| | | BEFORE | AFTER |
|---|---|---|---|
| **UPDATE** | CONTEXT | The number of patients accepted for dermatitis treatments should not exceed 60 per day. | The number of patients accepted for melanoma treatments should not exceed 60 per day. |
| | CONNECTION | At 12:00, the average readout of all meters should have a value less than X | At 14:00, the average readout of all meters should have a value less than X |
| | CONDITION | When starting the read-out of 00:00 values, all meters should be read out within 6 hours. | When starting the read-out of 00:00, 99% of all meters should be read out within 5 hours. |
| | BEHAVIOR | For 100 (simultaneous) ad hoc readouts , if 10 meter checks exceed 6 hours then send an alert. | For 100 (simultaneous) ad hoc readouts , if 10 meter checks exceed 6 hours then stop the readouts. |

Figure 1: ISC Monitor

# 1 Change Operation: Update

The update can be seen as a composition of two change operations; i.e., Delete and Add. However, complexity wise using an atomic Update operation is less costly than deleting the existing ISC or part of it and adding the new one afterwards.

**Update Context** Updating a context implies replacing one of the existing contexts of an ISC by a new one. This assumes that the new context (i.e., process) provides the connections; e.g., event types specified and required for the checking of corresponding the ISC. In Fig. 1 (CONTEXT), the context *dermatitis treatment process* has been replaced by the *melanoma treatment process*. This implies counting the melanoma patients instead of the dermatitis patients for the day. The same event type *patient admission* is provided by both processes.

**Update Connection** Updating a connection replaces an event type by an another. This implies either changing a time trigger or a process relate event; e.g; task execution. The new connection should be provided by at least one of the contexts specified within the updated ISC. In Fig. 1 (CONNECTION), the time trigger has been changed from checking the conditions; i.e., average readout less than x, at 12:00 to 14:00.

**Update Condition** A part or an entire condition might be updated . The update here goes from a simple update of a value within the condition to replacing the whole condition. However, after update, the condition should still refer to event types specified in the changed ISC. In Fig. 1 (CONDITION), the condition on the number of successful readouts as well as the duration has changed to 99% instead of 100% (all) and 5 instead of 6 hours respectively.

**Update Behavior** A behavior is the action to be triggered when an ISC fires. updating the latter implies replacing an action or a part of it by a new one. In Fig. 1 (BEHAVIOR), instead of sending an alert, the readout instances are stopped