Nexleaf/ColdTrace API options/use-case examples – 2017-08

Over the past few years we've had a lot of discussions about use cases for integration. These are some of the suggestions we've heard from folks in the field and the types of data from the ColdTrace system that can be used to build these. Please note these are not implemented currently but the underlying data is in the system to rapidly create an API for these.

2-way requirements:

- Which ever system is keeping track of the association of facility-equipment-RTMD-sensor ideally has an API to access the information.
- Need clear master data lining up facilities-equipment-RTMD-Sensor (can be off-line)
- Need clear mapping of administrative structure e.g. state, province, county, district (can be off-line)
- Optional: Facility location and other meta-data

For all options below, questions considerations are:

- What are requirements of responsiveness/latency for use cases?
- What are requirements of completeness of data?
- What is done with 'no data' cases?
- What is load on both systems for each scenario?
- Data completeness:
    - Data is sometimes delayed from devices
    - Data is sometimes out of order
    - Data is sometimes missing (full power loss when battery runs out)

a) Current Status (past 24 hours): Alarms status and current temperature

- *USE CASE*: coldchain manager, logistician, etc. U
- Use this to understand current state of the CCE.
    - Options:
        - Live: Synchronous pull
        - Asynchronous: Register and push from CT
        - Asynchronous: Regularly scheduled push from CT with update
- Examples of data:
    - Current temp/status, most recent reading.
    - Daily Min/Max
    - Current alarm status
    - Metric based status: combination of uptime, alarms, power data. Can provide 'working, needs attention, not working' type status.

b) Daily/Weekly/Monthly Performance:

- *USE Case*: Technician and District Supervisor for management/oversight
    - Options:
        - Asynchronous: register and push from CT
        - Asynchronous: Regularly scheduled push from CT with update
- Examples of data:
    - % time in/out of range
    - Frequency and duration of alarms
    - PDF Reports sent via email

c) 15-30 day time series

- *USE Case*: Technician
    - Options
        - Asynchronous: register and push from CT
        - Embeddable chart/viz
- Raw temp, power availability, battery percentage, and/or signal strength data for the past 15 or 30 days
- Can be done as embeddable html/js snippet

d) Real-time temperature and power alarms

- *USE Case:* Send per equipment alarm either directly to users or to LMIS system for it to be forwarded out.
    - Options:
        - Live: Synchronous push (max latency, few minutes) from CT
- Real-time alarm status

e) Set/Configure Temp Monitoring/CCE association & Subscription (alarms/pdf) management

- *USE Case:* Technician/installer who installs and/or moves temperature monitoring equipment.
- Alarm temp and duration thresholds
- Subscription phone numbers and emails
- Changes in installation location/equipment/facility association