

Bosch Building Technologies in times of a pandemic

coronavirus white paper | release 05.2020 v02



This white paper contains a collection of examples of how Bosch Building Technologies offers countermeasures to help prevent the spread of the coronavirus. The articles were collected and written in the beginning of April 2020. Please contact your local sales representative for more information.



BOSCH
Invented for life

Contents

03 STAY SAFE, GO REMOTE

It's safer to use the remote capabilities for fire, intrusion and video devices. Bosch cloud-based services are ready

07 PUBLIC ADDRESS REMINDERS

Public address systems are used for service announcements to remind people of proper behavior

04 LESS CONTACT – MORE INSIGHTS

How buildings cope better with the pandemic through contactless and intelligent access control systems

08 INTERCOM REMOTELY

A virtual intercom solution helps production staff to work remotely, allowing physical distancing

05 LIMIT THE NUMBER OF VISITORS

First applications use Bosch Intelligent Video Analytics to ensure that not too many people are entering a store

09 DISTANCE MEETINGS MADE EASY

Conference and discussion systems from Bosch address physical distancing requirements

06 STORE LAYOUTS FOR REOPENING

How retailers can use insights from cameras to prepare best for the time after the lockdown

10 A PROACTIVE TASK FORCE

The North America organization has formed an effective team to quickly react to the urgent needs of field hospitals



Stay safe, go remote

It's safer to use the remote capabilities for fire, intrusion and video devices. Bosch cloud-based services are ready.

REMOTE PORTAL – THE HUB TO COMMUNICATE WITH DEVICES IN THE FIELD

The Remote Portal is the hub to connect with Bosch Building Technologies products in the field. It makes life for end customers and system integrators easier by providing device management, value-added services and application management currently for video, intrusion and fire detection devices. For example when a Bosch camera is commissioned to the Remote Portal, it can be configured and calibrated remotely, and the camera health is continuously monitored and reported. In addition, firmware updates for the complete installed base can be made with just one click, and smartphones apps for live streaming can be used without requiring any further configuration.

During the Corona pandemic, we see traffic on the Remote Portal increasing. There is a stronger utilization and interest in our remote maintenance and configuration capabilities. It seems that system integrators, our main target group, may in fact enter the buildings of the end customers less and hence shift to remote maintenance more than usual.

— Maximilian Weiss
Global Product Manager Remote Portal

FIRE REMOTE SERVICE IS KEEPING SERVICE TECHNICIANS SAFE

One concrete product that is built upon the remote portal capabilities is **Remote Service** to fire panels from Bosch. System integrators can purchase the license to get detailed

maintenance data for each of the fire panels and all connected sensors remotely. This way, the service technician can even see the dust level of a single smoke detector on his computer.

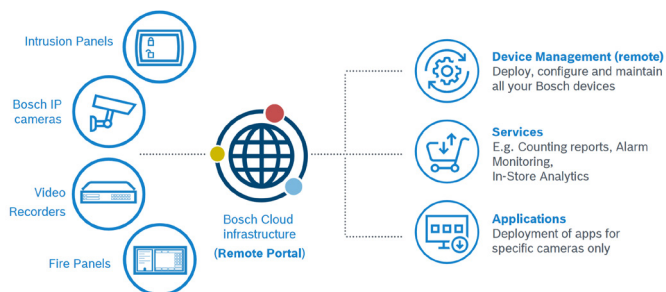
In the past, we marketed our Remote Services mainly to provide efficiency to our partners. They can save a lot of time and money by doing things remotely instead of driving to the end customers' site. Today, during the pandemic, this becomes suddenly a strong safety feature. And keeping people safe has always been our first priority.

— Johannes Stauber
Head of Product Management Fire Alarm Systems

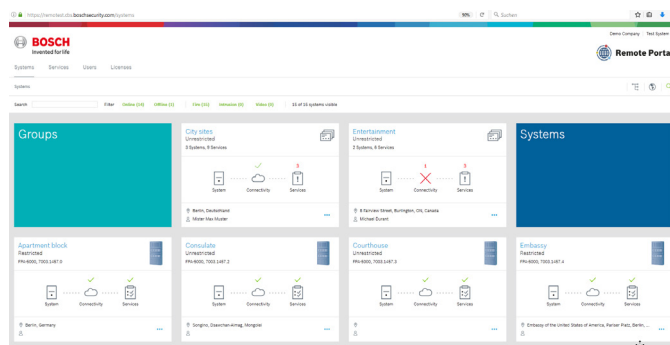
That's why the business unit decided to provide Remote Services for **free of charge for 3 months**. All certified partners were informed about the promotion and the reaction was very positive. One day after the announcement, 25 licenses were already activated. For many partners and end customers, the crisis situation is the trigger to switch to remote services and minimize on-site maintenance activities.

We also noticed that it is not the right time to start a big marketing campaign when so many people suffer from the coronavirus crisis. That's why we chose a targeted email to reach our partners individually. This was very well received.

— Thomas Knaul
Director Product Management and Marketing Fire Alarm Systems



Bosch Remote Portal schematic



Screenshot: managing Bosch fire panels with Remote Portal

Remote Portal: <https://remote.boschsecurity.com>

Fire Remote Service: <https://www.boschsecurity.com/xc/en/solutions/fire-alarm-systems/remote-services>

Less contact – more insights

How buildings cope better with the pandemic through contactless and intelligent access control systems

CONTACTLESS ACCESS CONTROL

The standard solution for access control is already providing **contactless door entry**: Access card readers. It gets problematic, if you still have to touch the door handle or a keypad to enter a PIN. Also fingerprint sensors, a popular biometric device show the same disadvantage: Any part that is touched by many people, even if very small, might serve as a bridge for the virus to infect more people. So customers are actively looking for other alternatives like face recognition, mobile phone readers and new contactless biometric solutions like hand scanners. In high security areas, dual authorizations are required, usually a biometric scan next to the standard access card.

Our access control software is compatible with many kinds of access control devices that are available on the market and that support touchless access control. Dual authorizations mechanisms are implemented and together with the Bosch Integrator Business we already have running systems in the field with new biometric solutions like iCognize.

— Andre Kamp

Senior Product Management Access Control Systems

TRACING INFECTIONS

Bosch Building Technologies is also working on an algorithm that anonymously traces all movements of occupants in a building. If somebody reports an infection, the algorithm can extrapolate a sociograph that shows which other occupants could have met the infected person.

For tracing infections, the building needs more sensors and access points that feed the algorithm. We need the sensors inside the building, not only at the entrances. We are looking for an end customer who is willing to equip his building accordingly and create this proof of concept with us.

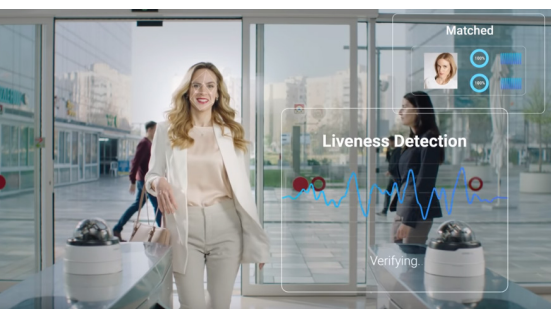
— Gregor Schlechtriem

Head of Business Unit Access Control and Intrusion Systems

MEASURING THE OCCUPANCY OF A BUILDING

Adding readers will also provide advantages for the operators of buildings. They can show much more precisely who is where, who is allowed to enter certain areas and if the current occupancy of the building is still allowing physical distancing. "We think this could provide scenarios in which regulatory authorities allow companies to open their buildings earlier, if they have implemented measures like advanced access control," says Gregor Schlechtriem.

It is likely that many end customers will invest in the new possibilities of access control solutions to be better prepared for pandemics. Also, every additional access control point enhances the security of a building and helps buildings be used more efficiently.



Face recognition- AnyVision Abraxas¹



Palm vein scanner- iCognize Manuscan²



Mobile access- STid³

<https://www.boschsecurity.com/xf/en/solutions/management-software/building-integration-system/>

¹ Anyvision: www.anyvision.co

² iCognize: www.icognize.de

³ STid: www.stid.com

Limit the number of visitors

First applications use Bosch Intelligent Video Analytics to ensure that not too many people are entering a store

CAMERAS SEE MORE THAN PIXELS

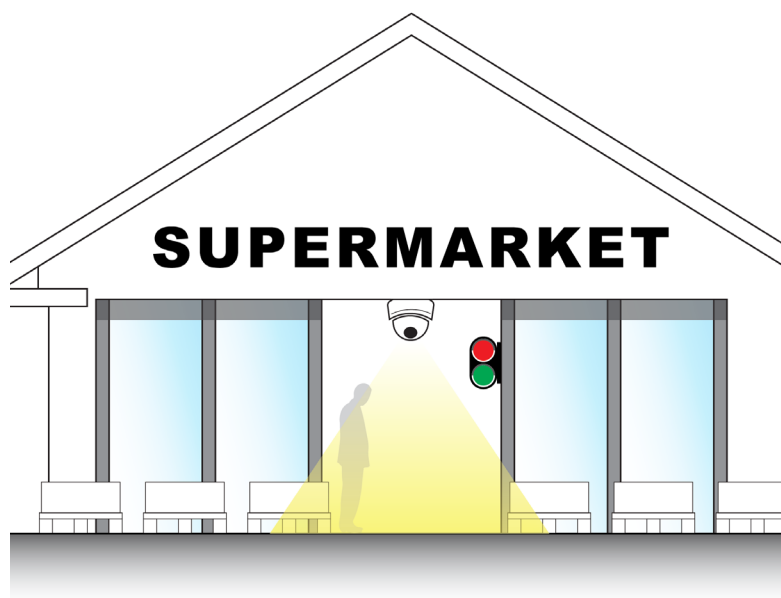
Bosch **Intelligent Video Analytics** algorithms offer features like “person in field”, “birds eye view counting” and “crowd detection”. These functions are used at entrances of supermarkets to count people that enter or to alert an operator if people enter restricted areas. It can measure the occupancy of people in certain areas, for example in front of an ATM machine. The detection is still influenced by certain challenges like shadows of objects, identifying shopping carts as two people or objects that are moving too quickly.

A PRAGMATIC STAND-ALONE SOLUTION FOR SHOPS

A system integrator in Germany asked our regional marketing team if the people-counting algorithm could be used to trigger a signal at the entrance of supermarkets to limit the number of people entering at a time.

The standard user interface is not able to program the camera accordingly, but the onboard scripting capabilities enabled the required solution. A camera above the entrance measures incoming and outgoing people traffic. Upon exceeding a predefined threshold of visitors, the camera controls a simple traffic light signal, no other computing device is needed.

The Bosch sales organization is in contact with many other system integrators who are highly interested in pragmatic solutions like the „smart signal“.



A smart camera directly controls the entrance signal of the supermarket

They really appreciate our fast support in this time. This enables them to help their customers to get a little relief. Many shops cannot afford to hire extra staff to control the entrance, so a technical solution is a good alternative. We are also in contact with large end customers in the retail industry.

— Uwe Kühlewind
Product Marketing Manager DACH

Store layouts for reopening

How retailers can use insights from cameras to prepare best for the time after the lockdown

UNDERSTAND PEOPLE BEHAVIOR IN STORES

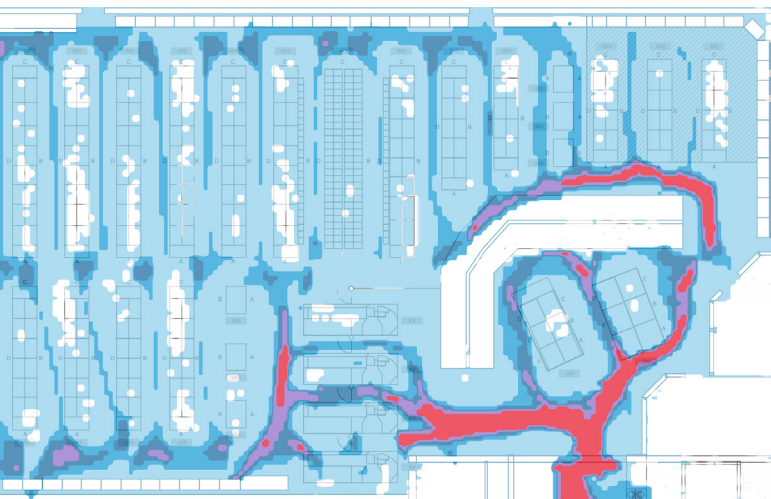
Bosch **In-Store Analytics** is a solution that processes anonymous position data from various cameras in the cloud. Advanced algorithms filter the position data according to individual location environments and relevant behavior patterns.

In a final step, the data is intuitively presented through customized web interfaces. Here, users can flexibly query the entire data set for an area in any site at any point in time. The actual video streams never leave the retailer's premise, thus maintaining shopper's privacy.

USE HEAT MAPS TO FIND CRITICAL STORE AREAS

Typically In-Store Analytics is used to optimize the product merchandising and customer service experience. While originally the system supports retailers to maximize the revenue of a store, they can now use the data to ensure customer safety and confidence whilst shopping in their store.

For instance, crowded store areas are visualized on a heat map. This can be used for a targeted physical distancing signage, disinfection measures or a redesign of the store layout for better crowd distribution.



Heat maps show crowded store areas at a glance

BALANCE PEOPLE TRAFFIC IN STORES

In-Store Analytics traffic metrics can inform retailers to adapt their store opening times so that traffic can spread more evenly across the day.

Also, detailed queue line length statistics can inform when all cash counters should be open, so customer lines can be spread and relaxed as much as possible, easing physical distancing possibilities in queue situations.

CLOUD POSTPROCESSING

With cloud postprocessing of Bosch's Intelligent Video Analytics data, In-Store Analytics reaches an unmatched accuracy of more than 95%, providing a high reliability to customers.

The current solution can already be used by our customers to prepare best for reopening their stores after the coronavirus lockdown. And we are also looking into developing new algorithms that help to ensure new physical distancing or hygiene guidelines. These could also be used outside the retail industry. Our team is planning a series of customer research activities to understand the most important needs of our users.

— **Sabine Gallian**
Senior Manager In-Store Analytics

Public address reminders

Public address systems are used for service announcements to remind people of proper behavior

REMIND PEOPLE OF PHYSICAL DISTANCING

Crowd management and physical distancing need to be managed well, particularly in the retail sector. The first end customers (e.g., shopping malls) are using their public address (PA) system to regularly remind all visitors to obey physical distancing rules.

In Singapore, building or business operators who do not manage this well might face fines or even be forced to cease operations entirely. This can be supported by crowd monitoring with camera based video analytics, focusing on bottlenecks and queue locations.

First applications exist where video based crowd detection triggers automatically a pre-recorded announcement on the public address system.

INFORM VISITORS OUTDOORS

A leading U.S. retail chain upgraded their public address system with high performance outdoor speakers and amplifiers from Bosch. This way they can inform visitors outdoors about their current store policies in order to improve safety and customer satisfaction.

The pre-recorded messages address:

- ▶ queuing instructions
- ▶ and washing instructions
- ▶ information about public sanitizers in store
- ▶ physical distancing rules (stay 6 feet apart)
- ▶ no loitering allowed in store
- ▶ reduced store hours to clean and refill more often

This automated solution enables employees to focus more time on day to day tasks and gives customers a positive feeling of reassurance.

*All Bosch public address systems like **PLENA**, **PAVIRO**, **PRAESIDEO** and **PRAESENSA** are capable of playing recorded messages. The customers can also schedule the announcement, e.g., every 15 minutes the message is played automatically.*

— **Joachim Licht**

Product Manager Installed Audio



Bosch public address systems remind visitors to obey physical distancing rules.

Intercom remotely

A virtual intercom solution helps production staff to work remotely, allowing physical distancing

REMOTE INTERCOM SOLUTIONS FROM RTS

Bosch-owned brand RTS delivers intercom solutions to many TV and radio stations producing news broadcasts, which the public relies on in these times. The usual working context of media broadcast professionals is the studio and production control room where space is limited, hence physical distancing and keeping a 1,5-2m distance to others is not always feasible.

RTS already provides a virtual intercom solution in the form of a software application running on smartphones, tablets or computers, called **"VLink"**. It enables production staff anywhere in the world to communicate with each other remotely using the broadcast intercom system but without the need for dedicated equipment.

Now, as the Corona crisis significantly impacts the operations of the major broadcast studios, the business unit quickly released a **three-month license** so that so that users have a fast and temporary way to benefit from the solution. To support the surge in demand for VLink software, RTS recently created a dedicated webinar to introduce how to set up a remote production using VLink.

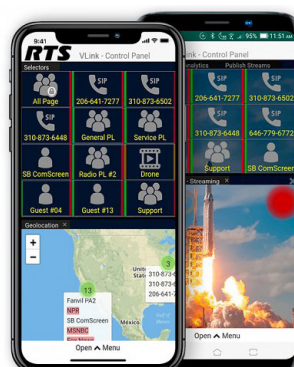
In the current pandemic, remote production is the new normal for broadcasters everywhere. VLink has been designed to make this process as seamless as possible. Judging by the recent increase we've seen in software licenses, VLink is becoming a key tool for organizations all over the world.

— **Denis Castanet**

Director Product Development, RTS Intercom Systems



Current situation: It can get dense in studio rooms



RTS VLink-Control Panel

Distance meetings made easy

Conference and discussion systems from Bosch address physical distancing requirements

SPEECH REINFORCEMENT FOR DISTANT SEATING

The need for people to meet and discuss important topics does not disappear during a pandemic – in fact, it becomes even more critical. However, new considerations such as physical distancing add a unique challenge to many situations.

For example, as a consequence of physical distancing, seating arrangements in physical meeting rooms are altered to ensure participants can maintain the required distance from each other, making a good speech reinforcement solution more important than ever.

JOIN MEETINGS REMOTELY

Due to COVID-19 travel and health restrictions, many people will also need to join meetings remotely via Skype, Teams, Zoom or similar platforms. Bosch conference solutions can be easily interfaced with applications such as these, ensuring participants can join the meeting from home while participants in the room maintain safe distances from one another.

Bosch has a broad product portfolio to support a wide variety of meeting types. From small to larger and more challenging applications, users can choose the future-proof and fully IP-based **DICENTIS Conference System**, or opt for the Wi-Fi-based **DICENTIS Wireless Conference System** when the quickest set-up and breakdown time is required. For meetings involving remote participants, the DICENTIS Wireless conference system provides the perfect solution. It increases participant interaction, optimizes meeting efficiency, and provides the required flexibility in system set-up and the integration of third-party systems.

*Seating arrangements for meetings must comply with social distancing guidelines; the **DICENTIS Wireless conference solution** provides organizations and communities with the required flexibility: with this system, you can simply rearrange the seating in an existing meeting room or facilitate the meeting in a larger space so participants can keep their distance.*

— Lars van den Heuvel

Global Product Manager for Conference & Discussion



Conference and discussion systems from Bosch optimize speech intelligibility while applying physical distancing.

A proactive task force

The North America organization has formed an effective team to react quickly to the urgent needs of field hospitals

FIELD HOSPITALS NEED TECHNICAL EQUIPMENTS

The U.S. has been hit badly by the coronavirus crisis. Large venues like convention centers, hotels or even parts of the Central Park in New York have been transformed into emergency hospitals. The so-called „pop-up hospitals“ now quickly need equipment for nurse-alarm, patient surveillance, asset tracking and hands-free patient and nurse intercom.

The opportunity for Bosch is to help with a variety of solutions: Intrusion panels for alarming, video cameras for patient monitoring, intercom and public address solutions for helping nurses and doctors to communicate.

A TASK FORCE FOR QUICK RESPONSE

The regional organization formed a task force of subject matter experts from each field to offer help and to react effectively. Every request is run by that team. Additionally, one team member is coordinating with government agencies as needed.

We are trying to be more proactive than reactive. That's why we are working on a brochure that describes each of the applications that we have in mind. We also list the bill of material needed for a 1,000 bed pop-up hospital so our regional sales people can quickly put a solution together.

— **Robert Drob**
Business Development North America



Inside a field hospital tent

Buildings today don't only provide a safe, functional place for people to live and work. They can also cater for – and even respond to – their needs, while helping them work more efficiently and sustainably. The Internet of things (IoT) and sensor-driven technologies play a vital role in this. At Bosch Building Technologies, we are at the forefront of these new developments.

With innovative solutions in everything from access to fire prevention and public announcement to intelligent video security, we are helping redefine people's relationships with the buildings they spend their time in.

Bosch Building Technologies

Intelligent building technologies for fascinating experiences in public and commercial spaces

