

INDRA INSTALLS A SYSTEM FOR MONITORING PEOPLE'S TEMPERATURE AND FACE-MASKS AT ACCESS POINTS TO THE BUENOS AIRES TRAIN NETWORK, TO INCREASE SAFETY AND SECURITY DURING THE COVID-19 PANDEMIC

- **Indra's technology will help protect the general public, prevent infections during the Covid-19 pandemic and maintain the highest safety, operation and quality levels in transport services**
- **The solution is integrated with QR code control, which limits the access to essential workers during the rush hour, as established by Trenes Argentinos (Argentinian Trains), and allows for validating ticket reservations, cross-checking to find out whether the person is an essential worker and granting or refusing access**
- **This project consolidates Indra's position as one of the world's leading companies in smart technology application and urban mobility**

Madrid, February 1, 2021.- Indra, one of the world's leading companies in matters of technology and consulting, has developed an access control system to prevent Covid-19 for Trenes Argentinos (Argentinian Trains), which complements the current access turnstiles with SUBE transport card readers, and integrates body temperature measurement, face-mask control and validation of ticket reservation by means of QR code, in order to lower the infection risk among passengers. During this first stage, this system has been installed in 350 turnstiles, which grant access to the Buenos Aires Metropolitan Area (or AMBA per its initials in Spanish).

With the goal of reducing the amount of infection inside small spaces, such as passenger cars, it is necessary to have greater station/train access control systems so as to guarantee social distancing, safety and security. Thanks to Indra's system, the access turnstiles can be blocked when body temperatures higher than those indicated as healthy are detected or when a person not wearing the mask correctly tries to enter.

The new access control solution is directly connected to the Argentine train database in order to check the QR code necessary to access the AMBA trains at rush hour, restricted to workers deemed essential. Thus, Indra's system makes it possible to confirm the ticket reservation at peak traffic hours, confirming whether the person is an essential worker or not, and denying or allowing them to pass. The solution asks the traveler to show their reservation to a tablet located on top of the access control turnstile, then asks them to stand about 50 centimeters from the device, which measures their temperature and at the same time checks the correct use of the mask, using technology that combines facial recognition with thermal and visible light imaging with ultra-fast temperature controls. Finally, it makes it possible to pay with the SUBE card and pass through.

In addition, sound alerts are activated when access is authorized or denied, together with visual aid for people with hearing impairment. This is how Indra's applied technology streamlines - with great speed and capacity - accurate verification of the status of passengers who attempt to access trains, thus improving safety.

The implemented system, which has been developed in record time, will help to protect citizens and reduce the risk of infection, as well maintaining the highest security, operability and quality of service of the Buenos Aires Metropolitan Area trains, one of the largest railway networks in the world, with more than 200 stations.

The technological device implemented by Indra for the AMBA to control temperature and masks is also suitable for maintaining security measures in any type of location where the capacity level must be controlled, such as other transport stations, airports, hospitals, factories, schools or commercial buildings.

State-of-the-art technology

Indra's technology integrates the access control turnstile validation system with its respective tablet, the station transaction hubs and the switches. The system incorporates an infra-red temperature sensor with thermal imaging technology, which captures different levels of infra-red light and acts as an automatic contactless thermometer, with a maximum of 10,800 measurement points, capable of detecting temperature differences up to 0.3°C and automatically selecting the highest temperature.

The system also combines thermal imaging with state-of-the-art visible light technology, surpassing the speed of the four frames per second (fps) offered by ordinary infra-red technology at 25 fps. It is also equipped with the latest anti-counterfeiting algorithm for facial recognition, against almost all types of fake photo and video hacks.

Thermal imaging technology uses a wide-angle camera that is suitable for monitoring both tall and short people, which can recognize their authentication and easily measure their body temperature.

Investing in innovation

In 2016, Indra equipped the AMBA train network's eight lines with its access control and ticketing technology, with 1,400 turnstiles; 170 disabled entrances; 200 automatic top-up machines for contactless SUBE cards, which are used to access all public transport in the city; as well as 150 on-board validators and 230 on-platform validators, which passengers use to pay their travel fare. The company also supplied 160 in-station transaction hubs and 300 journey inspection terminals.

An AMBA monitoring and control solution, which compiles information from a number of different subsystems and helps improve service management, has also been developed and implemented by Indra. At the time, the technology sped up passenger control and fare collection, while also helping to combat fraudulent use of the rail network. This contract saw Indra strengthen its position as a smart technology supplier for transport in Buenos Aires, where commuter train passengers, who make more than 1.4 million journeys each day, use the company's systems to access the network and pay travel fares.

Indra is one of the main ticketing companies world-wide, with its own product and projects for transport systems such as those in Madrid, Barcelona, Amsterdam, Lisbon, Medellín, Santiago de Chile, Cairo, Kuala Lumpur, Calcutta, Mumbai, St Louis, Austin and Mexico City, among many others.

Its Mova Collect ticketing solutions make it easier to manage the transport system economically and they have a clear impact on citizens' quality of life, by making it simpler and more convenient to access transport, thereby noticeably reducing the time it takes to pay and encouraging inter-modality - the combined use of different transportation systems.

Indra has vast experience in Transportation, with more than 2,500 projects developed in more than 100 cities and more than 50 countries. Indra's renewed product range for Transports, Indra Mova Solutions, covers the entire life cycle of its clients' projects: from engineering and consulting to collection, operation and control, security and communications solutions, plus traveler experience or after-market services. It combines the new digital and integration capabilities, specialization and innovation demanded by the market with Indra's reliability, business know-how, transportation-specific technology, and the unique experience of its team of professionals.

About Indra

Indra (www.indracompany.com) is one of the leading global technology and consulting companies and the technological partner for core business operations of its customers world-wide. It is a world-leader in providing proprietary solutions in specific segments in Transport and Defence markets, and a leading firm in Digital Transformation Consultancy and Information Technologies in Spain and Latin America through its affiliate Minsait. Its business model is based on a comprehensive range of proprietary products, with a high-value focus and with a high innovation component. In the 2019 financial year, Indra achieved revenue of €3.204 billion, with more than 49,000 employees, a local presence in 46 countries and business operations in over 140 countries.