



SUMMARY



Customer

Rega (Swiss Air-Rescue)
Switzerland

Industry

Public Safety - EMS

Challenge

Reduce On-Board Weight,
Manage Documents
Electronically, and Improve
Efficiencies

Solution

Customized User Interfaces and
Automatic Updates

Results

Positive Response and Rapid
Adoption of Mobility Solution

* Zebra acquired Xplore
Technologies and all Xplore
products in 2018.

Zebra Rugged Tablets Help Swiss Air Rescue Service To Soar

Accessing critical situational data in real time

Rega (Swiss Air-Rescue) is the air rescue service which provides emergency medical assistance in Switzerland and Lichtenstein, notably in mountains but also in cases of life-threatening emergencies elsewhere. It is Rega's mission to provide airborne medical help around the clock, directly to the scene of an accident. Whether it's an avalanche, a red alert, traffic or forest accident, or someone has to be rescued from a glacier crevasse— in Switzerland, you can call 1414 any time of the day or night to contact the air rescue services. The teams remain busy. An average winter weekend often requires Rega teams to take to the skies for more than 100 assignments to assist people involved in skiing accidents alone.

The majority of the Rega assignments involve helicopters, which are best suited to access mountainous areas to rescue hikers, pick up injured skiers, and conduct searches or evacuations. In flat country, most of the helicopter assignments are dispatched for traffic accidents, followed by sports and work related accidents. Rega also flies patients from one hospital to another and transports organs as well as medicine.

Rega (an acronym of Rettungsflugwacht and Garde Aérienne – Rescue Flight Services and Aerial Protection) has its main offices in the Rega Center at the Zurich-Kloten Airport. This is where the dispatch office is located and also serves as the home base for three ambulance jets and a maintenance service center for all aircraft. With 12 helicopter bases distributed throughout the country, a helicopter can be at any particular accident location within 15 minutes after the alarm has been received under good flight conditions.

Challenge

Reduce On-Board Weight, Manage Documents Electronically, and Improve Efficiencies

Three pilots, three paramedics, a number of different doctors and relief personnel are allocated to each of the twelve helicopter bases. A standard crew consists of one pilot, one paramedic, and one doctor, each on call for 24 to 48 hours. In challenging terrain, an additional rescue specialist from the Swiss Alps Clubs (SAC) joins the crew on-board. In a helicopter, rescue aids such as telescope rods and crevasse rescue equipment are taken along in addition to the routine medical equipment.

SUCCESS STORY

REGA (SWISS AIR-RESCUE)

When pilots start out on assignments, they must carry all important and legally required documents. This includes extensive maps, the Minimum Equipment List (MEL), and the operating manuals for the helicopter, which alone weigh five to six kilograms. Prior to the assignment, the pilot also has to become familiar with the specifics of the situation in the air and on the ground. Weight and balance calculations, including the weight of the passengers and fuel, must be ready to be presented to the proper authorities when the aircraft lands. For many years, these documents were printed out and taken along. In addition to the stack of paper and the significant extra weight, the information was also not always up to date.

Space and weight are decisive factors for every assignment because any weight saved can be allocated to additional medical equipment, fuel, or crewmembers. That's why Rega was interested in switching to electronic data, implementing a paperless process, and automating that process as much as possible.

Due to the specific requirements for in-flight use, various mobile technology solutions – including the Zebra hard-handle rugged tablet form factor – were evaluated by Rega. The Zebra* rugged mobile computing technology came out quickly ahead of other manufacturers with its superior mobility, excellent battery life, and higher value for the cost.

Solution

Customized User Interfaces and Automatic Updates Delivered via Rugged Tablets

One of the chief concerns of the pilots and paramedics was being able to integrate a customized user interface on the tablet's display screen into the start menu to meet their specific needs. IT expert Marcel Haldimann programmed the user interface in Visual Basic. NET so that, with the large keys, users can access the functions reliably even during flight and when exposed to constant vibration. A stylus can be used to access menu items with just one click. Prior to takeoff, the device can also be operated using a mouse and keyboard. The docking station and the connection options for peripheral devices transform the highly portable solution into a complete desktop replacement solution.

"Quick access to more up-to-date information is not only more pleasant for us, it can even increase our safety and the safety of the patients."

Reinhard Weissen
Operational Project
Coordinator, Rega



SUCCESS STORY

REGA (SWISS AIR-RESCUE)

The durable 10.1" rugged tablets are also equipped with a solid-state drive (SSD) and feature 2 GB of RAM. Despite the extensive maps required, Rega currently uses a maximum of 20 GB of the available 64 GB SSD, providing potential for the addition of further applications. Running a professional-grade Windows® OS, the rugged tablet PCs are integrated seamlessly into the corporate network and are equipped with a MS SQL Express version for the helipad database. The online database at Helipad.org provides the current data on any flight obstacles and specific dangers. For example, if a pilot is flying to a hospital for the first time, he can find out about the flight approach

At 5:30am every morning, the replication mechanism programmed by the Rega IT team loads and runs the current data from relevant intranet sectors and the web applications onto the tablet PCs for the individual bases. Since the devices are all equipped with a WLAN interface, the crew could also work online on the ground. The official electromagnetic interference (EMI) test has already shown that the radio-navigation devices are not affected by the use of the Zebra rugged tablets. "For the users, the main focus was on designing a user interface that makes it possible to operate practically all the functions with just one click. The biggest challenge in the introduction of the devices, however, was the programming of the replication and synchronization mechanism," explained Marcel Haldimann, IT project head at Rega. Following the successful start, he sees great potential for the future. "We have only just scratched the surface. The Zebra rugged tablets offer a number of additional valuable options, leaving us lots of room to add applications in the future."

Following the successful test runs, Rega decided to purchase devices to outfit all the helicopter bases with the same 10.1" hard-handle rugged tablet form factor.

The devices were purchased through I-BITPRO AG, a Zebra Swiss distribution partner. Because of the company's attention to customer care, the tablets were soon up and running at the different locations with all the desired features. The devices are now in use at each base and there is an exchange pool available to the IT department.

The Zebra rugged tablets are designed for mobile use and built to be strong yet light in weight. IP54 rated for protection against dust and moisture, and MIL-STD-810G tested to ensure protection from drops, the tablets also feature an optional SSD for protection against shock and impact and Corning® Gorilla® Glass for advanced screen protection. Being dropped from the helicopter seat into the snow should pose as little problem as the constant vibrations and jolts during flight.

"Everyone is happy that the mountains of paper have been reduced, that less time is now spent on administration tasks and that the data available is always up to date."

Reinhard Weissen
Operational Project
Coordinator, Rega



Because the users constantly work shifts or are on-call, it was necessary to find an alternative to a central user-training program. First, the Zebra rugged tablet computers were presented to the pilots at the regular pilot meetings; then one employee from each base was sent to a half-day training course and expected to pass on what had been learned onto colleagues. The operational project coordinator, Reinhard Weissen, was able to conduct the user-training course easily. "Thanks to the intuitive operation and the use of familiar applications, the introduction phase went very smoothly," commented Weissen. "In the final analysis, the whole process has become significantly easier with the investment of relatively little time and effort."

Results

Positive Response and Rapid Adoption

On assignment, using the the Zebra rugged tablet is quick and easy. The tablet, which contains all the up-to-date information, is removed from the docking station and taken along in the helicopter. It is then stored behind the pilot's seat. Should special information on the hospital landing pads, mountain railways or building heights be required during the flight, the paramedic can get the tablet and directly access the corresponding information.

This information includes up-to-the-minute map data indicating the shooting areas used by the Swiss Army or the many mountainous railway transport cables throughout the country, which pose a great danger to the helicopters. With the superior screen presentation, the brightness adjustment and the View Anywhere® display, the pilot is able to see the current information on the flight area from a less-than-perfect viewing angle and despite any glare caused by the snow or sunlight. Thanks to the flight preparation completed and stored before takeoff, the crew is always ready for a possible ramp check, which can be conducted by the aeronautical authorities at any

landing place at any time. The Zebra rugged tablet can be used in stand-by mode for up to seven hours. For emergencies, the team also carries an extra battery to replace a depleted battery without any interruption in hot-swap mode even under difficult conditions, e.g. when it is extremely cold.

At the end of each shift, the Zebra tablet is put back into the docking station to recharge the battery and upload the automatic update from the corporate network. As a result, the shifts always work alternately with one of the identically programmed computers belonging to the helicopter base. The team can rely on having an up-to-date database and a fully charged battery, regardless of whether they are flying with night vision gear to an assignment on the north face or are called to a traffic accident early in the morning.

Although the pilot can request information from the central office, it is much easier to have all the data ready at the touch of a button at any time and to have access to the relevant intranet sectors with up-to-the minute information. The phone book and countless maps of remote ski areas are all stored in this spacesaving format and updated on a regular basis. The IT department's development work for the integration of the Zebra rugged tablet platform and the investment costs for these devices is considerably lower.

At a conservative estimate of a time savings of approximately 10 minutes per process, the result is an increase in efficiency of up to eight hours a week. The new system also eliminates the usual paper costs. The investment has really paid off for Rega.

Rega's main goals were achieved including reducing the weight on board, saving space and keeping data up to date. The enormous increase in efficiency and the step towards a paperless, electronic helicopter "flight bag" were also essential criteria achieved in utilizing Zebra rugged tablets.

For more information on Zebra Tablets,
visit www.zebra.com/tablets



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