RACE RESULT

TAVI

*Transponder Assisted
Visitor Information*

*Visitor flow
measurement and contact
tracing for conventions,
trade fairs and exhibitions*

This white paper introduces the TAVI solution. TAVI enables the effective implementation of visitor flow measurements, contact tracing and capacity recording. By using UHF transponder technology, it anonymously records visitors and customers in facilities or at events, separated according to defined rooms or areas.

This data can be evaluated in a targeted manner: In a non-personalized way to measure length of stay, visitor density and main visiting times; or, if necessary, for effective contact tracing.

With just a few simple steps, the organizer can install small boxes at key locations and distribute disposable transponders to all visitors. TAVI now works autonomously.

Goals & Benefits

Comfort and well-being of visitors are decisive factors in the success of an event or exhibition. Therefore, it is important for organizers to be able to analyze visitor flow. In addition, TAVI offers the possibility of retracing possible contacts between visitors and thus implementing health-related safety concepts.

TAVI enables a wide variety of fields of application:

- Count visitors and customers anonymously in different areas (entrances, exits, passageways, halls, rooms, expo booths, ...) and determine their length of stay

- Create heatmaps for important areas

- Track visitor routes

- Optimize customer experience and personnel planning

- Automatic admission stop with a specified maximum number of visitors (e.g. visual traffic light solution)

- Contact tracing: Recognize simultaneous presence of visitors in predefined areas / rooms

- A tracing integrated in the event or exhibition concept can make increased visitor numbers possible (security concept, fire protection, etc.)

- Targeted evaluation of the data if necessary

- Collect and analyze marketing-relevant data

The TAVI Solution

Track Box Passive

- Installed at critical points

- Registers which transponders are within range at what time

- Sends the data to a secure server via the cellular network
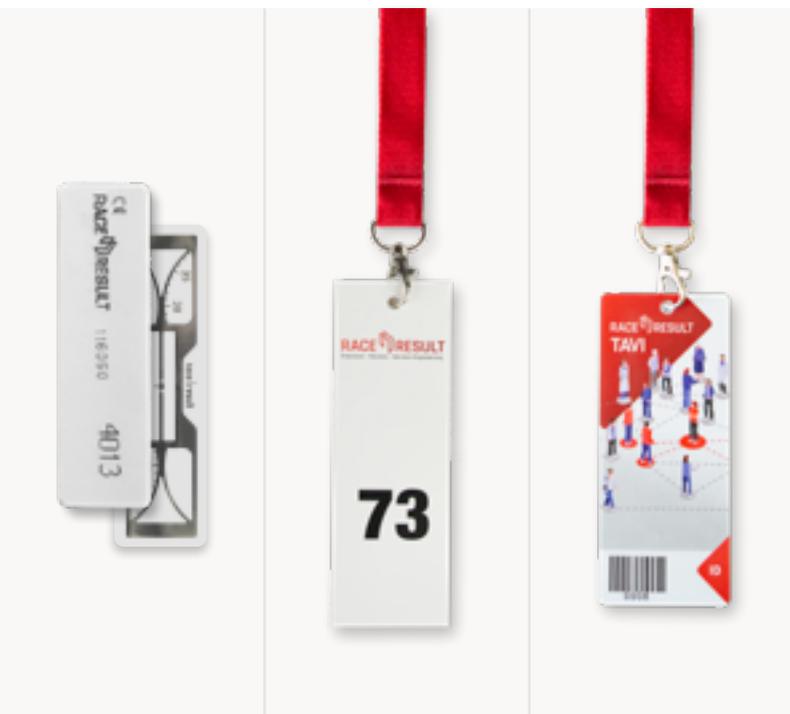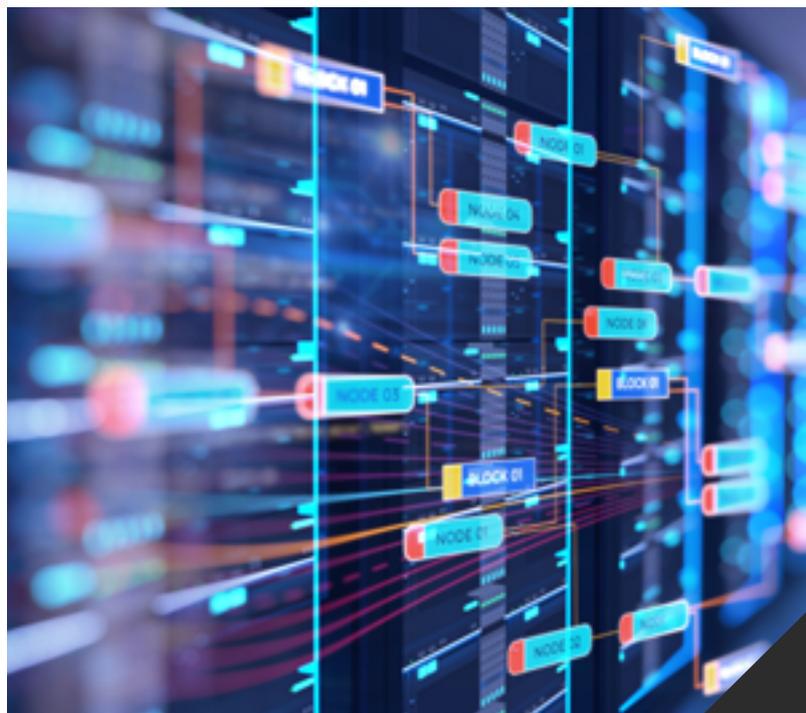

Transponder

- Distributed to visitors and staff

- Can be worn as a sticker or lanyard

- Sends an anonymous code via radio technology that is received by the Track Box

Server

- Saves the collected data of the track boxes with date and time

- Calculates on demand which transponders "met" near the Track Boxes during a specified time period

Advantages of the TAVI Solution

Operators, employees and visitors must be able to use a tracing system without technical effort and without operating errors.

TAVI is based on UHF technology. It works without user intervention. Anyone who carries the feather-light transponder with them has already done everything right.

- Low-priced and contactless passive transponders (from less than 1€)

- Can be used in lanyards or attached to other elements (e.g. tickets) that the visitor visibly carries with them (transponders also work under suitable protective equipment / clothing)

- Transponder distribution to visitors during entry / ticket handover

- Centrally controlled solution without relying on smartphone apps

- Independent of GPS reception and battery life

- Fast, uncomplicated, wireless installation (you can do it yourself)

- No WiFi necessary, only GSM connection (SIM cards included)

- Low maintenance

- Possible detection accuracy >99.8%

- Fully anonymous data collection in real time

- No transfer of personal data to third parties (if assignment is desired, the information remains with the TAVI operator)

- Secure access to data via web applications

- Data safely stored on servers in Germany

- Ready to use immediately, hardware delivery within few days

Setup Example
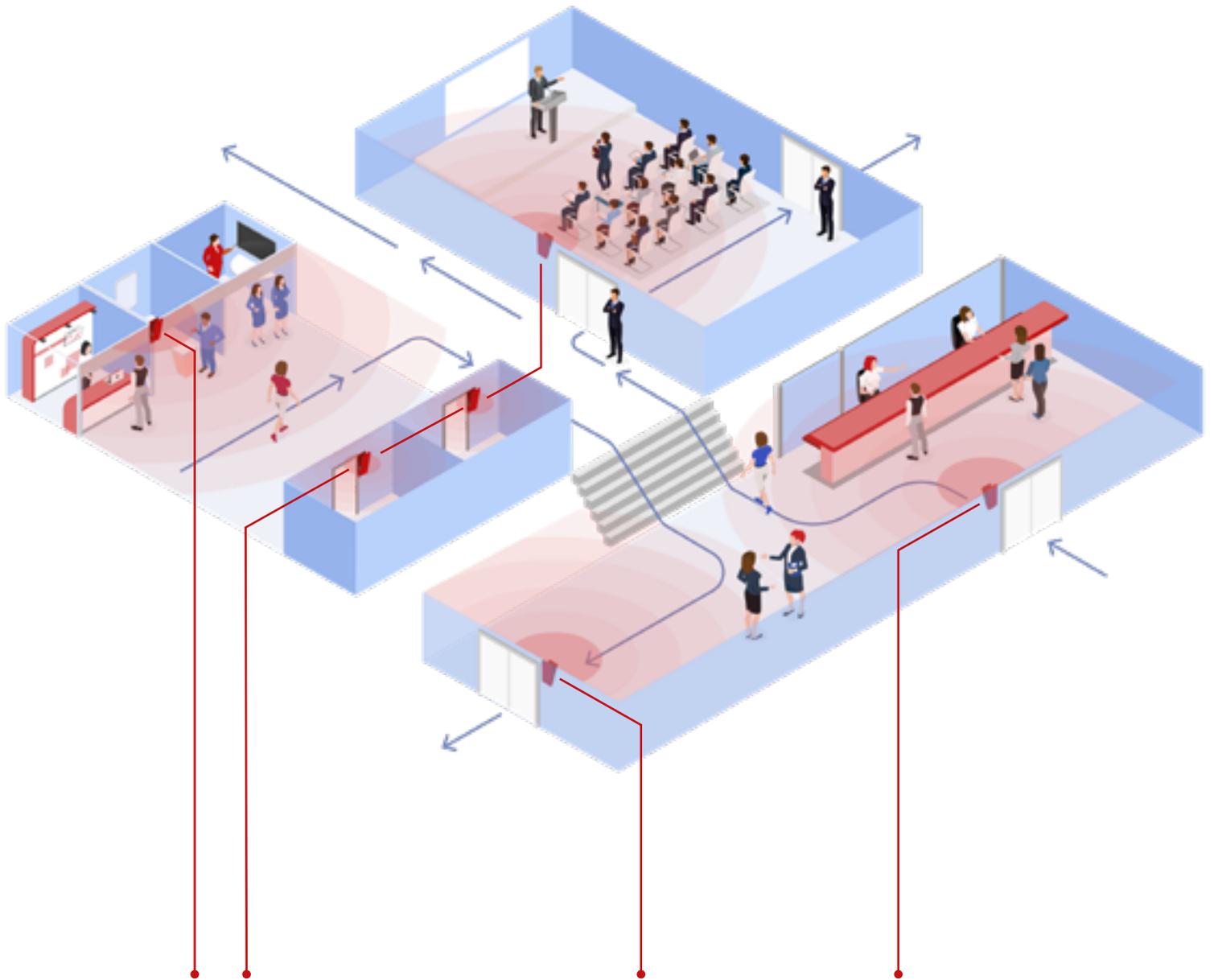
The Track Boxes are positioned at key locations such as conference rooms, exhibition stands or highly frequented areas. Hotspots can be identified and a simple visitor count and alert system can be implemented. Visitor flows can be recorded and possible contact persons can be traced afterwards.

Transponders are detected up to ten meters away, if there is a direct line of sight. Walls, doors, etc. form a natural barrier for the UHF signal.

Entrances and exits as well as passageways are ideal for recording visitors. The more locations are equipped with a Track Box, the more precisely movements and whereabouts can be traced.

Installation and Maintenance

The **Track Boxes** are shipped pre-configured. They contain a SIM card and a power adapter. Installation is easy with hooks or the integrated magnets. The Track Box can run continuously, it is powered via internal battery or mains power. The box 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, so are designed to be particularly robust.

Transponders can be easily attached to visitor tickets.

They can also be delivered inside a PVC lanyard ticket with customized print layout.

All **data** can be made available in various ways. The TAVI software enables the visualization of contact tracing, visitor numbers and much more. Evaluation options can be adapted to the wishes of the customer. It is also possible to forward the data directly to the operator's interfaces.

The data processing remains completely anonymous as long as no assignment of transponder ID to visitor is made.

What is the difference between tracking and tracing?

Tracking and tracing are often used in the same context, but they differ significantly. While tracked user data can be followed in real time, for example through the use of GPS, contact tracing aims at a subsequent assignment of contacts.

For data protection reasons, the tracing method is therefore often preferred. One example of this is the Corona warning app from the Federal Government of Germany.

Tracking: Tracking is often used in connection with online marketing and movement data for location services. Live tracking of movement data is often rejected by laws or consumer protection.

Tracing: The process is mainly used in logistics. It describes the investigation of individual supply or production chains. Data is permanently recorded anonymously. If necessary, it is subsequently evaluated by the operator and, if necessary, de-pseudonymized.

Tracing and Data Protection

The tracking of employees, patients 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 assignment to individuals at a later date, if, for example, there has been contact with a risk of infection. As the Transponder-ID is a simple alpha-numeric code, it can be easily stored in existing systems such as staff 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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