**Set of Events in Audit Trail**

Below is an overview of the most common events that appear within the Rotronic Monitoring System Audit Trail. This explains the meaning of the event, the possible root causes and proposed actions. If an event occurs within your system that is not listed, or the event can't be explained by the list below, then please export an unfiltered overview of all events before, during and eventually after the event occurred. Send the event overview to [rms@rotronic.ch](mailto:rms@rotronic.ch)

| Event name | Adjust |
|---|---|
| Meaning | An adjustment was carried out. |
| Possible root cause | A user did an adjustment on a measuring point. |
| Action | No reaction required in case this message is expected. |

| Event name | Alarm script |
|---|---|
| Meaning | An alarm script has been run. |
| Possible root cause | The conditions of an alarm script were fulfilled and the alarm script was executed. |
| Action | React according to internal SOP's. |

| Event name | Allocate gateway |
|---|---|
| Meaning | A different gateway has been allocated to a wireless device. |
| Possible root cause | 1) A new gateway with a better signal than the original one has been detected and therefore chosen by the wireless device <br> 2) The original gateway is offline, and communication changes to another gateway |
| Action | No reaction required in case this message is expected. |
| Comment | This event can only occur if the gateways are setup to create a redundancy (same network ID and channel) |

| Event name | Calibrate |
|---|---|
| Meaning | A calibration was carried out. |
| Possible root cause | A user did a calibration on a measuring point. |
| Action | No reaction required in case this message is expected. |

| Event name | Calibration reminder |
|---|---|
| Meaning | A calibration reminder was triggered. |
| Possible root cause | A user set a reminder for a calibration with a defined time lapse. The lapse was achieved. |
| Action | 1) Calibrate the measuring point in question. <br> 2) Afterwards close the reminder eventually set a new reminder. |

| Event name | Create element |
|---|---|
| Meaning | An element has been created. |
| Possible root cause | A user has created a new element (new user, group, device, measuring point or report). |
| Action | No reaction required in case this message is expected |

| Event name | Data gap | |
|---|---|---|
| Meaning | The RMS server tries to read out (backfill) data from device after recovering from communication interruption. But the backfilling is not successful. | |
| Case 1 | Behavior | Three "read out data" trials with the "timeout" message. Afterwards the "data gap" event occurs |
| | Possible root cause | A communication problem between the device and the server during "read out data": 1) Faulty power supply 2) A network issue 3) A gateway issue |
| | Action | Check the device status and make sure it's not in the device timeout status. Retry tp read out the data manually: Event page>Data gap event>Try again |
| Case 2 | Behavior | The "Read out data" trial with "no data" message followed by a "data gap" event. |
| | Possible root cause | The device has no measured data for the asked time period: 1) Faulty power supply (Battery, external supply, PoE) 2) The device was switched off 3) There was a deviation of the time synchronization |
| | Action | 1) Check in the audit trail for related information such as "measuring time not valid" during the period of the data gap 2) Check in the IT system, whether the server time made a big jump |

| Event name | Delete element |
|---|---|
| Meaning | An element has been deleted. |
| Possible root cause | A user has deleted an element (user, group, device, measuring point or template). |
| Action | No reaction required in case this message is expected |

| Event name | Devices timeout | |
|---|---|---|
| Meaning | Measured data was not received on the server side for longer than defined timeout limit. | |
| Case 1 | Behavior | Timeout for a certain period |
| | Possible root cause | For wired devices:<br>1) A problem with the device power supply<br>2) A network problem between the server and the device<br>For wireless devices:<br>1) A problem with device power supply<br>2) A network problem between the server and the gateway<br>3) A disturbance in the signal or a weak signal to the wireless devices |
| | Action | 1) Check to see if there are a any validation or maintenance work on-going, react according to the internal SOP's and check that the data was backfilled<br>2) Check the power supply and network of the gateway and/or devices<br>3) Check the signal strength of the wireless devices |
| | Comment | If various wireless networks are running, make sure that the networks are not in conflict with each other. |
| Case 2 | Behavior | Timeout remains |
| | Possible root cause | 1) The battery capacity is too low<br>2) No power supply<br>3) No network connection to the server<br>4) A device malfunction |
| | Action | Check the device status (hardware, power supply, network connection...). |

| Event name | Edit element |
|---|---|
| Meaning | An element has been edited |
| Possible root cause | A user has edited the property of an element (user, device, measuring point). |
| Action | No reaction required in case this message is expected. |

| Event name | Inhibit alarm notification |
|---|---|
| Meaning | Alarm notifications have been inhibited. |
| Possible root cause | A user has inhibited an alarm or a warning for a certain time. |

| Action | No reaction required in case this message is expected. |
|---|---|

| Event name | **Inhibit technical alarms** |
|---|---|
| Meaning | Technical alarms have been inhibited. |
| Possible root cause | A user has inhibited technical alarms (sensor error, devices timeout, low battery) for a certain time. |
| Action | No reaction required in case this message is expected. |

| Event name | **Log in** |
|---|---|
| Meaning | A user has logged in. |
| Possible root cause | A user has logged in. |
| Action | 1) No reaction required in case this message is expected. 2) In case of an unexpected "Log in", contact your IT responsible. |

| Event name | **Log out** |
|---|---|
| Meaning | A user has logged out. |
| Possible root cause | A user has logged out. |
| Action | 1) No reaction required in case this message is expected. 2) In case of an unexpected "Log out", contact your IT responsible. |

| Event name | **Low battery** |
|---|---|
| Meaning | A device battery is low. |
| Possible root cause | 1) The battery is used and must be changed. 2) During a battery change, after the old battery was removed, the new battery was inserted quickly. The capacitor on the device was not discharged completely and therefore the counter was not reset. |
| Action | Change the battery. After removing the old battery, wait minimum 1 minute or press the button on the device before putting in the new one. |
| Comment | 1) Should the time out event occur frequently, the device battery will decrease at an increased rate due to the fact that the device will try to reconnect to the system. 2) The battery monitoring function of RMS is done with a counter and not an actual measurement of the battery capacity. |

| Event name | **Measured value out of limit** |
|---|---|
| Meaning | The measured value was out of defined warning/alarming limits. |
| Possible root cause | 1) Measuring value too high or too low. 2) The wrong alarm/warning levels have been set. |
| Action | 1) Check measured data during alarm/warning. |

| | 2) In case of suspicion, check alarm/warning levels, delays and hysteresis. |
| :--- | :--- |
| | 3) Acknowledge/Inhibit the warning/alarm according to internal SOP's. |

| Event name | **Measuring time not valid** | |
| :--- | :--- | :--- |
| Meaning | The time stamp received from the device (device time) is different to the system time (server time). | |
| Case 1 | Behavior | Only a single message. The difference between the device time and the server time < 1 minute |
| | Possible root cause | A delay on the measuring data transmission. Service restart on server, server reboot, network issues. |
| | Action | No reaction required, if this happens seldom and the system works further without any issues. In case the message appears too frequently: 1) Check the settings such as the service restart interval 2) Check the IT infrastructure |
| Case 2 | Behavior | Only a single message. The difference between the device time and the server time > 1 minute |
| | Possible root cause | The device has restarted and it was using the last known time stamp, which was stored internally |
| | Action | No reaction required, if this happened after re-powering or re-pairing a device. In case message appears too frequently: 1) Check the IIS settings about the application recycle 2) Check the IT infrastructure |
| Case 3 | Behavior | Consecutive messages every interval |
| | Possible root cause | Device control crashed due to low power supply: 1) Low battery status. 2) Too low supply voltage in case of an external power supply. 3) The device is subjected to very low temperatures. 4) A device malfunction. |
| | Action | 1) Change the device battery. 2) Remove the device from the very low temperature environment and consider the use of an extension cable. 3) Check the external power supply. |

| Case 4 | Behavior | The message appears for different devices at the same time and the device time on different devices are the same. |
| | Possible root cause | The server time has been updated. The device time and server time will mismatch. |
| | Action | Check the IT infrastructure. The server time shall not have big jumps |

| Event name | Probe replaced |
| --- | --- |
| Meaning | A probe was replaced. |
| Possible root cause | A change in probe serial number was detected. |
| Action | 1) No reaction required in case this message is expected. 2) Acknowledge the event according to internal SOP's. |
| comment | The event is frequently seen during calibration should the probe be removed from the logger for calibration. |

| Event name | Read out data (not followed by "Data gap") | |
| --- | --- | --- |
| Meaning | RMS detects missing data for a period and tries to read back the missing data from the device. | |
| Case 1 | Behavior | With single devices and seldom occurs. |
| | Possible root cause | Short-term failure of the wired or wireless connection. |
| | Action | No reaction required in case this message is expected. |
| Case 2 | Behavior | With single devices and frequently occurs |
| | Possible root cause | 1) The connection between the server and the wired device is disturbed, network issue. 2) A disturbance or weak signal for the wireless devices. |
| | Action | A frequent "read out data" message is an indication of a network issue (frequent communication interruption). Check the network and/or wireless connection. |
| Case 3 | Behavior | Happens to all measuring points at the same time. |
| | Possible root cause | 1) The server was offline due to an application recycle. It starts to backfill the data when it's online again. 2) The connection to the server was disturbed, network issue. |

| | Action | 1) No reaction required if an expected offline of the server was expected. |
| | | 2) Check the IIS settings about the application recycle. |
| | | 3) Check the network connection. |

| Event name | Send e-mail |
|---|---|
| Meaning | An e-mail was sent to a certain user due to reminder/alarm/warning/error. |
| Possible root cause | A reminder/alarm/warning/error occurred and an e-mail was sent according to the notification settings. |
| Action | React based on the e-mail content and/or internal SOP's. |

| Event name | Send SMS |
|---|---|
| Meaning | An SMS was sent to a certain user due to reminder/alarm/warning/error. |
| Possible root cause | A reminder/alarm/warning/error occurred and an SMS was sent according to the notification settings. |
| Action | React based on the SMS content and/or internal SOP's. |

| Event name | Sensor error |
|---|---|
| Meaning | An error has been detected on sensor/probe. |
| Possible root cause | 1) The sensor/probe is defect. |
| | 2) The sensor/probe is disconnected or has a bad connection to the device. |
| | 3) A device malfunction has occurred. |
| Action | 1) Check the audit trail for other related events. |
| | 2) Check the physical connection of sensor/probe. |
| | 3) Try with another sensor/probe if possible. |

| Event name | Simulator connected |
|---|---|
| Meaning | A device is set to simulator mode. |
| Possible root cause | 1) For the mini modules, the checkbox for simulator can be selected under Setup>device>device properties. |
| | 2) For the digital probes, the devices are set to simulator mode via the RMS-Config tool. |
| Action | No reaction required in case this message is expected. |

| Event name | Software exception |
|---|---|
| Meaning | A software exception has occurred. |

| Possible root cause | 1) After an RMS service restart, several "software exception" messages can be triggered. RMS service restart is controlled via the IIS settings<br>2) Another software problem |
|---|---|
| Action | If the "software exception" only occurs seldom and right after the RMS service restart, no reactions are required. |

| Event name | **System** |
|---|---|
| Meaning | An event, that is triggered by the system. |
| Possible root cause | For example an RMS server stop/restart. |
| Action | No reaction required in case this message is expected |

| Event name | **Telephone call** |
|---|---|
| Meaning | A telephone call was made to a certain user due to reminder/alarm/warning/error. |
| Possible root cause | A reminder/alarm/warning/error occurred and a telephone call was made according to the notification settings. |
| Action | React based on the telephone call content and/or internal SOP's. |

| Event name | **Turn switch off** |
|---|---|
| Meaning | A switch output has been turned off. |
| Possible root cause | 1) The conditions of an alarm script were fulfilled and the alarm script was executed and the switch output was turned off.<br>2) A user turned off the switch output manually using a virtual button. |
| Action | No reaction required in case this message is expected. |

| Event name | **Turn switch on** |
|---|---|
| Meaning | A switch output has been turned on. |
| Possible root cause | 1) The conditions of an alarm script were fulfilled and the alarm script was executed and the switch output was turned on.<br>2) A user turned on the switch output manually using a virtual button. |
| Action | No reaction required in case this message is expected. |