



swisstom
Now I can see.

USER INTERFACE EXPLAINED



See what really matters
Award-winning Interface of Swisstom BB²



2ST800-106 Rev. 000 © Swisstom AG 2015 Patents pending

Real-time tomographic images for organ
function monitoring and diagnosis

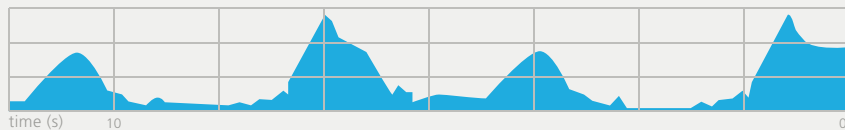
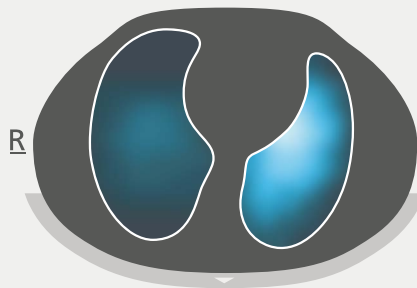




silent spaces



stretch



VentView™: Shows the distribution of air within the lungs during breathing just like a movie. This information on regional ventilation is brought to you continuously and in real-time.

Using Electrical Impedance Tomography (EIT) Swisstom BB² shows the breathing lungs in real time directly on the screen. An electrode belt is fastened to the patient's thorax and its 32 integrated sensors measure without any side effects the respiration in different lung regions, constantly converting electrical potentials into functional images.

Watch the lungs breathe!

The clear and reduced appearance of the award-winning touch user interface facilitates decision making in stressful environments. It is divided into three main views which overlap on the screen. The selected view shows detailed information on a large area. At the same time, the other two sections are shown in their compact form now displaying key information only. This way 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 intensive care or emergency environment.

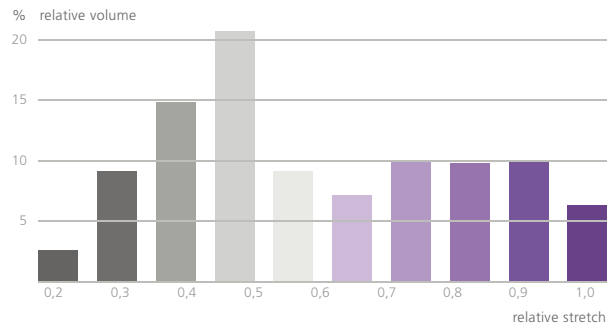
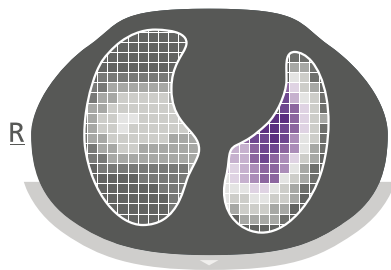
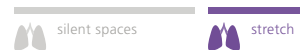
The ScoutView™ shown on the top in its compact form provides the user with indicators for skin contact, signal quality and for the patient's body position.

The VentView™ lets the users watch the lungs breathe by displaying continuously the distribution of air within the lungs during breathing. The expected location of the right and left lungs are depicted by their respective contours.

For deeper insights into your patient's lung condition, move on to the LuFuView™.



LuFuView



LuFuView™: Stretch images show the impact of breathing on the local lung tissue. Both, histograms and images are updated with every breath.



event



start



details

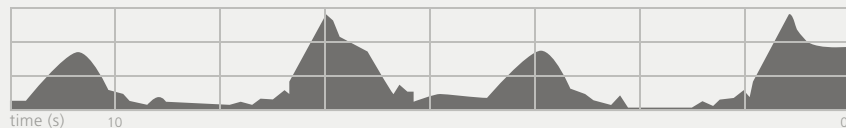


trend



time scale

VentView



The LuFuView™ visualizes lung function regionally and quantitatively. Updated with every new breath it provides the user with a clear picture of complex information. Each parameter represents lung function in its specific, reduced yet intuitive way. The color-coded individual parameters can easily be selected on the top right hand corner of the LuFuView™ view.

Review the breaths you deliver!

Tidal EIT images refer to the changes in regional impedance values during one breathing cycle. During a breath, the lung tissue expands to receive the inhaled tidal volume. Some areas within the lungs receive large amounts of air during tidal breathing, others very little to no air. Regions with large stretch-related changes are shown in violet colors. The ten-part bar chart represents the relative contribution of each one of these stretch categories to the total tidal volume.

The parameter stretch or more precisely, “relative tidal stretch” shows you where and how the lungs are stretched during tidal

breathing. It is a hypothetical concept based on the assumption that impedance changes are brought about by tissue expansion or stretch. As these changes occur during a single breath they are considered to result from the impact a tidal volume has on the mechanical and thus electrical properties of the surrounding lung tissue. Thus, the stretch images and histograms let you review the physical impact of the breaths you deliver.

To see what really matters switch to the Silent Spaces™.





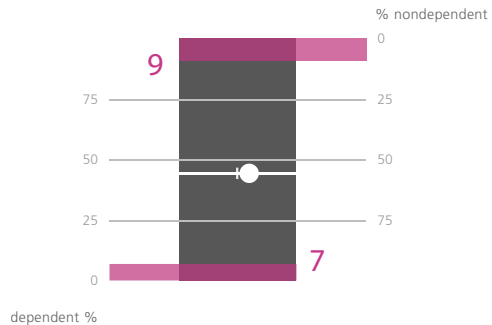
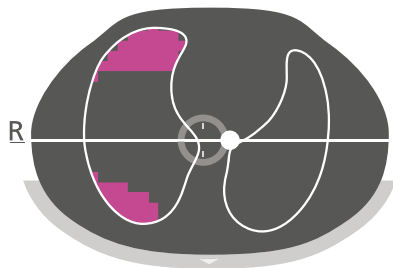
LuFuView



silent spaces



stretch



Silent Spaces™ expose those lung areas that do not breathe as expected while the centre of ventilation summarizes the lung's entire ventilation in one single point.



event



start



details

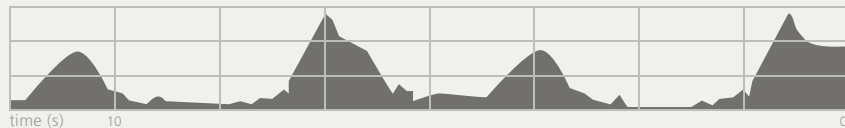


trend



time scale

VentView



Silent Spaces™ are areas within the lungs that receive neither much air nor much attention in other EIT images. As they represent complication-prone lung zones a special LuFuView™ has been dedicated to them. The ease of use and visual clarity of the Silent Spaces™ support decision making at the bedside.

You finally see what really matters!

Silent Spaces™ are derived from the smallest of the aforementioned stretch categories and divided into two groups: dependent and non-dependent Silent Spaces™. If located in dependent lung zones Silent Spaces™ are likely to represent closed, collapsed, or fluid filled lung areas. If, however, located in the non-dependent lungs these areas are either distended or even overdistended.

Dependent in the context of these EIT image means located physically below, while non-dependent means located above the “ventilation horizon” shown as a horizontal reference line running right through the centre of ventilation, the depictive

summary of the lungs’ entire ventilation in one single point. The value attributed to the Silent Spaces™ is the relative number of pixels located either below or above the ventilation horizon and expressed as percent of the total number of pixels within the lung contour. Silent Spaces™ are calculated breath-by-breath and change with PEEP, recruitment, body position etc.

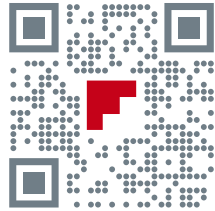
Therapeutic interventions should aim at minimizing Silent Spaces™.

Want to know more? www.swisstom.com/eit-academy





USER INTERFACE EXPLAINED



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Swisstom AG

Swisstom AG, located in Landquart, Switzerland, develops and manufactures innovative medical devices. Our new lung function monitor enables life-saving treatments for patients in intensive care and during general anesthesia.

Unlike traditional tomography, Swisstom’s bedside imaging is based on non-radiating principles: Electrical Impedance Tomography (EIT). To date, no comparable devices can show such regional organ function continuously and in real-time at the patient’s bedside.

Swisstom creates its competitive edge by passionate leadership in non-invasive tomography with the goal to improve individual lives and therapies.



25T800-106 Rev. 000 © Swisstom AG 2015 Patents pending

Real-time tomographic images for organ function monitoring and diagnosis



Text: Dr. Stephan H. Böhm; Concept and realization: Zweisert Brand Development, Hamburg; Screens: Swisstom AG; Photos: istock, T2306; Photomontage: Zweisert