

Vendor Standards for Environmental and Lighting Control Systems

The following are a list of standards for project implementation and software control for the Dartmouth College Environmental and Lighting Control Systems. The purpose of these standards is to ensure that vendors coordinate with the College, and provide complete as-builts and proper documentation of issues or software changes implemented.

1. Prior to any project implementation on an existing controls system, selected controls vendor shall perform a "system health assessment" to ensure that the existing system architecture and controllers are capable of supporting the proposed new logic without exceeding the manufacturers recommended configuration guidelines for acceptable amounts of points/devices/memory/CPU usage/etc. on that system. Furthermore, the vendor shall identify if there will be room for continued expansion within the system following implementation. If there are potential limitation issues identified, current system configuration/controllers exceed recommended guidelines, or new hardware or software will be needed, vendor shall make that known in writing to Dartmouth College Project Manager prior to starting any implementation. Conversely, if vendor does not anticipate an issue, that shall be communicated in writing as well.
2. Dartmouth College Building Automation Shop shall make the most current control software for existing systems available to the vendors in order to help them provide an accurate system health assessment.
3. All proposed graphics for a project shall be included as part of the initial project submittals. Failure to include graphics shall be cause for immediate rejection of submittals.
4. All device/controller/point names shall follow the standard "Dartmouth College Control System Naming Conventions" (see attached) unless otherwise requested by Dartmouth College.
5. Vendor shall provide to Dartmouth College Building Automation Shop a digital copy of all software that is currently configured in the system no later than the end of every work week with the understanding that it is to be used in case of emergency and not to be considered a final product.
6. All graphics that are related to equipment that is being worked on shall be in complete and working order before the end of that day so that after hours technicians may have a graphical view of the work that has been accomplished.
7. Vendors should label all thermostats to identify what controller they are connected to.

8. Vendors shall contact the Building Automation Shop on any day that they will be performing demolition or construction work on an existing control system. Also, the vendor shall inform the Project Manager and Building Automation Shop at the end of the work day the status of the controls system and confirm that there are no performance issues on existing systems prior to leaving the site.
9. Upon final completion and acceptance of a project, vendor shall provide a complete digital copy of all software from the project on the day of acceptance. This to include all end devices, building level controllers, graphics, etc. Vendor shall also provide complete construction as-builts and copies of control sequences in both digital and hard copy to appropriate Dartmouth College Shops (Building Automation and/or Electrical), and to Dartmouth Engineering. (As-builts to include electrician's communication bus routing diagram). Note that if project is a partial renovation to existing controls, as-builts shall be an update of original control system as-built digital and hard copy documents.
10. Vendors shall be given access to the control system (not including servers) in order to perform work but access shall be limited to 7:30am-4pm, Mon-Fri, unless an exception is required due to the project schedule.

DAY to DAY work:

11. Vendors that perform service work that is not considered a project may be given a copy of the software that they need in order to perform work that day, and that day only, with the expectation that they will return by disk or e-mail, a digital copy of that project if any changes were made, along with written documentation of changes made. Dartmouth College will then store the changed copy in a separate "working projects" folder until the changes made have been proven to provide the results requested. At that time, the file will be moved to Dartmouth College's secure project folder until a copy is requested again.
12. It is expected that the vendor may keep a copy of work performed in their company archives for reference but will delete said copy from their programming devices upon leaving the premises. Vendor shall request a new copy of software every day that they perform work in order to ensure that they do not use an out of date copy of software.

Dartmouth College Control System Naming Conventions

Note: Building Names/ Room Numbers to be coordinated with Dartmouth Space System

For Controllers:

Building.Floor.UnitName(with location served if a corridor/restroom/mech room).

IE: Wilder.Floor1.FCU1-Men's Room, Wilder.Floor1.AHU1 – Auditorium, or Wilder.Floor3.VAV2

For controller descriptions, please note location served in description if a numbered controller and duplicate in alarm message text.

IE: Name - Wilder.Floor2.VAV3 Description – Serves Rm 201-202-203. Alarm Message Text - Serves Rm 201-202-203.

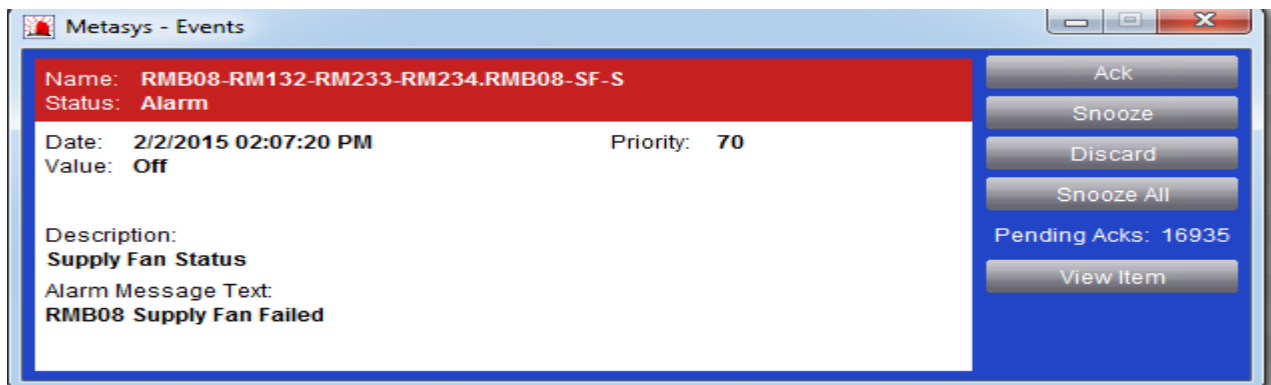
For Points:

Building.Floor.UnitName.PointName

IE: Wilder.Floor2.VAV4.Room202 RM Temperature or Wilder.Penthouse.AHU3.DA Temperature

In the point description, please use point name, location served and basic description of point.

IE: Description would be Wilder.Floor3.FCU12.SF-S - Rm201 Supply Fan Status
Point alarm message texts should give description of alarm such as shown below.





























Note: Equipment assigned names should not duplicate names of other equipment in the building, eg. two AHU-1's.

Dartmouth

Campus Services

Additional Point Naming examples are given below.

-  RM-XXX {52A012VM}
-  BYRNEHALL.2NDFLR.VAV1.OCC-S {OCC-S}
-  BYRNEHALL.2NDFLR.VAV1.DPR-O {DPR-O}
-  BYRNEHALL.2NDFLR.VAV1.DA-T {DA-T}
-  BYRNEHALL.2NDFLR.VAV1.HTG-O {HTG-O}
-  BYRNEHALL.2NDFLR.VAV1.ZN-T {ZN-T}
-  BYRNEHALL.2NDFLR.VAV1.OCC-SCHEDULE {OCC-SCHEDULE}
-  BYRNEHALL.2NDFLR.VAV1.ZNT-SP {ZNT-SP}
-  BYRNEHALL.2NDFLR.VAV1.HTG-EN {HTG-EN}
-  BYRNEHALL.2NDFLR.VAV1.HTGOCC-MAXFLOW {HTGOCC-MAXFLOW}
-  BYRNEHALL.2NDFLR.VAV1.AIRCUITY-OA-T {AIRCUITY-OA-T}
-  BYRNEHALL.2NDFLR.VAV1.GB-OA-T {GB-OA-T}
-  BYRNEHALL.2NDFLR.VAV1.EFF-OCC {EFF-OCC}
-  BYRNEHALL.2NDFLR.VAV1.HTGOCC-MINFLOW {HTGOCC-MINFLOW}
-  BYRNEHALL.2NDFLR.VAV1.CLGOCC-MINFLOW {CLGOCC-MINFLOW}
-  BYRNEHALL.2NDFLR.VAV1.CLG-MAXFLOW {CLG-MAXFLOW}
-  BYRNEHALL.2NDFLR.VAV1.EFFHTG-SP {EFFHTG-SP}
-  BYRNEHALL.2NDFLR.VAV1.EFFCLG-SP {EFFCLG-SP}
-  BYRNEHALL.2NDFLR.VAV1.HTGUNOCC-SP {HTGUNOCC-SP}
-  BYRNEHALL.2NDFLR.VAV1.HTGSTBY-SP {HTGSTBY-SP}
-  BYRNEHALL.2NDFLR.VAV1.HTGOCC-SP {HTGOCC-SP}
-  BYRNEHALL.2NDFLR.VAV1.CLGUNOCC-SP {CLGUNOCC-SP}
-  BYRNEHALL.2NDFLR.VAV1.CLGSTBY-SP {CLGSTBY-SP}
-  BYRNEHALL.2NDFLR.VAV1.CLGOCC-SP {CLGOCC-SP}
-  BYRNEHALL.2NDFLR.VAV1.SA-F {SA-F}
-  BYRNEHALL.2NDFLR.VAV1.SAFLOW-SP {SAFLOW-SP}