

Swisstom & UID Pioneer Work in Monitoring Mechanical Ventilation: New Insights into Lung Function



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.

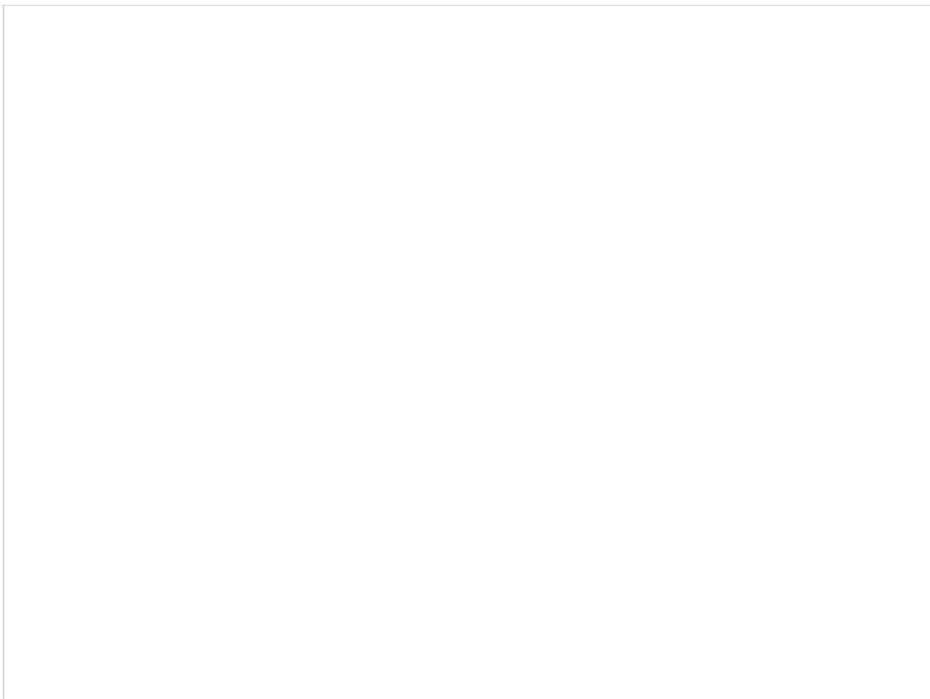
[UID](#)'s services at a glance

- moodchart and visualization workshop
- interaction concept
- screen design

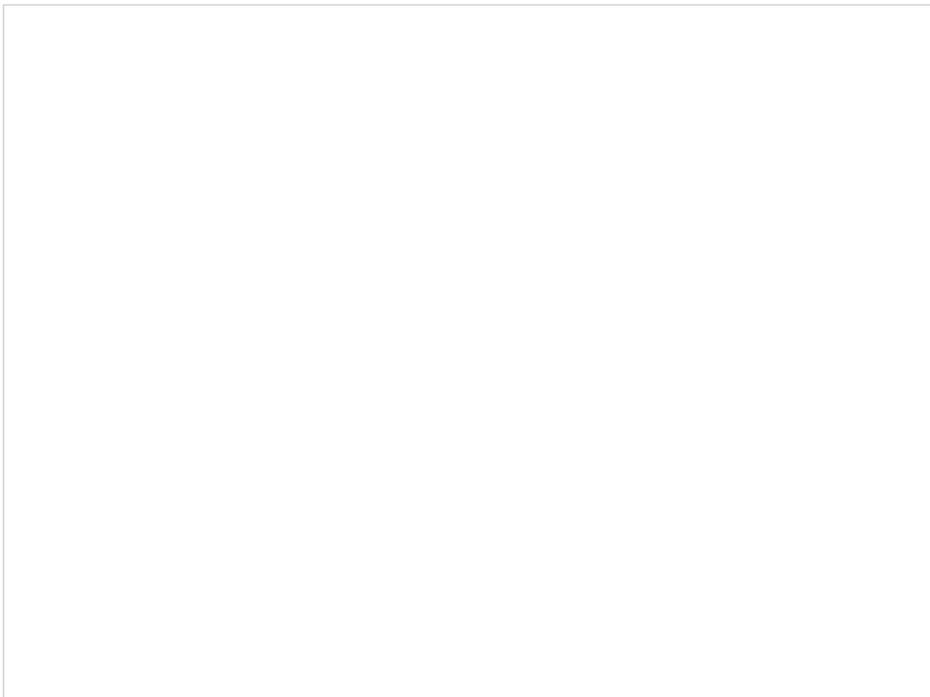
The result

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.

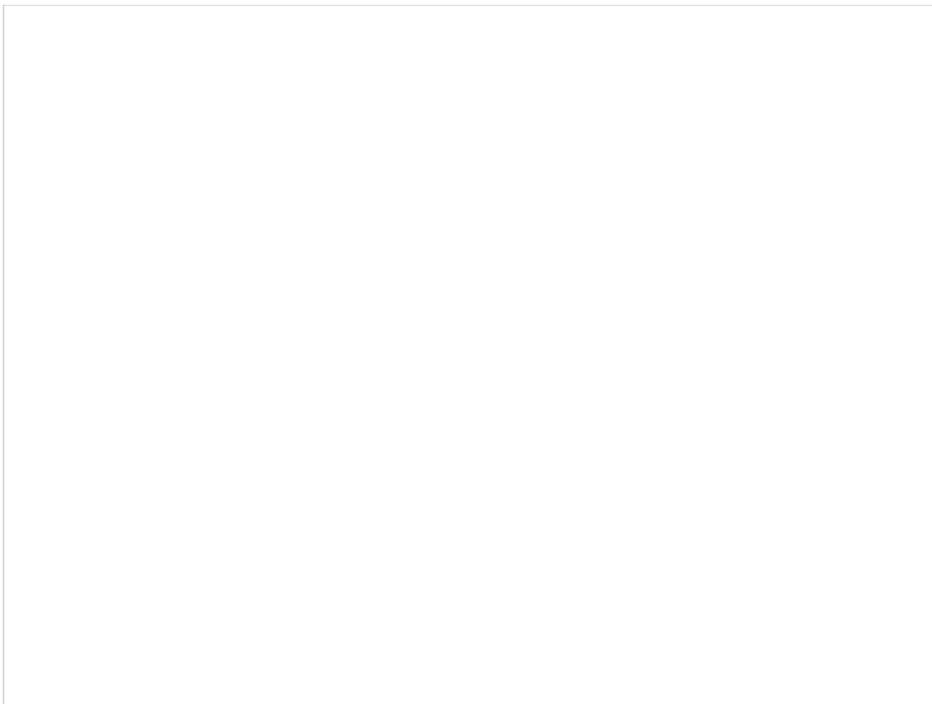
The touch user interface is divided into three main sections: **The ScoutView** provides the user with an overview of the patient's general data and indicators for monitoring quality and body position. **The VentView** displays the amount of respiration in specified parts of the lung during a breath. **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.



The VentView lets the users watch the lungs breathe.



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

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.

For more information, please visit www.swisstom.com and www.uid.com.

Source: [Swisstom AG](#)

All images courtesy of Swisstom AG.

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