RACE RESULT

TAVI
CORONA-TRACING
for Companies and Facilities

*How a transponder-based solution helps tracing and protecting **COVID-19** contacts*

This white paper presents a solution for effective contact tracing within companies and institutions. With transponder technology, all critical contacts within predefined rooms / areas are recorded and saved. If necessary, the information can be specifically evaluated. The solution is designed to help those responsible in the event of an infection to quickly identify and protect potentially endangered people. Thanks to reliable data, extensive quarantine measures can possibly be averted.

Smartphone apps for tracing have weaknesses when it comes to recording contacts within predefined areas and groups of people. The following short analysis already shows this. An in-house that reliably records contacts between employees and visitors is significantly more effective in the event of an infection. Its components and functionality are explained below.

Taking responsibility in times of crisis

Without a vaccine available, protection against COVID-19 infections remains an enormous challenge for economy and society. Companies, public and private institutions ensure that their employees are protected.

At the same time, there is a legitimate interest in returning to a regular operation as quickly as possible. In the event of an infection, the consistent tracing of contacts from the past few days is the most important component to prevent an uncontrolled virus spread. Whether at work, school or care home: where a defined group of people is always in the same premises, it is advisable to install an own tracing solution that is easy to integrate into everyday life and that delivers fast, reliable results in an emergency.

How useful are tracing apps?

Virologists see a voluntary tracing app for smartphones as an important aspect to permanently limit the spread of the SARS-CoV-2. The app uses the smartphone's Bluetooth interface to recognize which other app users come within close range and for how long. If a user is proven to be infected with COVID-19, he can now anonymously warn others he has been in contact with.

If a user is later found to be infected with COVID-19, they can now anonymously warn others with whom they have been in contact with. Within the core business of RACE RESULT, we have seen similar efforts to use app-based solutions for sports timekeeping. However, experience has shown that an app has clear disadvantages for such use cases. These disadvantages can also be transferred to other areas where data of a limited group of people in defined premises must be recorded reliably over a longer period:

- An app requires that the user has installed and started it. In addition, the Bluetooth interface must be activated and sufficient battery runtime must be available. With each of these requirements, the sources of error for the user increase
- In live operation, the person responsible cannot see whether the system is working as intended and who is actually using the voluntary app
- In the event of an infection, it is up to the positively tested app user to disclose their data and warn contacts
- Managers do not have central access to data collected within company or facility. A central query in the event of an infection is not possible

A tracing app can help contain the virus in the general population. In the specific case of infection within a company or facility, however, it does not provide any helpful data. Anyone who is responsible for creating lists must be able to master and control the technology used. The effort for each user must be reduced as much as possible. A quick and targeted analysis of the contact data is only possible if it is saved centrally for each company/facility.

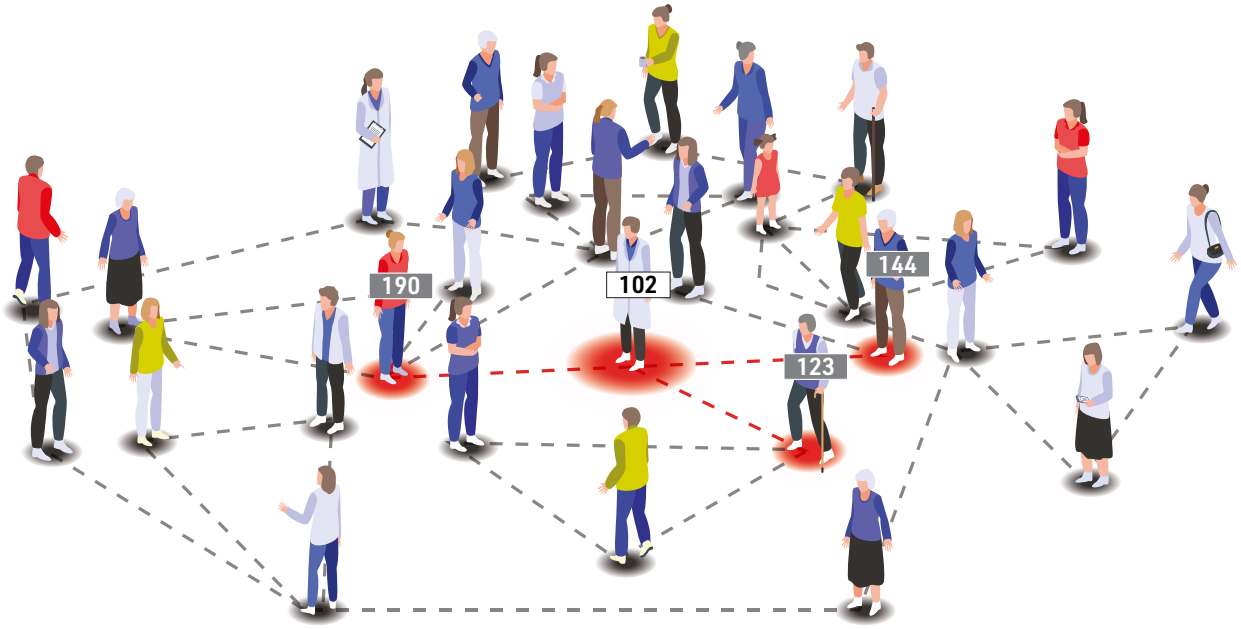
The In-House Tracing Solution

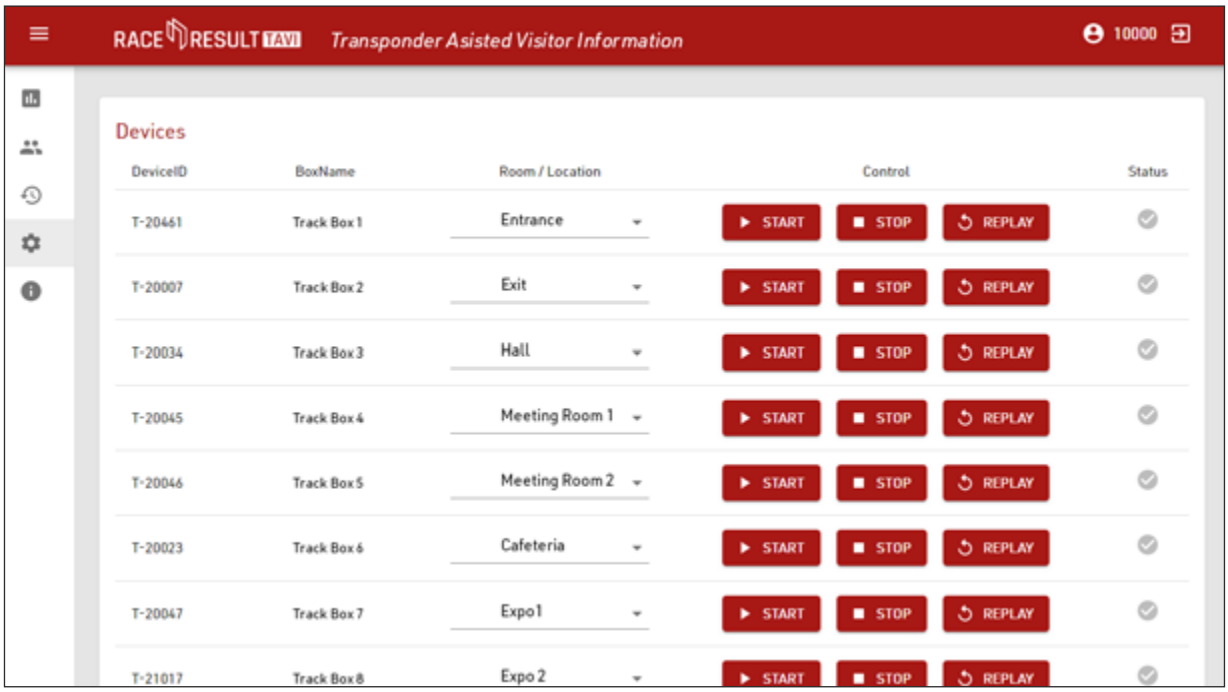
Managers can only make reliable statements about contact persons if they are able to independently record and evaluate contacts. In the event of an infection, quick action is required regarding health protection and HR planning. Automated data from the past few days are particularly valuable here:

- Who was in the same room with the infected person for a long time?
- Who had no contact with the infected?
- Did shift plans or work areas overlap unplanned?
- Have employees from other departments entered the critical area?
- Do external visitors have to be notified?

The basic requirement for reliable data is that all relevant contacts have been recorded. To do this, emplyees and external people must be able to use a tracing solution without any technical effort and without "incorrect operation".

This is exactly where **TAVI** comes in, "**Transponder Assisted Visitor Information**". The solution automatically records and archives contacts in critical areas. This allows operators to reconstruct who was with whom in the same room and at what time. TAVI uses UHF transponder technology. It has the great advantage that it works without user intervention. Anyone who has the feather-light transponder on their person is already prepared.





Track Box

- Installed at critical points
- Records which transponder is within range and when
- Sends the data to a secure server via the mobile network

Transponder

- Will be distributed to all employees and visitors
- Can be worn as a sticker or lanyard
- Sends an anonymous code via radio technology that is received by the Track Box
- Inexpensive (<1 € each)

Server

- Saves the collected data of the track boxes with date and time
- Calculates on demand which transponders "met" near the Track Boxes in a certain period of time

Installation Example

Where several people are together for a longer time, the risk of virus transmission is particularly high. These are, for example, meeting rooms, large offices and break rooms. Here, the installation of a Track Box makes sense.

Positioning the boxes at other **critical points** can also make sense, for example at the entrances and exits of individual wings or floors. The transponder is detected as it passes.

Transponders are automatically recognized with a direct line of sight up to **10 meters** away. Walls, doors etc. form a natural barrier for the UHF signal.

Installation and Maintenance

The **Track Boxes** are shipped pre-configured. They contain a SIM card and a power adapter. A hook in the wall and a socket are enough for the installation. The Track Box can run continuously. It is switched on at the push of a button and automatically connects to the data server. TAVI is extremely flexible. Boxes can be added, removed or repositioned at any time without any special effort.

The **transponders** come in bulk on rolls and are 1.5 mm thick stickers with a strong adhesive. They were developed for use at sporting events. That is why they are particularly robust.

All data is provided at https://tavi.raceresult.com and is password-protected. You can filter by time period, contact duration and location. The system generates a list of transponder IDs that were in contact with the infected person's transponder. This query can be made at any time and without prior technical knowledge. It is also completely anonymous until the operator assigns an ID to a person.

Advantages of the TAVI Solution...

...for Operators

+ The solution can be implemented quickly. You will receive the desired hardware within a few days of ordering
+ The installation of the Track Boxes is very easy. No external technician is required to enter the facility
+ No software training necessary
+ Online support for hardware and software included
+ Transponder distribution to employees and visitors can be done via a simple list, even on paper. No learning required
+ No disclosure of personal data to third parties. Lists with the assignment of the anonymous transponder code to the person remain in the facility

...for Employees and Visitors

+ The only requirement is to wear the transponder
+ The UHF technology works non- contact. Employees do not have to scan a chip card or manage lists
+ Hygienically safe
+ Transponders also work under protective equipment
+ No reliance on smartphones, GPS reception or battery life

Tracing and Data Protection

The tracking of employees and visitors is a surveillance measure that is seen as controversial for a number of reasons. This is why we made data reduction and GDPR compliance one of the key design goals from the very start. We only save the unique, and initially, anonymous Transponder-ID as part of the data.

It is the responsibility of each controller to use the Transponder-ID as a pseudonym, which can be used for an assigning to individuals at a later date, once there has been confirmed contact to a known infected person. As the Transponder-ID is a simple alpha-numeric code, it can be easily stored in existing systems such as staff / patient management logs or even a manually written visitor list.

Secure storage of personal information, access restrictions for de-pseudonymization of data and other necessary measures are thus easier and faster to implement.

Hereby the balancing of legitimate interests for the introduction of tracing is significantly simplified and the solution can be implemented sooner without the need to meet complicated prerequisites.

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