

## Case Study

# Fire Department Turns to RFID Technology to Increase Safety and Maintenance of Protective Gear

### Company Description

Brooks RFID Division - formerly HERMOS Informatik GmbH - is part of Brooks Automation Inc., a worldwide provider of automation solutions headquartered in Chelmsford, Massachusetts (USA), with representations in Central and North America, Europe and Asia. Since 1994, the company's RFID Division, based in Germany, has focused on contactless identification by radio frequency identification (RFID). It manufactures both RFID hardware for integration in existing installations and mobile devices for wireless data exchange.

### Operations

- Brooks Automation is a member of Texas Instruments' Team Tag-it® Program. The program is a partnership of industry leading companies dedicated to the development and market adoption of RFID smart labels.
- Pioneers in RFID, Brooks RFID Division has been involved in every aspect of the technology for nearly 15 years. They can consequently look back on a multitude of successful RFID projects and more than 50,000 implemented readers.
- The division's own development and manufacturing operations create RFID products of the highest quality, security and reliability. As a developer, manufacturer and integrator of RFID systems Brooks Automation serves very different segments with technically sophisticated and economically attractive automation solutions.
- Material flow control, access control, product tracking or goods inspection are just as much a focus for Brooks Automation as the implementation of new marketing strategies by modern product handling terminals.

### Problem

Firefighters are charged with entering the harshest of environments to rescue fire victims. They depend on their firefighting clothing and gear to protect them throughout the rescue effort. It is their job to lend assistance in the case of accidents, floods or fires: that means to rescue, protect, and save people, animals, and material objects. Any failure in the protective clothing can literally mean life and death to either the victim or the firefighter. As such, the Krefeld Fire Department in Germany sought to improve the tracking and management of its firefighters' protective clothing. Their goal was to ensure all of the garments were in good working order and to determine if any replacement materials were needed. Fire departments are responsible for the clothing issued to the firefighters so there is a significant degree of liability associated with cleaning and maintaining it. Regular washing and disinfecting of the clothing and gear is required by law. On the one hand, a thorough cleaning treatment of the protective clothes is indeed crucial; on the other hand, with



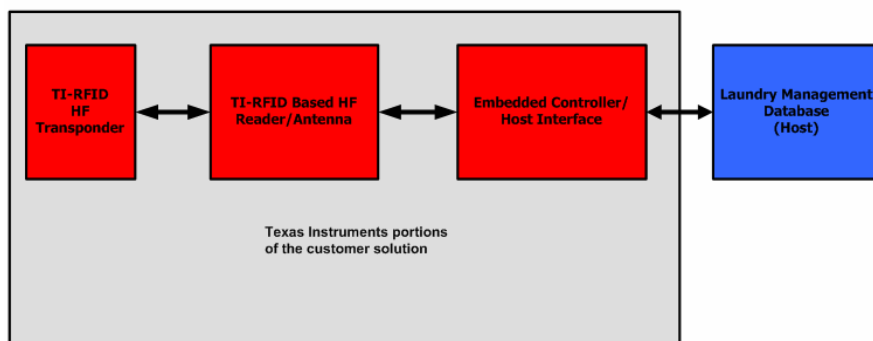
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each laundry/disinfecting action the gear sustains a certain degree of damage. Therefore, each item can withstand a certain number of cleaning treatments before it must be discarded and replaced. The Krefeld Fire Department sought to understand how technology could facilitate clothing maintenance and replacement so they looked to Brooks Automation, an RFID systems integrator and distributor of Texas Instruments' RFID solutions, for answers. With greater information about the wear and tear of its protective clothing and gear, the Krefeld Fire Department could first, increase safety and secondly, manage and maintain the necessary replacement of materials and the associated costs.



### Solution

To address the opportunity with the Krefeld Fire Department, the Brooks RFID division inserted a Texas Instruments RFID transponder into each fire resistant garment which is designed specifically for the laundry application. With several million transponders deployed into the laundry industry and more than 18 years of RFID experience, TI delivered Books Automation a reliable and stable product (RF-HDT-DVBB-N1 and RF-HDT-DVBE-N0) capable of standing up to multiple environmental stresses. The transponders, which are sewn into each article of protective gear, withstand the extreme heat and physical stresses as wore by the firefighter and it is also resistant to the cleaning, maintenance and disinfecting process. Each laundry drop-off and distribution point has an RFID reader, also called table scanners, to read the transponder's data as it enters the cleaning process. With the aid of RFID technology every article of clothing now reveals its past – which is a fast, simple and trouble-free process. Whether it is dropped off, distributed, brought in for laundering or disinfecting – the data for all the necessary processes are automatically collected by the RFID reader.



The precise identification number that distinguishes a transponder makes it near impossible to confuse or lose laundry items. Relevant data such as the user, time and date of the last cleaning and disinfection are

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stored in a database. In the example of the Krefeld Fire Department, the software was programmed according to its needs and requirements. Furthermore, the distribution points are capable of immediately detecting whether the article of clothing is in working condition or whether it must be withdrawn from use. The Krefeld Fire Department can use the stored data to easily obtain reliable and substantiated information regarding the status of all work clothes administered during routine inventory checks. This benefit meets the Krefeld Fire Department's request to save resources with time-consuming administrative tasks and remain focused on doing the important work – fighting fires and saving lives.

### About Texas Instruments RFID Systems

Texas Instruments is the world's largest integrated manufacturer of radio frequency identification (RFID) transponders and reader systems. Capitalizing on its competencies in high-volume semiconductor manufacturing and microelectronics packaging, TI is a visionary leader and at the forefront of establishing new markets and international standards for RFID applications. For more information, contact **RFID Systems** at 1-800-962-7343 (North America) or +1 214-567-7343 (International), find this and other RFID case studies at [www.ti.com/rfidnews](http://www.ti.com/rfidnews), or visit our Web site at [www.ti.com/rfid](http://www.ti.com/rfid).

### About Brooks Automation

Brooks Automation Inc. (Nasdaq: BRKS) is a worldwide operating provider for automation solutions and robotic systems. The company with subsidiaries in America, Asia and Europe, has its headquarters located in Chelmsford/Massachusetts, USA. Since 1994 the RFID division of the German subsidiary Brooks Automation (Germany) GmbH concentrates its business activities on development, production and integration of RFID systems, which communicate contactless and without intervisibility. The product portfolio contains mobile and stationary readers based on the frequencies 134.2 kHz LF and 13.56 MHz HF as well as numerous accessories.

Brooks RFID Division link to <http://www.brooks-rfid.com> or RFID reader link to <http://www.brooks-rfid.com/rfid-hardware/rfid-reader-hf-1356-mhz/overview-rfid-reader-hf.html>

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