Thales solutions in response to the Covid-19 pandemic

People centred cutting edge technologies

TRANSPORT
PUBLIC SAFETY
BANKING AND PAYMENT METHODS
MOBILE COMMUNICATIONS
The public health crisis that we face as a result of the Covid-19 pandemic remains dynamic and unprecedented.

One of the key challenges the world must address now is to halt the pandemic’s spread and to pin down the virus so as to minimise future outbreaks.

In a world where changes happen ever more quickly, which is both unpredictable and challenging, Thales provides innovative solutions for building a future in which we can all have confidence.
We help government institutions, law enforcement bodies, critical infrastructure operators and firms worldwide to keep their business going and to maintain safety amid ongoing changes and emerging risks.

At Thales our priority is to contribute with our digital technology solutions to raising safety standards and to enhancing people’s lives.

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Solutions in response to the Covid-19 crisis
Solutions to the Covid-19 crisis for transport
The effects of the Covid-19 pandemic have hit the public transport system hard. The fear of contagion and the implementation of new regulations and procedures have resulted in lower user volumes and a shift in user preferences towards other forms of travel such as private vehicles.

All this is having a huge impact on how transport networks work. Operators need to establish the ‘new normal’ and to offer safe journeys, applying measures that ensure compliance with social distancing and allow detection of passengers who may be ill.

Restoring user confidence is a key goal.
Returning to normality involves applying technological solutions based on digital safety allowing us to restore confidence, recover occupancy and revenues and increase the system’s resilience.

Transport operators are in the front line against the pandemic. They need to supervise and apply health measures and adapt their services accordingly.

Thales has various solutions which either individually or as part of higher-level systems allow fast implementation in metros, railways, ports and airports without compromising public privacy rights.
Control of passenger flow and social distancing

CHALLENGES

• Determining how many people are on the platform and being able to limit access to the train according to its maximum permitted capacity
• Sending alerts if social distancing is not maintained
• Indicating to passengers on the train which seats are free

RESPONSES

• Smart video analytics system measuring passenger density on board and on platforms, warning if maximum capacity is exceeded and allowing the distance between passengers to be measured
• Thales NAIA solution supervises passenger flow patterns in stations and on platforms, facilitating optimal planning
• Cost-effective and non-intrusive: easy implementation, using existing cameras

BENEFITS

• Supervising social distancing: warning when passenger density reaches a predefined threshold. Crowd alerts
• Enhancing safety by regulating passenger access to platforms and trains
• Managing train frequency according to the required social distancing
Checking use of face masks

**CHALLENGES**

- **Allowing access** only to passengers wearing face masks
- **Access control** for private infrastructure (e.g. control centres, plant rooms, etc.)
- **Checking whether passengers** on trains and platforms are wearing face masks and alerting if this is not the case

**RESPONSES**

- **LFIS (Live Face Identification System)** is Thales’s state-of-the-art biometric facial recognition solution
- **Supervision of whether passengers are wearing face masks**, monitoring mask-wearing at the same time as identifying individuals
- **Access control** letting people through if they are wearing a mask

**BENEFITS**

- **Enhancing passenger safety**: compulsory wearing of face masks
- **No-mask detection** in access control, on platforms and on board
- **Preventing ill employees from mixing** with colleagues in critical operating areas
- **Tool for managing the pandemic crisis period**
Body temperature detection and access management

CHALLENGES

- Health control measures
- Compliance with new rules and regulations
- The Covid-19 epidemic involves limiting access to indoor areas for employees and visitors only
- In airports, stations and transport terminals there is a need to easily identify infected individuals among passengers, crew and staff on arrival and departure

RESPONSES

- Contactless temperature control using thermal imaging cameras
- Supplementing existing access controls and site protection by detecting and flagging potentially feverish subjects
- Thales ThermoBox system. High-precision thermal cameras
- Preconfigured secure server: for connecting to a screen and displaying video imagery and the alerts generated
- Logging of alerts and statistics

BENEFITS

- Fast, smooth controls
- Safety for guards and reception staff
- KPIs and live reporting
- Greater sense of safety
- Quick plug & play installation
- Adaptable solution for meeting needs beyond the Covid-19 crisis
## Resilient operations and systems

<table>
<thead>
<tr>
<th>CHALLENGES</th>
<th>RESPONSES</th>
<th>BENEFITS</th>
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</thead>
<tbody>
<tr>
<td>• Keeping systems fully operative during the crisis</td>
<td>• <strong>TIRIS system.</strong> Predictive maintenance for all equipment types</td>
<td>• Resilient infrastructure</td>
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<tr>
<td>• Trackside staff safety issues. Non-availability of resources for safety reasons</td>
<td>• <strong>High operational availability</strong> at the control centre through integration, operational assistance and system automation. Redundant infrastructure. Control centre backup</td>
<td>• Avoiding unplanned track work</td>
</tr>
<tr>
<td>• Need to <strong>maximise remote operations</strong> and optimise maintenance areas</td>
<td>• Thales remote support is guaranteed during lockdown conditions. <strong>Remote access to equipment.</strong> Delivery maintained during the crisis.</td>
<td>• <strong>Guaranteed maintenance services.</strong> Remote testing and updating. Automation of human processes. Fewer operators needed</td>
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<tr>
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<td>• <strong>Adaptation of train schedules</strong> for maintenance work and offsetting of resource shortfalls during the crisis</td>
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</table>
Contactless passenger management

**CHALLENGES**

- More efficient passenger management. Avoiding crowds and queues
- Reducing infection by minimising contact with airport staff
- Fast and secure identification
- Integration with airport transit operators, train stations, etc. Restoring catering and shopping activities

**RESPONSES**

- Contactless travel, establishing a biometric route from check-in to boarding, using facial recognition for passenger authentication, including:
  - Automatic checking of the name on the boarding card against that on the passport
  - Validation with passenger boarding systems
  - Automated authentication of documents, either graphic or electronic
  - Live biometric capture and quality assurance

**BENEFITS**

- Safeguarding the health of both passengers and staff
- Recovery of passenger traffic
- Enhanced perception of safety in airport transits, and catering and shopping activities
Multimodal supervision

**CHALLENGES**

- Supervising **all transport modes** in a city or region
- **Efficient management** of contingencies
- Keeping the **whole transport system working** despite new restrictions and more limited resources
- **Coordinating** public information

**RESPONSES**

- **Integrating traffic data** with public transport data (metros, trains)
- **Monitoring** public transport **efficiency** (KPIs and dashboards)
- **Managing crises** and incidents with a multimodal approach
  - Managing large events with automated functions
  - Simulation tools for better planning, **preventive measures and service optimisation**

**BENEFITS**

- **General situational awareness** and monitoring of compliance
- Enhanced **passenger safety**
- Adapting services to demand
- **Optimal resource management** across various transport modes
- Real-time **passenger information** from start to end
Remote viewing of cab tests

**CHALLENGES**

- Reducing physical presence of staff so as to assure social distancing and minimise infection risk
- Cab space in trains is limited and so does not allow distancing measures to be maintained
- Minimising staff travel to remote locations, often at night

**RESPONSES**

- **Equipment**: interior cameras showing the control panel and tracks, microphone, loudspeaker, WiFi, including a mobile recorder
- **Remote image transmission** by data link
- **Portable, easy to carry**: No pre-installation needed. Withstands train vibration
- **Two-way intercoms** for transmitting instructions and managing incidents

**BENEFITS**

- Avoiding the need for staff to carry out cab tests
- **Seamless testing** despite Covid-19 restrictions
- **Visual record** of tests for subsequent remote viewing
- **Optimising time and cost** in validating the solution
- **Minimising test repetitions** for lack of sufficient data
Solutions for the Covid-19 crisis in the field of public safety
The Covid-19 pandemic is an unprecedented crisis. Cities, governments and states worldwide face severe challenges in keeping people safe. The measures taken to control the spread of the virus (lockdown, test and trace, restriction of movement, etc.) are exceptional, and require law enforcement bodies to adapt their systems, surveillance methods and resource management.

In Thales we turn cutting-edge technologies into imaginative and resilient people-centred solutions, giving our clients confidence in challenging situations that create uncertainty.
A major health crisis can cause widespread unpredictable disruption which the authorities may address with measures including:

- Preventive measures for establishing and ensuring compliance with mobility restrictions
- Coordination across health authorities and state law enforcement bodies, among others, for a concerted, comprehensive crisis response
- Management of critical resources such as hospital beds, medical staff, health resources and volunteers
- Real-time public information
- Tracing and detecting positive cases and persons at risk
- Measures for selective control of lockdown according to people’s state of health
In response to the global pandemic Thales has developed and integrated new features and external applications into its Security Digital Platform using the power of big data, artificial intelligence and cybersecurity to upgrade its security and mobility solutions in response to today’s needs and tomorrow’s contingencies.

The platform is designed to handle day-to-day security operations and to go further in exceptional circumstances, and along with its original capabilities for detecting, processing and displaying big data, this may help deploy measures in response to Covid-19.
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<td>• Establishing and enforcing travel restrictions and lockdown</td>
<td>The Thales SDP can help the authorities apply containment measures, with proven and experimental usage scenarios including:</td>
<td>• By unifying all security subsystems, the platform provides shared, enhanced situational knowledge. Key players receive live updates on critical resources and security alerts.</td>
</tr>
<tr>
<td>• Multilevel coordination of health, police and emergency administrators, among others, for a concerted, comprehensive crisis response</td>
<td>• Use of video analytics for automatic detection of gatherings of people</td>
<td>• Enhancing cyber-security by countering cyber-threats, which are considerably greater in times of crisis</td>
</tr>
<tr>
<td>• Managing critical resources such as hospital beds, medical staff, health resources and volunteers</td>
<td>• Detecting offenders with biometric identification technologies integrated into the platform</td>
<td>• Ability to quickly integrate new sensors and subsystems</td>
</tr>
<tr>
<td>• Real-time public information and updates gathered in situ</td>
<td>• Automatic reporting on inspections conducted by law enforcement bodies in the field</td>
<td>• Open architecture to accommodate new applications and the latest innovative algorithms</td>
</tr>
<tr>
<td>• Detecting and tracing active cases and persons at risk</td>
<td>• Public applications totally integrated with the platform so as to allow the public to report to and communicate with central forces</td>
<td>• Fast, modular deployment</td>
</tr>
<tr>
<td>• Progressively lifting lockdown, safely identifying immune or healthy persons and easing certain restrictions on movement</td>
<td>• Monitoring of suspect cases through video surveillance with advanced analytics</td>
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**Thales Security Box**

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<td>• Ensuring <strong>compliance with the rules</strong> laid down in relation to the Covid-19 pandemic</td>
<td>• Use of <strong>advanced video analytics</strong> for crowd management. Our lockdown module analyses all footage and reports alerts at once</td>
<td>• Reducing the workload of security forces</td>
</tr>
<tr>
<td>• <strong>Auto-detection</strong> of gatherings of people</td>
<td>• Can be up and running <strong>simply by connecting</strong> the Security Box module to existing CCTV cameras</td>
<td>• Efficient <strong>dispatch and guidance of security</strong> forces</td>
</tr>
<tr>
<td>• <strong>Detection of breaches</strong> of lockdown</td>
<td>• Real-time <strong>analysis of video footage</strong></td>
<td>• Real-time <strong>key indicators</strong> and reporting</td>
</tr>
<tr>
<td>• <strong>No-mask</strong> detection</td>
<td>• <strong>Instant viewing</strong> of georeferenced infringements</td>
<td>• Potential to add further functions after the crisis</td>
</tr>
<tr>
<td></td>
<td>• <strong>This module is independent</strong> of the Thales Security Platform</td>
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</table>
## Body temperature detection and access management

### Challenges
- Health control measures
- Compliance with new rules and regulations
- The Covid-19 epidemic involves challenges such as restricting access to indoor spaces, events and other areas

### Responses
- Contactless **temperature control** with thermal imaging cameras
- Supplementing existing access controls and site protection by detecting and flagging potentially feverish subjects
- Thales ThermoBox system. High-precision **thermal cameras**
- Preconfigured secure server: for connecting to a screen and displaying video imagery and the alerts generated
- **Logging of alerts** and statistics

### Benefits
- Fast, smooth controls
- **Safety for guards** and reception staff
- KPIs and live reporting
- Greater sense of safety
- Fast **plug & play** installation
- Adaptable **solution** for meeting needs beyond the Covid-19 crisis
Solutions for the Covid-19 crisis in the field of banking and payment methods
From the start of the crisis prompted by the Covid-19 pandemic, the financial sector has striven to adapt to the new circumstances due to its being regarded as a key service to society.

Over this period some of the public’s habits have changed, with a very significant drop in cash movements along with a transformation of payment habits and a rise in online purchases.

The authorities have provided measures to encourage electronic payments and thus to limit the risk of the virus spreading through exchanges of cash, with more use of contactless cards and payments with mobile phones. The implementation of recent legislation has also been facilitated for banks so that public does not experience difficulties with digital payments or online banking.
Taking account of these concerns involves new challenges to which the sector is already providing the first responses. In this new reality, digital fingerprinting can be used as a means of verifying cardholders in place of a PIN code or signature, both with biometric cards and mobile payments, thereby avoiding the need for consumers to handle the terminal.

Thales leads these two fields, as the first provider to have its biometric card certified by a major payment scheme, and the first to roll it out on the market. Over 4 years Thales has invested millions of euros in R&D to develop this technology and take it to a level of maturity that has made this another standard offering within its banking product portfolio.

In contactless mobile payments we are the world’s #1 independent token broker. Through our digital payment platform we connect more than 100 banks with the top OEMs and digital wallet providers. We help our clients every day to offer the best digital payment experience and to take advantage of the new tokenisation services promoted by international payment schemes (Visa, MasterCard and others).
Biometric card

**CHALLENGES**

- Avoiding physical contact with the card terminal when paying (with growing demand for contactless interaction in all shopping)
- Being able to pay any amount in total safety
- Having an immediate payment method with no need to go to a bank branch
- Convenient payments, without remembering a PIN, anywhere in the world

**RESPONSES**

- Thales’s biometric card has a built-in fingerprint scanner to replace PINs when making payments
- Thales Trusted Service Hub (TSH) allows contactless payments in Apple Pay, Samsung Pay, Google Pay and banks’ digital wallets, with a single cloud connection
- Thales Digital-First Card programme offers a new multiplatform card issue experience, with instant digital issue on a smartphone and the possibility of choosing the best option for delivery of a physical card (at home or in the office, instant issue points, etc.)

**BENEFITS**

- Possibility of contactless payment by mobile as soon as the contract with the bank is signed
- Secure biometric authentication in the payment device (whether a phone or a card)
- No need to remember a PIN for contactless payment for purchases of any amount
- Pay always in the same way in any country worldwide
**CHALLENGES**

- **Digital transformation** in banks is gathering speed with the restrictions entailed by Covid-19
- Being able to offer services in **digital channels** is now an indispensable requirement
- **New customers** are canvassed increasingly by means that are not face to face
- Customers need the confidence to make **transactions in digital channels** with full safeguards, while enjoying a simple convenient interface
- Traditional banking is competing with new players with a **digital approach** and using the latest technologies, not burdened by the IT systems of years ago
- The increased use of digital channels in recent months has also led to a sharp rise in fraud attempts

**RESPONSES**

- Thales IdCloud helps banks to transform their digital services so as to give their customers secure and convenient access
- With a single integration, banks can comply with regulatory requirements for secure access to bank and payment services
- Cloud-based services offer short rollout times as well as great flexibility, scalability and adaptability to new usage scenarios
- Services for digital customer onboarding, secure authentication at every stage of service use, and a modular approach to combating fraud of all kinds
BENEFITS

For banks

- **Fast rollout** with a single API giving access to integrated services, secure authentication including biometrics and the option of adding fraud prevention features to mission-critical customer interactions
- **Scalability** for adaptation to fast growth in user numbers and digital channels supported
- Access to the **latest technologies**, with regular cloud updates

For customers

- Use of **remote channels** with no need to go to a branch
- **Secure** and **highly convenient access** to services offered by the bank in its digital channels
- Ease of mind on making transactions thanks to a sophisticated **fraud prevention** system
- Possibility of opting for **biometric authentication** so as to forget about passwords and PINs for banking transactions

For banks For customers
Solutions for the Covid-19 crisis in the field of mobile communications
In an unprecedented situation such as that of today, connectivity and communications have proven to be key aspects of our lives.

Millions of people working from home, millions of children pursuing their education online, patients ill in hospital whose only line of communication with their relatives in this tough time has been by audio/video mobile telephony, people thousands of miles from their loved ones able to feel close to them thanks to mobile communications... In this unusual state of affairs, telecoms operators have proven to have a vital role – from day one, when their services were ranked as essential by government.

Thales has an extensive portfolio of solutions to address these challenges and to assist in the digitalisation process we are undergoing.
As in other sectors, we have seen user behaviour change as users have been unable or unwilling to go to brick-and-mortar shops, and so all these digitalisation processes in which Thales has been busy for some time have gathered speed.

As a first step in digitalisation, Thales provides technological solutions for online the registration of new customers including document and biometric verification. We are encountering ID-checking needs not just for new consumers but also for existing ones, and so offer biometric authentication solutions for new online operator services.
Thales also provides a key element in the whole SIM card digitalisation process, with a dual role:

- Supplying the main mobile manufacturers with the secure element (eSIM) embedded in phones where the operator credentials will reside
- Providing the world’s top mobile operators with SIM card digitalisation solutions, allowing remote subscription downloads in latest-generation mobiles (remote subscription manager)

To all this we may add real-time data analytics solutions using artificial intelligence for predictive maintenance of telecoms operator networks and real-time solutions for monitoring user experience, facilitating customisation of services.
Digital identity

**CHALLENGES**

- Digital transformation was already a big issue for communications operators, but it is ramping up quickly with the restrictions entailed by Covid-19 and has now become indispensable.
- Attracting new customers by means other than face to face is a priority, given the restrictions imposed on face-to-face sales forces and customer behaviour trends.
- Likewise, operators need to offer new services to existing customers remotely.
- Innovation in all remote processes is vital in order for user ID to be verified in keeping with current regulations (GDPR, AML, etc.).
- Ensuring a simple, fast and reliable user interface is key for online service users, as they are using personal data.

**RESPONSES**

- Thales Trusted Digital ID allows the online registration of new customers easily and securely.
- Including document and biometric verification, as key requirements for registering new customers.
- For existing customers, our solution offers biometric authentication simply and intuitively for operator services.

**BENEFITS**

- The solution allows telecoms operators to attract new customers by digital means.
- Its reliability allows the verification of documents/identities for future litigation, if necessary.
- Fast and secure deployment with GDPR compliance.
- The use of biometrics offers users security and simplicity, as no PINs or passwords need be remembered.
Remote subscription management

**CHALLENGES**

- In a context such as Covid-19, involving restrictions and new customer behaviours, many existing flows in new service signups or operator changeovers have become trickier, making it more urgent to deploy digital processes.
- The need for SIM digitalisation in a secure environment and with a simple interface for the end user is vital for operators.
- Operators need to have the assurance that new digital processes will at least meet the security and certification criteria applied currently in conventional processes.

**RESPONSES**

- Remote subscription management allows digital subscription downloads on the eSIM embedded in latest-generation phones.
- Thales is the world’s #1 purveyor of such solutions, so we furnish references demonstrating our expertise and experience worldwide.
- Thales also supplies the top mobile manufacturers with the secure element (eSIM) embedded in phones where the operator credentials will reside.

**BENEFITS**

- With Thales’s solution, operators can offer users digital subscription downloads to their sofa at home with no need to visit an outlet.
- We offer a simple, secure and reliable solution to meet the need for real digitalisation.
- Working with Thales, you may be confident that all certifications required with physical cards are complied.
Artificial intelligence and advanced analytics

CHALLENGES

• Telecommunications have become a key service due to social distancing and self-isolation with Covid-19

• Family, friends and workmates are at a distance, generating extra voice and data traffic in video-conferencing (Skype, Zoom and others), changing the behaviour and traffic patterns applying prior to Covid-19. Social network channels are brimming with news. People communicate much more than in ordinary times. Also staying at home means people watch more TV and video on demand, not to mention the growing use of telemedicine packages.

• The internet is our lifeline of communication, and operators are working harder than ever to keep it healthy, available and responsive to the needs of mobile and landline subscribers

• Manual traffic monitoring is sometimes unsophisticated and is liable to miss important data. Predictive maintenance with real-time monitoring of network faults, congestion, availability and failures along with traffic trends is key to enhancing service availability and assuring users’ quality of experience (QoE)

RESPONSES

• Thales Guavus-IQ provides operators with AI-based network analytics and operational capabilities as well as machine learning (ML) for predictive maintenance

• Our software offers real-time monitoring, automatic fault detection and correlation of network event data. It reduces diagnostics time and prevents incidents affecting service availability, thereby minimising financial impact

• Our technology also enhances users quality of experience by allowing root causes to be identified, whether issues with the network platform, user/device behaviour or a change in the OTT (over-the-top) service, and guides operators in record time to resolve the issue by giving customers a customised response
Artificial intelligence and advanced analytics

**BENEFITS**

**For operators**
- Enhancing users’ quality of experience (CX) by increasing the customer satisfaction score (NPS)
- Minimising financial exposure resulting from incidents/events affecting the service
- Reducing the time for diagnosing and remedying disruptions/incidents affecting the service
- Reducing the need for resources (human and technical) to support network operation

**For customers**
- Better availability of mobile and landline services so that communication is possible by any channel (voice and data) at all times, thereby mitigating isolation
- Receiving much more customised treatment in customer services able to anticipate experience of incidents and to remotely enhance the treatment of requests in real time
Business contacts
Business contacts

Transport
Antonio Troncoso Cárdenas
e-mail: antonio.troncosodecardenas@thalesgroup.com • Landline: 91 273 73 60 • Mobile: 690 95 72 29

Public safety
Francisco Simón Vera
e-mail: francisco.simonvera@thalesgroup.com • Landline: 91 545 21 30 • Mobile: 690 65 96 80
Daniel Gómez Mateo
e-mail: daniel.gomezmateo@thalesgroup.com • Landline: 91 545 21 28 • Mobile: 659 31 63 77

Banking and payment methods
Matthias Gelze
e-mail: matthias.gelze@thalesgroup.com • Landline: 93 462 83 20 • Mobile: 619 71 94 65

Mobile communications
Jean Decolin
e-mail: jean.de-colin@thalesgroup.com • Landline: 91 484 77 87 • Mobile: 669 40 93 69
Begoña Martínez
e-mail: begona.martinez@thalesgroup.com • Landline: 91 837 36 72 • Mobile: 669 40 93 67
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