



# Zone Monitoring & Find

Active RFID

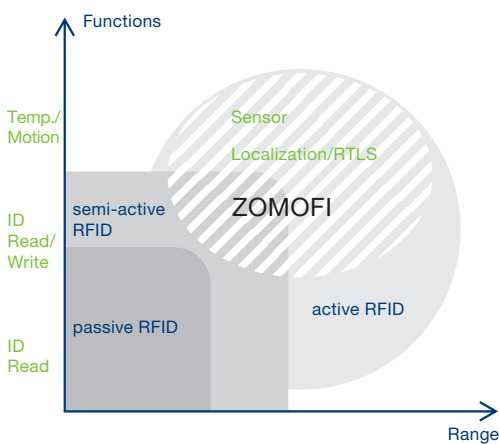
**albis**  
technologies

## Active RFID – a technology for a variety of applications

Albis Technologies is a leading international manufacturer and developer of innovative electronic products, systems and solutions serving business and industry, leisure, retail, transportation, healthcare, security, and telecommunications markets worldwide. The Zone Monitoring & Find Division focuses on the integration of active RFID (radio frequency identification) tags, components and solutions for a range of specialist applications for secure and efficient track and trace and access systems in all industry sectors. In particular, these applications include asset management, condition monitoring, people safety, high speed tracing and intrusion security.

Albis' Zone Monitoring & Find Division consistently develops its technological solutions to suit the specific applications and environments in which they are employed. The products within its portfolio locate and track objects and people in real-time and long range. These include managing containers and load carriers in the business process sector, locating equipment and people inside buildings, tracking and managing railway cars, securing works of art and ensuring enhanced access control for businesses.

The increasing use of Active RFID and the emerging adoption of RTLS (real time location systems) technologies for critical applications such as intrusion detection, traceability of sensitive goods and condition monitoring, is driving innovation within the Zone Monitoring & Find Division. Customers who need to apply this technology in their track and trace infrastructures are motivated by security, safety and economic factors. Albis is positioned to meet these challenges to empower sophisticated multifunctional devices for tracking, locating and monitoring people and objects anywhere and at anytime.



## Zone Monitoring & Find – a wide field of applications, market segments and scenarios

Applications that make use of active RFID technology are numerous and are spread across a variety of industries. The transponders (tags) have a battery and support transmission distances up to 160 meters and more for purposes of location, identification, data exchange, and sensor data exchange.

### RTLS (Real-time locating systems)

For objects and person ZOMOFI offers several level of localization methods and accuracy:

- Basic (10 to 160 meters)
- SpotZone (2 to 20 meters)
- Advanced (2 to 8 meters)
- Precise (0.5 to 2 meters)

For each of these methods ZOMOFI can be integrated in the existent infrastructure.

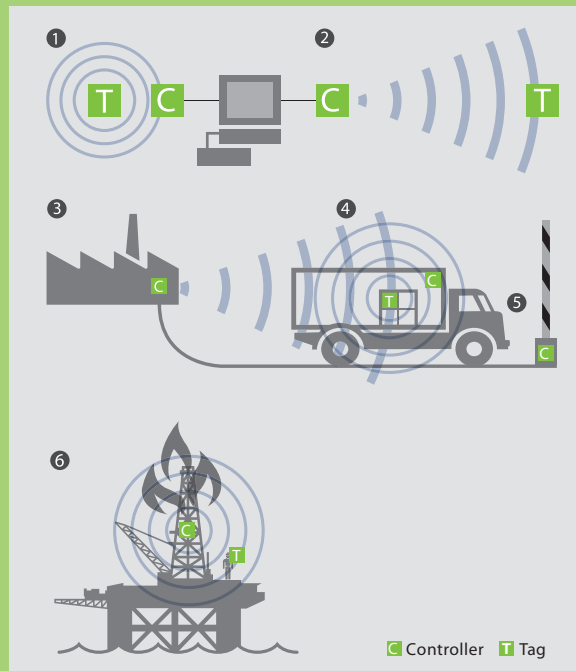
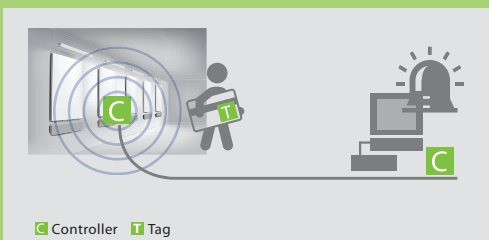
Application	Segment
Access Control	Buildings/Campus Parking Retail
Asset Management	Airports/Ports Defense Logistics Transport (Train/Trucks) Automotive Hospitals
Cold Chain	Retail Transport (Train/Trucks) Pharma
Customized	Any
Intrusion Security	Museums Art Galleries
People Safety	Oil & Gas Hospital/Care Homes Mining Petro Chemistry Manufacturing Waste Management

**ZOMOFI can be used in the following scenarios:**

- Presence/absence, for real time localization
- Coverage by mapping in
  - cells (1)
  - precise and target-oriented tracking (2)
- Surveillance in halls and storage areas (1)
- Monitoring in passageways (3)
- Tracking in trucks, including temperature monitoring (4)
- Access control with long-range convenience (5)
- People safety (6)

**A short sample of customer scenarios is given below:**

- ZOMOFI® product family is used in railroad systems. The RFID components are suitable for detecting passages of rolling stock, its location and the frequency of its use in real time. This enables the maintenance and management of railroad cars and locomotives to be optimized. TrainTracer (TT) products are ideally suitable for the arduous conditions (like hard temperature and very high speed) encountered in railroad operations.



- «Monitoring of goods in storage areas and buildings»: Very large volumes of goods and wares are stored, moved and shipped in companies with several office buildings, distribution centers and storage areas. Often it is easy to lose track of goods and some goods are simply misplaced. What's needed is a reliable monitoring system. ZOMOFI lets you define specific zones (storerooms, dispatch areas, offices, passageways, etc.) that are then monitored by the system. As a result, you always know which goods or shipping containers are located in which zone at any given moment.
- The ZOMOFI RFID components allow the permanent-surveillance in real time of single object like a painting, a sculpture or any art object in the show room. The transponders with motion sensor are affixed to the art objects, the readers are installed in the exhibition area independently of other systems. The sensitivity of the sensor and the related alarm can be adjusted for each singular object.

## Z-Tags and Z-Controllers – long range and multifunctional

The ZOMOFI solution includes tags, sensor tags and controllers.

### Multifunction tags:

- Unique ID
- Read & write data over the air
- User memory 112 Bytes
- Unique long battery lifetime (years not months)
- Long reading & writing distance (up to 160m and more)

The ZOMOFI 2.45 GHz controllers are reading ID, battery status, user and sensor data over long range. The anti-collision mechanism allows for a thousand tags to be simultaneously present in the range of one single controller. Hundreds of controllers can be networked.

The unique transmission features make this tag useful also in difficult environments, where non-friendly Radio Frequency material is present such as metal surroundings, concrete walls and water proximity. The alteration of the transmission remains usually very acceptable given the harsh conditions in which the active tag is operating.

### Sensor tags:

- 3D motion
- Temperature
- Humidity

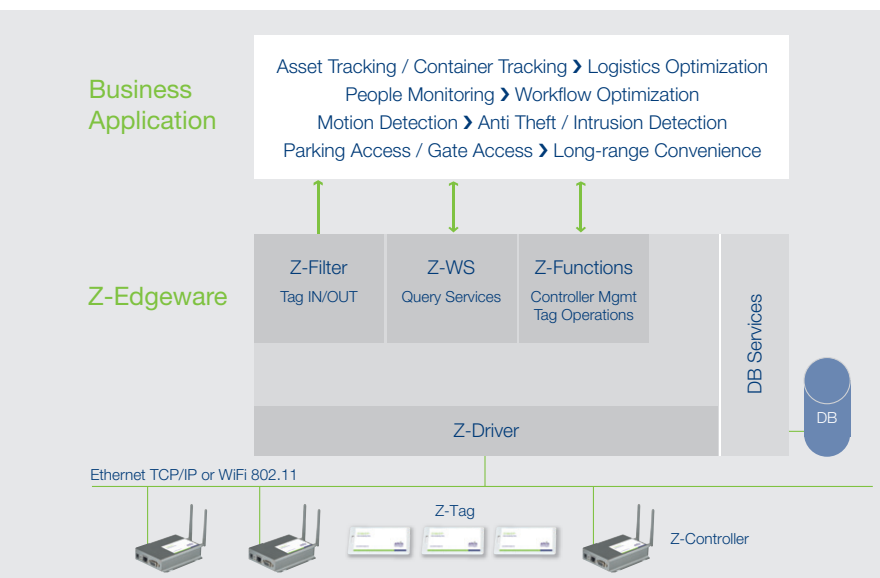


### Controller for all tags:

- RTLS (realtime locating system)
- SpotZone
- Programmable reading range
- Interfaces:
  - Serial RS232/RS485
  - Serial RS232/RS485 + Ethernet + WiFi
- Reads more than 80 tags per second, 5000 tags per reader
- Sophisticated anti-collision



## Interface at the controller – simple and clear



ZOMOFI contains a defined and documented interface to the «Business Application Layer». Therefore existing or newly developed business applications can leverage the ZOMOFI system for tracking / locating information or sensor data. Such integration is supported by the Z-Edgware with filter functions, query services and device operations.

The interface at the controller supports the following main functions for multifunction tags or sensor tags within the transmission range:

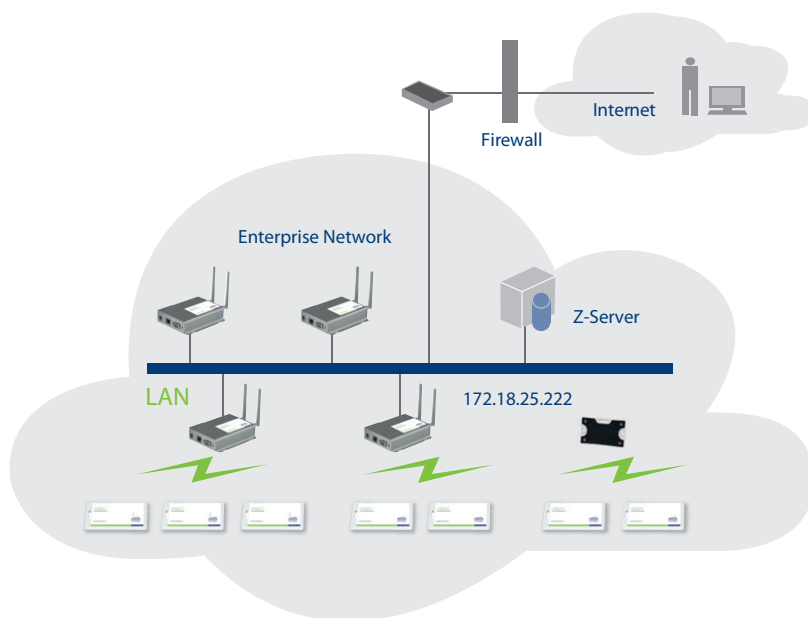
- Location of the tag is reported every few seconds.
- Change of location is reported (filtered).
- The data of multifunction tag can be read/written at any time. Tag's signalization rate can be adjusted individually. Tags can be muted and transmission suppressed.
- Attenuation can be set to minimize and maximize the reading distance, meaning the size of each zone.

### **A solution demo kit is available together**

with the full command set description.

The firmware of the controller is expandable in order to protect the customer's investment.

## Integration of ZOMOFI solution in your network – standards based and very flexible



The ZOMOFI controllers can be connected to the LAN infrastructure. Standard IT components and cabling or wireless access points can be leveraged. There is no need for an extra network or for specialized maintenance or security policies.

If for some zones more accuracy is needed, these can be equipped with SpotZone Controllers that don't need any installation infrastructure like power or network.

The ZOMOFI server – also connected to the LAN network – runs the ZOMOFI edgware and the individual business application.

In many cases the users of the RFID system are connected to the same infrastructure and are running a web-application on their computers to take best advantage of ZOMOFI.

The integration and its IT topology overall is therefore standards based, simple and very flexible.

If you want to optimize your customer processes by using the ZOMOFI solution or simply want to combine the above components with your products and services, please let us know – we shall be happy to tell you more about ZOMOFI.



leave it up to us

Albis Technologies Ltd.  
Zone Monitoring & Find  
Albisriederstrasse 199  
CH-8047 Zürich  
Phone +41 58 252 4828  
Fax +41 58 252 4778  
[zomofi@albistechnologies.com](mailto:zomofi@albistechnologies.com)  
[www.albistechnologies.com/zomofi](http://www.albistechnologies.com/zomofi)