



Remote Patient Monitoring Tool

SmartLink is a remote web interface to review patients monitoring data, alarms, trends and waveforms.

SmartLink operates with Mindray's PDS Gateway and Hypervisor CMS.

It's made of three components:

- SmartWaves and SmartTrends,
- SmartAlarms,
- SmartConnect.

"SmartWaves+SmartTrends" or "SmartConnect" can be installed separately.

"SmartAlarms" can't operate separately: to install it you must install first "SmartWaves + SmartTrends".

SmartWaves+SmartAlarms provides a remote web interface to:

- View and rearrange waveforms and parameters values.
- View parameters trends, spread trend curves, select trend parts.
- Review stored waveforms and parameters using a "recorder-like" interface (this feature has been completed and tests are in progress: it will be released soon).

SmartAlarms is an "intelligent" alarm manager that can:

- Select alarms you want to manage.
- Select thresholds for each alarm to recognize when the alarm becomes relevant in the user context (actually thresholds are timeouts: if an alarm persists for more time than his timeout, the alarm becomes "relevant").
- Define, for each alarm, a notification strategy:
 - The channel to notify the alarm:
 - message on PC screen,
 - SMS,
 - e-mail message.
 - The recipients of the alarm notifications:
 - a list of cell numbers (for SMS),
 - a list of e-mail addresses,
 - a list of phone numbers (for alternate SMS messaging).
 - The strategy to use for managing the recipients lists:
 - send immediately the notification message to everyone,
 - send the message to the first recipient, then send the message to the next recipient if nobody has taken charge of the message, until the end of the list,
 - stop when reached the end of the recipients list, or restart from the beginning of the list if nobody has taken charge of the message.
- Taking charge of the alarms using a web interface that shows:
 - All the alarms pendings.
 - Alarms already taken in charge.

Software Team srl

SmartConnect is an integration module between Monitoring Systems and HIS (Hospital Information System) or CIS (Clinical Information System).

Based on web services it provides functions to:

- search a patient into the central demographics database,
- receive patients demographics and link patients to monitors,
- store and send waveforms and or parameters to HIS or CIS when requested,
- send parameters values subsets in non solicited mode after predefined time intervals,
- send parameters values subsets in solicited mode (or if requested from HIS or CIS, or when the nurse identifies the patient reading, for example, a barcode on the patient bracelet).
- send alarms messages in non solicited mode to the HIS or CIS.

Although SmartConnect can communicate using standard solutions (protocols and messages, like XML, HL7, W3C services,), normally it's needed a software customization to fulfil the customer needs.

OTHER FEATURES

These features are not included in the standard product and must be quoted separately.

Messages to nurse call systems or dect phones

The possibility depends on the features of:

- the nurse call system,
- the phone system of the customer.

If the nurse call system can receive string messages from an external system, using serial RS 232 or USB ports, or via network using TCP messages, or other similar solutions, we can develop the adapter to send messages.

If the phone system of the customer can receive messages and destination phone numbers, we can develop the adapter.

We have already developed an adapter for this function, installed and operating in Milan, to send messages to doctors and nurses in a sheltered structure for elderly people.

(Normally there are no problems in interfacing external systems to send messages.

But to be sure to can do it well, we need to contact the suppliers or the technical staff of the two systems, to get interface specifications, protocols, support.

Launching SmartLink from inside a Clinical Information System (CIS)

If needed, SmartLink can be launched directly from a CIS or a Patients Management System.

Doing that, SmartLink opens exactly showing waveforms, data, alarms of the selected patient.