BACbone Demonstration

National Conference on Building Commissioning

Frank Mayfield
M2M Systems Integrators
frank.mayfield@m2m.net
States as Countries
BACbone DDCx

- Overlays Existing BAS
- Interrogate (not Integrate)
- BACnet & Niagara
- Building Search Engine
- Exception Reporter
- Force Multiplier
- Cx / RCx / Monitoring
Where it’s been

- Government
- Military
- K-12
- Higher Ed
- Data Centers
- Fortune 100 HQ’s
What we’ve used for:

• Commission our own controls work
• Commission controls work of others
• Trouble shoot systems
• PM Inspections
• RCx
• Prospect for energy leaks, micro view
HVAC Systems Knowledge  
BAS / IT Experience  
Building Operations Expertise
Technology Permitting

DEMONSTRATION
DDC Airside Analysis
Natural State
Office Complex

Pre Tree Blvd
Sarasota, FL
June 10, 2011
Figure 1a, AHU Time of Day Schedule Records
Figure 2a, Filter Criteria for Outside Air Ventilation During Low Occupancy Hours

```
BACnet Report

Add Points | Create Calculated Points | Filter Criteria | Duplication Options | Create

- FL INW AHU UPCH CBU1 -01-032 "Outside Air Flow Realtime" > 0
- HN
- Hour("DateTime") < 8
- OR
- "FL INW AHU UPCH CBU1 -01-032" "Outside Air Flow Realtime" > 0
- HN
- Hour("DateTime") > 18

Select All | Remove Selected

Note: Drag and drop items from the Objects To Report window.

Object Name: FL INW AHU UPCH CBU1 -01-032 "Outside Air Flow Realtime"

Other Components
- Round()
- ABS()

Date/Time Components
- HourOfDay
- DayOfWeek

Note: Hover over a component for more information.
```
Figure 2b, Low Occupancy Outside Air Flow Records
Figure 2c, Closed Outside Air Damper Signals with Air Flow Records
Figure 3a, Filter Criteria for Discharge Air Temperature Subcooling

- FLINW AIRUP PCM SDU1-01-032: "Discharge Air Temp" < FLINW AIRUP PCM SDU1-01-032: "Discharge Air Temp Set Point" - 2
- FLINW AIRUP PCM SDU1-01-032: "Chilled Water Valve" > 5

Note: Drag and drop items from the Objects To Report window.

Other Components:
- ()
- Bound()
- ABS()

Date/Time Components:
- Hour/Day
- Day/Week

Notes: Hover over a component for more information
Figure 3c, Filter Criteria for Discharge Air Inadequate Cooling

The image shows a screen capture of a software interface with a filter criteria setup for discharge air inadequate cooling. The criteria include:

- Discharge Air Temp > Value
- Discharge Air Temp Set Point + Value
- Chilled Water Valve < Value
- Discharge Air Flow

The interface allows for the addition and modification of these criteria through drag and drop operations. The right side of the interface displays objects to report with specific conditions and logical operators such as AND, OR, LIKE, and VAL. The software seems to be part of a larger system for monitoring and reporting HVAC conditions.
Figure 3d, Inadequate Discharge Air Cooling Records
Figure 6a, VAV Dampers at Maximum Air Flow and 3 Degrees Greater than Setpoint Records
Figure 6b, VAV Dampers Fully Closed Measuring Airflow Records
Thank You

frank.mayfield@m2m.net
479.879.7909