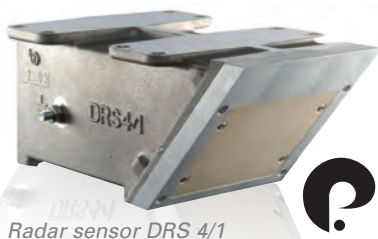


DEUTA News

Issue 1 / September 2010

Up to date know-how for rail transport

Patents are a reflection of innovation in electrical products and components. DEUTA is to the fore in questions of innovation and sets the standard for driving safety and efficiency. DEUTA was not only first to use the Doppler principle from microwave technology in trains. DEUTA also developed a procedure for processing time-dependent, discrete measurements using a Kalman filter. This patent pending system is an integral part of the DRS 4/1 radar sensor. DEUTA will be introducing the DRS 4/1, along with many other products, at InnoTrans in Berlin this year.



Radar sensor DRS 4/1



Patent pending by DEUTA



I hope you will find this Newsletter informative and enjoyable.

Dr. Rudolf Ganz
Technical Managing Director

DEUTA News – the new Print Newsletter from DEUTA-WERKE will keep you up to date with the latest from the company. In this issue you will learn how, with our specialised knowledge, we are supporting European and North American system houses on the Chinese market. In addition, we present innovative products and systems from DEUTA: REDBOX – the new Recorder Generation and Video Solutions.

Read a report by Frank Wichmann, an expert in video protection systems who advised DEUTA on the new video surveillance system.

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DEUTA's new Recorder Generation sets the standard for driving safety and efficiency and records journey data more safely.
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Safety in railway vehicles is a very topical issue. With Video Solutions, DEUTA has developed a video surveillance system which makes passengers feel safer.
- **DEUTA Quality Strategy**
Electronic products and components in railway vehicles are subject to extreme conditions. In order to deal with these, Deuta products are produced and inspected according to the DEUTA quality strategy.
- **Interview China**
With its expertise in the area of trains, DEUTA supports European and North American system houses on the Chinese market.
- **InnoTrans 2010**
At InnoTrans this year, DEUTA will present its complete range of products – from the REDBOX Recorders and Multifunction Terminals to Video Solutions and sensors.
- **Expert Wichmann in discussion**
The benefits of video surveillance in buses and trains are well known to Frank Wichmann, a specialist in video surveillance systems. Throughout the development of Video Solutions, DEUTA cooperated with the external advisor.



Feeling Safe – due to innovative, highest quality video surveillance

11.34 pm: waiting on a lonely platform for the next train home. The darkness is eerie and a feeling of uncertainty hangs in the air. Finally, the train comes; the door opens. You get on quickly as the train offers protection and safety thanks to its video surveillance. Safety in rail traffic is a very topical issue. As a leading developer and producer of components and systems for modern rail traffic technology, DEUTA, with its specialist knowledge, sets standards in driving safety and performance. Now the company has also developed a solution in the area of video surveillance in railway vehicles.

Integrated solutions for exacting demands

DEUTA Video Solutions comprises innovative and highly reliable IP interior cameras, rearview cameras, special video recorders and the successful DEUTA Multifunction Terminals. The challenge for DEUTA lay in utilising cutting edge technologies for the extreme demands made on rail traffic and in integrating the individual components into a comprehensive whole.

Clear images thanks to highly modern cameras

For both the interior of the vehicle as well as the rear view mirror, DEUTA Solution cameras record image data in high resolution, with great light sensitivity and DSP based signal processing. A special mix of materials makes these very light yet practically vandalproof. From the attachment of sensor chips to many small design features, the cameras have been designed to withstand the high pressures of rail traffic. Equipped with modern, high quality CMOS sensors, the cameras also deliver clear images in difficult, especially uneven lighting conditions.



DEUTA Video Solutions makes a considerable contribution to passenger safety in rail traffic.

Safe data storage and easy evaluation

At the core of DEUTA Video Solutions is an autonomous 19" unit: the DEUTA REDBOXtop view. Parallel recording of video and journey data facilitates the reconstruction of incidents. The recorder can record defined incidents, trigger signals and control the cameras. The recorder will play the image data of these incidents on the driver's monitor. The DEUTA Recorder stores the data continually over several days on removable disks in racks with IDE interfaces. To evaluate the data, the disk is removed and transferred to the evaluation station. Access to the data is safeguarded. Using the ADS evaluation software, the data can be evaluated graphically and in table form and the REDBOX Web-Interface gives you worldwide access to your REDBOXtop view.

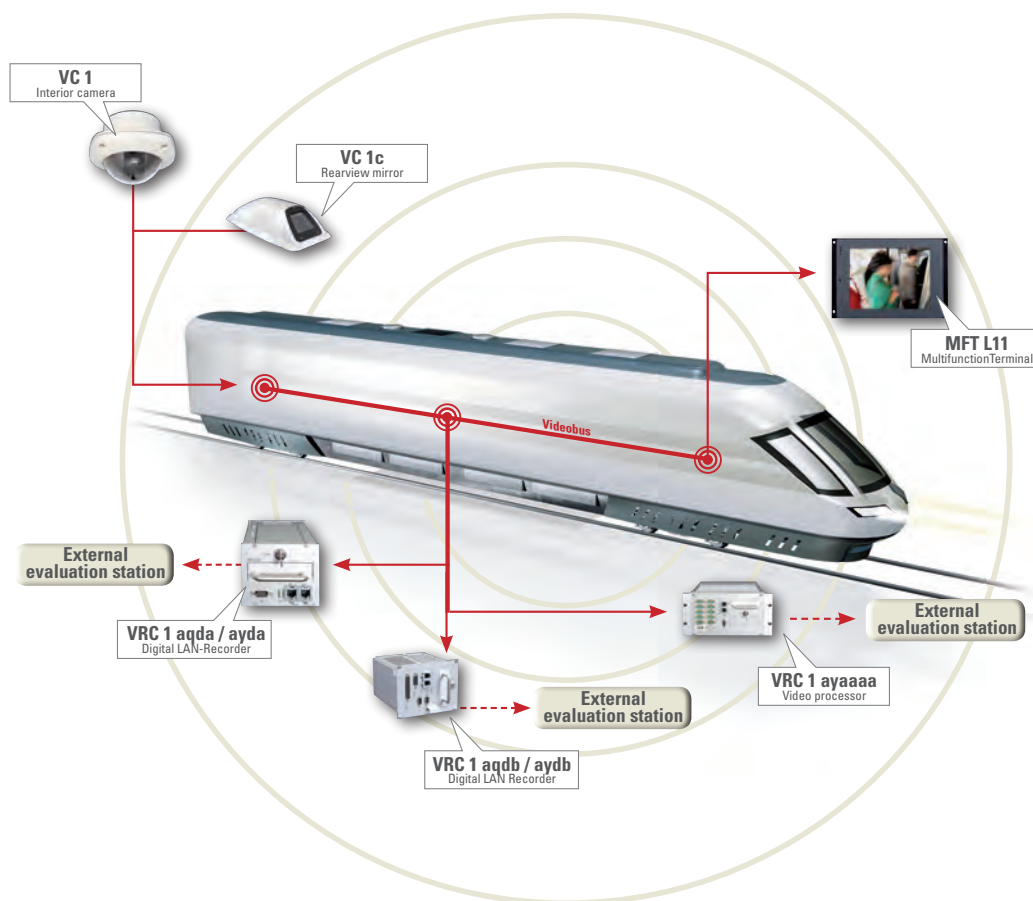
Visualisation with high quality standard

To display the recorded data, DEUTA Multifunction Terminals are employed. The robust panels feature high contrast and brightness levels. The uniform technology concept of all DEUTA MFTs offers many advantages: a wide spectrum of variants, easy portability of client software and a high quality standard. The MFTs in DEUTA Video Solutions are equipped with particularly powerful processors. In this way, they have

more RAM, greater processing power and lower power loss through energy saving technology. Together, processor quality and platform concept lead to high MTBF values and optimised LCC values.

Synergies for the optimal solution

With Video Solutions DEUTA is forging ahead with its goal of recording all data relevant to rail transport. DEUTA Video Solutions not only visualises data but also saves and evaluates it. The greatest challenge for the company lay in integrating systems into a complete solution. DEUTA mastered this challenge. Cameras, recorders and Multifunction Terminals all come from one source and are certified as a complete system. Individual components interact with each other in an optimal way. As a result of this synergy, DEUTA Video Solutions is setting new standards for video surveillance in railway vehicles.





DEUTA Video Solutions – for more safety in buses and trains

Passengers and drivers wish to travel comfortably and safely on public buses and trains. The reality is often different – there is more and more graffiti on windows. Seats are dirty or have been slashed. Sometimes fights break out, or worse. As a consequence, the sense of security among passengers and drivers suffers enormously. To combat this, DEUTA has developed Video Solutions, the video surveillance system. Frank Wichmann, specialist in vehicle video surveillance acted as advisor on this project.



Frank Wichmann

Experienced expert cooperates with DEUTA

Frank Wichmann knows that video protection systems, in which vehicles are monitored using video recordings, are a proven way to help in the fight against vandalism and violence on trains. The external advisor has spent many years working for different local train services and in the distribution of video protection systems and knows pretty much everything there is to know in the area of video surveillance in vehicles. Wichmann, who is also a consultant for railway vehicle operators, has put over 200 projects in place and possesses a wealth of experience. He worked closely with the company on the development of DEUTA Video Solutions.

Video surveillance – many questions still to be answered

Research carried out by different transportation companies has shown that in buses and trains on which events are recorded by video cameras, vandalism has been drastically reduced. However, there are many things which need to be considered when dealing with the very topical issue of video surveillance. These mainly concern data protection. How do I implement the legal guidelines? What happens to the data? How is data recorded and stored?

Data protection versus safety?

As already mentioned, the monitoring of public spaces is a topical and controversial issue. On the one hand, critics of video surveillance are suspicious of data protection - above all, the uncertainty over how long data is stored and who can access it. On the other hand, those in favour point to the worldwide security situation. The terror attacks on the regional train network in Madrid in 2004 and on the London Underground in 2005 have shown that trains can be the target of terrorist groups. To increase the subjective sense of security among passengers and train drivers alike, supporters of video surveillance recommend putting such systems in place. According to Wichmann, passengers are also positively disposed towards the idea: "transport company surveys show that 95% of passengers are in favour of video surveillance in buses and trains, as their subjective sense of security increases."



With video surveillance passengers feel safer in buses and trains.

Correct implementation of guidelines

While DEUTA and Wichmann were working together, exactly this critical aspect of data protection became the focal point. "In particular, I offered DEUTA advice regarding data protection regulations 7015 and 9344, initiated by VDV", said Wichmann. But legal guidelines were not the only object of the consultation. His many years of experience meant Wichmann was able to take client requirements into account right from the beginning. With DEUTA Video Solutions the technical requirements exist which enable the client to implement the data protection guidelines. Video Solutions records data, encrypts it and saves it cyclically according to the type of event. A circular buffer procedure, which means that storage capacity is no longer an issue these days, records the data for 72 hours and then overrides it again with new data.

Video Surveillance is worth it

That video surveillance is worth it, also in monetary terms, has been confirmed by many studies in recent years. Empirical data tells us that in vehicles which have had a video protection system installed, damage through vandalism and acts of aggression or violence are far fewer. Companies benefit from higher resale values for vehicles which have suffered less damage. For many years Wichmann has cited the additional use of video protection systems in wrongful or fraudulent claims for damages brought by passengers – and it has proved itself to be a very useful tool in that regard. Without a video protection system, when an accident allegedly occurs in a bus or train, it is the passenger's word against the driver's word. In most cases, the company simply has to pay out. Along with documentation, video surveillance clarifies what actually happened and in this way, claims without basis can be dismissed.

DEUTA Video Solutions – the synergetic solution

Frank Wichmann advised the operating companies to seek out suppliers with experience. "Experience is essential when it comes to developing products which will withstand the difficult conditions in railway vehicles. Furthermore, the operator of a railway vehicle should be able to depend on solutions which will see the vehicle through right to the end of its life cycle. That all the required norms and guidelines are adhered to should be taken for granted. Only when these requirements are fulfilled will operators be protecting their investment." Although the area of video surveillance is a new one for DEUTA, the consultant can see the obvious advantage the company has with Video Solutions: "Video solutions are indeed a new area for DEUTA. However, the company uses the synergy of its solutions along the whole process chain – from data collection and processing to the displaying of data."



DEUTA REDBOX – the new Recorder Generation records journey data more safely

Whether on a main-line train, a regional train, a tram or a locomotive – the recording of journey data in every field of application in railway vehicles is important for train safety. Recording this data makes a lot of demands on the recorders. In every train there are differences in available position and space. Above all they must withstand the extreme demands of railway transport. With REDBOX, DEUTA has developed a new Recorder Generation and it is setting new standards in driving safety and efficiency.

Multifunktion Recorders in four variants

The sophisticated Platform Concept forms the cornerstone of the REDBOX Recorder. The Recorders are based on a uniform platform; they are however available in different variants and ready for use for every application. The REDBOX is currently available in four variants: REDBOXpro, REDBOXlog, REDBOXflex and REDBOXtop. The core of the device, consisting of communications structure, microprocessor and memory module forms a stable basis for all REDBOX variants. In the process, DEUTA transforms the highly technological requirements of its products into patented solutions. A patent has also been applied for the REDBOX's speed calculator, which is based on a Kalman filter. With the REDBOX family, DEUTA is moving forward its product strategy "everything from one source". DEUTA manufactures, develops, assembles, qualifies and offers worldwide support around the Multifunction Recorder.

Innovative service and evaluation possibilities

What makes the new recorder generation stand out are the innovative possibilities for service and evaluation. Through a Web-interface, the status of the appliance or fill level of the data storage can be checked worldwide and at any time. Diagnostic messages and software versions as well as language settings are also available through the Web-interface. With the web browser there is no need to adapt to different operating systems. With DEUTA REDBOX you can evaluate recorded journey data with ADS evaluation software graphically and in table form. Since the journey data memory reconstructs the data in every resolution, you can evaluate journey data results more easily, particularly at high resolutions.

Experience the new recorder generation at InnoTrans!

DEUTA presents its new recorder generation at InnoTrans in Berlin. Avail of the opportunity to have a good look at our innovative REDBOX recorders from 21 to 24 September 2010.

Hall 4.2, Booth 121

Practical storage medium and easy integration

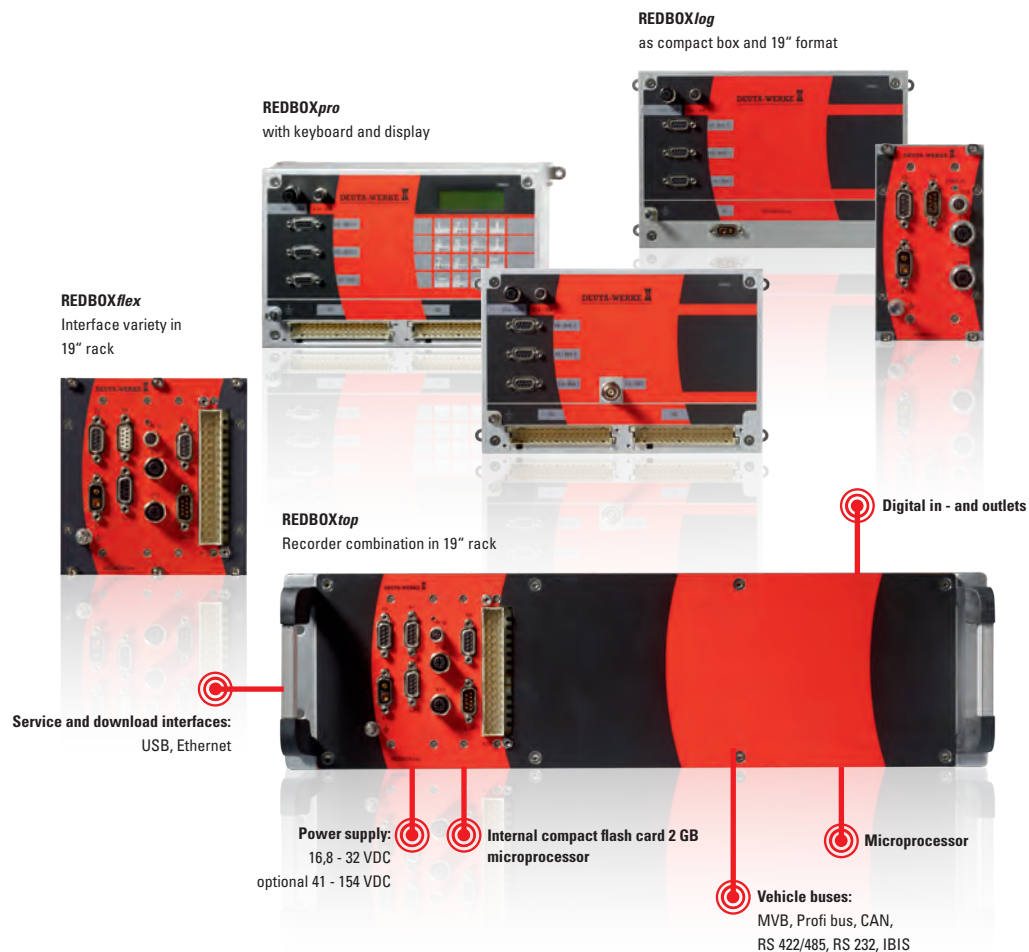
There are two further advantages to the the DEUTA Multifunction Recorders compared to other recorders. First of all, there is the integrated compact flash card. Lost or incorrect memory cards are a thing of the past. Recorded journey data can be read in the conventional way using the standard Ethernet interface or a USB stick. Secondly, the DEUTA REDBOX is easy to integrate. The recorder hardware will always find room. As a 19" rack in the control cabinet or as a box version, the Multifunction Recorders are easily integrated into the individual vehicle.

REDBOX for your application

Our products and project engineers are happy to help you to choose the optimal combination and to find the right REDBOX for your particular application. Make contact with us and have a close look at the DEUTA REDBOX, the new Recorder Generation, with which you can safely record journey data.

redbox@deuta.de

DEUTA Multifunction Recorders: one Platform – many variants



The Chinese railway market – DEUTA is ideally equipped for the challenge

Back in 1994 DEUTA-WERKE in Shanghai along with Chinese partner Shanghai Railway Communication Factory (SRC) set up the Joint Venture „Shanghai DEUTA Electronic & Electrical Equipment Co. Ltd. “

The Chinese railway market is continually expanding. On the one hand, the urban infrastructure is being improved through Metro projects; on the other hand, centres of commerce are being connected by long distance connections. The manufacturers of railway vehicles face the great challenges of localisation.

As a strategic partner of European and North American system houses, DEUTA supports its clients locally. Competent contacts are part of this: Thilo Weigel from DEUTA in Bergisch-Gladbach is moving to Shanghai DEUTA. In her role as Sales Engineer for the Chinese market, Ms Auwärter-Leng will reinforce the DEUTA Sales and Distribution Team in Germany with immediate effect. Both have already worked for Shanghai DEUTA and know the Chinese railway market very well.



DEUTA worldwide



Vivian Auwärter-Leng

? Ni hao, Mr Weigel, how good is your Chinese now?

I'm certainly not at the level of native speaker but I feel the one-to-one language course has helped. I also spent six months in Shanghai in 2009 which helped me to feel comfortable with the language.

? You are leaving DEUTA-WERKE in Bergisch-Gladbach and going to Shanghai-DEUTA. What will your responsibilities be?

Shanghai DEUTA already has a lot of experience in implementing localisation projects.

As vice-CEO I am currently working on client and product oriented solutions. Our clients value this service because localisation – that is the part-relocation of a value added chain, also presents a great challenge for the system houses. The existing certification from TÜV Rheinland and the IRIS certification testify to high quality awareness. I will contribute to pursuing this standard. Also on my agenda is the strengthening of the collaboration between Shanghai DEUTA and DEUTA Werke. Within the framework of localisation, knowledge and experience from China and Germany must be focussed and put to optimal use.



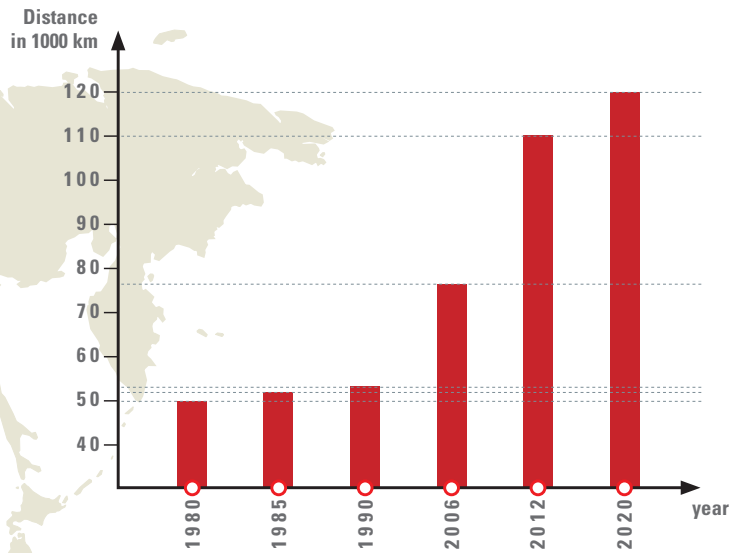
Thilo Weigel

? Ms Auwärter-Leng, you know both companies. Tell us something about the competencies of Shanghai DEUTA and DEUTA-WERKE?

The core competence of both companies lies in the area of product solutions along the whole process chain. The product portfolio for rail vehicles is particularly well integrated and synergetically designed. It ranges from radar and sensor technology to recorders, indicators and Multifunction Terminals. DEUTA achieves quality and flexibility through its great production depth. This facilitates cooperation and understanding between the plants.

? Mr Weigel, you are continually working to optimise Shanghai DEUTA's localisation range. Are there any State guidelines within which you have to work and which present a particular challenge?

Yes, the Chinese Government has brought in the 'Local Content' regulation. It is the intention of the Ministry to increase the added value of products in China. The end product should consist, in large part, of products locally produced in China. However, in Shanghai DEUTA we will not be limiting our localisation concept to production only. Maintenance, service activities and product qualification are also carried out locally. Particularly in the client sensitive areas of maintenance and service activities, we will be dedicating a lot of time to our Chinese colleagues in order to fulfil the requirements arising from the IRIS certification.



The Chinese rail network is continually being extended and by the year 2020 will have reached 120,000km in length.
(Source: Wikipedia – Rail Transport in the People's Republic of China)

? Ms Auwärter-Leng, how can clients of DEUTA become active in China?

The Chinese rail market is growing all the time and the Chinese economy is in the process of opening up. However, many system retailers are not yet active on the Chinese market. DEUTA supports system houses during the localisation process. Both vehicle manufacturers and DEUTA must use locally available skills and resources.

? Is there a particular tendency in infrastructural projects or are there concrete projects that you can tell us about?

The Chinese Government attaches great importance to the upgrading of the rail transport infrastructure. The Chinese rail market has the potential for enormous growth, in both new infrastructural projects as well as the upgrading of the existing network. Long distance connections between centres of commerce are being upgraded and connected with high speed trains. Investments are being made in freight capacity, i.e. engines and carriages, in order to be able to manage the internal Chinese transport of goods. Furthermore, there are many Metro projects pending in the ever growing cities and urban areas. An increase in the number of vehicles and an extension of the network improves the infrastructure of rail traffic within cities.

? Mr Weigel, what are the benefits that DEUTA can offer its partners in the realisation of these projects?

Our partners benefit from our production depth, our successful management of obsolescence and our wealth of experience in the rail market. System houses, such as Bombardier, Insigma, New York Airbrake, Peking Metro or CSRC, appreciate the access to the Chinese market they have with Shanghai DEUTA.

? Mr Weigel, one final question: what are you most looking forward to during your stay in China?

Along with its clients, Shanghai DEUTA has obvious prospects for growth. I see it as great challenge to help shape this dynamic growth.



DEUTA supports the manufacturers of railway vehicles for the Chinese rail market.



DEUTA Quality Strategy – reliably fulfilling exacting demands

The train covers thousands of kilometres on the tracks. Kilometre by kilometre in wind and all kinds of weather. The electronic products and components get a thorough shaking on bumpy journeys. DEUTA products, recorders, sensors and Multifunction Terminals reliably fulfill these exacting and specific demands thanks to type tests and development accompanied by tests, which form part of the successful DEUTA quality strategy.

From interference resistance to vibration

In order to satisfy the highest quality requirements, testing forms part of DEUTA's ongoing development. Many different tests are required, such as the test for electromagnetic compatibility. In this test, beamed and conducted emitted interference and interference resistance are measured. Tests regarding mechanical influences are also possible, such as shock and vibration or leakage tests, or the testing of an environmental situation as in a climatic test.

Modern equipment for a variety of tests

The various tests take place in DEUTA's in-house test laboratory. The equipment there meets the high technical requirements essential for testing DEUTA products. These high quality devices enable DEUTA to conduct tests parallel to development. By way of example, there is an infrared camera for the creation of heat images, so called thermography. Thanks to the laboratory's modern equipment and instrumentation, DEUTA is in a position, among other things, to carry out tests for impact, insulation and electrical strength as well as stress screening.

Reliable performance in the face of exacting demands

DEUTA products must pass these suitability tests, carried out in accordance with DIN EN ISO/IEC 17025 requirements, in order to function reliably later in demanding operational and environmental conditions. Client regulations are of considerable importance - for example, the installation of DEUTA products in railway vehicles belonging to Deutsche Bahn (DB) is conditional on compatibility with all radio frequencies of DB AG.

DAR Accreditation makes complete test procedure possible

To further optimise the DEUTA quality strategy, the test specialists are preparing the laboratory for accreditation from the German accreditation council, Deutsche Akkreditierungsrat (DAR). "From autumn 2010 we will conduct the complete test procedure as an accredited test laboratory: from developmentally guided product qualification to the final qualification", says Ralf Meuser, test laboratory chief. As an IRIS certified company, accreditation is nothing new for DEUTA. Thanks to the accreditation and the excellently equipped test laboratory, Ralf Meuser is very optimistic about the future.



DEUTA tests products in the test laboratory with high grade equipment.



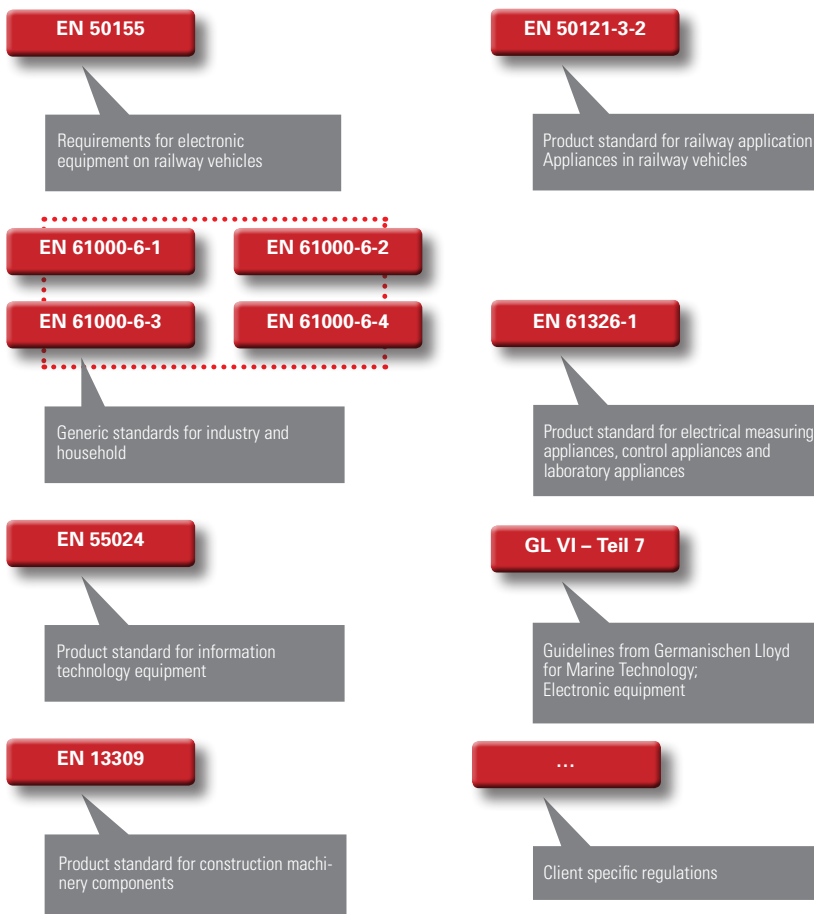
External products in the testing bay too

The coveted test stations at the DEUTA testing laboratory are also open to external products. Testing in the DEUTA lab is a cost-effective way to quickly and efficiently achieve a marketable and certifiable result. The test team, under Ralf Meuser, carefully examines vehicle components, devices for industrial and small scale use and portable built-in units according to their later area of application. Test plans and technical documentation conforming to standards are prepared by the staff. Thanks to their professionalism, items under test are incorporated at short notice into the test procedure. Owing to high demand, this competent team now comprises four people.

If you would like to have your products inspected in the DEUTA testing laboratory, Ralf Meuser and his team are happy to help. Tel. +49 (0) 22 02 958-215.

Examples

Standards and regulations in use



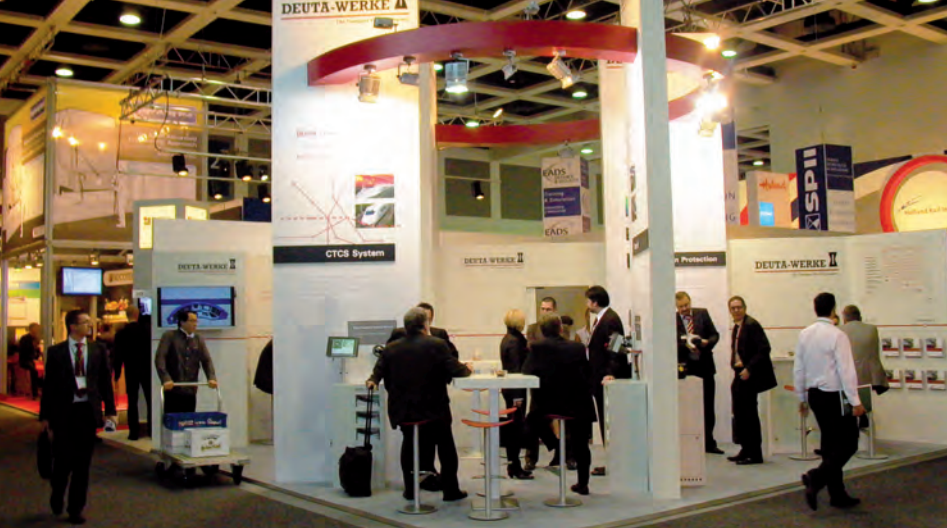
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DEUTA will be presenting its innovative products at InnoTrans this year too.

Great prizes to be won

DEUTA will be holding a REDBOX lottery at this year's InnoTrans. On each day of the Fair, the company will raffle an Extra Class Dell Inspiron Mini 10 Notebook. Visit the DEUTA stand and see for yourself how DEUTA realises its vision in innovative products.

Come and meet DEUTA at InnoTrans 2010 in Hall 4.2 – Booth 121

Making railway transport demonstrably safer and more efficient. That is our vision at DEUTA. How the company breathes life into this vision, you can find out at InnoTrans Berlin from 21 to 24 September 2010. At the international trade fair for Traffic Engineering, Hall 4.2, Booth 121, the company will be presenting its complete product portfolio – unique in its breadth and depth. This is how DEUTA harnesses high end technologies for use in railway vehicles and sets international standards.

Learn more about the complete portfolio:

REDBOX – the new Multifunction Recorder Generation

The sophisticated REDBOX concept provides journey data security and innovative possibilities for service and evaluation – compact and applicable worldwide.

Multifunction Terminals – with IconTrust

Your visualisation requirements are met, with DEUTA Multifunction Terminals – and always exactly as your needs dictate. At this year's InnoTrans, DEUTA will introduce the IconTrust circuit – the innovation for all TFT indicators, which must fulfill a certain Safety Integrity Level (SIL).

Mobile Video Systems

With video surveillance you can be confident that you have an overview of all that is happening within and around the vehicle. DEUTA video surveillance consists of innovative and highly reliable IP interior cameras, rearview cameras, the hybrid recorder REDBOXtop view for the recording of journey and video data, the new infotainment terminals and the successful DEUTA Multifunction Terminals.

Pick up sensors, wheel axle sensors, Doppler radar sensors

Extreme longevity and little maintenance needed. Let us introduce, among others, the single-channel Doppler Radar DRS 4/1 with the patented algorithm. This has been optimised for the estimation of current speed, particularly in applications like traction control and measurement during strong acceleration, for example in Metro trains.

Each individual product benefits from DEUTA's experience with the complete process: from the gathering through to the processing and representation of all values needed for safe and efficient railway transport.

DEUTA-WERKE 

The Transport Vision Company