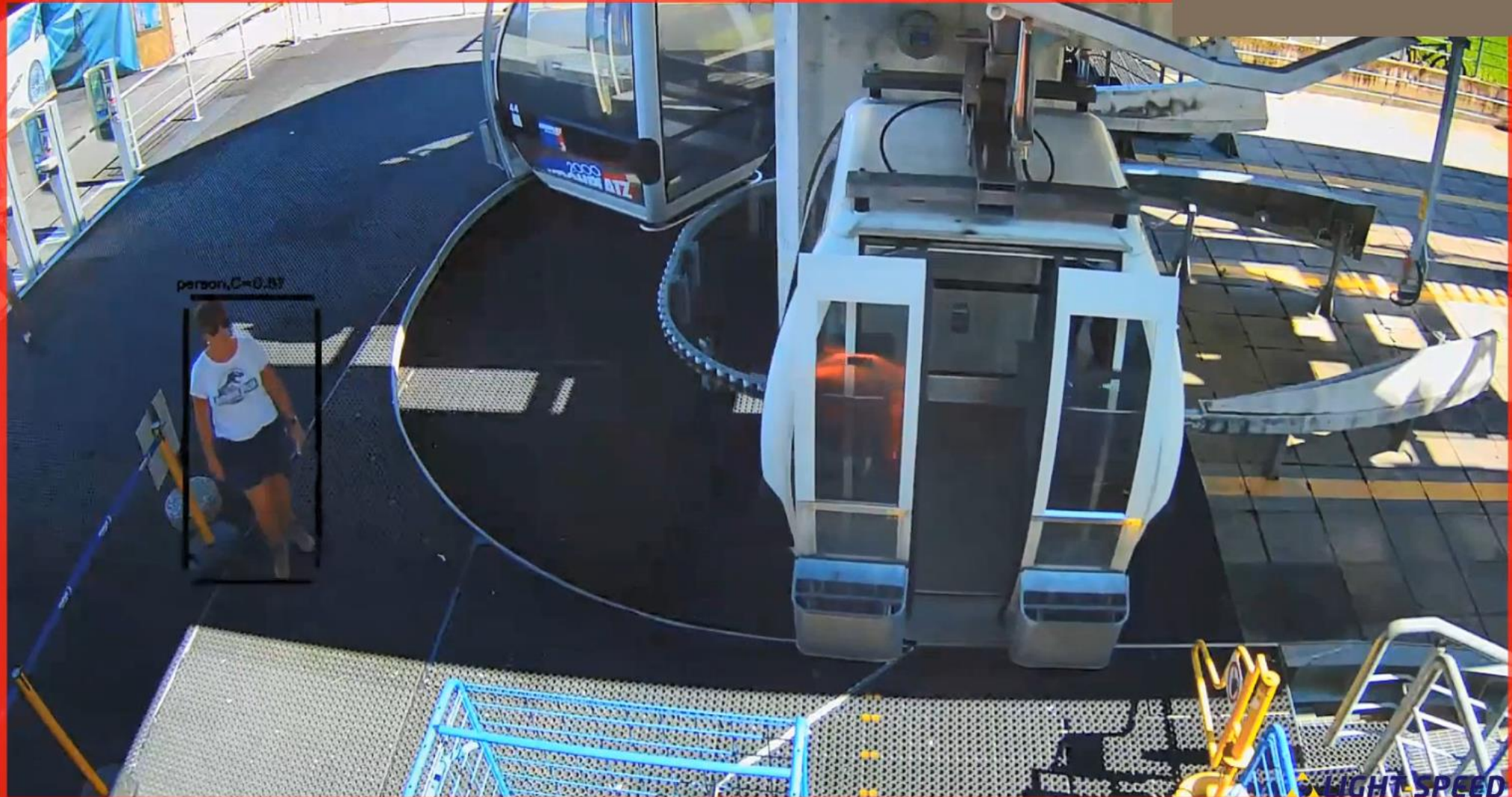
WHAT IT DOES

- Upon boarding and unboarding, it detects fallen passengers or in areas where access is not allowed.
- Measure the lateral sway of the cab at the station entrance.
- Checks sure the doors close.
- In case of alarm, activate a light or acoustic signal.
- Produces statistical data describing passenger numbers, stature and behavior, useful for prevention.





REMOTE AREA MONITORING - ALARM EXAMPLE



RESTRICTED AREA

LIGHT-SPEED

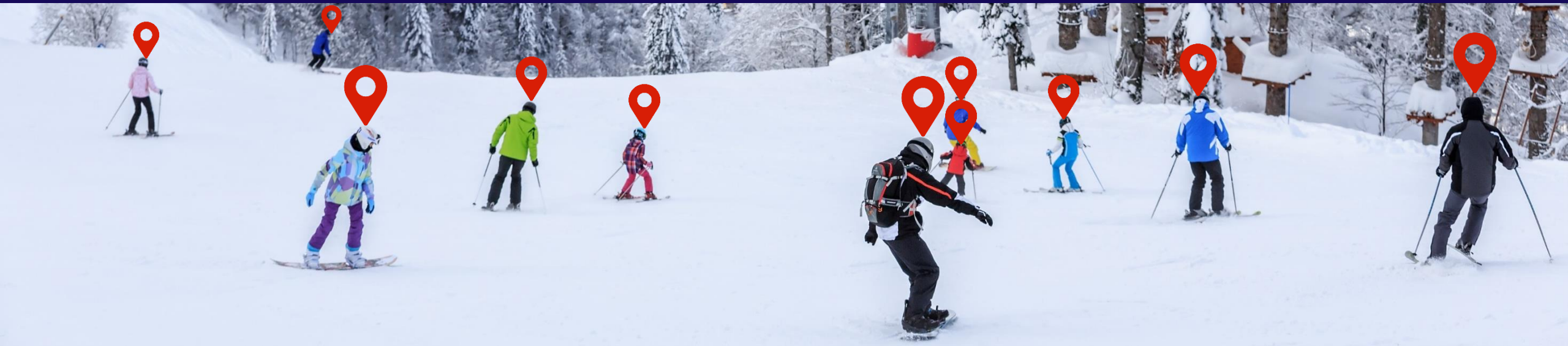


DOOR CLOSING MONITORING - EXAMPLE



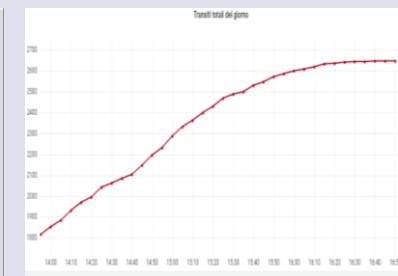
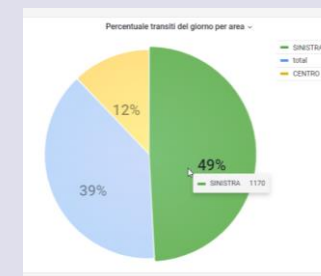
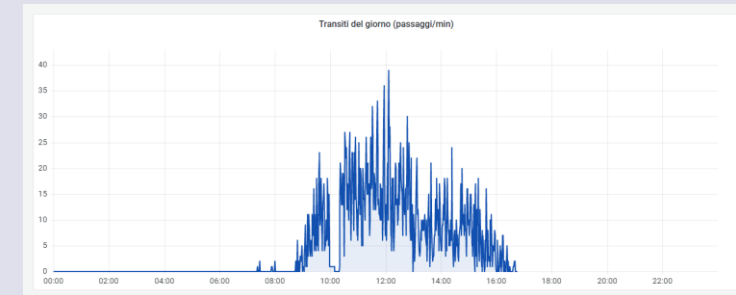


FLOW MONITORING OF SKIERS



WHAT IT DOES

- Measure in real time: track occupancy rate, average speed and amount of skiers passed in the hours of the day.
- Help the manager to know the use that is made of each ski slope.
- With a single camera it can manage multiple tracks, for example near a junction or an input.
- It provides a dashboard of indicators that can be viewed from smartphones and PCs.
- Store all data on the cloud for further processing.





HOW IT SIGNALS A DANGER

- Light signal with protective mattress
- Siren



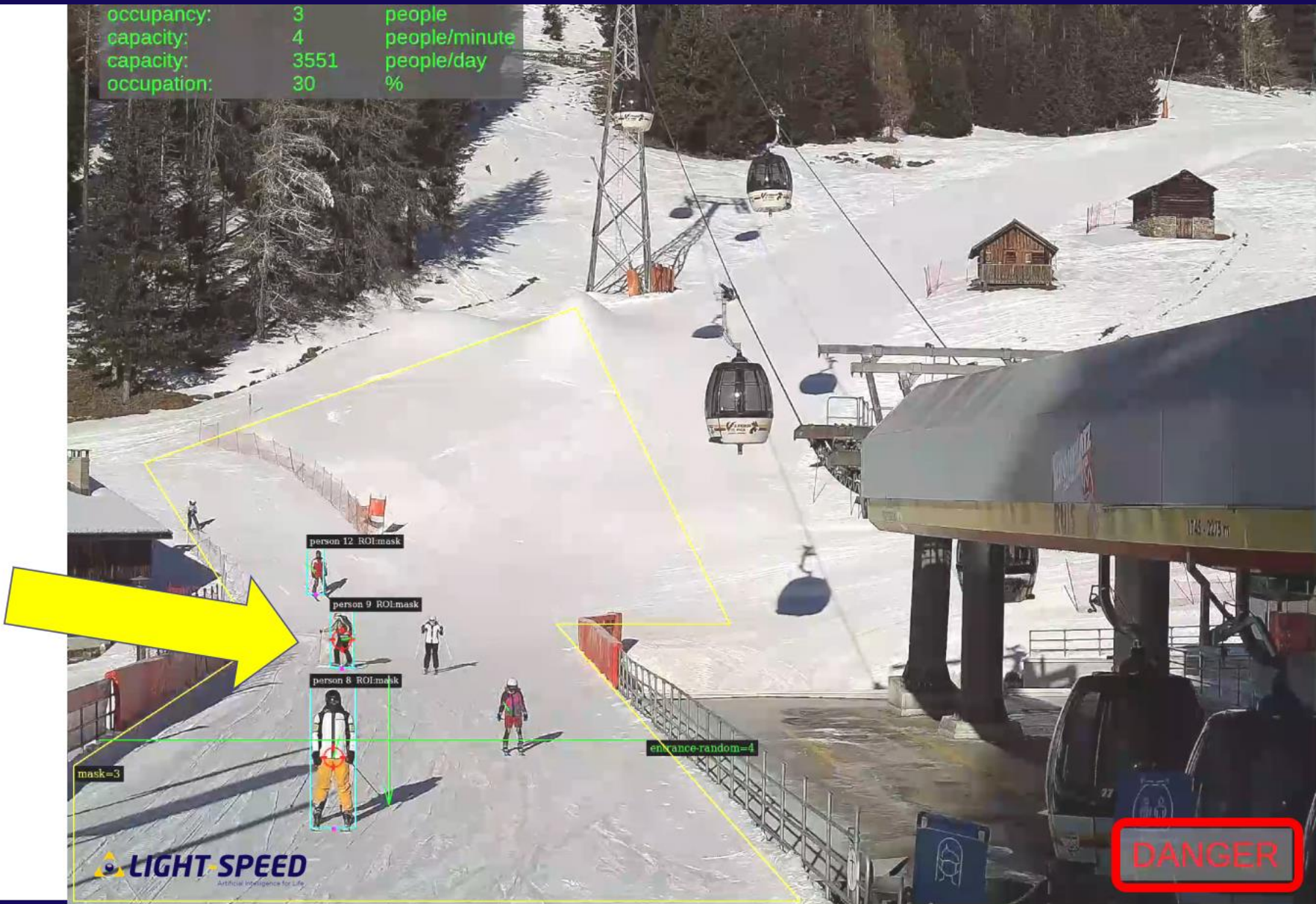
WHAT IT DOES

- Detects people standing in dangerous or blind spots and.
- It detects fallen people.
- Signals to those who stop at dangerous points the need to move to a safer point (e.g. at the edge of the track or where the ski slope is wide).
- It signals to skiers who come the presence of people stationed in dangerous points.
- Streamlines bottleneck traffic and reduces the risk of accidents.
- Notify every event at a checkpoint.





SKIER FLOW MONITORING AND HAZARD DETECTION - EXAMPLE





FLOW MONITORING OF CYCLISTS



WHAT IT DOES

- Measurement in real time: track occupancy rate, average speed and amount of cyclists passed in the hours of the day.
- Provides an estimate of the age of cyclists.
- Help the manager to know the use that is made of each track.
- It provides a dashboard of indicators that can be viewed from smartphones and PCs.
- Store all data on the cloud for further processing.





SKI LIFT AND CARPET LIFT SURVEILLANCE



WHAT IT DOES

- Detects people who have fallen from a ski lift or carpet lift.
- Assist surveillance staff quickly identify dangerous situations.
- Reduces the risk of serious accidents.
- Notify every event at a checkpoint.

HOW IT SIGNALS A DANGER

- Light signal with protective mattress
- Siren





THE TECHNOLOGICAL ARCHITECTURE



THE VIDEOSENSOR

- The Videosensor is placed in a cabinet at the station (edge mode) or in a remote data center (cloud mode).
- The Videosensor is scalable to process from 1 to 30 video streams.
- The remote monitoring and management of the Videosensor are performed through a dedicated cloud infrastructure.
- The Videosensor controls audible and visual alerts or variable message panels to provide feedback to users.



OPEN TO INTEGRATION

- All information processed by the Videosensor is available via API application interfaces that allow integration with third-party information systems.
- The Video sensor has specific APIs for system monitoring and remote management.
- Additional APIs can be developed upon request to facilitate integration with third-party systems.



THE "PRIVACY BY DESIGN" PRINCIPLE IN LIGHTSPEED TECHNOLOGY



PRIVACY IS AN INTEGRAL PART OF TECHNOLOGY

- It neither collects nor stores biometric data.
- It is entirely developed in-house by Lightspeed Srl.
- It only collects data strictly necessary for processing.
- Keep data only for the time strictly necessary for processing.
- Access credentials protect your data from unauthorized access, disclosure or use.
- Collects anonymized data.
- Configuration and maintenance operations are performed via encrypted VPNs to protect your data from unauthorized access, disclosure or use.
- Images are anonymized immediately to prevent direct identification of individuals.
- Includes automatic restart techniques in case of unexpected malfunctions.
- "Privacy by default" settings.



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CERTIFICAZIONE DI QUALITÀ

ISO 9001:2015

