

## Contact Us

YOUR PARTNER FOR SAFETY



**Customer-oriented** // Whether standard system or special solution - we have the suitable system. Flexibility is very important to us - we are always at your side as a competent and reliable partner with many years of practical experience and immediate delivery capability.



**Team** // Behind the name ZÖLLNER stands a team of over 180 employees in Kiel. Development, Production, Training, Sales, Order Processing und After-Sales – at ZÖLLNER everything is under one roof.



**24/7 Support** // Our 24/7 support hotline is there for you around the clock. Experienced technicians advise you on problems or provide on-site support, if required.



**Academy** // With our own training centre, the ZÖLLNER Academy, we are a recognized training provider in Germany and offer practical training. In our best equipped Academy or directly at your site - our training brings you up to date and conveys the safe handling of our components.

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Safety "Made in Germany"

# The COBRA System //

## CONTROL OF BALISES WITH REMOTE ASSISTANCE





# Safe worksites through remote train control //

## COBRA

### Basic functions

COBRA stands for "Control of Balises with Remote Assistance" and serves the purpose of being able to influence (to brake) a rail vehicle with the help of the additional components (Euro-)Balise and (mini) LEU depending on the dangerous situation (for example in front of a worksite). The system is designed in such a way that the status OK prevents a train from passing and the operator must actively confirm that the track is clear. The confirmation is carried out by operating the control unit, which switches the telegram of the balise by radio. This system works autonomously and independently of higher-level (train control) systems.

- » **Wireless communication**
- » **Battery operation -> no external power supply needed**
- » **Range up to 3 km - with repeater up to 6 km**
- » **Switch up to 4 balises simultaneously**

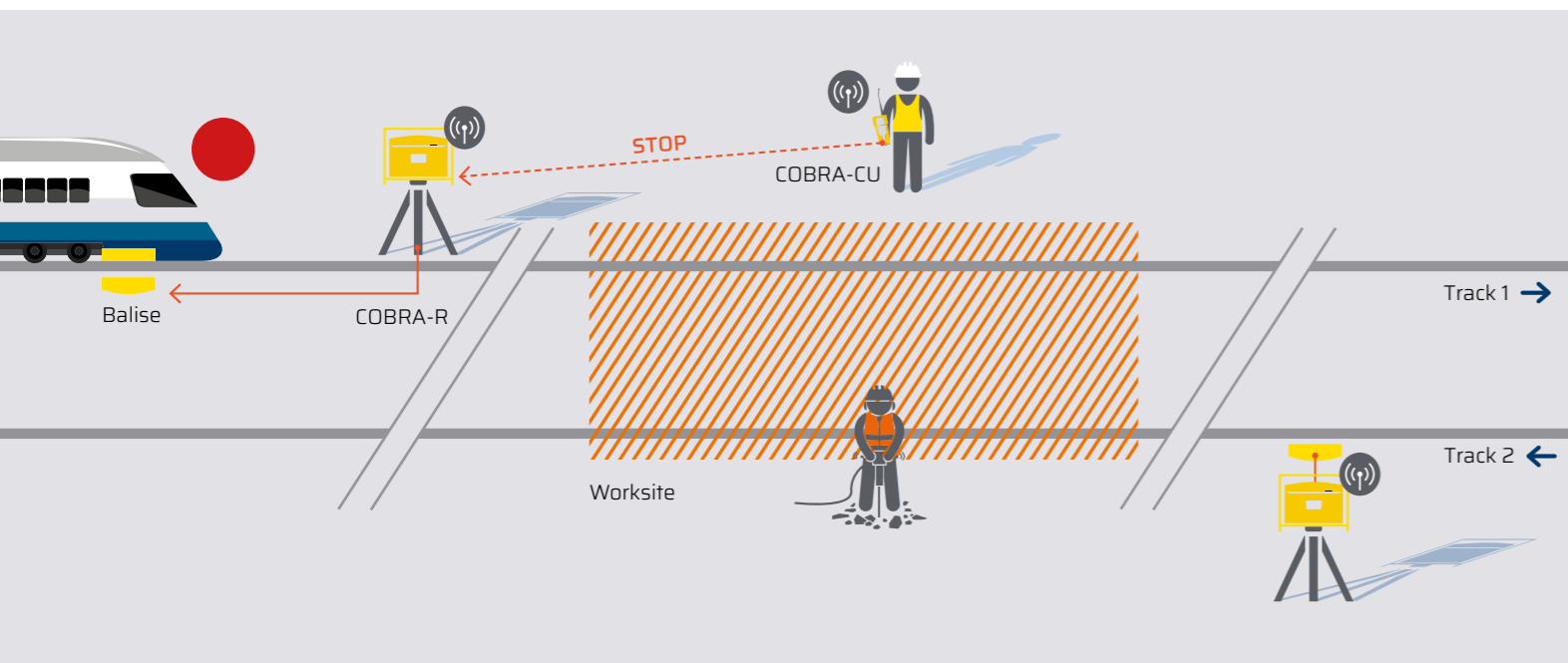
### Control Unit // COBRA-CU

The control unit (COBRA-CU) can remotely control up to four receiver units/COBRA-R (and thus balises). It communicates with the COBRA-R via radio. The COBRA-CU is equipped with a replaceable battery. With a reaction time of less than one second, the COBRA-CU is able to process the information safely and in a timely manner (send and receive to COBRA-R and evaluate and control the LEU and Balise).

### Receiver // COBRA-R

The COBRA-R unit serves as an interface between LEU and COBRA-CU. It switches the balise remotely via the LEU. The receiver is also equipped with a portable battery and is designed to operate for several days. The units are configured with each other using RFID cards.

## How COBRA works as shown by the example of a small worksite



**Fig. above** The graphic shows an exemplary structure of the COBRA system. By means of the Eurobalises, the trains can be stopped or braked.



We would be happy to work with you to develop further functional principles for individual solutions - please contact us at any time.  
[ifs@zoellner.de](mailto:ifs@zoellner.de)

### Possibilities and examples of application

**Remote control of transparent ETCS Eurobalises //** The system is currently designed for remote control of Eurobalises (see Fig. 01). For further applications, an individual adaptation can be realised, e.g. PZB 90.

**Worksites //** The system is ideally suited for worksites. With the help of the additional devices, COBRA can protect the personnel from any residual risk.

**Speed limit //** The train can also be reduced to a certain speed. The choice of speed depends on the planning, whereby balises on different tracks can be programmed differently but can still be switched simultaneously.

**Combined (Dual) Control //** The aforementioned dual control can also be used as a permanent combination. The conventional system with STOP & GO can be set up on one track and a speed restriction, for example, on the other track.

**Combination with ATWS //** The system can also be used and planned in combination with a track warning system (see Fig. 02) from ZÖLLNER in order to merge the safety concepts of warning and blocking and to be able to increase safety. The person responsible for safety receives a train warning and can then clear the worksite. Only then the train is allowed to pass through the worksite.



**Fig. 01** Fixed data and transparent balises on an ETCS line section

**Fig. 02** The new ZPW126-10 from the MFW system as an acoustic warning device when combining both safety concepts.



**01 Starting the system** Insert the RFID card into the COBRA-R receiver.



**02 Switching on the COBRA-CU control unit** Deactivate the RFID cards that are not in use.



**03 Switching on the COBRA-R receiver** The system is now ready for operation.