**CASD-SLA-Event-Calculations-Post-ServiceType-Change-v0.2**

**Technical Description or Requirement**

Currently, when changing an Incident Service Type new SLA warning & expiry events are created based upon the time the Service Type changed. These new events will expire without taking into account any Incident history (going right back to Incident open time), i.e. accumulated SLA time before the Service Type was changed.

A service type can change due to either a change in Incident:

1. Site Category (A to F)
2. Incident Area
3. Priority (1 to 4)

We need to configure CASD so that when allocating a new Service Type CASD recalculates the SLA warning and violation times subtracting any historical time the incident may have spent with the SLA accumulating time i.e. time spent not Suspended/Resolved.

So if the incident had exhausted 3 hours of a 4 hour service type, then a new 8 hour service type is allocated there should be only 5 hours ( 8 subtract 3) remaining.

Only time spent with the SLA events accruing time should be considered, not time spent either Suspended or Resolved.

**Priority 1 to Priority 4 Example (simple):**

A Priority 4, Site Category B Incident is raised at 08:30 with an 8hr (08:00 to 18:00) service type, and suspended (because assigned to OSM) at 09:30 for 1 hour. At 10:30 the Incident is assigned from the OSM back to FJ resulting in the SLA starting to accumulate time again. At 11:30 FJ set the Incident status to Resolved, this will stop the SLA clock.

At 15:30 the Incident status is changed from ‘Resolved’ to ‘In Progress’ which restarts the SLA clock again.



At 16:30 the Incident priority changes from a Priority 4 to a Priority 3 resulting in a new 5 hr (08:00 to 18:00) Service Type being automatically allocated.

Allocating a new Service Type results in the SLA event (warning & violation) start times being reset back to Incident open time i.e. 08:30. However, the time the incident spent with the 8hr SLA accruing time (i.e. between 08:30 -> 09:30, 10:30 -> 11:30 and 15:30 to 16:30) a total of 3 hours, is not taken into account as the incident moves forward from 16:30 with the new 5hr (08:00 to 18:00) Service Type. The new 5 hr SLA violation and warning times need to be recreated having subtracted all the accrued SLA time spent with the 8hr (08:00 to 18:00) service type, i.e. subtract all time the Incident spent not suspended or resolved (5 - 3 = 2 hours). This means that the SLA is projected to violate at 08:30 the next day (Monday to Friday, not Bank Hols)

At 17:30 the site associated with the Priority 3 Incident changes from a Site Category B to an A. This will result in a new 5hr (24x7) Service Type.

Again, allocating a new Service Type results in the SLA event (warning & violation) start times being reset back to Incident open time i.e. 08:30. However, the time the incident spent with the 8hr SLA accruing time (i.e. between 08:30 -> 09:30, 10:30 -> 11:30 and 15:30 to 16:30) a total of 3 hours and the time spent as a 5hr SLA (16:30 -> 17:30) a total of 1 hour, is not taken into account as the incident moves forward from 17:30 with the new 5hr (24x7) Service Type. The new 5 hr SLA violation and warning times need to be recreated having subtracted all the accrued SLA time spent with both the P4, 8hr (08:00 to 18:00) and the P3, 5hr (08:00 to 18:00) service type, i.e. subtract all time the Incident spent not suspended or resolved ( 5 - (3 + 1) = 1 hours). This means that the SLA is now projected to violate at 18:30 on the same day.

Please note the above scenario is relatively simple. An incident can change Site Category, Incident Area and/or Priority many times during the Incident lifecycle. In addition more than one of these 3 parameters can simultaneously change during a single transaction.

**Priority 5 Example (simple):**

The SLA violation time for Priority 5 Incidents will be at the end of the next working day (NWD) which is considered to be 1900 the following day. If the Incident is associated with an e.g. ‘08:00 - 18:00’ work shift then 1 hour will be added to 18:00 on the NWD, this will be the end of the NWD + 1 hour i.e. 09:00.

In the example below a Priority 5, Site Category B Incident is raised at 09:00 with a NWD (08:00 to 18:00) service type. Because the end of the NWD is 19:00 and the work shift finishes at 18:00 the SLA violation time will be Wednesday at 09:00.

At 10:00 the Incident is suspended (because assigned to OSM) for 2 hours. At 12:00 the Incident is assigned from the OSM back to FJ resulting in the SLA starting to accumulate time again. Because the Incident was suspended for 2 hours an additional 2 hours is added to the projected SLA warning and violation times, however between (09:00 -> 10:00) 1 hour was spent accumulating time (i.e. time spent not Suspended/Resolved) so 1 hour should be deducted, this is a net increase of 1 hour. The SLA violation and warning times are therefore increased by 1 hour, i.e. set to Wednesday at 10:00.

At 13:00 FJ set the Incident status to Resolved, this will stop the SLA clock. At 14:30 the Incident status is changed from Resolved to ‘In Progress’ which restarts the SLA clock again. Because the Incident was resolved (SLA suspended) for 1.5 hours an additional 1.5 hours is added to the projected SLA warning and violation times, however between (12:00 -> 13:00) 1 hour was spent accumulating time (i.e. time spent not Suspended/Resolved) so 1 hour should be deducted, this is an additional net increase of 0.5 hours) The SLA violation and warning times are therefore increased again by 0.5 hours, i.e. set to Wednesday at 10:30



At 16:00 the site associated with the Priority 5 Incident changes from a Site Category B to an A. This will result in a new NWD (24x7) Service Type.

Allocating a new Service Type results in the SLA event (warning & violation) start times being reset back to Incident open time i.e. 09:00. This will generate an SLA violation time of NWD @ 19:00 (Tuesday). However, the time the Incident spent suspended (i.e. between 10:00 -> 12:00 & 13:00 -> 14:30) a total of 3.5 hours and the time spent accumulating SLA time (i.e. time spent not Suspended/Resolved) (09:00 -> 10:00, 12:00 -> 13:00 & 14:30 ->15:00) a total of 2.5 hours is not taken into account as the Incident moves forward from 15:00 with the new NWD (24x7) Service Type. The new SLA violation and warning times need to be recreated having subtracted all the accumulated SLA time spent (2.5 hours) and adding the total suspended time (3.5 hours). This means that the SLA is now projected to violate at 19:00 minus 2.5 hrs plus 3.5 hrs = 20:00 on Tuesday.

At 17:00 the Incident priority changes from a Priority 5 to a Priority 4 resulting in a new 8 hr (24x7) Service Type being automatically allocated.

Again, allocating a new Service Type results in the SLA event (warning & violation) start times being reset back to Incident open time i.e. 09:00. However, the time the incident spent accumulating time with the previous service type(s) (i.e. times between 09:00 -> 10:00, 12:00 -> 13:00, 14:30 -> 15:00, & 15:00 -> 17:00) a total of 4.5 hours, is not taken into account as the incident moves forward from 17:00 with the new 8hr (24x7) Service Type. The new 8 hr SLA violation and warning times need to be recreated having subtracted all the accrued SLA time spent previously, i.e. subtract all time the Incident spent not suspended or resolved (8 subtract 4.5 = 3.5 hours). This means that the SLA is projected to violate at 20:30 that day.

Please note the above scenario is relatively simple. An incident can change Site Category, Incident Area and/or Priority many times during the Incident lifecycle. In addition more than one of these 3 parameters can simultaneously change during a single transaction.