



## Pioneering work for monitoring mechanical ventilation – Swisstom and UID allow new insights into lung function

Landquart, October 2013

An electrode belt of the Swiss start-up company Swisstom measures the respiration in individual lung regions and displays it in real time. The clear and reduced design of the user interface designed by UID facilitates the work on intensive care units. Its parameters provide instant information, while the interaction is very intuitive. Thanks to its friendly and light aesthetics, the user interface stands out from comparable medical interfaces, giving Swisstom another unique selling point.

### The background

The electrical impedance tomography (EIT) of the Swiss start-up company Swisstom raises the bar for mechanical ventilation monitors. EIT transmits the breathing lungs directly onto a screen. To do this, an electrode belt is fastened to the patient's thorax. Its integrated sensors measure the respiration in different lung regions, constantly converting the generated data into parameters relevant for decision making. Other imaging methods such as CT only provide snap-shots. EIT, however, enables physicians and caregivers in intensive care to monitor respiration in real time without any hindrances for the patients. That way, decision makers will be able to take fast and targeted actions to address changes in lung functionality.

### UID's services at a glance

- moodchart and visualization workshop
- interaction concept
- screen design

### Contact Swisstom AG:

Dr. Stephan H. Böhm  
Medical Director

Phone +41 (0)81 330 09 72  
Fax +41 (0)81 330 09 71  
Mobile +41 (0)79 427 74 04  
shb@swisstom.com  
www.swisstom.com

### Press contact User Interface Design GmbH (UID):

Juliane Markotschi  
Corporate Communications

Phone +49 (0) 7141 3 77 00 37  
Fax +49 (0) 7141 3 77 00 99  
Pressekontakt@uid.com  
www.uid.com





### The result

Transparency, as one of Swisstom's brand values, is apparent in all parts of the product: The focus of the product's interaction and design is on providing the user with a clear picture of complex information.

The touch user interface is divided into three main sections: The **ScoutView** provides the user with an overview of the patient's general data and indicators for monitoring quality and body position. The **VentView** displays the amount of respiration in specified parts of the lung during a breath. The **LufuView** visualizes how often certain parameter values are encountered in different lung regions. This enables care givers to see, for example, where inspiration or expiration is delayed.

*The ScoutView contains graphics that show the patient's body position and indicate whether the electrodes of the belt are in sufficient electrical contact with the patient's skin*

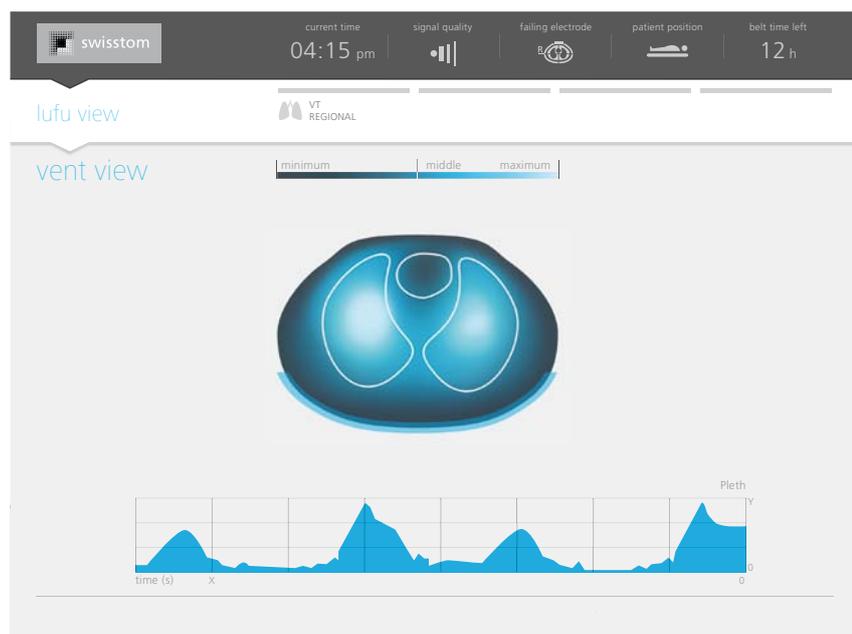
These three main sections overlap on the screen. The selected view displays detailed information on a large area. At the same time, the other two sections are shown in a compact view. They display any relevant data in reduced form so that it is still possible to keep an overview of the entire situation. A new view can be selected by simply tapping it: The area expands, moving the previous view to the background. This clear structure allows for a fast operation of the device even within the stressful intensive care environment.

Its unambiguous design concept reflects the product's transparency. The individual parameters are easy to capture visually. The light colors and lightweight fonts are in line with Swisstom's corporate design and values. Despite its clarity, the interface has a friendly and positive appeal, supporting communications between physicians, caregivers, patients and their families.

*„Working with UID has been extremely professional, efficient and productive. UID has met all our expectations, which were extremely high from the start, with regard to content, form and organization. And the result is impressive: perfect usability combined with the highest design quality. Our entire team is looking forward to continuing this cooperation“,* says **Dr. Stephan H. Böhm**, Medical Director of Swisstom AG, expressing his joy about the project's outcome.

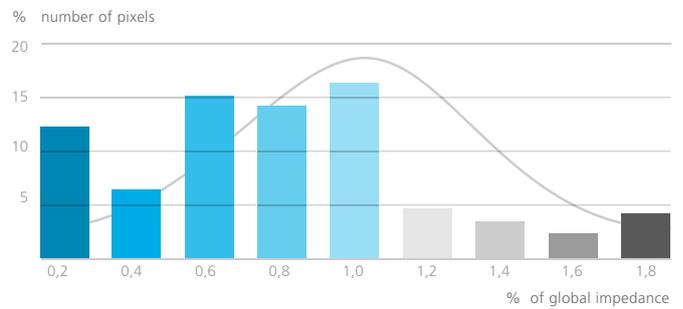
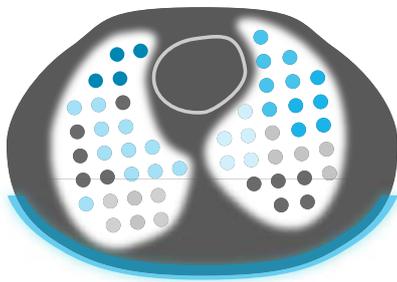
Currently, Swisstom showcases the Electrical Impedance Tomography (EIT). The current reference implementation will soon be used on intensive care units.

*The VentView lets the users watch the lungs breathe*

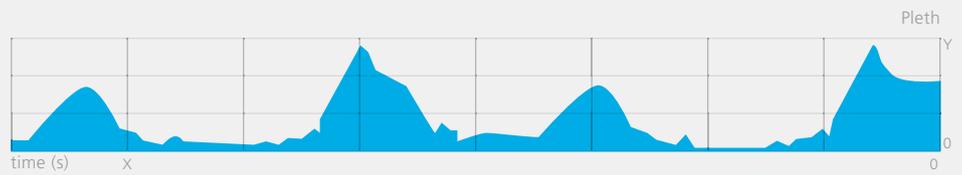


swisstom current time 04:15 pm signal quality failing electrode patient position belt time left 12 h

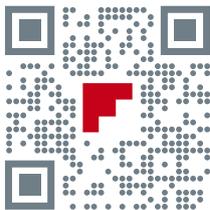
### lufu view



### vent view



The **LufuView** visualizes both, parameter values in individual lung regions as well as their relative frequencies



Visit us at [www.swisstom.com](http://www.swisstom.com)