

Information Model for LMAP

draft-burbridge-lmap-information-model-00

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Motivation / Example

Run the 'download speed test' with the test server at the end user's first IP hop in the network; if the end user is active then delay the test and re-try 1 minute later, with up to 3 re-tries; repeat every hour at $xx.05 + \text{Unif}[0,180]$ seconds.

Report results once a day in a batch at 4am + $\text{Unif}[0,180]$ seconds; if the end user is active then delay the report 5 minutes.

Copied from `draft-eardley-lmap-framework-02`

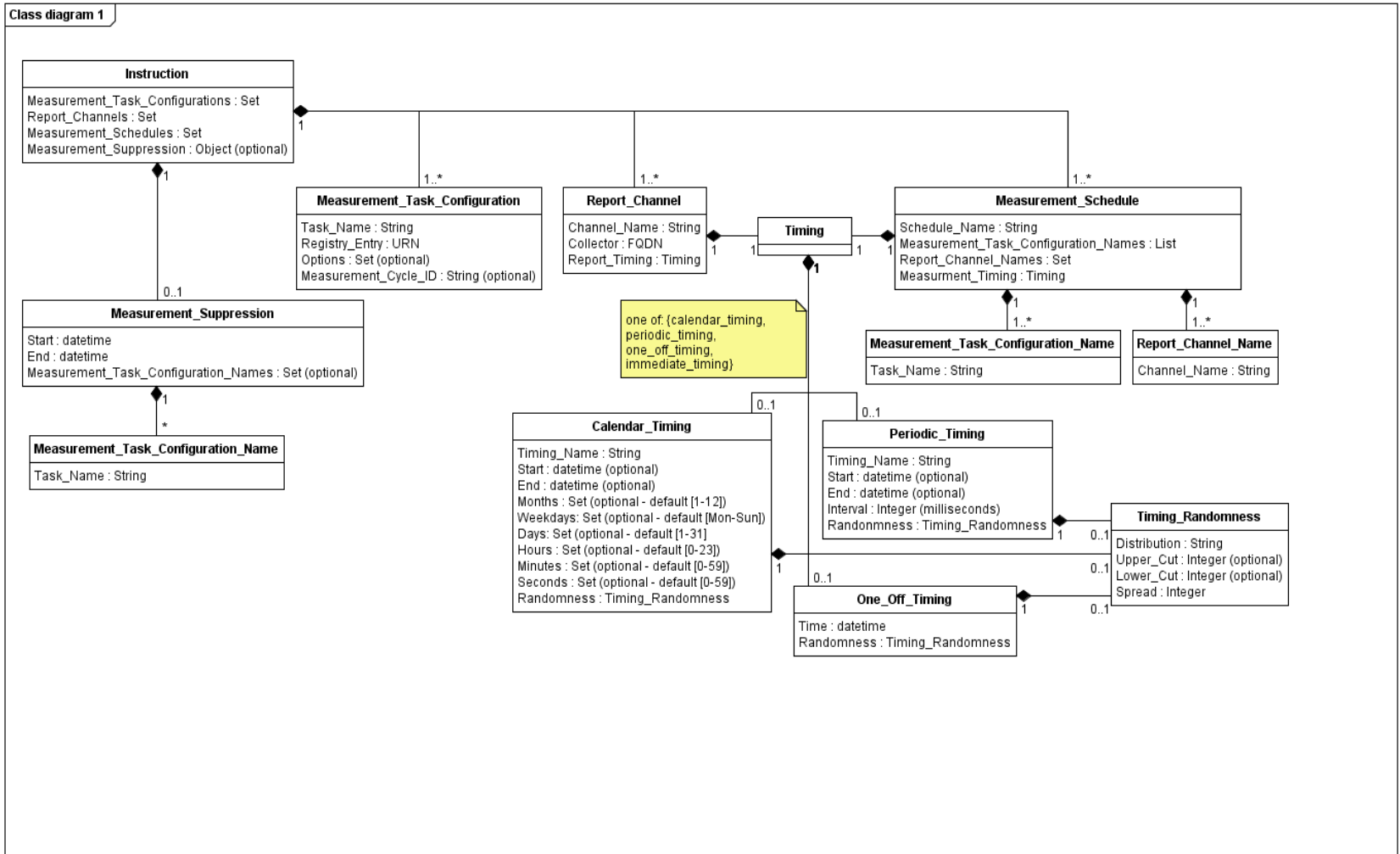
Divide and Conquer

- Breaking the information model into “sections”:
 - There is information needed for different functions (test parameters and test scheduling, reporting parameters and report scheduling, ...)
 - Information in different sections is likely updated at different times, at different rates, etc.

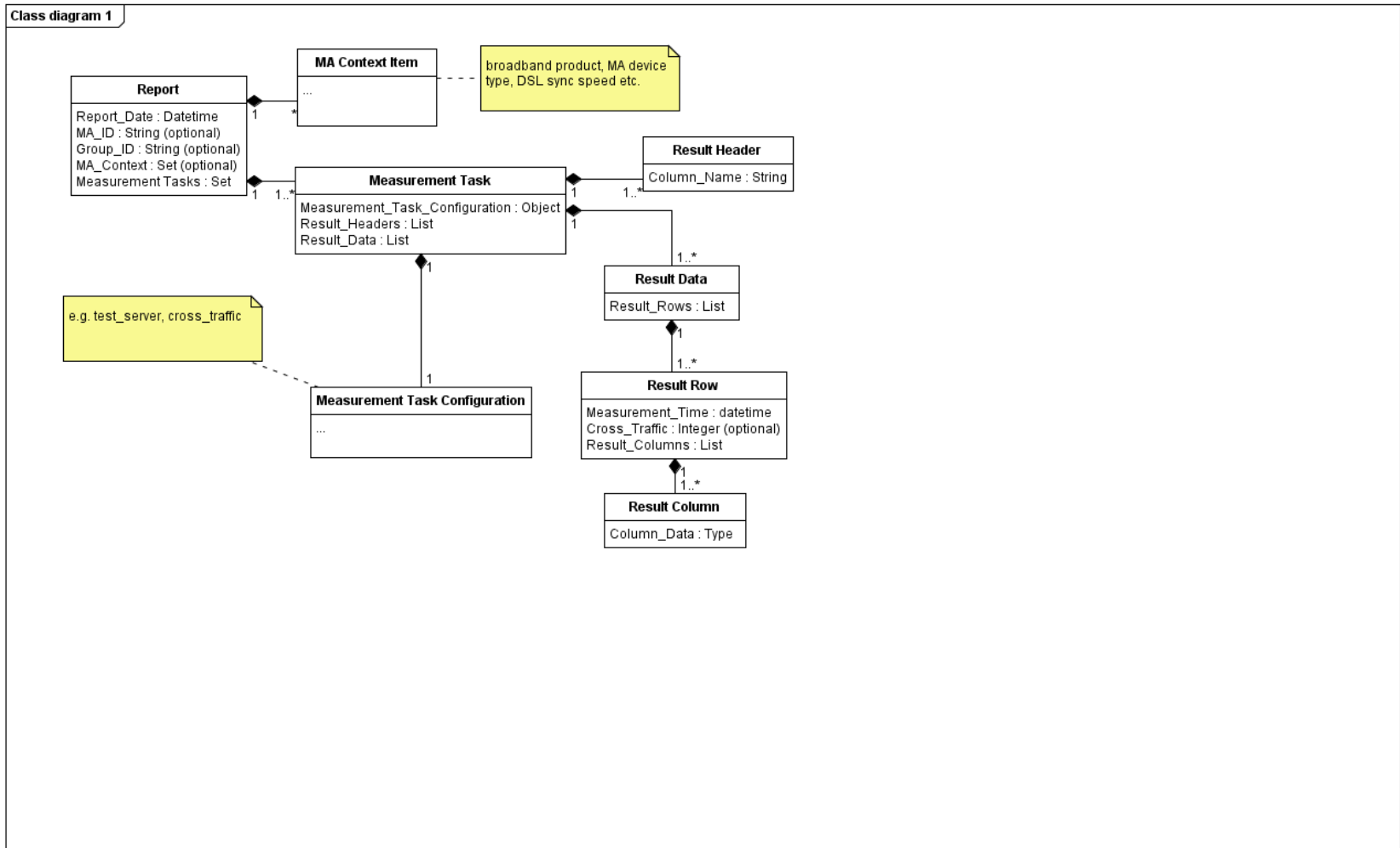
Information Model Sections

Pre-Configuration	Minimal set of information necessary for an MA to securely contact an initial Controller
Configuration	Information configured by the Controller pertaining to Controller communication or general MA settings such as MA and Group ID
Instruction	Configuration by the Controller of what Measurement Tasks to perform, when to perform them, and where/when to report the results
Logging	Information transmitted back to the Controller with configuration or instruction errors and general failure notices
Status	Information available to be fetched by the Controller such as the Measurement Tasks supported by the MA
Reporting	Information sent to the Collector regarding the Measurement Task results including MA context and Task Configuration

Instruction Information



Reporting Information



Pre-configuration issues

- Is the ID of the MA pre-configured or configured by the Controller?
- What is the format of the MA ID?
 - An opaque UUID?
 - Something with structure and meaning?
- What is the minimal pre-configuration information necessary to bootstrap an MA?

Privacy issues

- Replacement of the MA ID with a Group ID assigned to a set of similar MAs.
- Does an MA have a single Group ID or can an MA have multiple Group IDs?
- Multiple Group IDs likely add complexity since the MA ID or Group ID is the primary key of the Collector's database.

Suppression issues

- Suppression can be used to temporarily disable measurements
- Is suppression applied to measurement task configurations or to the schedules or both?

Error handling issues

- General MA errors (e.g., failed refresh of instructions) are sent to a Controller log.
- Measurement errors should be reported to the Collector as they form a valid part of the collected data.
- Maybe have a pass/fail mandatory element on the measurement result.

Measurement issues

- Measurements should have a start AND an end time.
- At the moment only the start time is mandatory; end time or duration are an option per test.
- We might want to standardize one of them.

Security issues

- Are credentials such as certificates and associated keys part of the information model?
- Can a Controller update credentials of Mas via LMAP or can we utilize some other existing credential management mechanism?

Collector / Controller identification

- Currently, the Collector and Controller are identified by a FQDN.
- Is that sufficient or should we use a URL (which allows to have multiple controller behind a single FQDN)?

Measurement registry issues

- More work is needed to figure out how to exactly use the IPPM measurement registry in the scheduling and reporting portions of the information model.