Zoneworks XT HIVE BMS Integration Options

The Zoneworks XT HIVE System has the ability to integrate with 3rd party Building Management Systems at two different levels.

Low Level Interface

Zoneworks XT HIVE Controller Digital Output Module

Each Zoneworks Controller has 2 digital outputs that can represent the status of pre-defined system elements. The controller is connected via the Ethernet backbone and generally located at the local electrical distribution boards.

The Zoneworks Controller provides system summary level information using 2 of the 2 available outputs as follows;

a) Threshold of Faulty Units Reached Alarm (actual number or %). For example a threshold of 5% can be set so that if the total quantity of faults rises above 5% the digit output is closed.
b) Emergency Light Controller Status Alarm. If any of the emergency light controllers on site goes offline the digital output is closed.

We can program each of the outputs to represent their state in either the high or low condition.

High Level Interface

Direct Structured Query Language (SQL) database access

The HLI option involves the connection to and the use of information kept in the Zoneworks SQL Express Database.

This integration method provides granular emergency luminaire device details including:

a) Fitting Type
b) Location
c) Next scheduled test
d) Last discharge and diagnostic test results
e) Current fitting status

The information in the Zoneworks SQL Express Database is a live representation of all devices on the Zoneworks network and provides Building Management System (BMS) packages with the information necessary to display and represent Zoneworks emergency luminaires in real time with live status.

The Zoneworks server and the BMS server will require ability to communicate via the site network to establish this direct SQL database access to the emergency light fitting database.

Clevertronics recommend that the requirement of a Building Management System interface is addressed early in the project cycle to provide sufficient time for co-ordination of all associated stakeholders.

BMS Setup & Configuration

The following document outlines the basic configuration information for a high level BMS interface to the Zoneworks XT HIVE system via the SQL database.

The details below are relevant to all Zoneworks XT HIVE systems either installed or upgraded to version 1.6.0 and greater.

SQL Access

In order to access the Zoneworks XT database the following read-only credentials can be used.

Server IP: TBA:1433
SQL Instance: ZWORKSCLEVERTRONICSSQL
Database Name: ZWorks_XT
Username: bms
Password: bms

Queries & Field Descriptions

The following queries list all available data for the BMS and a description of the data in each field.

Controller Status

```
/****** Controller Status  ******/
SELECT [ControllerID]                          Controller Id number
      ,[ParentID]                              Controller folder Id number
      ,[AssetCode]                             Provided asset code (if applicable)
      ,[Name]                                  Controller name
      ,[Status]                                Controller status; 1 = Ok, 0 = Fault
      ,[Location]                              Location of the controller
      ,[Switchboard]                           Switchboard supplying the controller
      ,[Circuit]                               Circuit supplying the controller
      ,[Phase]                                 Phase supplying the controller
      ,[DWGRef]                                Drawing reference number
      ,[DrawingName]                           Drawing name showing controller
      ,[GridRef]                               Grid reference of the controller
      ,[Building]                              Building name
      ,[Floor]                                 Floor of the controller
      ,[Version]                               Firmware version
      ,[IP]                                    Controller IP address
      ,[GatewayType]                           Controller type
      ,[Commissioned]                          Commissioned status; 1 = OK, 0 = Uncommissioned
      ,[CommsStatus]                           Communications status; 1 = Ok, 0 = Fault
      ,[LastErrorDescription]                  Last logged controller error
      ,[RepeatingMode]                         Currently set repeating mode
      ,[CommissionState]                       Current commission state
      ,[ControllerFolderID]                    Controller folder Id number
      ,[ControllerFolderName]                  Controller folder name
  FROM [ZWorks_XT].[dbo].[viewControllerStatus]
```

Device Summary By Gateway

```
/****** Device Summary By Gateway  ******/
SELECT [GatewayID]
      ,[GatewayName]                                    Controller Id number
      ,[Total Devices]                                  Controller name
      ,[Ok]                                             Qty of devices on the controller
      ,[Faulty]                                         Qty of devices showing a 'Good' status
      ,[Testing]                                        Qty of devices showing a 'Faulty' status
      ,[Commissioning]                                  Qty of devices currently under test
      ,[Uncommissioned]                                 Qty of devices currently commissioning
      ,[Pending]                                        Qty of devices currently uncommissioned
      ,[Paused]                                         Qty of devices with commission pending
      ,[Deleting]                                       Qty of devices with commission paused
      ,[Cancelling]                                     Qty of devices currently beign deleted
      ,[hasTamperAlarm]                                 Qty of devices cancelling commissioning
      ,[hasTamperUnack]                                 Qty of devices with a current tamper alarm
      ,[hasTamperAlarmUnacked]                          Qty of devices with an unacknowledged alarm
      ,[hasTamperAlarmOrUnacked]                        Qty of devices with a current and unacknowledged alarm
  FROM [ZWorks_XT].[dbo].[viewDeviceSummaryByGateway]  Qty of devices with a current or unacknowledged alarm
```

Device Summary By Group

```
/****** Device Summary By Group  ******/
SELECT [GroupID]
      ,[GroupName]                                      Group Id number
      ,[TotalDevicesInGroup]                            Group name
      ,[Ok]                                             Qty of devices in the group
      ,[Faulty]                                         Qty of devices showing a 'Good' status
      ,[Testing]                                        Qty of devices showing a 'Faulty' status
      ,[Commissioning]                                  Qty of devices currently under test
      ,[Uncommissioned]                                 Qty of devices currently commissioning
      ,[Pending]                                        Qty of devices currently uncommissioned
      ,[Paused]                                         Qty of devices with commission pending
      ,[Deleting]                                       Qty of devices with commission paused
      ,[cancelling]                                     Qty of devices currently beign deleted
      ,[hasTamperAlarm]                                 Qty of devices cancelling commissioning
      ,[hasTamperUnack]                                 Qty of devices with a current tamper alarm
      ,[hasTamperAlarmUnacked]                          Qty of devices with an unacknowledged alarm
      ,[hasTamperAlarmOrUnacked]                        Qty of devices with a current and unacknowledged alarm
  FROM [ZWorks_XT].[dbo].[viewDeviceSummaryByGroup]    Qty of devices with a current or unacknowledged alarm
```

Fitting Status

```
/****** Fitting Status  ******/
SELECT [DeviceId]
      ,[DeviceRef]                              Fitting Id number
      ,[Device Type]                            Fitting Reference
      ,[Commissioned]                           Fitting Type
      ,[Status]                                 Fitting commission status;  1 = Ok, 0 = Uncommissioned
      ,[Fault Reason]                           Fitting status; 1 = Ok, 0 = Fault
      ,[First Test Completed]                   Reason for fitting fault
      ,[LastTestDateTime]                       Initial required test completed; 1 = True, 0 = False
      ,[LTReqDuration]                          Date and time of the last test
      ,[LTResult]                               Required duration of the last test
      ,[LTMinutes]                              Last test result; 1 = Pass, 0 = Fail
      ,[Last DT Result]                         Last test run duration (in minutes)
      ,[Last FT Result]                         Last discharge test result
      ,[LastUpdate]                             Last function test result
      ,[LampState]                              Date and time of the last status update
      ,[Battery State]                          Fitting lamp state; 1 = On, 0 = Off
  FROM [ZWorks_XT].[dbo].[viewFittingStatus]   Fitting battery state
```

Fitting Details

```sql
/****** Fitting Details ******/
SELECT [DeviceId]
      ,[DeviceRef]
      ,[GroupName]
      ,[Building]
      ,[Location]
      ,[Floor]
      ,[Switchboard]
      ,[Circuit]
      ,[AssetCode]
      ,[DWGRef]
      ,[GridRef]
      ,[ProductCode]
      ,[ProductDescription]
  FROM [ZWorks_XT].[dbo].[viewFittingDetails]
```

Fitting ID number
Fitting Reference
Assigned Group Name
Building Name
Location
Floor
Switchboard
Circuit
Asset Code (If Applicable)
Drawing Reference (If Applicable)
Listed Grid Reference (If Applicable)
Product Code
Product Description