NOKIA

IETF #95
LMAP Information Model Issues

Tim Carey (Nokia)

April 5, 2016

NOKIA

LMAP – Information Model Issues
Summary

- In review of draft-ietf-lmap-information-model-09, we realized that this draft:
  - Modified the ma-schedule-obj to include new attributes for schedule end and duration.
  - Added list of ma-suppression-obj to the instruction object

- These issues and other issues were noted on the mailing list. However these 2 issues remain outstanding.

- In addition – There seems to be a proliferation of events that can cause schedules to be invoked. This mechanism needs further discussion

NOKIA

LMAP – Information Model Issues: ma-schedule-obj
Summary

- In the latest draft the ma-schedule-obj added 2 attributes: ma-schedule-end and ma-schedule-duration.

- Juergen stated in on the mailing list that these attributes were requested by Al Morton
  - In a discussion with Al yesterday his concern was that the schedule **occurrence** needed to allow for randomness

```
object {
    string              ma-schedule-name;
    ma-event-obj        ma-schedule-start;
   [ma-event-obj    ma-schedule-end;]
   [int                 ma-schedule-duration;]
    ma-action-obj       ma-schedule-actions<0..*>;
    string              ma-schedule-execution-mode;
   [string              ma-schedule-tags<0..*>;]
   [string              ma-schedule-suppression-tags<0..*>;]
} ma-schedule-obj;
```


NOKIA

LMAP – Information Model Issues: ma-schedule-obj Problem

- The ma-schedule-start and ma-schedule-end are already typed as events that allow for definition of the event **reoccurrence.**

- Meaning event type already has the start/end/duration/randomness

- **As such the attributes for the end and duration in the schedule are not needed.**

```
object {
   string                ma-event-name;
   union {
       ma-periodic-obj             ma-event-periodic;
       ma-calendar-obj             ma-event-calendar;
       ma-one-off-obj              ma-event-one-off;
       ma-immediate-obj            ma-event-immediate;
       ma-startup-obj              ma-event-startup;
       ma-immediate-obj            ma-event-immediate;
       ma-startup-obj              ma-event-startup;
       ma-controller-lost-obj      ma-event-controller-lost;
       ma-controller-connected-obj ma-event-controller-connected;
   }
   [int                  ma-event-random-spread;]
} ma-event-obj;

  object {
     [datetime         ma-calendar-start;]
     [datetime         ma-calendar-end;]
     [string           ma-calendar-months<0..*>;]
     [string           ma-calendar-days-of-week<0..*>;]
     [string           ma-calendar-days-of-month<0..*>;]
     [string           ma-calendar-hours<0..*>;]
     [string           ma-calendar-minutes<0..*>;]
     [string           ma-calendar-seconds<0..*>;]
     [int              ma-calendar-timezone-offset;]
  } ma-calendar-obj;
```

LMAP – Information Model Issues: ma-schedule-obj
Resolution

- Remove the 2 attributes: ma-schedule-end and ma-schedule-duration.

- Realize that the ma-schedule-start is really the definition of the schedule **occurrence**
  - We can rename the ma-schedule-start to ma-schedule-occurrence

```
object {
    string              ma-schedule-name;
    ma-event-obj        ma-schedule-start;
  [ma-event-obj     ma-schedule-end;]
   [int                 ma-schedule-duration;]
    ma-action-obj       ma-schedule-actions<0..*>;
    string              ma-schedule-execution-mode;
   [string              ma-schedule-tags<0..*>;]
   [string              ma-schedule-suppression-tags<0..*>;]
} ma-schedule-obj;
```


NOKIA

LMAP – Information Model Issues: ma-suppression-obj

Summary

- In the latest draft the ma-instruction-obj was modified to add a list of suppressions.

- In the past one 1 suppression object was expected and requested by the information framework and BBF TR-304.

- Juergen indicated on the mail list that these suppression objects can be multi-use (instruction and controller timeout events)

```
object {
    ma-task-obj          ma-instruction-tasks<0..*>;
    ma-channel-obj       ma-instruction-channels<0..*>;
    ma-schedule-obj      ma-instruction-schedules<0..*>;
   [ma-suppression-obj   ma-instruction-suppressions<0..*>;]
} ma-instruction-obj;
```


NOKIA

LMAP – Information Model Issues: ma-suppression-obj
Problem

- The instruction object was intended for communication of measurement related tasks and not the general housekeeping of the MA (status, configuration).

- The ma-suppression-obj has a similar problem to ma-schedule-obj where the start and end time are reoccurrence events.

```
object {
    ma-task-obj          ma-instruction-tasks<0..*>;
    ma-channel-obj       ma-instruction-channels<0..*>;
    ma-schedule-obj      ma-instruction-schedules<0..*>;
   [ma-suppression-obj   ma-instruction-suppressions<0..*>;]
} ma-instruction-obj;
```

```
object {
    string               ma-suppression-name;
   [ma-event-obj         ma-suppression-start;]
   [ma-event-obj         ma-suppression-end;]
   [string               ma-suppression-match<0..*>;]
   [boolean              ma-suppression-stop-running;]
} ma-suppression-obj;
```

LMAP – Information Model Issues: ma-suppression-obj
Resolution

- Realize that ma-suppression-objs can be used for various purposes (instruction, controller lost)
- Make the instruction-obj supression a single instance (aligns TR-304 and framework)
- Add another ma-suppression-obj to the ma-config-obj for controller-timeout-suppression
- Delete the ma-suppression-end and change the ma-suppression-start to ma-suppression-occurrence.

```
object {
    string              ma-suppression-name;
   [ma-event-obj        ma-suppression-start;]
   [ma-event-obj        ma-suppression-end;]
   [string              ma-suppression-match<0..*>;]
   [boolean             ma-suppression-stop-running;]
} ma-suppression-obj;
```


NOKIA

LMAP – Information Model Issues: ma-event-obj
Summary

- The ma-event-obj has become a place where **occurrences** of events are defined.
- The intent is that these occurrences would trigger actions of schedules to be invoked.

- In some cases – periodic, calendar events actually contain a **reoccurrence** definition as part of the event itself

- As such the occurrence event has been overloaded with the reoccurence definition

```
object {
   string                ma-event-name;
   union {
       ma-periodic-obj             ma-event-periodic;
       ma-calendar-obj             ma-event-calendar;
       ma-one-off-obj              ma-event-one-off;
       ma-immediate-obj            ma-event-immediate;
       ma-startup-obj              ma-event-startup;
       ma-immediate-obj            ma-event-immediate;
       ma-startup-obj              ma-event-startup;
       ma-controller-lost-obj      ma-event-controller-lost;
       ma-controller-connected-obj ma-event-controller-connected;
   }
   [int                  ma-event-random-spread;]
} ma-event-obj;
```


NOKIA

LMAP – Information Model Issues: ma-event-obj
Resolution

- Create a separate obj (ma-schedule-reoccurrence and add the periodic, calendar, one-off, immediate and random-spread to that object.

- Assign the ma-schedule-reoccurence to the ma-schedule-object's ma-schedule-occurrence attribute

- Rename the ma-schedule-**occurrence** attribution to ma-schedule-**reoccurrence**

- Add a new type of event: ma-event-schedule-occurrence and document it

NOKIA

NOKIA