

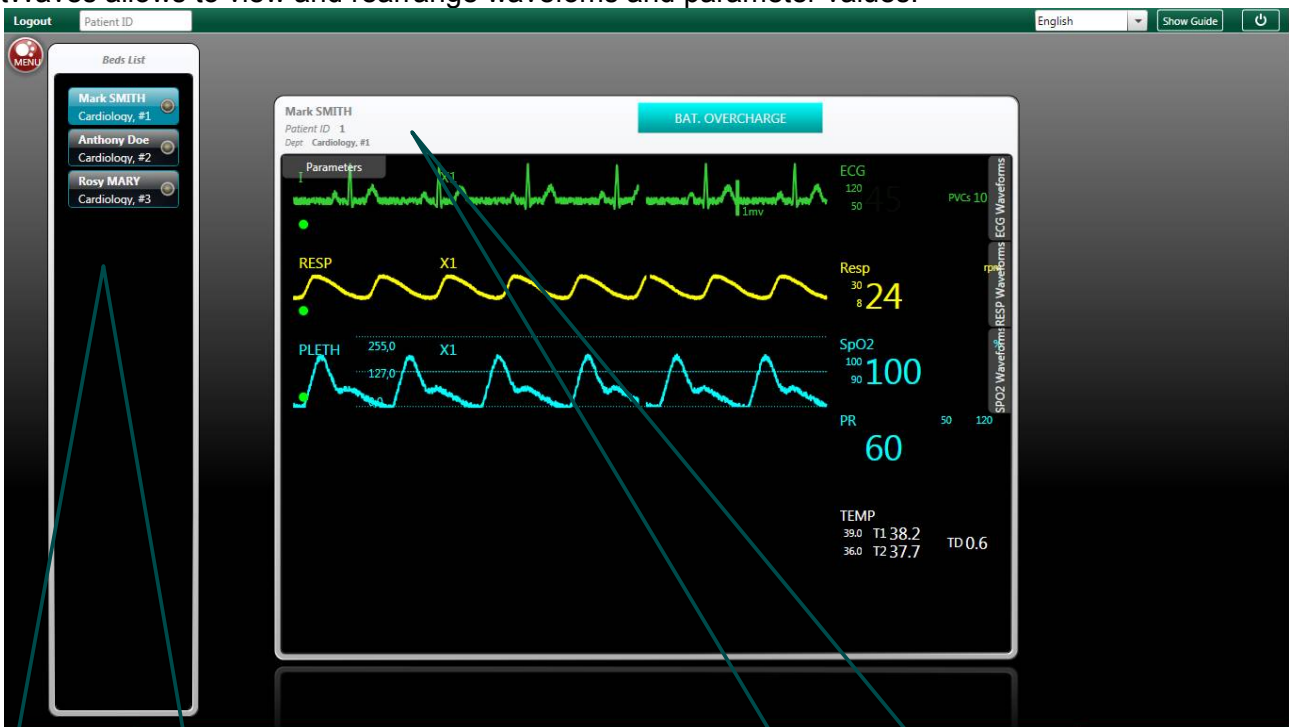
SmartLink is the Software Team's remote web interface for patients monitoring systems. SmartLink operates with Mindray's monitoring systems, collecting all the data coming from Mindray's HyperVisor and PDS Gateway. With SmartLink you can review parameters and waveforms, alarms and trends.

Three main functions are available:

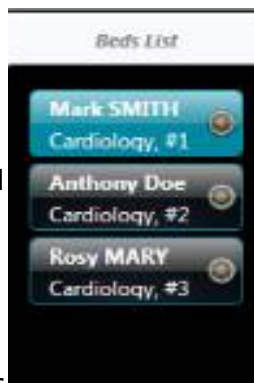
- SmartWaves
- SmartAlarms
- SmartTrends



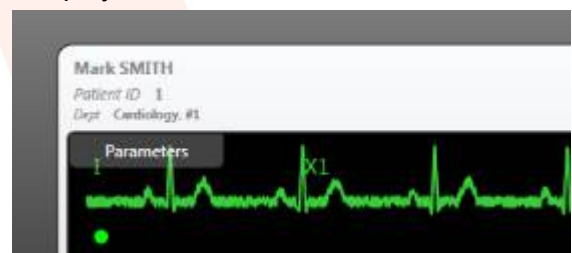
SmartWaves allows to view and rearrange waveforms and parameter values.



The **beds list** shows the currently active beds. An "active" bed is a bed for which the system receives data from the patient's monitor. The colour of the "radio button" inside the bed button shows the highest alarm level of the corresponding patient monitor: green means "no alarm", while yellow is for a "low level" alarm and red for a "high level" alarm.



The **patient's info** section on the screen contains the name, the wand and other information regarding the patient currently displayed.



Move the mouse on the “Parameters” label to open the parameters list.

The parameters set is the same as the selected patient's monitor: different monitors can have different parameters sets.

A currently displayed parameter corresponds to a blue enhanced button, while a grey button indicates an available but not currently displayed parameter.

Click on a parameter button to select or deselect the corresponding parameter.

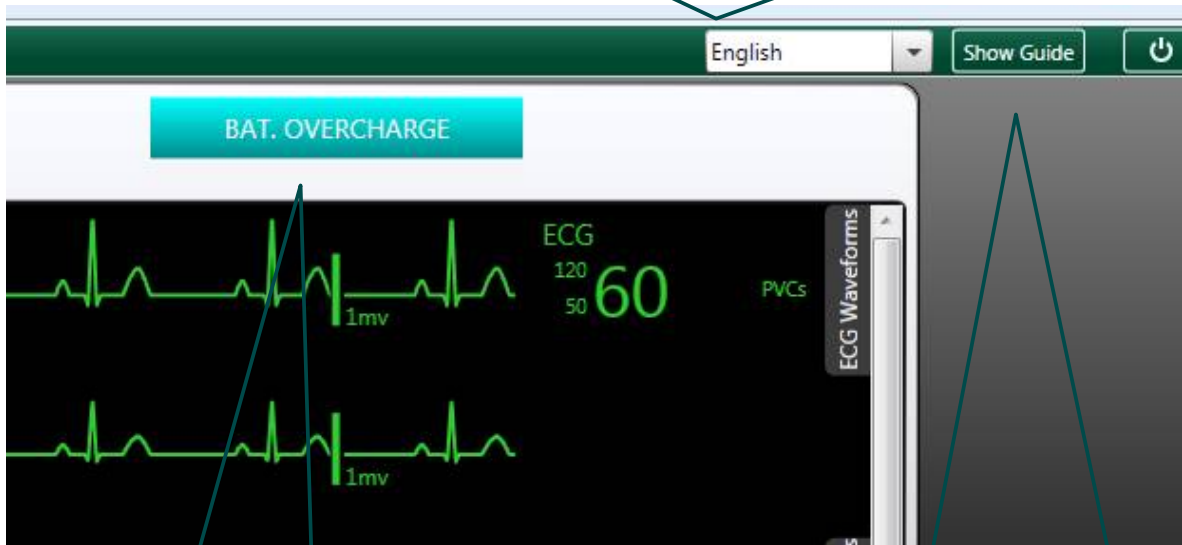


When waveforms are available for a displayed parameter, a grey label appears beside the parameter value. Move the mouse on the grey label to open the waveforms list. Click on a waveform button to select or deselect the corresponding waveform. Waveforms are displayed beside the corresponding parameters. All waveforms related to a parameter are kept together.

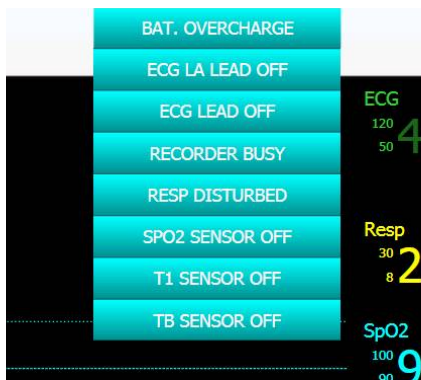
Click the freeze button to stop and freeze the waveforms, Click again on the same button to restart.

Dragging with the mouse you can move a parameter and its waveforms up and down on the screen, to change the order of the displayed items.

SmartLink has a multilingual interface: opening the Language Selection list, you can select your preferred language. The selected language applies to the program messages and to the help contents.



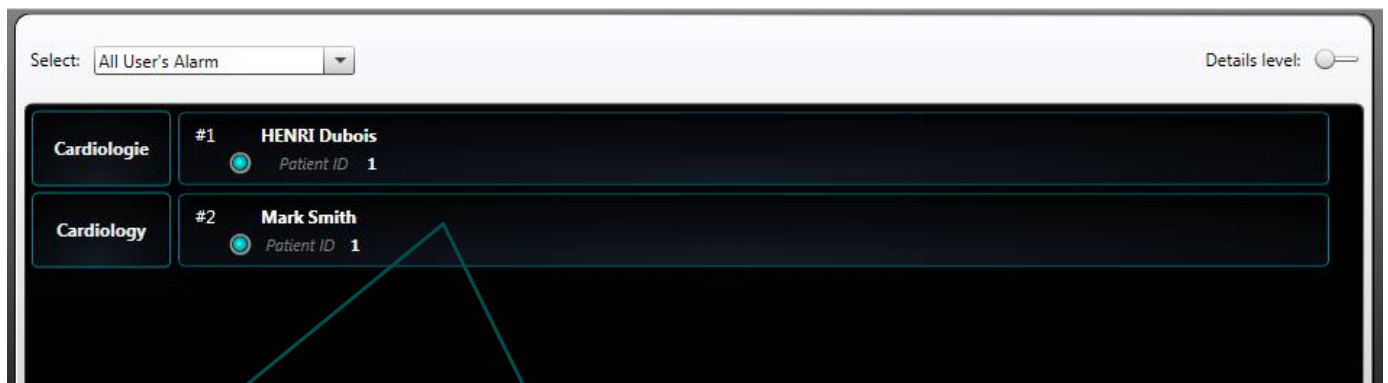
On top of the waveforms window there is the **alarm messages bar**. The colour of the bar is the same as the highest alarm level received from the patient's monitor. Move the mouse onto the bar to open the list of all active error messages. The bar colour is related to the level of the alarm message.



Click on the **Show Guide** button to open the SmartLink guidance system. The guidance labels appear as an overlay of the current SmartLink interface. Click on a label to open a window with help information about the screen objects under the selected label.



The specific task of SmartAlarms is, by using customer selectable thresholds and communication media, to notify the doctor to take charge of the alarm messages. SmartAlarms displays the alarms related to the current user. With a click onto the alarm selection list, SmartLink can display the complete notified alarms list. Each line corresponds to a patient with his notified alarms.



Click on the line to have more information about this patient's alarms.  
Move the "Details level" button to obtain more information about all the patients listed.



For each alarm displayed you can see the alarm level, the message, the date and time the alarm became relevant for the first time. The coloured dots to the right are the count of the notifications sent. These dots appear only if the alarms notification is active. In this case each dot represents a notification step, such as an SMS or e-mail sent to the list of recipients.

The task of SmartTrends is to build trend graphics, to focalise on the alarms and to show the waveforms replays.

The graph is based on the full-disclosure data received.

Since many values can belong to a single screen point, moving the cursor on a trend point will display, for that point, the minimum value, the maximum value, the average of all the values related to that point.

Expanding the trend will increase the precision, reducing the number of values related to each displayed point.

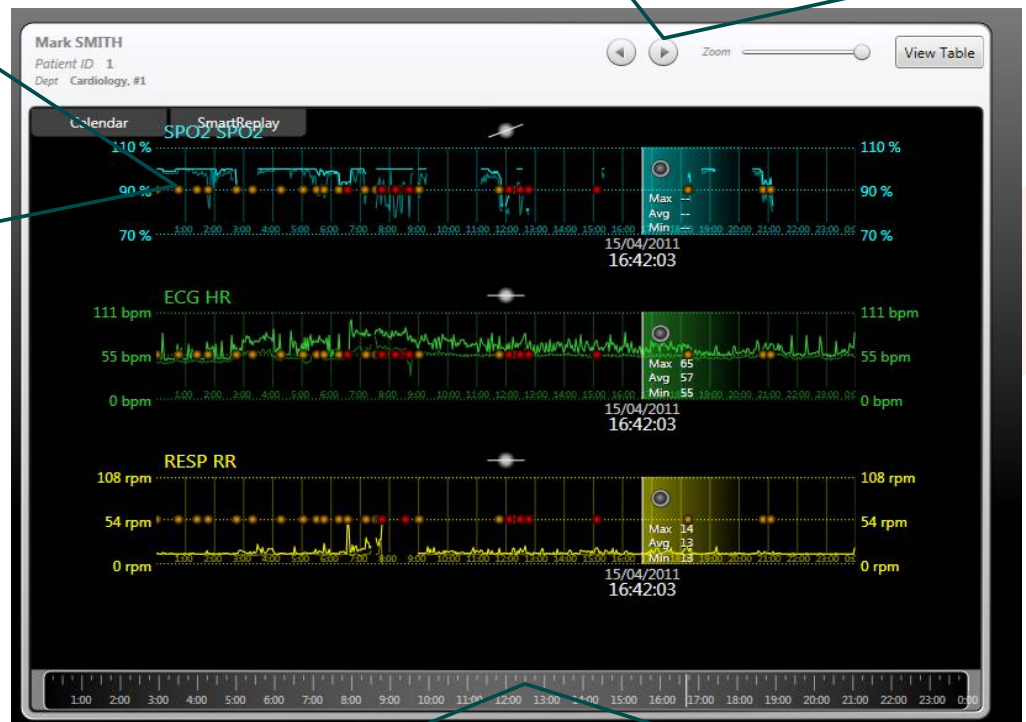
The colored buttons into the trend graph are the alarm flags.

Given that many alarms can belong to the same alarm flag on the graph, the color of each button shows the highest alarm level related to that button.

Two arrow buttons allow you to navigate through the alarm points of the trend graph.

Move the **zoom** button to stretch or enlarge the trend graph.

Expanding the trend will increase the precision, reducing the number of values related to each displayed point. The colored buttons into the trend graph are the alarm flags. Given that many alarms can belong to the same alarm flag on the graph, the color of each button shows the highest alarm level related to that button.

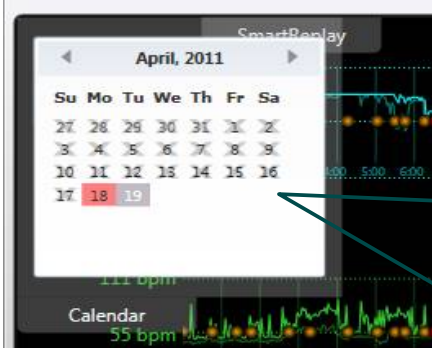


SmartLink builds the trends and replays for the selected date. The timeline shows the 24 hours period you are working on. The enhanced bar on the timeline shows the time interval currently displayed.

Date	SPO2 Alarm	SPO2 Min	SPO2 Avg	SPO2 Max	ECG HR Alarm	ECG HR Min	ECG HR Avg	ECG HR Max
15/04/2011 00:00:33	HR TOO LOW	97	99,45	100	HR TOO LOW	45	50,60	55
15/04/2011 01:49:10	SPO2 TOO LOW	82	98,76	100	SPO2 TOO LOW	46	51,10	55
15/04/2011 02:46:28	SPO2 TOO LOW	88	99,10	100	SPO2 TOO LOW	48	61,37	55
15/04/2011 04:17:36	HR TOO LOW	98	99,90	100	HR TOO LOW	49	61,43	55
15/04/2011 05:04:32	HR TOO LOW	93	99,64	100	HR TOO LOW	45	56,96	55
15/04/2011 05:31:36	SPO2 TOO LOW	87	95,59	100	SPO2 TOO LOW	50	56,90	55

The **“View Table”** button allows SmartTrends to switch to a tabular view of the values of the graphs.

Each line corresponds to a point of the graph on the screen and displays date and time, the alarm messages, the minimum, maximum and average values.



The **calendar** gives information about the available data for trends building and for waveforms replay.  
 A date on a white background means that there is data for trends but not for replay  
 A red background means that there are data for trends and replay  
 A crossed date means that there is not any data to be displayed.  
 SmartLink builds the trends and replays for the selected date..

Selecting the “**SmartReplay**” label you can start the replay related to the trends you are viewing.  
 Like SmartWaves, waveforms are displayed beside the corresponding parameters.  
 Parameters and waveforms can be moved up and down to change the order of the displayed items.  
 While a replay is running, trend graphs are displayed in perspective and the line moves on the trends to show the same time of the waveforms you are replaying.



A recorder console allows you to increase the replay speed, stop and restart the waves and move to a specific point on the replay

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