Kapsch BusinessCom

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challenging limits

Press release

Kapsch BusinessCom – Huge amounts of snow in the Northern Alps: textile, smart snow load sensor can save lives.

A textile snow load sensor is now in use in Vorarlberg, the first of its kind in the world. This innovative solution was developed by Kapsch BusinessCom, in collaboration with the Grabher Group and the Smart-Textiles Platform Austria. Estimating the snow load on building roofs is a major challenge, even for specialists. This intelligent, textile snow load sensor is designed to help emergency services, local authorities, and private individuals to make more accurate assessments of the danger level, so that action can be taken in time.

Vienna/Hohenems, January 21, 2019 – The current weather conditions in Austria are testing roof structures to their limits with large volumes of snow. As a result, many people are wondering how much more snow their roof can support before it collapses. The intelligent, textile snow load sensor from Grabher provides the answer. And the underlying technological solution from Kapsch transforms this innovative fabric into an intelligent sensor. The sensor is just a few millimeters thick, and is mounted directly onto the roof surface. There, it measures the weight of the snow and activates an alarm via an online platform if the snow load reaches its maximum. In Eichenberg (Vorarlberg), these textile, digital snow load sensors are now being tested for the first time in real-life conditions, at 793 meters above sea level, where the snow is 40 centimeters deep. The lifesaving fabric device has already been put through its paces in the laboratory. The development process began three years ago. In 2018, the company presented the sensor to the public for the first time. It won its first award shortly afterwards: in the Dornbirn Smart City Competition, the textile snow load sensor was nominated as one of the winners, as an outstanding digitalization project.

How do you make a fabric smart?

The digitalization process that makes a fabric "intelligent" is a complex one. "In the course of our day-to-day work here at Kapsch, and our experience from over 130 digitalization workshops, we have found that most digitalization processes can be broken down into five elements: sensors, networking, platforms, artificial intelligence and analysis, plus application," explains Jochen Borenich, member of the Management Board at Kapsch BusinessCom. These elements also feature in the development of the textile snow load sensor solution. The starting point is the sensors, which gather data. For the assessment of snow loads, the sensors are part of an intelligent fabric that records the weight of the snow. Data about the snow load are gathered continually, transmitted securely to an IoT platform in Kapsch's own data center, and recorded in encrypted form. The next step is to evaluate and analyze these data. You could say that this is the point at which the fabric becomes intelligent. These data become information that can be used to control and influence events and decisions. The final step is for the necessary information to be sent to the end user in real time via the platform. There, he or she can read the snow load data through an app. This is where big data become smart data, in a form that is comprehensible to the end user. If the readings are high, then the textile, intelligent snow load sensor directly activates an alarm. This is one way in which digital, smart solutions are enhancing safety and making our everyday lives easier. "With our expertise as leading digitalization experts, we are implementing end-to-end projects in every sector, from industry to healthcare and the smart office," adds Borenich.

Essential equipment for snow emergencies.

"Kapsch's expertise in the fields of data transmission, security, and analysis, and our know-how across the entire textiles sector complement each other perfectly, making fabrics smart and developing intelligent applications," says Günter Grabher, Chairman of the Grabher Group. This solution is attracting enormous interest because of the current conditions, and it is now being tested extensively in various scenarios and in real-life conditions. Experts from Kapsch, Grabher, and the Smart-Textiles Platform are already planning additional functions: they hope, for example, that the system will also provide data for the assessment of avalanche situations.

Kapsch BusinessCom, a Kapsch Group company, supports companies in taking their business performance to the next level and developing new business models. As a leading partner in digitalization, the company operates as a consultant, system supplier, and service provider. Kapsch BusinessCom is the ideal partner for keeping abreast of rapidly evolving digital technologies thanks to its widespread expertise in handling large quantities of data and matters of security, in addition to the valuable experience gained from successful implementation of a variety of use cases across numerous industries. The company's comprehensive portfolio in Austria, Romania and the DACH region includes technology solutions for intelligent and – most importantly – secure ICT infrastructure along with smart building technology, media and security technology, and outsourcing services. Kapsch pursues a strategy of manufacturer independence, cooperates with leading global providers such as HPE, Cisco, and Microsoft, and participates in a wide network of research partners and industry-specific solution providers ranging from startups to major corporations.

Kapsch BusinessCom services more than 17,000 customers both locally and globally, including Allianz, Erste Bank, ÖBB, OMV, ORF, and Vodafone. In the fiscal year 2017/18, Kapsch BusinessCom generated revenue of approximately EUR 318 million with its 1,200 employees.

The **Grabher Group** is based in Vorarlberg, and was Enterprise of the Year in 2018. It includes nine companies, specializing in technical textiles, lightweight composite fibers, nano-plasma technology, and smart textiles. The group also has its own specialist research center, V-trion textile research GmbH, which is regarded as one of the world leaders in the research and development of textile sensors and actuators. www.grabher-group.at

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