

Troubleshooting Instructions

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Introduction

Qualified Persons

WARNING

The equipment covered by this publication must be installed, operated, and maintained by qualified persons who are knowledgeable in the installation, operation, and maintenance of overhead electric power distribution equipment along with the associated hazards. A qualified person is one who is trained and competent in:

- The skills and techniques necessary to distinguish exposed live parts from non-live parts of electrical equipment.
- The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed.
- The proper use of the special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment.

These instructions are intended only for such qualified persons. They are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.

Read this Instruction Sheet

Thoroughly and carefully read this instruction sheet before programming, operating, or maintaining your S&C Universal Interface Module. Familiarize yourself with the safety information on page 3. The latest version of this instruction sheet is available online in PDF format at www.sandc.com. Select: Support/Product Literature Library.

Retain this Instruction Sheet

This instruction sheet is a permanent part of your S&C IntelliRupter. Designate a location where you can easily retrieve and refer to this publication.

Warranty

The standard warranty contained in S&C's standard conditions of sale, as set forth in Price Sheet 150, applies to the Universal Interface Module, except that the first paragraph of said warranty is replaced by the following:

(1) General: Seller warrants to immediate purchaser or end user for a period of 10 years from the date of shipment that the equipment delivered will be of the kind and quality specified in the contract description and will be free of defects of workmanship and material. Should any failure to conform to this warranty appear under proper and normal use within ten years after the date of shipment the seller agrees, upon prompt notification thereof and confirmation that the equipment has been stored, installed, operated, inspected, and maintained in accordance with recommendations of the seller and standard industry practice, to correct the nonconformity either by repairing any damaged or defective parts of the equipment or (at seller's option) by shipment of necessary replacement parts. The seller's warranty does not apply to any equipment that has been disassembled, repaired, or altered by anyone other than the seller. This limited warranty is granted only to the immediate purchaser or, if the equipment is purchased by a third party for installation in third-party equipment, the end user of the equipment. The seller's duty to perform under any warranty may be delayed, at the seller's sole option, until the seller has been paid in full for all goods purchased by the immediate purchaser. No such delay shall extend the warranty period.

Replacement parts provided by seller or repairs performed by seller under the warranty for the original equipment will be covered by the above special warranty provision for its duration. Replacement parts purchased separately will be covered by the above special warranty provision.

Warranty of the Universal Interface Module is contingent upon the installation, configuration, and use of the control or software in accordance with S&C's applicable instruction sheets. This warranty does not apply to major components not of S&C manufacture, such as batteries, and communication devices. However, S&C will assign to immediate purchaser or end user all manufacturer's warranties that apply to such major components.

**Understanding
Safety-Alert Messages**

There are several types of safety-alert messages which may appear throughout this instruction sheet as well as on labels attached to the Universal Interface Module. Familiarize yourself with these types of messages and the importance of the various signal words, as explained below.

⚠ DANGER
<p>“DANGER” identifies the most serious and immediate hazards which <i>will likely</i> result in serious personal injury or death if instructions, including recommended precautions, are not followed.</p>


⚠ WARNING
<p>“WARNING” identifies hazards or unsafe practices which <i>can</i> result in serious personal injury or death if instructions, including recommended precautions, are not followed.</p>

⚠ CAUTION
<p>“CAUTION” identifies hazards or unsafe practices which <i>can</i> result in minor personal injury or product or property damage if instructions, including recommended precautions, are not followed.</p>

NOTICE
<p>“NOTICE” identifies important procedures or requirements that <i>can</i> result in product or property damage if instructions are not followed.</p>

**Following
Safety Instructions**

If you do not understand any portion of this instruction sheet and need assistance, contact your nearest S&C Sales Office or S&C Authorized Distributor. Their telephone numbers are listed on S&C’s website www.sandc.com. Or call S&C Headquarters at (773) 338-1000; in Canada, call S&C Electric Canada Ltd. at (416) 249-9171.

NOTICE	
<p>Read this instruction sheet thoroughly and carefully before installing or operating your S&C Universal Interface Module.</p>	

**Replacement
Instructions and Labels**

If you need additional copies of this instruction sheet, contact your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

It is important that any missing, damaged, or faded labels on the equipment be replaced immediately. Replacement labels are available by contacting your nearest S&C Sales Office, S&C Authorized Distributor, S&C Headquarters, or S&C Electric Canada Ltd.

Applicable Software

These instructions were prepared for use with software UIMD3C1X, Rev. 1.3.

You can find the revision number on the Setup disk label and on the main screen of the UIM, called the **PRESENT CONDITIONS** screen. For questions regarding the applicability of information in this chapter to future software releases, please contact S&C.

WARNING

These instructions do NOT replace the need for utility operation standards. Any conflict between the information in this document and utility practices should be reviewed by appropriate utility personnel and a decision made as to the correct procedures to follow.

Serious risk of personal injury or death may result from contact with electric distribution equipment when electrical isolation and grounding procedures are not followed. The equipment described in this document must be operated and maintained by qualified persons who are thoroughly trained and understand any hazards that may be involved. This document is written only for such qualified persons and is not a substitute for adequate training and experience in safety procedures for accessing high voltage equipment.

The Universal Interface Module and host control are connected to switchgear operating at primary voltage levels. High voltage may be present in the wiring to the switch control or the switch control itself during certain failures of the switchgear wiring or grounding system, or due to a failure of the switch itself. For this reason, access to the switch control should be treated with the same safety precautions that would be applied when accessing other high voltage lines and equipment. Follow all locally-approved safety procedures when working on or around this switch control.

Before attempting to access an existing switch installation, check carefully for visible or audible signs of electrical or physical malfunction (do this before touching or operating the switch control or any other part of the installation). These warning signs include such things as smoke, fire, open fuses, crackling noises, loud buzzing, etc. If a malfunction is suspected, treat all components of the installation, including the switch control and associated mounting hardware, as if they were elevated to primary (high) voltage.

Whenever you are manually reconfiguring the circuit (for example, during repairs), follow your company's operating procedures to disable automatic operation of the IntelliTEAM II system. This prevents any unexpected operation of a team member.

You can disable the IntelliTEAM II system by pressing the automatic operation **ENABLE/DISABLE** faceplate button to **DISABLE** on the faceplate of any active 5800 based team member of the team you want to disable, or turn on Prohibit Restoration on the UIM faceplate.

Troubleshooting Overview

The following tools and Interface Module features are used to diagnose and correct problems.

LCD

The LCD on the faceplate provides information about the present state of the team. For an explanation of the faceplate and the LCD, see *Instruction Sheet 1043-540*.

LEDs

The LEDs on the Interface Module faceplate provide information about the state of the control. For an explanation of the faceplate LEDs, see *Instruction Sheet 1043-540*.

IntelliLINK software

The OPERATION screens and TROUBLESHOOTING screens display information about the Interface Module and its operation. For an explanation of these screens, see Using IntelliLINK to Locate Problems on page 9.

To view these screens, you need a portable IBM/PC-compatible computer, a serial cable, and the IntelliLINK version for the Interface Module. For more information about the equipment required and how to use the IntelliLINK software, see *Instruction Sheet 1043-540*.

NOTICE

If the suggested troubleshooting steps do not resolve the problem, call S&C at (773) 338-1000 for assistance.



Figure 1. Rack-Mounted Universal Interface Module.

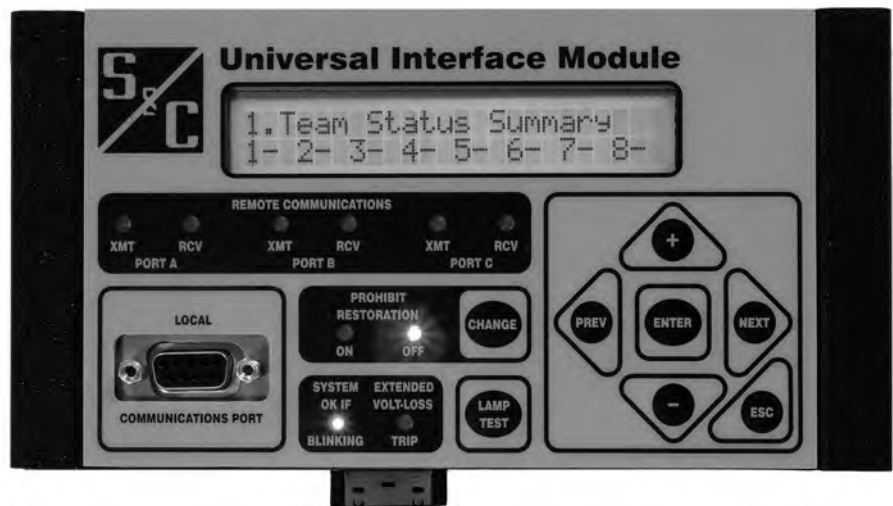


Figure 2. Panel-Mounted Universal Interface Module.

Display Problems

LCD is blank or you cannot scroll the data, or is not lighted

Check the LEDs. If all the Interface Module LEDs are OFF, the Interface Module is not receiving power.

Check control power. Following utility-approved work procedures and safety practices, verify that there is correct voltage in the line which provides control power.

Error Messages

The IntelliLINK software may display an error message while trying to establish communications with the Interface Module or a snapshot. If an error message appears, follow the corrective action given below for that message.

IntelliLINK software won't start

A. Close other software programs. Some software applications (such as HotSync® technology for Palm™ handhelds) may interfere with the IntelliLINK software being able to access your computer's serial port. You should exit any program that might take control of a serial port while using the IntelliLINK software.

B. Reinstall the IntelliLINK software on your computer. There may be a problem with one of the files. See *To Install the IntelliLINK Software in 1043-530*.

"Could not connect to control on COM1"

See *Opening port COM1... Trying 38400 BAUD... Connection Failed* below.

"Incompatible Ident"

The IntelliLINK software uses a different screenset (WMN file) for each type of control and normally selects the screenset for you. This message appears when you have a screenset selected (displayed) and try to connect to a snapshot that requires a different screenset.

Use the correct screenset. To close the open screenset, click File > Close Screenset. Then click File > Open Snapshot. In the Open Controller Data File dialog box, select the snapshot you want to view, then click OK to open both the snapshot and the correct screenset.

"IntelliLINK setup incorrect or incomplete"

Reinstall the IntelliLINK software on your computer. There may be a problem with one of the files. See *To Start the IntelliLINK Software in 1043-530* for details.

"Opening port COM1... Trying 38400 BAUD... Connection Failed"

These messages appear in the Connect dialog box when the IntelliLINK software in your computer cannot establish communication with the software in the Interface Module.

A. Check that the Interface Module has power. If the LCD is blank, the Interface Module may have no power and cannot communicate with your portable computer. See *LCD is blank or you cannot scroll the data* on page 7.

B. Check the serial cable connections. Check that you plugged your serial cable into the **LOCAL COMM. PORT** on the Interface Module faceplate. Check that you plugged the cable into the correct port on your computer (usually COM1 on portable computers).

C. Try another communications port. The COM1 port on your computer may be broken or assigned to a different device. Connect the cable to another comm port. In the Connect dialog box, click the Change Setup button. From the pull-down list, select the name of the port where you connected the cable. Click Connect.

- D. **Use a different serial cable.** The serial cable between your computer and the switch control may have a broken wire or pin. The cable may be wired for use with a different kind of computer, or it may be a null-modem cable.
- E. **Check the serial port on your computer.** Test the serial port by trying to communicate with a modem or other serial device.

“Program in the control: XXXX... not configured for this program”

Reinstall the IntelliLINK software on your computer. Make sure that you are installing the correct IntelliLINK software for this Interface Module. For details, see *To Install The IntelliLINK Software in 1043-530*.

“Software in control incompatible with open screenset... cannot be established”

The IntelliLINK software uses a different screenset (WMN file) for each type of control and normally selects the screenset for you. This message appears when you have a screenset selected (displayed) and try to connect to a control that requires a different screenset.

Use the correct screenset. To close the open screenset, click File > Close Screenset. Then click File > Open Screenset and choose the correct screenset for the Interface Module. Once the screenset opens, click Connection > Connect to Device.

“Software in control is XXXX... not properly configured for this product”

Reinstall the Setup software on your computer. There may be a problem with one of the files. For details, see *To Install The IntelliLINK Software in 1043-530*.

“Times New Roman font is not on your system. The project requires it.”

Click OK to close the dialog box. If the program cannot find the desired font, it warns you and then uses a different font.

**Software
Troubleshooting**

Team Does Not Communicate

IMPORTANT: Carry out the following general procedure at each member of the team – starting at the team member that is the most likely source of the problem.

- A. **Check the link between the switch control and its team communications device.** Check that the communications cabling is firmly in place at both ends, and that the communications device has power.
- B. **Check all other communications ports that are being used.** If the interface module is directly connected to another team member, Interface Module connected to host control device, or there is a radio or cable connection to a SCADA master station, check all those cable connections. Test communication between the interface module and the other devices.
- C. **Check the *SETUP: Communications* screen settings.** Make sure the baud rates, RTS active durations, and duplex settings are correct for the installed communications hardware.
- D. **If this switch control/Interface Module uses a radio, check the radio antenna.** Check that the radio antenna is in place and that the antenna cable is attached at both ends.
- E. **If this switch control/Interface Module uses a radio, check radio connectivity.** Check that the radio at this location can see all the other radios that it should see. For more details, see the manufacturer’s documentation.

Team does not reconfigure the circuit

- A. **Check the Team Logic setpoint.** Connect your computer to the switch control/Interface Module and start the IntelliLINK software. On the *SETUP: Team* screen, check that the *Team Logic* setpoint is enabled for this team.
- B. **Check the other *SETUP: Team* screen settings.** Make sure the *DNP/RTU Address* is correct for each team member. Also, check that the normal switch position in the *Normal Open/Close* setpoint is correct for each switch in the team, and that the normal switch function is correct in the *Normal Sw Func* setpoint. Make sure that the *Maximum Capacity* settings are appropriate for the circuit conditions.
- C. **Check the values on the TEAM OPERATION screen.** Make sure that the Ready Status reads *READY*. If not, check the *Operational Status*, *Line Status*, and *Configuration Status* fields for reasons that the team may not be ready.
- D. **Check team communications.** See *Team Does Not Communicate* on page 7.
- E. **Check the circuit configuration.** Make sure that the circuit has not been temporarily reconfigured due to construction or maintenance.
- F. **Check whether an event was logged.** Check the *DATA LOGGING HISTORIC EVENTS* screen to see whether the switch control detected and took action on an event.

Team does not return the circuit to normal

- A. **Check the *Return to Norm Mode* setpoints.** Connect your computer to the Universal Interface Module and start the IntelliLINK software. On the *SETUP: Team* screen, check that the “Rtn to Norm Mode” setpoint is set properly for this team (Open or Closed).
- B. **Check the present operation mode for each team member.** On the *TEAM OPERATION* screen, make sure that the *Ready Status* reads *READY*. If not, check the *Operational Status*, *Line Status*, and *Configuration Status* fields for reasons that the team may not be ready.
- C. **Check team communications.** See *Team does not communicate* on page 7.
- D. **Be sure automatic operation was not disabled.** If automatic operation was disabled at any team member while the circuit was in its reconfigured state, the Return to Normal process is canceled.

LCD shows “ALARM” or “FAULT”

Check the TEAM OPERATION screen. Check the *Operational Status*, *Line Status*, and *Configuration Status* fields for the reason(s) that the team is not ready.

DNP communications between PC and team members is not working

- A. **Check team communications.** See *Team does not communicate* on page 7.
- B. **Check that the DNP cable is connected.** Make sure that the serial cable from your computer is connected to the cable from the DNP port (usually Port A). Also check that the DB9 connector is fully seated in the DNP port.
- C. **Check the protocol and DNP address being used by the IntelliLINK software.** Start the IntelliLINK software on your computer. Select Tools > Options > Communication Setup. Make sure that DNP is the selected protocol. Also check that the Peer Address matches the “DNP/RTU Address” for the team member with which you are trying to communicate. Be sure the timeout and the baud rate are set appropriately as well.

- D. Check for error messages on the HISTORIC EVENT VIEW screen. To perform this check, connect directly to the faceplate communications port and select “ICP” in the IntelliLINK Communications Setup dialog box. See “HISTORIC EVENT VIEW Screen” on page 35 for more details.

SCADA commands are ignored by the Interface Module/Host control device

- A. **Check for Interface Module power.**
- B. **Check the RTU address.** At the *SETUP: Communications* screen, check which *Communications RTU Address* is used by this switch control. Make sure the SCADA master station is sending commands for this control to the correct address.
- C. Check your communications hardware. See the manufacturer’s documentation for details.

Using IntelliLINK to Locate Problems

The *LOCAL OPERATION*, *TEAM OPERATION*, and *TROUBLESHOOTING* screens can help you check the present status of:

- this Universal Interface Module
- other team members
- team operations

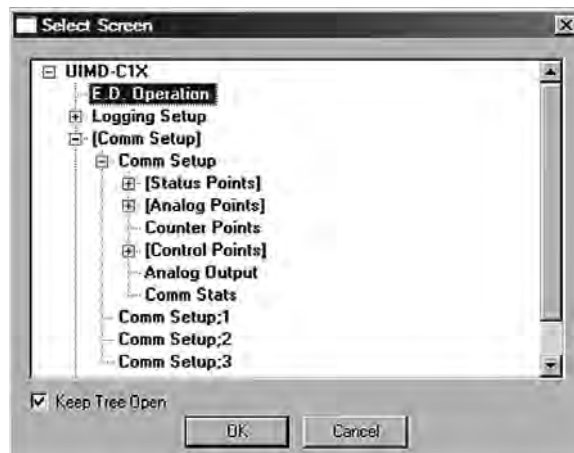
These screens can also help you locate the cause of various team and team member problems.

Navigating the IntelliLINK Screens

The **Main** button, at the bottom of each screen, takes you back to the *Present Conditions* screen, which is the main screen for UIM IntelliLINK Software. From this screen you can get to all other screens. You can also return to the *Present Conditions* screen, by opening the **Window** menu, and selecting **Show Main Screen**.



The **Tree** button, at the right of the **Main** button, opens the *Select Screen* dialog box, and presents an expandable tree view of the UIM Screenset, similar to *Windows Explorer*. Double click on the screen name that you want to go to.



View the *Present Conditions* Screen

The *PRESENT CONDITIONS* screen (Figure 3) shows the present status of various switch control settings, any existing fault and error conditions.

To display the *PRESENT CONDITIONS* screen:

Click the **Main** button at the bottom of any IntelliLINK screen to go to the *PRESENT CONDITIONS* screen.

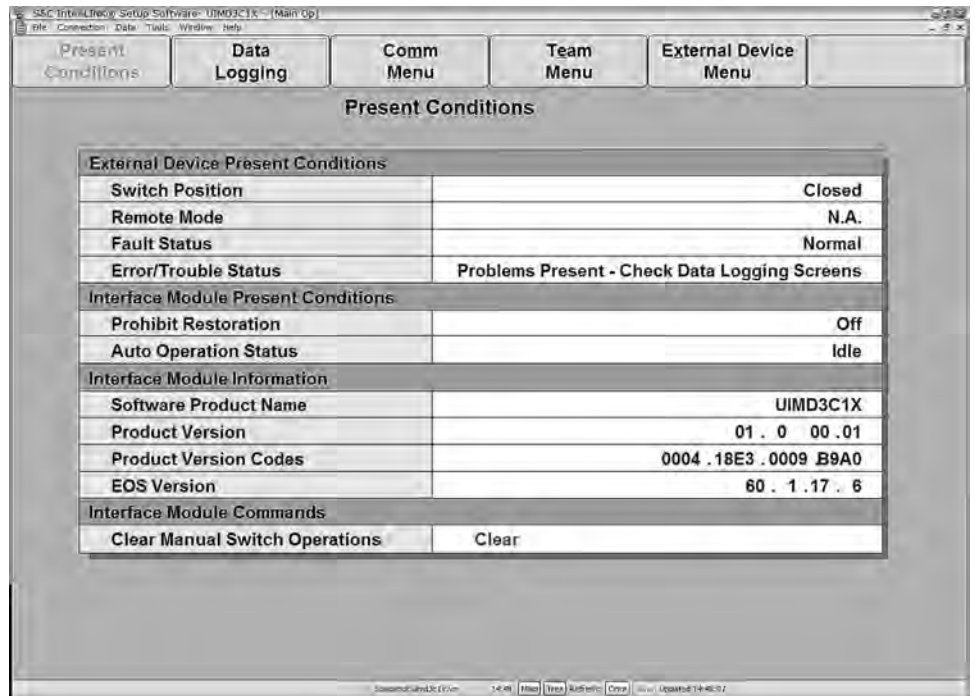


Figure 3. PRESENT CONDITIONS Screen.

This screen includes the following fields:

External Device Present Conditions

Switch Position

Once the binary status points are entered for switch position and the Interface Module is polling the external device, the present switch position will be displayed here. Anything other than open and close will be reported as bad contacts.

Remote Mode

Once the binary status point is entered for remote mode and the Interface Module is polling the external device, the state of the remote mode will be displayed here. If not programmed an N.A. will be displayed.

Fault Status

This field will follow the phase fault status points. If all points are inactive, Normal will be displayed, Fault Detected will be displayed on any or all points that are active.

Error/Trouble Status

Any active alarms out in Data Logging, Logging Status Points will cause the message “Problems Present - Check Data Logging Screens”.

Interface Module Present Conditions

Prohibit Restoration

When Prohibit Restoration becomes active from the front panel or from IntelliTEAM II, Enabled will be displayed, else Disabled will be displayed.

Auto Operation Status

When IntelliTEAM initiates extended phase loss or 3 phase voltage loss open commands to the external device, “Extended voltage loss trip” will be displayed, else “Idle” will be displayed.

Interface Module Information

Software Product Name

This is the S&C name for the application software present in this Interface Module.

Product Version

The first two bytes 00.09 are the firmware revision bytes. 00 is the major version with 09 being the minor version. IntelliLINK uses these two bytes to match the screen set to the application version loaded into the Interface Module. The remaining two bytes 00.02 are the application build revision.

Product Version Codes

These eight bytes are unique to this firmware/product revision. These codes along with the above Product Version are used to identify software installed in the field when troubleshooting concerns are being addressed.

EOS Version

The version of the operating system is displayed here.

Interface Module Commands

Clear Manual Switch Operations

When IntelliTEAM II has taken a team out of ready because of a manual operation, or a NO OPERATION report was encountered, use this command to clear the internal error.

To display the Communications Diagnostics screen:

From the PRESENT CONDITIONS screen select the Comm Menu button, and click the Comm Stats button to display the Communications Diagnostics screen (Figure 4).

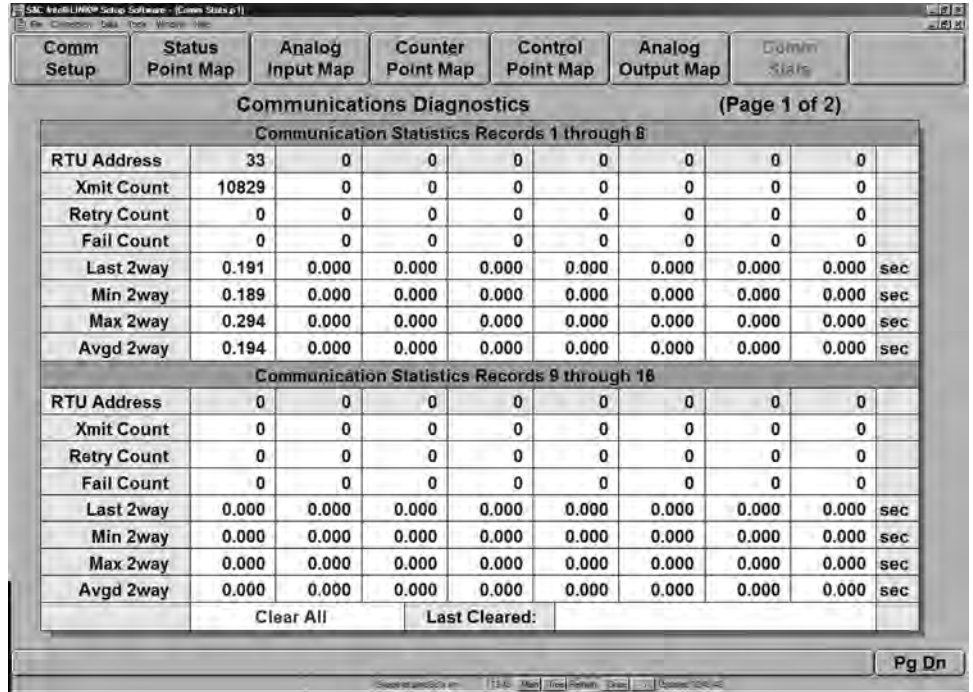


Figure 4. Communications Diagnostics for the Universal Interface Module.

This screen contains counters and statistics associated with DNP communications and the IntelliTEAM II system. This page tracks communications statistics for each team member in the team(s) where this control is a member.

RTU Address

This field shows the “DNP/RTU Address” for the team member associated with the counts in the column below.

Xmit Count

This field shows the number of original packets transmitted to a single team member.

Retry Count

This field shows the number of packets transmitted to a single team member due to a retry of an original packet.

Fail Count

This field shows the number of communications failures with a single team member.

Last 2way

This field shows the latency (in seconds) associated with the last request sent to a single team member.

Min 2way

This field shows the minimum latency (in seconds) recorded for a request sent to a single team member.

Max 2way

This field shows the maximum latency (in seconds) recorded for a request sent to a single team member.

Avgd 2way

This field shows the average latency (in seconds) recorded for requests sent to a single team member.

Last Cleared

A timestamp is displayed here that indicates the last time “Clear All” was performed. This timestamp will assist you in determining the usefulness of the counters presented on both Various Counters screens. If the counters have not been recently cleared, then they may not represent present communications performance.

To display the Communications Diagnostics screen:

From the PRESENT CONDITIONS screen select the Comm Menu button, and click the Comm Stats button to display the Communications Diagnostics screen, then click “Pg Dn”.

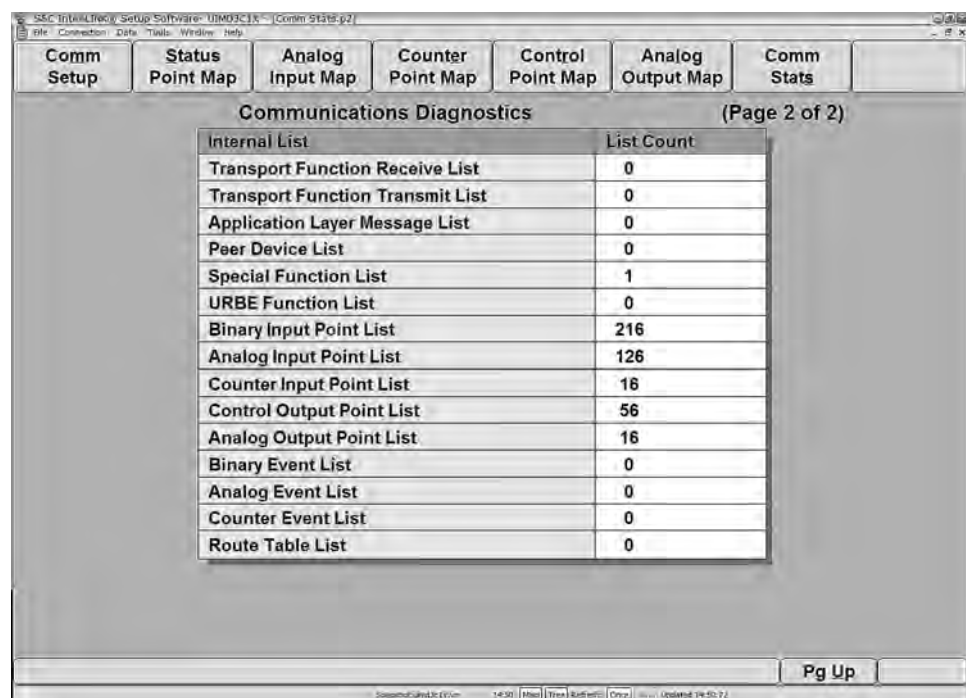


Figure 5. SETUP: Communications Diagnostics for the Universal Interface Module.

This screen contains diagnostic information regarding communications related buffers within this control. This information may be useful when talking with S&C personnel about communications related issues.

Transport Function Receive List

This is the number of DNP frames that have been received and placed in the Transport Function frame buffer. A frame may remain in this buffer if it is part of a multi-frame fragment for which all frames have yet to be received, or it may remain in this buffer for a limited time if the application layer is busy and can not yet accept the new frame.

Transport Function Transmit List

This is the number of DNP fragments that have been processed by the application layer and are waiting for Data Link Layer service. A fragment may remain in this buffer for a limited time if the Data Link Layer is busy.

Application Layer Message List

This is the number of application layer messages that are waiting to be processed and/or serviced by the Transport Function. These messages primarily consist of originated messages destined for team members for which responses are expected. These originated messages will remain in the buffer until a response is received or until the retry time and count have expired.

Peer Device List

This is the number of peer devices, or team members, that have been registered with DNP and for which an association will be maintained.

Special Function List

This is the number of special functions that have been registered with DNP. Special functions are application processes that will be triggered by read or write operations to special predefined virtual memory locations.

URBE Function List

This is the number of functions, or application processes, that have been registered with DNP which will be triggered by the reception of unsolicited event messages from specific peer devices.

Binary Input Point List

This is the total number of binary input points that may be mapped to SCADA point numbers. This is the size of the buffer rather than the actual number of mapped points.

Analog Input Point List

This is the total number of analog input points that may be mapped to SCADA point numbers. This is the size of the buffer rather than the actual number of mapped points.

Counter Input Point List

This is the total number of counter input points that may be mapped to SCADA point numbers. This is the size of the buffer rather than the actual number of mapped points.

Control Output Point List

This is the total number of control output points that may be mapped to SCADA point numbers. This is the size of the buffer rather than the actual number of mapped points.

Analog Output Point List

This is the total number of analog output points that may be mapped to SCADA point numbers. This is the size of the buffer rather than the actual number of mapped points.

Binary Event List

This is the number of binary input events that are queued and ready to be sent in the next event data request, or the next unsolicited event report.

Analog Event List

This is the number of analog input events that are queued and ready to be sent in the next event data request, or the next unsolicited event report.

Counter Event List

This is the number of counter input events that are queued and ready to be sent in the next event data request, or the next unsolicited event report.

Route Table List

This is the number of routing table entries that have been registered with DNP. These entries originate from the "SETUP: Communications Routing" screen.

Team Operation Screens

The TEAM OPERATION screens show the present status of various team-related parameters for all members of the team.

To display the TEAM OPERATION MENU screen:

Click the Team Menu Button from the PRESENT CONDITIONS screen.

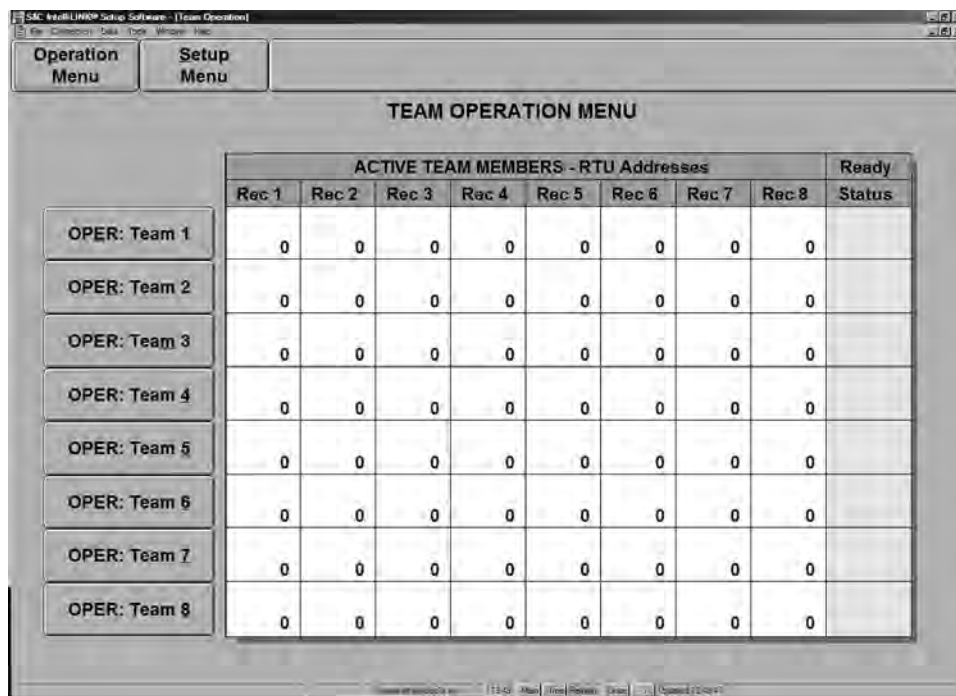


Figure 6. TEAM OPERATION MENU Screen.

The TEAM OPERATION MENU screen (Figure 6) shows a summary of the DNP/RTU addresses for the teams where the Universal Interface Module is a member, and the present Ready Status of each of the active teams.

To display one of the TEAM OPERATION screens:

At the TEAM OPERATION MENU screen, click the OPER button for the team you want to access. The IntelliLINK software will display Page 1 of the corresponding TEAM OPERATION screen.

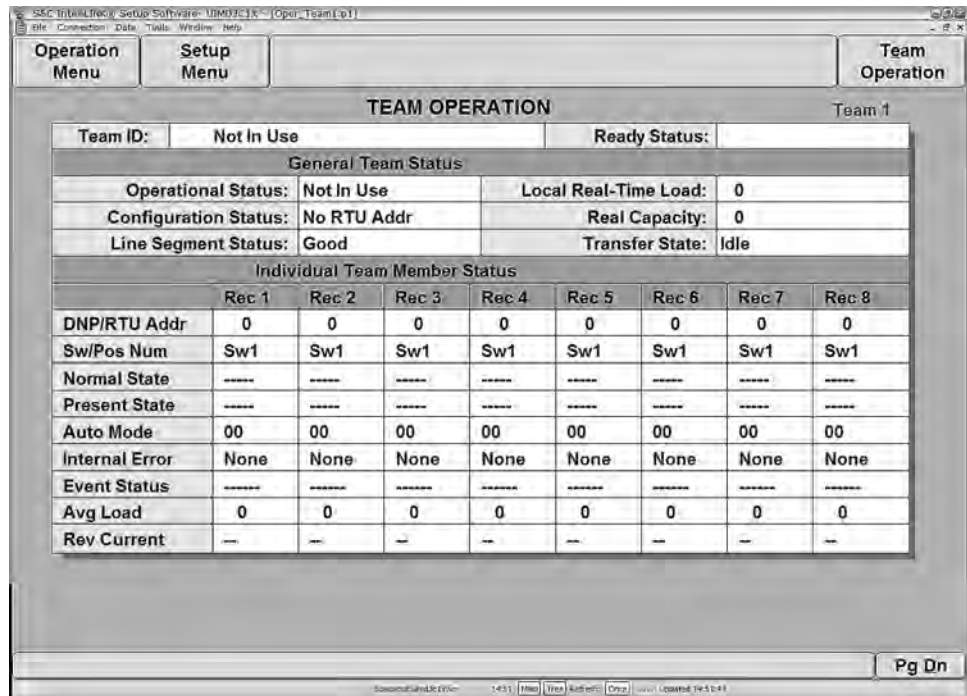


Figure 7. Page 1 of the TEAM OPERATION Screen.

Page 1 of the *TEAM OPERATION* screen (Figure 5) shows the present status of various team-related parameters and information for each team member.

Team ID

This is the name you entered in the *Team ID* setpoint on the *SETUP: Team* screen.

Ready Status

If the *Operational Status*, *Line Segment Status*, and *Configuration Status* all indicate that no errors are present, *READY* appears in this field. If errors are present, *ALARM* appears. *FAULT* will be displayed if the team is isolating a faulted line segment.

Operational Status

This is the operational status of the system. When the team members can perform team operations, this field reads **Good**. Other Possible values are:

Coordination	The team coach is not being passed throughout the team, causing a lack of team coordination.
Remote Config	The configuration of an adjacent team member is not consistent with the local team member's configuration.
Local Config	There has been a change to the local team configuration on the <i>SETUP: Team</i> screen that has not yet been accepted.
Remote Error	An adjacent team member is indicating an error condition.
Local Error	The local switch is disabled because Prohibit Restoration is ON, or because the switch has changed state from a faceplate or SCADA operation.
Logic Disabled	The team logic has been disabled on the <i>SETUP: Team</i> screen.
Not In Use	This team is not in use.
No 2nd Contin.	The team is in a transferred state, but if an additional event occurs, no further transfer is allowed.

Configuration Status

This is the status of the user configuration parameters essential for team operation. Possible values are:

NoRTU Addr	No RTU address was specified on the <i>SETUP: Communications</i> screen.
Stop + Data Chg	The "Team Setup" setpoint is in a "Stopped" state following a change made to the team parameters on the <i>SETUP: Team</i> screen.
Stopped	The "Team Setup" setpoint is disabled on the <i>SETUP: Team</i> screen.
Data Change	An unexpected change has been made to the team parameters on the <i>SETUP: Team</i> screen.
Record Count	The count of team member records on the <i>SETUP: Team</i> screen is incorrect. The team database must have at least one record to be valid.
Not 1 Source	An incorrect number of source switches was configured on the <i>SETUP: Team</i> screen. A team may have one and only one source switch.
No Local Rec	No local record was found in the team database. One of the team records must contain an RTU address that matches the "DNP/RTU Address" entered on the <i>SETUP: Communications</i> screen.

Line Segment Status

This is the fault and voltage loss status of the line segment protected by this team of controls. If no fault or voltage loss is detected, this field reads “**Good**.” The field can include a combination of possible values:

Segment Dead (Dd)	The line segment is deenergized.
Segment Open (Op)	All team switches are in the open position in preparation for a circuit reconfiguration.
Overcurrent (OC)	An overcurrent fault has been detected on the line segment protected by this team of controls.
Voltage Loss (VL)	A voltage loss event has been detected on this line segment before this transfer event occurred.
Team Error (Er)	An error has been detected within the team, affecting the accuracy of the “Line Segment Status.”
Alt Source (AS)	The line segment is being fed by an alternate source, either directly from an adjacent line segment, or indirectly from another location.

Local Real-Time Load

This is the *2-minute averaged* measured 3-phase load (in amps) on the line segment protected by this team. This averaged load does not include the load measured beyond any of the switches serving load outside of the local line segment.

Real Capacity

This is the loading capacity available on the line segment protected by this team. This value takes into account the real capacity of any source-side teams, the maximum capacity of the team’s present source switch, and any load that has already been transferred during team circuit reconfiguration.

Transfer State

This is the present state of any transfer operations. When no transfer or Return-to-Normal process is in effect, this field reads **Idle**. Possible values are:

Idle	The team configuration is normal, and no transfer or Return-to-Normal operation is taking place.
Init	The first step of a transfer event, where data is quickly collected from all team members, is taking place.
Rqst	The stage of the transfer event when the line segment is requesting service restoration from an adjacent line segment is taking place.
Grant	The stage of the transfer event when the line segment has been asked to grant service restoration to an adjacent line segment is taking place.
Wait	The team is not in a normal configuration, and is waiting for additional circuit reconfiguration or return-to-normal.
RTN	The team is actively returning to a normal configuration.
Stop	An error has been indicated either locally or remotely, causing a stop transfer condition.
Fault	This is a special transfer state that is used by a team that is presently isolating a fault.
Hold	This transfer state will be active when the team has begun a transfer event, but the line segment is not yet fully deenergized, requiring further transfer activity to be delayed.

Individual Team Member Status

These fields apply to the individual team members in this team.

DNP/RTU Addr

This row shows the DNP/RTU address for each team member. You entered this information on the *SETUP: Team* screen for this team.

Sw/Pos Num

This row shows the switch/position number associated with the team member, for example "Sw1" for a single overhead switch. You entered this information on the *SETUP: Team* screen for this team.

Normal State

This row shows the state of each line switch when the circuit is configured normally. You entered this information on the *SETUP: Team* screen for this team.

Present State

This is the present position of each switch in the team:

Open	The switch is open.
Closed	The switch is closed.
----	The switch state is unknown, or the record is not in use. This is the initial state of all switches and is considered an error condition during normal operation.

Auto Mode

This field shows the automatic features enabled for each team member. You entered this information for each team member on the *SETUP: Automatic Operation* and *SETUP: Team* screens. It also indicated whether the switch control has been temporarily placed in manual operation mode. The field can include a combination of possible values:

M	The switch control has been temporarily placed in manual mode via the faceplate or SCADA command.
A	Automatic sectionalizing has been enabled with the features configured on the <i>SETUP: Automatic Operation</i> screen.
V	Sectionalizing on loss-of-voltage only is enabled.
T	Automatic transfer logic has been enabled on the <i>SETUP: Team</i> screen.
Ro	Return-to-Normal logic using an open transition has been enabled on the <i>SETUP: Team</i> screen.
Rc	Return-to-Normal logic using a closed transition has been enabled on the <i>SETUP: Team</i> screen.

Internal Error

This field reads *None* when no internal errors are present in a team member. Possible error values are:

Trouble	The switch is disabled because of a bad battery or other condition.
NotAuto	The switch has been placed into a non-automatic condition.
ManOR	The switch's open/close state has been manually overridden by either a faceplate or SCADA operation.
No Op	The switch has detected an error in operation following a transfer event. A close or open operation was requested, but either the team member was unable to perform the operation, or the switch tripped back open based on shots-to-lockout logic (close request only).
	NOTE: ManOR and No Op status can be cleared on the <i>PRESENT CONDITIONS</i> screen using the <i>Clear Manual Switch Operations</i> Clear command. They can also be cleared on the <i>Team Sw. Errors</i> screen of the LCD, or with a SCADA command.
ProRes	The switch has been sent a Prohibit Restoration command.

Event Status

This is the present status of events related to this team member. The field can include a combination of possible values:

O	Latched overcurrent event.
V	Latched voltage loss, any or all phases
P	Latched phase loss sectionalizing event
Vr	Real-time voltage loss, any phase
3Vr	3-phase real-time voltage loss

Avg Load

This is the *2-minute averaged* 3-phase load reported by each individual team member. This value is used when determining the *Local Real-Time Load*. Following a circuit event, this value is frozen at the last value reported before the event began; this insures that the team uses pre-event values during the transfer. The value is not updated until after the transfer.

Rev Current

This field reads *Active* when a team member senses reverse current.

To display Page 2 of the TEAM OPERATION screen:

Click the PgDn button at Page 1 of the screen.

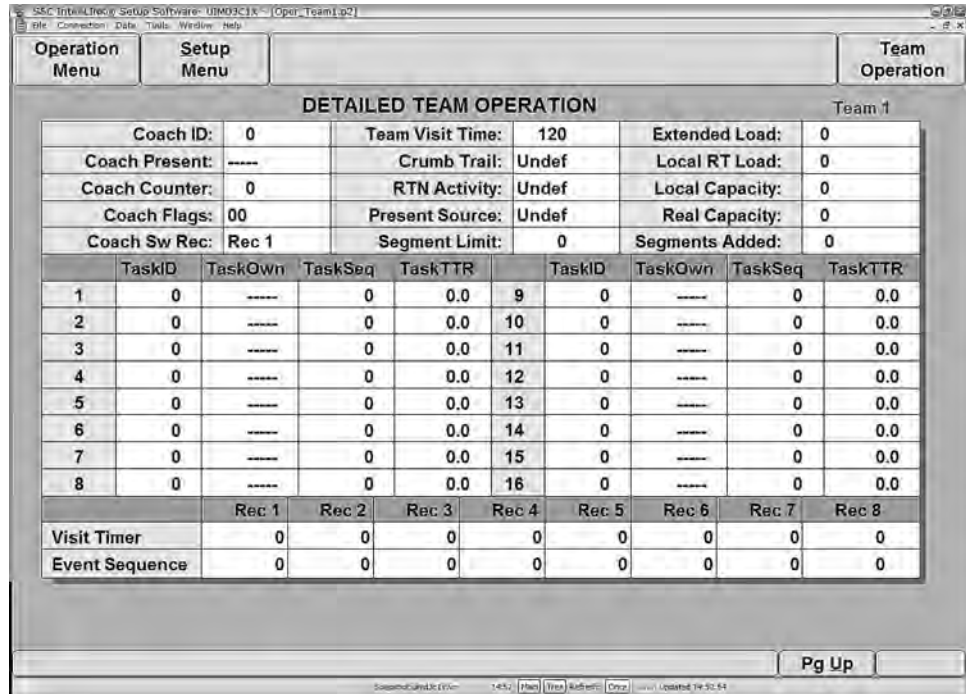


Figure 8. Page 2 of the TEAM OPERATION Screen.

Page 2 of the TEAM OPERATION screen (Figure 6) shows the present status of various team-related parameters and information for each team member.

The upper part of this screen displays information that is the same for all members of the team.

Coach ID

This field identifies the presently active coach. If a coach is lost, the next coach generated uses an identification sequence greater than the present number.

Coach Present

This field indicates that the team coach is present at this team member, as well as showing the status of the coach:

Reborn

The coach is newly generated.

Seeking BC

The new coach is looking for the most recent copy of team data.

Mature

The coach contains the valid team data and is able to facilitate normal team functions.

Coach Counter

This is the ongoing count of times the present coach has arrived at team members. Along with the *Coach ID*, it is used to validate the coach when it is received.

Coach Flags

This is an indication used by various functions within the team member to note that the coach has arrived and left this team member. It indicates that the team data has been refreshed.

Coach Sw Rec

This field shows the switch record where the coach, if present at this team member, is executing.

Team Visit Time

This field indicates the number of seconds remaining in which the team member expects the coach to return. This timer is refreshed while the coach is present. If the coach does not return, and the timer expires, this team member will generate a new coach.

Crumb Trail

This field holds a team database record as a marker to allow team functions to span multiple teams and have a path back to the originating team.

RTN Activity

This field shows the team database record where the Return to Normal process originated.

Present Source

This field shows the team database record for the switch through which the line segment is presently receiving power.

Segment Limit

This is the number of line segments that are allowed to be restored on this circuit. It is the lesser of the limit configured in the *Line Segment Limit* setpoint on the TEAM: Setup screen and the limits set in adjacent source side teams.

Extended Load

This is the extended loading of the team, which includes the loading of the line segment and all downstream load.

Local RT Load

This field displays the local real-time load on the line segment protected by this team. It is the same as the *Local Real-Time Load* on Page 1 of the *TEAM OPERATION* screen.

Local Capacity

This is the loading capacity of the local team. This value is compared with the remote capacity of the adjacent source side team to determine the real capacity of the team.

Real Capacity

This field shows the loading capacity available on the line segment protected by this team. It is the same as the *Real Capacity* on Page 1 of the *TEAM OPERATION* screen.

Segments Added

This field shows the number of segments presently added. The team compares this value to the *Line Segment Limit* on the *SETUP: Team* screen when a transfer event occurs.

The center part of the screen contains a table of the team tasks that are presently being executed. This information is used for diagnostic purposes when working with S&C support engineers.

TaskID

This is the identification for the task to be executed.

TaskOwn

This is the team database record where this task is to be executed. The task may also require global execution at all team members.

TaskSeq

This is the sequence number of the executing task.

TaskTTR

This is the Time-to-Run of the executing task.

The lower part of the screen contains a table of information (database records) about all members of the team.

Visit Timer

This is the countdown timer for the next time the coach should visit a specific team member. These timers are carried by the coach, and will be decremented only while the coach is present.

Event Sequence

This is the sequence number of the last event received from this team member.

Team Member Task Operations

To display the Team Member Task Operation screen:

Click the Operation button at any IntelliLINK screen, then click Misc Operation and then the Member Tasks buttons.

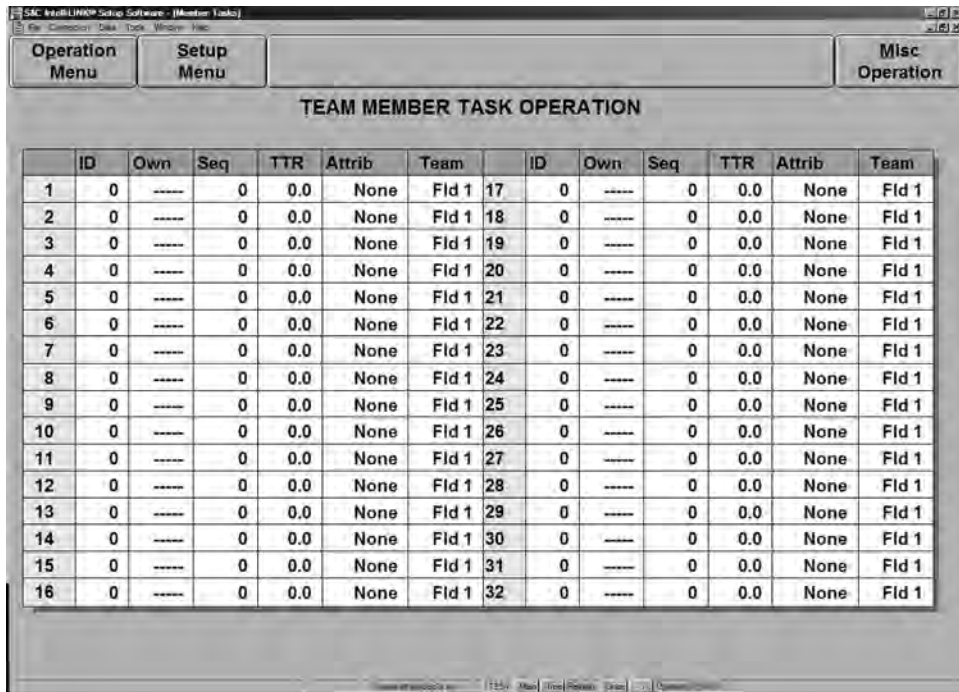


Figure 9. Team Member Task Operation Screen.

The MISC OPERATION: Team Member Task Operation screen (Figure 9) shows a table of the team member tasks that are presently being executed. This information is used for diagnostic purposes when working with S&C support engineers.

This screen includes the following fields:

ID

This is the identification for the task to be executed.

Own

This is the team database record associated with the execution of this task.

Seq

This is the sequence number of the executing task.

TTR

This is the Time-to-Run of the executing task.

Attrib

This is the Lock and Execute attributes associated with the executing task.

TEAM

This is the team number associated with the execution of this task.

Contract Status

The MISC OPERATION: Contract Status screen (Figure 8) shows information about contracts associated with the contract agent at this control. This information is used for diagnostic purposes when working with S&C support engineers.

If a contract is required for a particular line segment, a contract agent is used to track and secure the contract. Every contract request is uniquely identified by the requesting agent, the originating segment, and the timestamp when the request was made.

To display the Contracts screen:

Click the Operation button at any IntelliLINK screen, then click Misc Operation and then the Contract Status buttons.

Contract State	Rqst Agent	Grant Agent	Orig Segmt	Temp Segmt	Line Count	Load Rqst	Maint Timer	Rqst Time
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	
	0	0	Fld 1	Fld 1	0	0	0	

Figure 10. Contract Status Screen.

This screen includes the following fields:

Contract State

This field shows the present state of the contract:

Active	The contract has been granted and is presently active.
Rqst unsent	The contract agent received a contract request from the team member, but has not yet sent the request to the next contract agent.
Rqst pending	The contract request is pending.
Rqst travel	The contract agent is forwarding the contract further; the decision whether to grant the contract cannot be made at this location.
Rqst accept	The contract request was accepted by this agent; the contract approval is headed back to the originating agent. When this message appears at the granting agent, the contract has been approved.
Rqst decline	The contract request was declined by this agent. The request will be sent back to the originating agent.
Decline cont.	A “declined” message is being passed along to the requesting agent.
Dissolve start	An agent is dissolving the contract. This is generally done by the requesting agent.
Dissolve cont.	A “dissolve” message is being passed along.
Maint start	The maintenance timer on an active contract has expired, causing a maintenance action to occur.
Maint tickle	This contract agent has not seen a maintenance message for the contract lately. The agent sends a reminder to the requesting agent to see if the contract is still needed.
Maint travel	A maintenance message is being passed from the requesting agent to other agents along the contract route.
Maint tra NF	The contract agent has received a maintenance message for a contract that is not found in its list.
Maint tra NF rt	A <i>Maint tra NF</i> message (see above) is being returned to the requesting agent. This message can also appear at other agents along the contract route.
Maint tic NF	The contract agent has received a <i>tickle</i> message for a contract that is not found in its list.
Maint tic NF rt	A <i>Maint tic NF</i> message (see above) is being returned to the agent that initiated the tickle. This message can also appear at other agents along the contract route.
Maint restart	The requesting agent has confirmed that it still needs the contract. The maintenance timer is restarted.
Maint res cont.	A <i>restart message</i> is being passed to other agents along the contract route.

Rqst Agent

This field shows which agent requested the contract.

Grant Agent

This field shows which agent approved the contract.

Orig Segmt

This field shows the team record number for the segment where the contract request originated.

Temp Segmt

This field shows the present team record number for the location of the contract request.

Line Count

This field shows how many line segments will be picked up if the contract request is granted. This value is generally "1."

Load Rqst

This field shows how much load will be picked up if the contract request is granted.

Maint Timer

Once a request is granted, this field shows the time remaining before contract maintenance should be performed. Normally, when a contract is no longer needed, the requesting agent sends a message to dissolve the contract. However, if the local contract agent does not hear anything within the Maint timer, it checks with the requesting agent. The requesting agent can then extend the contract if it is still needed, or dissolve the contract if it is not.

Rqst Time

This is the date and time when the contract was requested.

Team Member Action Path

The *Team Member Action Path* screen (Figure 9) shows a table of the actions taken during the execution of a switch operation. This information is used for diagnostic purposes when working with S&C support engineers.

Some switch gear require different steps to be taken during the operation of the switch than other gear. These steps are often further changed by the configuration of switch parameters, the team parameters, and the conditions of the event. Together the steps are called the Action Path. The Action Path displayed in this table is created on the fly based on the present conditions during each event.

Due to the complexity of some Action Paths it is necessary to have the ability to back out of a series of steps. Backing out of an Action Path may occur when one of the steps can not be performed, thus requiring that the switch be put back into its normal state.

To display the Action Path screen:

Click the Operation button at any IntelliLINK screen, then click Misc Operation and then the Action Path buttons.

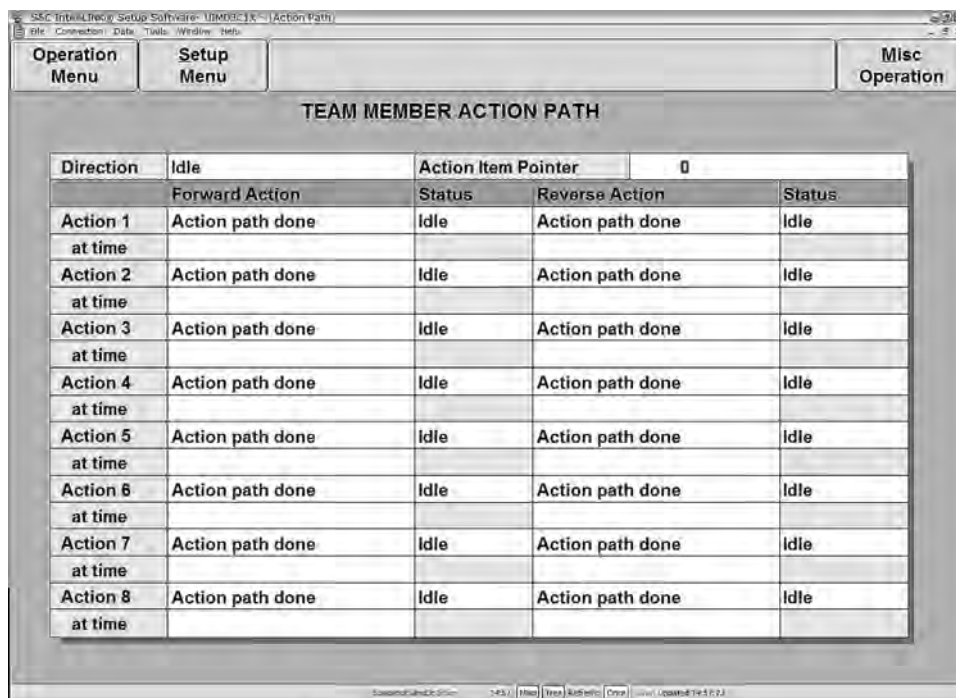


Figure 11. Team Member Action Path Screen.

This screen includes the following information:

Direction

This is the Forward or Reverse direction that the Action Path is presently taking. Reverse will only occur if the forward path is stopped before completion.

Action Item Pointer

For diagnostic purposes only, when working with S&C support engineers. This indicates the record within the Action Path that is presently being executed.

Forward Action / Reverse Action

These columns display two pieces of information. One is the name of the step what will be taken during execution of the Action Path. The other is a timestamp associated with the start of that step. The list names that will be displayed are:

- Action path done
- Close for xfer
- Contract request
- Contract terminate
- Block recloser
- Unblock recloser
- Block ground trip
- Unblock ground trip
- Alternate settings
- Normal settings

Status

These columns display two pieces of information. One is the status of the associated step in the action path. The status can be Idle, Running, Failed, or Success.

Coach Activity

The *Coach Activity* screen (Figure 12) shows timestamps for basic coach activities, as well as the counter for each team's coach.

To display the Coach Activity screen:

Start from the PRESENT CONDITIONS screen, click the Team Menu button, then click the Operation Menu button, then the Misc Operation Button, and finally the Coach Activity button.

The screenshot shows a software window titled "SSC IntelliTrec - Setup Software - IBMPC1K - Coach Activity". The window has a menu bar (File, Connection, Data, Tools, Window, Help) and three buttons: "Operation Menu", "Setup Menu", and "Misc Operation". The main area is titled "COACH ACTIVITY" and contains a table with the following structure:

Number	Activity	Time	Sign-In Count	
			Coach 1	0
Coach 1			Coach 2	0
Coach 1			Coach 3	0
Coach 1			Coach 4	0
Coach 1			Coach 5	0
Coach 1			Coach 6	0
Coach 1			Coach 7	0
Coach 1			Coach 8	0
Coach 1				
Coach 1				
Coach 1				
Coach 1				
Coach 1				
Coach 1				
Coach 1				
Coach 1				
Coach 1				

Figure 12. Coach Activity Screen.

This screen includes the following fields:

Number

This field shows the coach/team number.

Activity

This field shows the coach activity: signing in or going to the specified team member ("Rec 1," "Rec 2," etc.).

Time...Msec

This is the date and time when the activity occurred.

Sign-In Count

These fields show the ongoing counts for each team's coach.

Data Logging Setup

The *Data Logging Setup* screen (Figure 11) is used to select data that will be stored in the UIM internal memory. Only the data you filter for storage can be displayed on the *Historic Events View* screen. If you enable CF Logging, all data will be timestamped and stored on the compact flash, without any filtering applied.

To display the Data Logging Setup screen:

Click the Data Logging button on the PRESENT CONDITIONS screen.

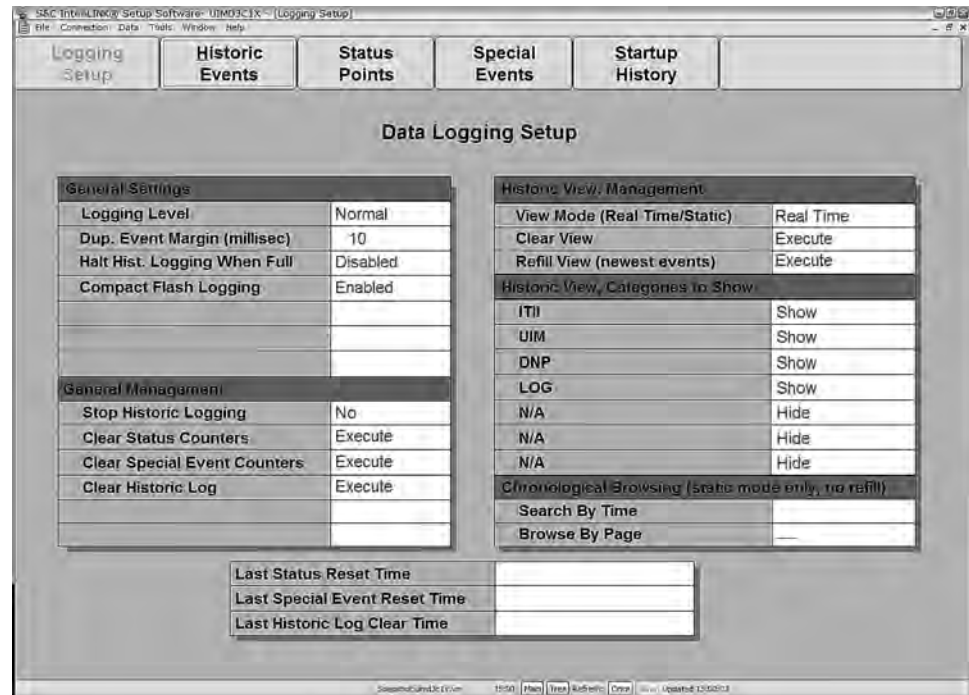


Figure 13. Data Logging Setup Screen.

This screen includes the following fields:

General Settings (for the UIM Historic Log, and enabling the Compact Flash):

Logging Level

Each historic logging event that is generated by the UIM application is assigned one of three levels. The assignment is done by S&C. There are three levels supported: All (events useful for detailed troubleshooting), Extended (events that allow more in-depth monitoring of the application activity) and Normal (events that describe regular operation). The default Logging Level is Normal, which tells Data Logging to log only the more basic events.

Normal: Logs only typical user-oriented information.

Extended: Logs both user-oriented information and internal errors.

All: Logs user-oriented information, internal errors, and internal trace/debugging information.

Dup. Event Margin (millisec)

Sometimes the UIM application will generate identical historic events within a short amount of time. Such “duplicate” events occurring right next to one another may flood the log, without yielding much valuable information about the operation of the application. For two events to be considered duplicates every element of their event records must match,

except for the timestamps. This setpoint tells Data Logging to log only the first event in an uninterrupted sequence of duplicate events, as long as each subsequent event occurs within the margin.

This setpoint has no effect on alternating sequences of events. For example, the setpoint can be set to 10ms and we can have a sequence of events ABABAB (where A and B are different events), each next event coming 1ms after the previous one. Even though identical events occur within 2ms in this case, which is well within the value of the setpoint, all of them will be logged— only an event that is identical to the previously logged one can be considered for elimination based on the setpoint.

Halt Hist. Logging When Full

When set to Enabled, halts logging of historic events once the historic event log fills up so that all events that come after that are discarded, without overwriting existing contents of the log. Compact Flash Logging, Status Point Logging and Special Event Counter logging are not affected by this setpoint. This setpoint can only be useful in a troubleshooting situation.

NOTE: Do not set to Enabled, unless there is some particular condition you are trying to troubleshoot. Once troubleshooting is complete or new event data is desired, the setpoint must be manually set to Disabled to ensure continued event logging.

CF Logging Enabled

When set to Enabled, every single historic event that the application generates will be written to the Compact Flash card, if it is present. If the card is not present and the setpoint is set to Enabled an error message will be entered in the Historic Event Log each time Compact Flash access is attempted.

Logging Level and Duplicate Event Elimination Margin setpoints do not affect whether an event makes it to Compact Flash. The purpose of Compact Flash Logging is to always save as much logging data as possible.

The only way to view Compact Flash logs is to physically remove the card from the control, insert it into the CF card reader on a PC, open the desired file with IntelliLINK as a snapshot, and view it in HTML format using the Data->Event/Data Logs menu. The procedure for viewing the Compact Flash logs is described on page 72.

NOTE: It is strongly recommended that whenever CF card is present, Compact Flash Logging is enabled to make future diagnostics and possible troubleshooting easier.

▲ NOTICE

Do not remove the CF card from the UIM control, unless this setpoint is set to Disabled as this can cause CF card corruption. Compact Flash Logging can be disabled either by setting this setpoint to Disabled via IntelliLINK or via the control's keypad.

General Management:

These options apply to event logging in general.

Stop Historic Logging

Stops Historic Event Logging immediately, without affecting Compact Flash Logging, Status Point Logging or Special Event Counter logging. All future historic events will not be put into historic event log. This can be useful to prevent newer events from overwriting older ones when Historic Event Log fills up.

NOTE: Be sure to start historic logging again once you have collected any necessary data from the log so that future events are not lost.

Clear Status Counters

Clears counters and Last Active/Cleared timestamps for all Status Points contained on the Status Points Screen. The time of last clearing is updated both in the lower portion of the current screen and on the Status Points screens.

Clear Special Event Counters

Clears counters and Last/First Active timestamps for all Event counters contained on the Special Event Counters Screen. The time of the last clearing is updated both in the lower portion of the current screen and on the Special Event Counters Screens.

Clear Historic Log

Removes all events contained in Historic Event Log, but has no effect on Compact Flash Logging, Status Point Logging or Special Event Counters logging. The time of the last clearing is updated in the lower portion of the current screen.

⚠ WARNING

Event data will be permanently deleted from the Historic Event Log. If you need to preserve event data, be sure to generate an HTML report of logged data before clearing. See Historic Event Log, on page 71, for information about generating an HTML report

Historic View, Management

It is not possible to view the in-memory Historic Event Log in its entirety via IntelliLINK screenset. In its complete form it can only be viewed in HTML format, using the IntelliLINK Data->Event Data Logs menu, as described in the Historic Event Log section, on page 71. However, a small subset of the full Historic Event Log, referred to as “Historic Event View”, is available through the Historic Events screens, as described below. This small subset holds only 160 events, as opposed to over 4,000 in the complete Historic Event Log. The following features of the screen allow selecting historic events for the Historic Event View.

NOTE: The settings/commands below have no effect on the main Historic Event Log.

View Mode (Real Time/Static)

Historic Event View can be in one of these two modes:

“Real Time”

As long as Historic Logging is active, every event generated by the application that satisfies the Logging Level and Duplicate Event Elimination Margin setpoints, as well as the Categories To Show selection (see below), will be added to the Historic Event View as soon as it is generated. When Historic Event View fills up the event slot containing the oldest event, is reused. Therefore, in this mode Historic Event View is a circular buffer that has no fixed beginning, and is updated in real-time.

“Static”

Historic Event View is not updated in real-time, but only when either Refill Historic View or Chronological Browsing features are used (see below). In this mode the View serves as a buffer to output the events that result from queries to the Historic Event Log but does not show newest historic events as they arrive.

Clear Historic View

Empties Historic View. If View Mode is Real Time, the next qualifying event will be placed on top of the View; if View Mode is Static, the View will remain empty until it is refilled or

Chronological Browsing features are used.

Refill Historic View

Clears the current contents of the View and loads as many events from the main Historic Event Log as the View can hold, in ascending chronological order. Only those events that satisfy the Categories to Show selection are placed into the View. Of all applicable events the newest are selected.

Historic View, Categories to Show

Each historic logging event, generated by the UIM, is assigned to one category by S&C, based on what part of application's functionality it belongs to. This is done to ease filtering and sorting. Category assignment is described in greater detail in the Historic Events section.

This feature allows you to select which categories of events will be displayed in the Historic Event View. For example, if you want to view only IntelliTEAM-related events, set the "ITII" category to "Show" and all other categories to "Hide".

ITII	- IntelliTEAM Messages
DNP	- DNP Comm Messages
UIM	- Messages describing the interaction between the UIM and External Device
LOG	- Maintenance Messages

Note that enabling and disabling categories does not cause events to be accepted or discarded for placement into the main Historic Event Log, the feature solely applies to the Historic Event View buffer. In the same way that the category of the event is ignored for the purposes of placing it into the Historic Event Log, the Logging Level of the event (see above) is ignored for the purpose of loading it from the Historic Log to the Historic View. Therefore, if Logging Level was lowered recently so that Historic Log still contains events that would not be logged after the change, Historic View may also end up having these events, even though their level does not match the present Logging Level setpoint value.

Chronological Browsing (static mode only, no refill):

Since the size of Historic Event View is only a fraction of that of the main Historic Event Log, it is necessary to be able to navigate through the Log chronologically. This can be accomplished in two ways, using these two features:

NOTE: Chronological Browsing features are only taken into account when View Mode is Static and do not apply in Real Time mode.

Search By Time

Loads into Historic Event View up to 160 (size of the View) events that occurred at and immediately following a certain time. Only events that satisfy the Categories To Show selection are placed into the View.

If all events that are currently in the main Historic Event Log occurred before or after the time specified here, the oldest available events are selected for placement into Historic Event View.

Historic Event View is refilled as soon as the timestamp is entered; the timestamp is cleared once the refill is complete, to avoid confusion.

Browse By Page

Allows to browse through Historic Event Log, instructing the application to load a certain group of events into Historic Event View. Four selections are available:

Oldest 8 Pages	Loads up to 160 (size of Historic Event View) of the oldest qualifying events from Historic Event Log.
Newest 8 Pages	Loads up to 160 of the newest qualifying events from Historic Event Log.
Prev 8 Pages	Loads up to 160 previous events, relative to the events currently in the View. Usually this means older events.
Next 8 Pages	Loads up to 160 next events, relative to the events currently in the View. Usually this means newer events.

When one of these selections is made, Historic Event View is refilled immediately.

NOTE: Since Historic Event Log is circular, selecting Prev may cause the newest events to be displayed (if the View currently holds the oldest) and selecting Next may cause the oldest events to be displayed (if the View currently holds the newest).

Last Status Reset Time

This is the time data on the Logging Status Points screen was last reset. The Reset Status Points command is located at the bottom of that screen, and in the General Management section of the Data Logging Setup screen.

Last Special Event Reset Time

This is the time data on the Special Event Counters screen was last reset. The Reset Special Counters command is located at the bottom of the Special Event Counters screen, and in the General Management section of the Data Logging Setup screen.

Last Historic Log Clear Time

This is the time the Historic Log was last cleared. The clear command is located in the General Management section of the Data Logging Setup screen.

Historic Event View

These screens display Historic Event View—a subset of the Historic Event Log, filtered based on the criteria specified in the right portion of the Logging Setup screen. Historic Event View holds 160 events and is displayed on 8 screens, 20 events on each. Navigating between the View screens is accomplished by Page Up/Page Down buttons in the lower right corner.

NOTE: These screens do not show the whole event log, only the filtered portion. To view the whole Event Log that resides in memory, use the HTML log feature of IntelliLINK, as described in the Historic Event Log section on page 71. Compact Flash event logs cannot be viewed from these screens either, but can be accessed through the HTML logs, as described in the Compact Flash Logging section on page 72.

The *Historic Event View* screen (Figure 12) shows a chronological listing of events. The event message, in conjunction with the Data 1 through Data 4 code, describes the event and action(s) taken. There are three categories of messages you can set - Normal, Extended, and All - based on the filter you choose, with the Logging Level on the *Data Logging Setup* screen.

If an event message refers only to “Data 1”, then any value in the other data columns is diagnostic information used by S&C staff.

The log can hold eight pages of information. In Real-time Mode, once the log is full, each new event over-writes the oldest event in the log. To find the most recent event, look for the message with a timestamp that is *older* than the time for the message above it.

To display the *Historic Event View* screen:

Click the Data Logging button on the *PRESENT CONDITIONS* screen, and then click the Historic Events button.

Category	Event Description	Timestamp	Data 1	Data 2	Data 3	Data 4
DNP	Point map reinitialized	03/08/07 08:57:48.871 am	0	0	0	0
DNP	Point map reinitialized	03/08/07 08:57:48.879 am	1	0	0	0
DNP	Point map reinitialized	03/08/07 08:57:48.880 am	2	0	0	0
DNP	Point map reinitialized	03/08/07 08:57:48.882 am	3	0	0	0
DNP	Point map reinitialized	03/08/07 08:57:48.882 am	4	0	0	0
DNP	Route table initialized	03/08/07 08:57:48.883 am	0	0	0	0
DNP	DNP Initialization complete	03/08/07 08:57:48.883 am	0	0	0	0
DNP	Pass-through routing disabled	03/08/07 08:57:48.897 am	0	0	0	0
UIM	Any Phase Voltage Loss Detected	03/08/07 08:57:48.910 am	7	0	0	0
UIM	Switch Position Close Detected	03/08/07 08:57:48.910 am	0	0	0	0
DNP	Error in configuration data	03/08/07 08:57:49.104 am	0	1	85520	0
DNP	Old configuration remains in effect	03/08/07 08:57:51.114 am	1	0	0	0
LOG	Compact Flash Card Swap Detected	03/08/07 08:57:53.902 am	0	0	0	0
N/A	-		0	0	0	0
N/A	-		0	0	0	0
N/A	-		0	0	0	0
N/A	-		0	0	0	0
N/A	-		0	0	0	0
N/A	-		0	0	0	0
N/A	-		0	0	0	0

Figure 14. Historic Event View Screen.

Each historic event message consists of these components, all having a corresponding column in the Event View table:

Category

Each historic logging event, generated by the UIM, is assigned to one category by S&C, based on what part of application's functionality it belongs to. This is done to ease filtering and sorting, as well as allow viewing only events of desired categories on these screens. The currently supported categories are:

- ITII** Events related to IntelliTEAM II team maintenance and transfer activity
- UIM** Events related to the interaction with Host Device
- DNP** Events specific to DNP communications, both between IntelliTEAM II team members and UIM to External Device
- LOG** Events generated by Data Logging itself, for instance Compact Flash-related

Event Description

There are a fixed number of historic logging events in each category, each generated in certain cases. This column succinctly summarizes what the event is. The list of all possible events is below.

Timestamp

Specifies when the historic event occurred, with millisecond precision. Note that this time is set based on the control's clock, not your PC's. Also, clocks on different controls are not automatically synchronized, so events that occurred on different controls at the same time might still have different timestamps. If you want to chronologically sort events that occurred on different controls, you first need to manually synchronize all control clocks, either through SCADA or the External Device Menu / SETUP: Miscellaneous screen. You can also synchronize a control with the clock in your PC computer, or manually set the time using IntelliLINK. Go to Tools > Set Control Clock on the IntelliLINK screen menu.

Events in the Event View are always sorted by timestamp in the ascending order (older to newer). However, because the View is circular when in Real-Time mode, the oldest event is usually not on top but rather drifts down as newer events continuously overwrite older ones.

Data1—Data 4

Many events have, together with the timestamp and the description, some numerical data associated with them. For example, if a switch was successfully closed in the course of IntelliTEAM transfer activity, the number of the team for which transfer took place, is supplied in the Data 1 column. There are up to 4 such pieces of data that can potentially come with an event, each placed in one of these 4 columns, always starting with Data1.

Some event messages contain text in parenthesis, which summarizes the meaning of the associated DataX columns, such as: "Transfer Approved (team, code)". This notation means that Data 1 is the team number, Data 2 is approval code and Data 3/Data 4 are either unused or contain solely tracing information. Other event messages have supplementary data codes that are solely documented below.

Here is the list of all events, grouped by Category and Event Description:

Category	Event Description	Definition	Log Level
DNP	Cold restart requested (Source Address, Destination Address, N/A, N/A)	A cold restart of the control has been requested over SCADA, and will be performed in two seconds.	Normal
DNP	Configuration change accepted	Changes to the communications setup parameters were validated and have been made active within the application.	Normal
DNP	DNP Initialization complete	Displayed when initialization of DNP processes has completed without error.	Normal
DNP	Error in configuration data (Setup Value, Min Value, Max Value, N/A)	A configuration setup parameter was found to be set incorrectly or out of range.	Normal
DNP	Map change callback init error	A DNP point map change callback function was unable to be registered due to a full callback list. This prevented initialization of DNP processes from being completed.	Normal
DNP	Master record not added (Return Code 1=error 3=list full, Code Location, N/A, N/A)	The master record was unable to be added to the peer device list due to either an incorrect parameter or the peer device list is full.	Normal
DNP	Old configuration remains in effect	Indicates that due to an error in configuration data the existing setup will continue to be used by the application.	Normal
DNP	Pass-through routing disabled	A valid pass-through route configuration was not found and pass-through routing was disabled.	Normal
DNP	Pass-through routing enabled	A valid pass-through route configuration was found and pass-through routing was enabled.	Normal
DNP	Point map init error	The point mapping table was unable to be initialized, preventing initialization of DNP processes from being completed.	Normal
DNP	Point map reinitialized (Map Number, N/A, N/A, N/A)	The point map was successfully reinitialized following completion of changes to the point map configuration.	Normal
DNP	Route table init error	The routing table was unable to be initialized, preventing initialization of DNP processes from being completed.	Normal
DNP	Route table initialized (Count of Routes, N/A, N/A, N/A)	The route table was successfully initialized with configured routes and routing was enabled.	Normal

Data Logging

Category	Event Description	Definition	Log Level
DNP	Serial port reset error (Port Number 1 [1=port a, 2=port B, 3=port C, 4=port D])	An error occurred in reset of a serial port during a communications setpoint configuration change. Changes to serial port configuration may not have taken affect.	Normal
DNP	Analog output code not mapped (Point Code, Associated RTU Address, N/A, N/A)	An analog output point special function was not added to the list because the analog output point is not yet included in the point mapping configuration.	Extended
DNP	Analog output function registered (Point Code, Associated RTU Address, N/A, N/A)	An analog output point special function was successfully added to the list. This function connects an analog output operation with functionality elsewhere in the application.	Extended
DNP	Bad amount of data received (Source Address, Reported Length, Actual Length, N/A)	The application layer detected an inconsistency in the amount of data in the fragment. The fragment was discarded.	Extended
DNP	Bad fragment length received (Fragment Length, N/A, N/A, N/A)	The application layer detected a fragment with an invalid length. The valid rand is from 2 to 2048 bytes. The fragment was discarded.	Extended
DNP	Bad frame length (Actual Length, Indicated Length, N/A, Code Location)	The actual length of the received DNP frame does not match the length indicated in the DNP data link header. The frame is discarded.	Extended
DNP	Bad object range index (Source Address, First Index or Index Size, Last Index or Qualifier, Code Location)	An error was detected in an object header of the current request message related to the data index values. An attempt will be made to process other objects within the message.	Extended
DNP	Bad transmit fragment length (Fragment Length, N/A, N/A, N/A)	The application layer was requested to send a fragment larger than the 2k size limitation.	Extended
DNP	Bad transport segment length (Segment Length, N/A, N/A, N/A)	The transport segment length of the DNP frame is invalid. The frame was discarded. The valid range is from 3 to 250.	Extended
DNP	Control point code not mapped (Point Code, Associated RTU Address, N/A, N/A)	A control point special function was not added to the list because the control point is not yet included in the point mapping configuration.	Extended
DNP	Control point function registered (Point Code, Associated RTU Address, N/A, N/A)	A control point special function was successfully added to the list. This function connects a control operation with functionality elsewhere in the application.	Extended

Category	Event Description	Definition	Log Level
DNP	Duplicate fragment received (Source Address, Destination Address, Application Control, N/A)	The application layer detected reception of a duplicate fragment. The previous response will be resent.	Extended
DNP	Error getting object header (Source Address, Destination Address, Object Type, Variation)	An error was detected in the object header of the DNP message.	Extended
DNP	Error in get map timer (Map Number, N/A, N/A, N/A)	An error was detected when attempting to initialize a map-change timer. The operation will be retried.	Extended
DNP	Error in object parse (Object Type, Source Address, Destination Address,)	The header or data portion of an object that was returned in a response message was invalid or otherwise unexpected. If possible other objects within the response will still be processed.	Extended
DNP	Error in route change timer	An error was detected when attempting to initialize a route table-change timer. The operation will be retried.	Extended
DNP	Error putting object header (Source Address, Destination Address, Object Type, Variation)	An error was detected in the object header during assembly of a response message. The response process was aborted.	Extended
DNP	Event buffer overflow (Point Type, N/A, N/A, N/A)	An overflow condition has been reached for the event buffer of the reported point type. The oldest event will be removed to make room for this new event, and the overflow IIN bit will be set.	Extended
DNP	FIR/FIN not set (Source Address, Destination Address, Application Control, N/A)	The application layer found that the FIR and FIN bits of the Application Control byte were not set. The fragment was discarded.	Extended
DNP	Fragment data size error (Source Address, Data Length, Data Index, Code Location)	The amount of data available in the fragment was not consistent with the expected amount of data. The fragment was discarded.	Extended
DNP	Fragment not found (Transport Header, N/A, Source Address, N/A)	A matching fragment was not found in the buffers for a newly received frame of a multi-frame fragment. The frame was discarded.	Extended
DNP	Fragment timed out on transmit list (Source Address, Destination Address, Application Control, Function Code)	The fragment was removed from the application layer transmit list after an extended period of inactivity. This will normally only occur if the transport function and data link layer are unable to service transmit requests.	Extended

Data Logging

Category	Event Description	Definition	Log Level
DNP	Frame addition failure (Transport Header of Fragment, Transport Header of Frame, Source Address, N/A)	A newly received frame of a multi-frame fragment was unable to be added to the fragment due to the 2k fragment size restriction. The fragment was discarded.	Extended
DNP	Function code not implemented (Source Address, Destination Address, Function Code, N/A)	The application layer received a message containing a DNP function code that is invalid or is not implemented.	Extended
DNP	Initial unsolicited confirmed (Callback Status, N/A, N/A, N/A)	Indicates that a confirmation message was received for the unsolicited null messages that must be sent on power up.	Extended
DNP	Input point code not mapped (Point Type 1=binary in 2=analog in 3=counter, Point Code, N/A, N/A)	The application attempted to supply input data for a point that was not included in the configured point mapping.	Extended
DNP	Map change callback buffer full	A special function to be used to inform the application about map changes was unable to be added to the list. The list was full.	Extended
DNP	Map change callback registered	A special function to be used to inform the application about map changes was successfully added to the list.	Extended
DNP	Mesg taken off xmit list, no peer (Source Address, Destination Address, Application Control, Function Code)	The destination peer device was not found in the peer list, possibly due to a change in configuration. The message was discarded.	Extended
DNP	Message timed out on receive list (Transport Header, N/A, Source Address, N/A)	A fragment was removed from the transport function receive buffer after an extended period of inactivity.	Extended
DNP	Message timed out on transmit list (Transport Header, N/A, Source Address, N/A)	A fragment was removed from the transport function transmit buffer after an extended period of inactivity.	Extended
DNP	No peer rec found during xmit (Code Location, N/A, N/A, N/A)	A transmit was attempted to a device that was not found on the peer device list. The transmit was aborted.	Extended
DNP	No URBE delay timer	No free timer was found when attempting to start an internal timer.	Extended
DNP	Object qualifier error (Object Type, Source Address, Destination Address, Qualifier/ Index)	The qualifier code of the object that was returned in the response message is invalid or unsupported.	Extended

Category	Event Description	Definition	Log Level
DNP	Object variation error (Object Type, Source Address, Destination Address, Variation)	The variation of the object that was returned in the response message is invalid or unsupported.	Extended
DNP	Object/variation not supported (Source Address, Object Type, Variation, Code Location)	The object being processed does not include a support object and variation combination. An attempt will be made to continue parsing other objects within the message.	Extended
DNP	Parsed data buffer full (Object Type, Source Address, Destination Address, Variation)	The data buffer containing the parsed object data is full. No further parsing of this response message will take place.	Extended
DNP	Peer device added to list (Peer RTU Address, Port Code, Master Flag, N/A)	The peer device was successfully added to the peer device list.	Extended
DNP	Peer device already on list (Peer RTU Address, N/A, N/A, N/A)	Addition of the peer device to the list was unsuccessful because the device is already on the list.	Extended
DNP	Peer device buffer full	A peer device was unable to be added to the peer device list due to the buffer being full.	Extended
DNP	Peer device not on list (Peer RTU Address, N/A, N/A, N/A)	The requested peer device was not found on the peer device list when attempting to remove the device from the list.	Extended
DNP	Peer device removed from list (Peer RTU Address, Code Location, N/A, N/A)	The peer device was successfully removed from the peer device list.	Extended
DNP	Point definition invalid (Map Number, Point Index, Error Data, Code Location)	A problem was found in the configuration data of a mapped point. The map will not be initialized until the error is corrected.	Extended
DNP	Port code invalid (Peer RTU Address, Port Code, N/A, N/A)	An invalid port code was detected when attempting to add a peer device to the peer device list.	Extended
DNP	Problem with Output Block (Object Type, DNP Output Block Status Code, Point Number, Function Code)	An operation request was unsuccessful due to a problem in the Control Relay Output Block of the message. See DNP documentation for a complete list of DNP Output Block status codes.	Extended
DNP	Receive data buffer full	The transport function receive data buffers are full. These buffers hold the data portion of the received DNP frames. The new frame is discarded.	Extended

Data Logging

Category	Event Description	Definition	Log Level
DNP	Receive message buffer full	The transport function receive message buffers are full. These buffers hold the frame header information and other message details. The new frame is discarded.	Extended
DNP	Removed deferred read request	A DNP read request that was deferred due to an outstanding unsolicited message was removed due to reception of a newer request.	Extended
DNP	Reset peer link received (Source Address, Action Taken 1=record reinit 2=reset seq num only 3=new peer added, N/A, N/A)	A Reset data link frame was received from the reported peer device.	Extended
DNP	Reset peer link sent (Source Address, Destination Address, N/A, N/A)	A Reset data link frame was sent to a peer device in an attempt to reinitialize peer-to-peer communications.	Extended
DNP	Route could not be added (Route RTU Address, Route Table Index, N/A, N/A)	The routing table did not have room for the new route. The route table will not be initialized.	Extended
DNP	Route entry invalid (Route RTU Address, Route Table Index, Problem 1=address 2=port/IP, N/A)	A problem was found with one of the configured route entries. The route table will not be initialized until the problem is corrected.	Extended
DNP	SBO select timer unavailable (Object Type, N/A, N/A, N/A)	An internal timer was not available to perform the select-before-operate timing function. The operation request was aborted.	Extended
DNP	SCADA disabled URBE (Source Address, URBE Status, N/A, N/A)	Unsolicited Report by Exception processing was disabled over SCADA.	Extended
DNP	SCADA enabled URBE (Source Address, URBE Status, N/A, N/A)	Unsolicited Report by Exception processing was enabled over SCADA.	Extended
DNP	Sequence number mismatch (Source Address, Destination Address, Application Control, N/A)	The application layer found that the sequence number in the Application Control byte was inconsistent with what was expected. The fragment was discarded.	Extended
DNP	Set SBO select timer error (Object Type, Timer Value, N/A, N/A)	An error was detected when attempting to initialize a select-before-operate timer. The operation request was aborted.	Extended
DNP	Set URBE timer error	An error was detected when attempting to start an internal timer.	Extended

Category	Event Description	Definition	Log Level
DNP	Special function already on list	An attempt by the application to register a special memory read/write function was rejected because a special function for that memory location already exists in the buffer.	Extended
DNP	Special function buffer full	An attempt by the application to register a special memory read/write function was rejected because the buffer was full.	Extended
DNP	Special function registered (Action 1=read 2=write, Memory Address, N/A, N/A)	A special function related to a specific memory action and virtual memory address was successfully added to the list.	Extended
DNP	Transient peer add failed (Source Address, Application Control, N/A, N/A)	The source of this fragment was unknown so an attempt was made to add it to the peer device list. The attempt was unsuccessful so the fragment was discarded.	Extended
DNP	Transmit fragment buffer full	No free buffer was found in the transport function transmit buffers. The application layer may save this message and reattempt to transmit.	Extended
DNP	Transmit fragment buffer full (Code Location, N/A, N/A, N/A)	No free buffer was found in the application layer transmit list. The fragment may be retried or discarded.	Extended
DNP	Unknown master access restricted (Source Address, Destination Address, Function Code, N/A)	A device that was previously unknown has requested an action that is restricted to configured master stations. The restricted actions are writes, select/operate and cold restart.	Extended
DNP	URBE registration buffer full	The buffer containing callback functions for unsolicited messages was full when attempting to add another function.	Extended
DNP	Utility timer unavailable	An internal timer was not available to perform the routing table configuration change timing function. DNP initialization will be aborted.	Extended
DNP	Utility timer unavailable (Map Number, N/A, N/A, N/A)	An internal timer was not available to perform the map-change timing function. DNP initialization will be aborted.	Extended
DNP	VM read or write error (Source Address, Memory Address, Result Code, Action 1=read 2=write)	A request to read or write virtual memory addresses was unsuccessful.	Extended
DNP	AL accepted good fragment (Source Address, Data Length, Application Control, Function Code)	The application layer successfully accepted a complete fragment from the transport function.	All

Data Logging

Category	Event Description	Definition	Log Level
DNP	App layer accepted FIN-only message (Transport Header, Fragment Length, Source Address, N/A)	A multi-frame fragment was successfully processed by the application layer and is being removed from the transport function buffers.	All
DNP	App layer accepted FIR-FIN message (Transport Header, Fragment Length, Source Address, N/A)	A single-frame fragment was successfully processed by the application layer and is being removed from the transport function buffers.	All
DNP	Change to point map detected (Map Number 0=binary in 1=analog in 2=counter 3=control 4=analog out, N/A, N/A, N/A)	A configuration change to a point map was detected. This change will be processed 30 seconds after the last change is detected.	All
DNP	Frame accepted by DL (Source Address, Destination Address, Transport Header, Frame Length)	A single frame was successfully handed off to the data link layer for transmit. Note that this may be a single frame of a multi-frame fragment.	All
DNP	Removed old FIR-only message (Transport Header, N/A, Source Address, N/A)	An incomplete fragment was discarded due to a newer message being received from the same source device.	All
DNP	Route config change detected	A configuration change to the routing table was detected. This change will be processed 30 seconds after the last change is detected	All
IntelliTEAM	All teams are transfer ready	All teams are fully operational, and may close switches as necessary to transfer load and reconfigure the circuit.	Normal
IntelliTEAM	Bad received mesg type (Team, Type)	An IntelliTEAM message was received over communications but contains a message type that is not recognized. The team the message was intended for, and the message type received, are included in the data.	Normal
IntelliTEAM	Bad Volt Reopen Flag (team, value)	Associated with the "Team Member Requalify Time" feature. Value of 1 means that the team member is disqualified on an unsuccessful attempt to close and a timer is started. Value of 0 means that the timer has cleared, and the team member can be considered as an alternate source again.	Normal
IntelliTEAM	Close switch fail (Team, Sw)	The switch/position indicated failed to close or remain closed after a request by the specified team. Automatic operation may have been disabled at this team member, or the switch may have reopened during the shots-to-lockout time period.	Normal
IntelliTEAM	Close switch ok (Team, Sw)	The switch/position indicated was successfully closed by the specified team.	Normal

Category	Event Description	Definition	Log Level
IntelliTEAM	Config. Update, operation resumed	The team configuration of any of the active local teams has been re-enabled on the SETUP: Team screen. Team operation is resumed.	Normal
IntelliTEAM	Config. Update, operation suspended	The team configuration of any of the active local teams is being changed on the SETUP: Team screen. While this change is in progress, team operation is suspended.	Normal
IntelliTEAM	Contract approved switch close (Team)	The specified team requested a contract, which then traveled to the granting agent, was approved, and came back. The switch has closed to energize the line segment.	Normal
IntelliTEAM	Contract declined (Team)	The contract request made by the specified team was declined.	Normal
IntelliTEAM	Contract request was accepted (Agent)	The granting agent accepted the contract. The number for the specified agent is associated with the RTU address at the originating team member.	Normal
IntelliTEAM	Contract request was declined (Agent)	The granting agent declined the contract request. The number for the specified agent is associated with the RTU address at the originating team member. Note that this message can appear at any agent with the contract on its list.	Normal
IntelliTEAM	Contract requested by member (Team)	The local team member has requested that the contract agent negotiate a contract on behalf of the specified team.	Normal
IntelliTEAM	Contract resource limitation (Code)	A contract agent found that resources were not available for load transfer, because of either segment limitations (Code 2) or capacity limitations (Code 3). The contract agent did not forward the contract any further.	Normal
IntelliTEAM	Control feature fail (Team, Point)	Indicates the requested control feature did not execute normally.	Normal
IntelliTEAM	DNP rejected message (Rtu, Code)	An IntelliTEAM communication message to the provided RTU was rejected by communications. The rejection code is provided.	Normal
IntelliTEAM	Error clrd - getting all switch data	The error collecting data related to the internal switch function was cleared.	Normal
IntelliTEAM	Error get comm task from list	An error was detected when removing a message from the DNP communications buffer.	Normal

Data Logging

Category	Event Description	Definition	Log Level
IntelliTEAM	Error get local switch data (Team)	An error was detected when the IntelliTEAM II software retrieved data for the local switch in the specified team. This may occur if the switch/position number configured on the SETUP: Team screen is incorrect.	Normal
IntelliTEAM	Error getting all switch data	An error was detected when the IntelliTEAM II software collected data related to the internal switch function.	Normal
IntelliTEAM	Error put coach task list (Team)	The list of pending tasks that the coach carries between team members is full in the specified team. No more tasks can be put on this list until one or more of the existing tasks have been completed.	Normal
IntelliTEAM	Error put comm task on list	The coach or the team member needs to send a new message to another team member and the DNP communications buffer is full. Existing transactions must be completed before more are put on the communications list.	Normal
IntelliTEAM	Error put event task list (Team)	The list of pending team-related tasks is full in the specified team. No more tasks can be put on this list until one or more of the existing tasks have been completed.	Normal
IntelliTEAM	Error put member task list (Team)	The list of pending member-process tasks is full in the specified team. No more tasks can be put on this list until one or more of the existing tasks have been completed.	Normal
IntelliTEAM	Event register ok (Team, Task)	The task indicated has enabled event registering for the specified team. The registering of an event is the process of making all team members aware that an event has occurred.	Normal
IntelliTEAM	Find alt src result (Team, Rec)	During a transfer event, the team must find an alternate source, based on the alternate source sequence and the normal function of the switches within the team (both entered on the SETUP: Team screen). This message indicates the resulting switch record, to be used for the team indicated.	Normal
IntelliTEAM	Internal test point	A general internal message to display data that may be helpful during diagnostics. Please contact S&C if you see this message.	Normal
IntelliTEAM	Line segment faulted (Team)	The line segment protected by the specified team is the location of the overcurrent fault on the circuit. The team will not attempt to restore service to this line segment.	Normal

Category	Event Description	Definition	Log Level
IntelliTEAM	Manual Op. Team Condition On (Team)	A team entered a non-operational state because an unexpected manual switch operation occurred. Typically the only “expected” manual switch operation is closing a source switch on a previously faulted team which proves that the fault is gone, and allows RTN process to take place (if RTN is enabled).	Normal
IntelliTEAM	Manual Op. Team Condition OFF (Team)	The unexpected manual switch operation team condition was cleared. This can only occur as a result of a user request.	Normal
IntelliTEAM	Man. Op. Condition Clear Fail (Team)	Manual Operation condition could not be cleared on a user request because the local team member is not in its normal state.	Normal
IntelliTEAM	Message timeout (Team, Code)	A message on the comm list for the specified team has timed out, based on a timer in either the IntelliTEAM II software (Code 1) or in DNP (Code 2).	Normal
IntelliTEAM	New coach generated (Team)	A new coach has been generated at the local team member for the specified team. This could be caused by a power up state, by the existing coach being lost due to communications failure, or by the existing coach data being inconsistent.	Normal
IntelliTEAM	Normally open sw. auto open (Team, Rec)	A normally open team member has opened for an automatic (IntelliTEAM-initiated) reason. This may happen during Return To Normal process. The team and the member record number are provided.	Normal
IntelliTEAM	Not all configured teams xfer ready	At least one of the active teams where the local control is a member is not fully operational.	Normal
IntelliTEAM	Prohibit restoration timer expired	The timer for the Prohibit Restoration feature has expired and will cause Prohibit Restoration to become active. (Team 1) indicates the team number to which this event applies.	Normal
IntelliTEAM	Rebuilding coach (Team, Code)	The coach for the specified team is being regenerated. This may be caused by a power up event, a configuration change in the team, or a lost coach due to communications failure. A diagnostic code is also shown, contact S&C for code details.	Normal
IntelliTEAM	Register event disabled (Team)	The registering of events for distribution within the specified team has been disabled at the local team member. This was probably caused by a change in the team’s configuration on the SETUP: Team screen.	Normal

Data Logging

Category	Event Description	Definition	Log Level
IntelliTEAM	RTN continue ok (Team, Code)	The internal Return to Normal process for the specified team indicated that Return to Normal may continue to the next step. The process's result code is also shown.	Normal
IntelliTEAM	RTN disabled at switch (Team)	The Return to Normal process will not be carried out on the specified team because Return to Normal is disabled on the SETUP: Team screen.	Normal
IntelliTEAM	RTN in progress on any team	A team is presently returning the circuit to its normal configuration.	Normal
IntelliTEAM	RTN not active on any team	No teams are presently returning the circuit to its normal configuration.	Normal
IntelliTEAM	RTN return failed (Team, Code)	The internal Return to Normal process for the specified team indicated that Return to Normal cannot continue. This may be caused by a team member that has Return to Normal disabled (Code 7), or by the adjacent source team not yet being in its normal state (Code 6).	Normal
IntelliTEAM	RTN start event received (Team)	The local team member of the specified team received a request to start the Return to Normal process. This follows the end of the Return to Normal timer and the subsequent event request.	Normal
IntelliTEAM	RTN start event request (Team)	The Return to Normal timer has expired, allowing the RTN process to start on the specified team. This message indicates that the specified team generated the event.	Normal
IntelliTEAM	RTN timer started (Team)	The Return to Normal timer was started by the local team member of the specified team.	Normal
IntelliTEAM	SCADA prohibit restoration active	A SCADA command was received to prevent the restoration of any load by this team member (the switch may not close automatically), however protection is not affected. If applicable, this message will also be displayed on power up.	Normal
IntelliTEAM	SCADA prohibit restoration cleared	A SCADA command was received to re-enable the restoration of load by this team member, and the switch may be closed automatically. If applicable, this message will also be displayed on power up.	Normal
IntelliTEAM	Sequence num resync (Team)	The sequence numbers of events for the specified team have fallen out of synchronization. The last sequence number received is shown. The local team member will now resynchronize the number.	Normal

Category	Event Description	Definition	Log Level
IntelliTEAM	Software mismatch on arriving coach	There is a software revision incompatibility within the team. The data fields show revision and version information for the team member from which the coach just arrived.	Normal
IntelliTEAM	Sw opened for xfer (Team, Rec)	During a transfer event, the coach of the specified team opened the switch indicated to allow the transfer operation to continue. This may occur when one or more switches within the team are not coordinated to open at the same time as the other switches.	Normal
IntelliTEAM	Switch is xfer ready	The local switch on the specified team is ready for transfer operations.	Normal
IntelliTEAM	Switch not xfr ready	The local switch on the specified team is not ready for transfer operations. This may be caused by an internal switch error (for example, a bad battery).	Normal
IntelliTEAM	Switch open fail (Team, Sw)	The specified team was unable to open the switch/position indicated.	Normal
IntelliTEAM	Switch open ok (Team, Sw)	The specified team successfully opened the switch/position indicated.	Normal
IntelliTEAM	Switch open to break extended parallel	During a closed transition Return to Normal, the team member at a tie switch automatically opened the switch after a prescribed timeout. This insured that a circuit parallel was not left in place indefinitely. This condition is not normal, and may have resulted in load being dropped.	Normal
IntelliTEAM	Team Comm Error (Team, RTU)	A team-related message could not be delivered.	Normal
IntelliTEAM	Timer prohibit restoration active	The Prohibit Restoration Timer expired, preventing the restoration of load by the team for which the timer expired, however automatic sectionalizing is not affected. If applicable, this message will also be displayed on power-up.	Normal
IntelliTEAM	Timer prohibit restoration cleared	A SCADA command was received to re-enable the restoration of load by this team member, and the switch may be closed automatically. If applicable, this message will also be displayed on power up.	Normal
IntelliTEAM	Transfer approved (Team, Code)	The transfer operation requested by the specified team, using the alternate source switch previously determined, was approved by the adjacent teams. The approval code is also shown. For details on the code, contact S&C.	Normal

Data Logging

Category	Event Description	Definition	Log Level
IntelliTEAM	Transfer declined (Team, Code)	The transfer operation requested by the specified team has been declined by the adjacent teams. The requesting team must look for another alternate source, or retry the operation on this alternate source if no other exists. Possible codes are: (code- definition) 2- Fault isolated, 3- Excessive load, 4- Open team not prepared for the transfer, 5- Closed team not prepared for the transfer, 6- Line segment limit exceeded, 7- Problem detected on one of the teams, 8- Phase loss isolated, 9- Source breaker isolated	Normal
IntelliTEAM	Transfer in progress on any team	A team is in the process of reconfiguring the circuit and transferring load to an alternate source.	Normal
IntelliTEAM	Transfer not active on any team	No teams are presently reconfiguring the circuit or transferring load	Normal
IntelliTEAM	Unknown event/task request (Team)	An event or task for which the local team member is not programmed was requested within the specified team.	Normal
IntelliTEAM	Wait for team open (team)	IntelliTEAM is waiting for all switches in the team to open so that it can attempt to restore service to the team. This is likely to occur only during a 2nd contingency event.	Normal
IntelliTEAM	Adjust line segment count (Team)	The UIM has increased or decreased the line segment count associated with the Line Segment Limit setpoint following a transfer event.	Extended
IntelliTEAM	Alt source flag cleared (Team)	The line segment associated with the specified team is no longer being fed from an alternate source. This message usually follows a Return to Normal operation.	Extended
IntelliTEAM	Coach collect data (Team, Goto Rec)	This message logs the collection of new data by the coach in the specified team. This data collection process occurs during the start of a transfer event. The team record where the coach is going is also shown.	Extended
IntelliTEAM	Coach old, dup or CRC bad (Team, Code [1=old, 2=dup, 3=CRC bad])	The coach received by the specified team is not the current coach – it is a duplicate of the current coach or it contains data inconsistent with the presently expected data. The coach is rejected.	Extended
IntelliTEAM	Contract dissolved by member (Team)	The local team member has started the process to dissolve an active contract on behalf of the specified team.	Extended
IntelliTEAM	Contract failed list add (Agent)	A contract agent tried to add a new contract to its list but could not, so the contract was declined. The number for the specified agent is associated with the RTU address at the originating team member.	Extended

Category	Event Description	Definition	Log Level
IntelliTEAM	Contract general error (Agent)	The specified contract agent detected a contract error. The number for the agent is associated with the RTU address at the team member.	Extended
IntelliTEAM	Contract is being dissolved (Agent)	An active contract is no longer needed and is in the process of being dissolved. The number for the specified agent is associated with the RTU address at the originating team member.	Extended
IntelliTEAM	Contract pending fail (Team, Team)	The requesting contract agent was waiting for a response when the timer ran out, so it failed the contract. The coach may restart the contract request if it cannot find another alternate source. This message shows the two teams involved with the transfer process at this team member location, where (Team 1) is the requesting team.	Extended
IntelliTEAM	Contract reactivated (Agent)	The contract is missing somewhere along its routing path, so the requesting agent reactivated the contract. The number for the specified agent is associated with the RTU address at the originating team member.	Extended
IntelliTEAM	Contract receiver busy (Agent, Agent)	A contract agent's receiver buffer was full, so a contract message was dropped. The numbers for the specified agent are associated with the RTU address at the originating team member.	Extended
IntelliTEAM	Control feature ok (Team, Point)	Indicates the requested control feature executed normally. Possible point values are: 1 Point to operate switch, 2 Point to block reclosing, 3 Point to block ground trip, 4 Point to change profile.	Extended
IntelliTEAM	Loading data reset (Team, Code)	When a transfer with a known load value occurs, the IntelliTEAM II software resets the loading data to reflect the new value. This updates the information more quickly than the "2-minute" load averaging. The code relates to the state of the reset process.	Extended
IntelliTEAM	Op sw func return (Team, Code)	This message displays the internal code returned during the operation of the local switch in the specified team. Contact S&C for code details, this code is application specific.	Extended
IntelliTEAM	RTN process stopped (Team, Code)	The Return to Normal process completed at the local team member with the indicated completion code. For details on the code, contact S&C.	Extended
IntelliTEAM	Unexpected State Change (Team)	The transfer state went through an unexpected transition at the specified team. This error might stop an ongoing transfer process.	Extended

Data Logging

Category	Event Description	Definition	Log Level
IntelliTEAM	Volt/fault reset occurred (Sw)	The voltage loss and overcurrent indications maintained by the IntelliTEAM II software have been reset after either the Sectionalizer Reset Time or, if a transfer event has occurred, after team reconfiguration is complete.	Extended
IntelliTEAM	Action path complete (Team)	This message is displayed when the action path for operating the switch gear has completed all possible steps in either the forward or reverse direction.	All
IntelliTEAM	Coach arrived (Team)	This message logs the arrival of the coach, along with all the updated data, at the local team member for the specified team.	All
IntelliTEAM	Coach arrived on request (Team)	This message logs the arrival of the coach at the local team member of the specified team after the local team member requested the coach.	All
IntelliTEAM	Coach hold override (Team, Goto Rec)	When the team member of the specified team holds the coach for an extended period of time, an override occurs that allows the coach to briefly visit other team members. This prevents the coach from becoming old and regenerated by an adjacent team member. The team record where the coach is going is also shown.	All
IntelliTEAM	Coach is held by member (Team)	The coach for the specified team is being held by the local team member. This occurs when a process is taking place at the local team member that requires the presence of coaches from both adjacent teams.	All
IntelliTEAM	Coach left (Team, Goto Rec)	This message logs the departure of the coach from the local team member for the specified team, and indicates where the coach is going next.	All
IntelliTEAM	Contract added to list (Team, Team)	A new contract was added to the list of contracts being maintained. This message shows both the requesting and granting teams associated with the transfer process. The requesting team (Team 1) identifies the origin of the contract.	All
IntelliTEAM	Contract cannot travel (Agent)	The requesting contract agent does not know where the present source is, so it could not forward the contract request. The contract failed. The number for the specified agent is associated with the RTU address at the team member.	All
IntelliTEAM	Contract comm received (Team, Team)	The contract agent has received a message. (Team 1) refers to the contract's originating segment, and (Team 2) refers to the temporary segment, usually the segment through which the message just passed.	All

Category	Event Description	Definition	Log Level
IntelliTEAM	Contract dup rcvd (Agent , State)	The specified requesting agent received an old or duplicate contract message, which refers to the indicated contract state. The number for the agent is associated with the RTU address at the team member.	All
IntelliTEAM	Contract maintained (Agent)	Scheduled maintenance of a contract was performed by the specified requesting agent to confirm the continued need for the contract. The number for the agent is associated with the RTU address at the team member.	All
IntelliTEAM	Contract not found (Agent)	A contract agent received a message about a contract that is not in its list. This may result in the contract being dissolved and, if necessary, reactivated. The number for the specified agent is associated with the RTU address at the originating team member.	All
IntelliTEAM	Contract request travel (Team, Rec)	A contract request is traveling between teams. (Team 1) is the segment through which the request just came, and (Rec 2) is the team member in the direction where the request is headed.	All
IntelliTEAM	Contract requires member wait (Team)	The specified team is waiting for a contract to be requested, granted, or declined.	All
IntelliTEAM	Contract started by member (Team)	A member of the specified team has determined that it can close based on information from the coach, but it must first request a contract.	All
IntelliTEAM	Contract transmit busy (Agent)	A contract agent's transmit buffer was full. The message is held until the transmit buffer has space, and is then sent. The number for the specified agent is associated with the RTU address at the originating team member.	All
IntelliTEAM	DNP feeder loading data rcvd (Data)	Feeder loading data has been received from the source substation or breaker, and may be used in determining the capacity of the circuit during transfer operations. Data 1 indicates the circuit loading received in increments of 10 amps per count.	All
IntelliTEAM	Member cleared task lock attributes	The team member logic cleared the execution lock on tasks present on the task list. These tasks may now be executed by the team member.	All
IntelliTEAM	Member requested (Team, Task)	The specified team has requested that the local team member execute the task indicated.	All

Data Logging

Category	Event Description	Definition	Log Level
IntelliTEAM	Monitor line segment (Team)	The specified team has an indication to start a transfer event, but the line segment is still energized. The team monitors the segment until it is deenergized.	All
IntelliTEAM	Next action (Action, Direction)	The operation of the switch gear is progressing to the next action within the action path. (Action 1) indicates the action to be taken and can be one of the following codes: 3 Close for xfer, 20 Contract request, 21 Contract Terminate, 30 Block recloser, 31 Unblock recloser, 33 Block ground trip, 34 Unblock ground trip, 36 Alternate settings, 37 Normal, 253 Action path done. (Direction 2) is the direction the action path is going, either Forward (1) or Reverse (2).	All
IntelliTEAM	Not rdy, discard task (Team, Task)	The indicated task has been discarded because the specified team was not ready to transfer. This is typically the result of a local or team error condition.	All
IntelliTEAM	Old or dup task discarded (Team)	The task taken from the event list on the specified team is either old or is a duplicate of an existing task. This occurs normally in the operation of the team as events are distributed throughout the team.	All
IntelliTEAM	Pending comm message cleared (Team)	The coach has determined that a pending message is no longer valid, and should be removed from the communications transmit list.	All
IntelliTEAM	Task travel (from Team, Team)	During a Return to Normal process, tasks associated with the process travel among multiple teams between the normal source and the normal tie point of the circuit. This message traces the path of the tasks.	All
IntelliTEAM	Volt/fault idle xfer state (Sw)	This message is output when all teams that the UIM is a member of have their transfer stated back to idle, signaling a reset of the total 3 phase average load.	All
IntelliTEAM	Volt/fault OC cleared (Team, Rec)	This message is output when an overcurrent fault was previously detected, the field now is not faulted and 3 phase voltage has returned, causing the coach to clear the latched overcurrent condition. For details on (Rec 2) contact S&C.	All
IntelliTEAM	Volt/fault PL cleared (Team, Rec)	This message is output when a phase loss was previously detected, the external device is now in its normal open or close state, real time 3 phase voltage is present, causing the coach to clear the latched phase loss condition. For details on (Rec 2) contact S&C.	All

Category	Event Description	Definition	Log Level
IntelliTEAM	Volt/fault VL cleared (Team, Rec)	The coach clears a 3 phase voltage loss when: 3 phase voltage loss was previously detected and real time 3 phase voltage is now present and either the external device is in its normal state or the external device's normal job is a source sub. For details on Rec 2, contact S&C.	All
IntelliTEAM	Xfer State Change (Team)	The transfer state changed for the specified team.	All
LOG	Compact flash card not found	Compact Flash logging Setpoint is on but either no CF card is inserted or the card is not formatted correctly. The only way to fix this is to insert a working CF card.	Normal
LOG	Compact flash card swap detected	The application determined that the compact flash card has been swapped.	Normal
LOG	Compact flash data likely lost on err	A Compact Flash operation was interrupted before completion. The file on which this occurred was saved with a .ERR extension and abandoned. Some events may have been lost from the CF log. The primary reason for this condition is a loss of power while CF card is active - a highly improbable but possible event. Another reason is that the card was pulled out while data was being written to it. This is why it is necessary to disable CF logging either through the IntelliLINK screen, or the faceplate keypad before removing the card. Notify S&C if you see this message more than a few times.	Normal
LOG	CF buffer processed early to preserve data	The application tries to access the CF every several seconds at a fixed time interval to increase overall application performance. However, if the volume of event data is such that the interval is not soon enough, logging events are saved to the CF card more frequently, which is what this message means. This message does not indicate any loss of event data and is to be expected during heavy team activity.	All
LOG	Compact flash operation failed	A CF disk error occurred while saving logs to the CF card. There may be many reasons for this, but errors seldom occur. If this message occurs persistently, replace the CF card to ensure continued logging, and notify S&C.	All
LOG	DNP error	Logging could not communicate to DNP.	All
LOG	Logging overflow (Last Events)	A large but not infinite number of events can be logged per unit of time. This message is displayed when this limit is reached or exceeded. The internal identification of last events is supplied in the data columns, and is diagnostic information for S&C. Data is seldom lost, but this message may indicate data loss. If you see this message often, please contact S&C.	All

Data Logging

Category	Event Description	Definition	Log Level
UIM	Any phase overcurrent cleared	The external device reports that an overcurrent condition has been cleared on one or more phases.	All
UIM	Any phase voltage loss cleared	The external device reports that a voltage loss condition has been cleared on one or more phases.	All
UIM	Automatic operation enabled	The external device reports that automatic operation is enabled.	All
UIM	Communication lost to E.D. cleared	When the external device (E.D.) starts communicating again, this message is output.	All
UIM	Communication to E.D. lost	When the external device (E.D.) stops communicating, for example a radio problem, this message is output.	All
UIM	Communication to E.D. running	When BEGIN SETUP is set to Running this message is output.	All
UIM	Communication to E.D. stopped	When BEGIN SETUP is set to Stopped this message is output.	All
UIM	Control device voltage loss cleared	The UIM has detected the external device report that voltage has returned to the source side.	All
UIM	Control point operation req.	<p>The UIM is issuing a control request on behalf of IntelliTEAM II to the external device. Data 1 indicates the control point being operated. The codes have the following meaning:</p> <ul style="list-style-type: none"> 1 = Close 2 = Trip (Open) 60 = Normal Profile (settings group 1) 61 = Alternate Profile 1 (settings group 2) 62 = Alternate Profile 2 (settings group 3) 63 = Alternate Profile 3 (settings group 4) 58 = Alternate Profile 4 (settings group 5) 59 = Alternate Profile 5 (settings group 6) 64 = Reclosing Block 65 = Ground Trip Block 66 = Hot Line Tag 	All
UIM	Control profile enabled	If the normal profile is supported and the reported status does match, any previous mismatch errors are cleared and this message is output.	All

Category	Event Description	Definition	Log Level
UIM	Ctrl operation retries failed	This message is only sent for IntelliTEAM initiated control point requests. The timeout is configured at: External Device Menu, Control Points, Control Point Operation Timeout (secs). The default timeout is 10 seconds. After half of the timeout (normally 5 seconds) one retry is initiated. If the status hasn't changed after the timer has elapsed (normally 10 seconds), this message is output.	All
UIM	Ctrl point operation retry	This message is only sent for IntelliTEAM initiated control point requests. The timeout is configured at: External Device Menu, Control Points, Control Point Operation Timeout (secs). The default timeout is 10 seconds. After half of the timeout (normally 5 seconds) one retry is initiated.	All
UIM	Ctrl point operation successful	The UIM has verified the successful completion of the control request initiated by IntelliTEAM II.	All
UIM	Data poll sent to host device	The DNP request for binary status, analog inputs, and binary counters is being sent to the external/host device at the External Device Menu - Module-to-Control Dev. Polling Interval.	All
UIM	Data received from host device	The DNP data poll requested by the UIM to the external device has been received.	All
UIM	Device data updates disabled	The Device Data Updates parameter on the BEGIN SETUP screen has been set to Stopped, preventing data retrieved from the external device from being used by SCADA and IntelliTEAM II.	All
UIM	Device data updates enabled	The Device Data Updates parameter on the BEGIN SETUP screen has been set to Running, allowing data retrieved from the external device to be used by SCADA and IntelliTEAM II.	All
UIM	DNP appl. layer timeout	The application layer of DNP communications within the UIM did not receive a confirmation for the latest request issued within the message confirmation time limit. The timeout is configured at: External Device Menu, module to control dev polling timeout.	All
UIM	E.D. trouble active	When trouble status points are programmed at the UIM, when they become active, this message is output.	All
UIM	E.D. trouble cleared	When trouble status points are programmed at the UIM, and the trouble clears, this message is output.	All

Data Logging

Category	Event Description	Definition	Log Level
UIM	Ext VLoss/PLoss qual-Sw already open	When extended phase or three phase voltage losses are qualified and the reported switch status is open, this message is output.	All
UIM	Fault cycling state cleared	The UIM has detected that the external device fault cycling status has cleared.	All
UIM	Frequency trip active	The UIM has detected that the external device had tripped open due to a frequency anomaly.	All
UIM	Frequency trip cleared	The UIM has detected that the external device had tripped open due to a frequency anomaly, and that the frequency condition has cleared.	All
UIM	Frequency trip inactive	The UIM has detected that the external device has not tripped open due to a frequency anomaly.	All
UIM	Ground trip mismatch cleared	The UIM had detected a mismatch in Ground Trip setting between the present state of the external device and the state as configured in the SETUP: Automatic Operation screen. The mismatch is now cleared, and the associated team is not prevented from being Ready.	All
UIM	Ground trip mismatch detected	The UIM has detected an unexpected mismatch in Ground Trip setting between the present state of the external device and the state as configured in the SETUP: Automatic Operation screen. Until cleared this mismatch will prevent the associated team from being Ready.	All
UIM	Hot line tag active	The UIM has detected that the Hot Line tag feature of the external device is active.	All
UIM	Hot line tag inactive	The UIM has detected that the Hot Line Tag feature of the external device is inactive.	All
UIM	IntelliTEAM disabled extended PL/Vloss	When teams go out of ready, IntelliTEAM will signal the UIM to disable extended loss of voltage operation, if the UIM is programmed for this operation.	All
UIM	IntelliTEAM enabled extended PL/Vloss	When teams are ready, IntelliTEAM will signal the UIM to enable extended loss of voltage operation, if the UIM is programmed for this operation.	All
UIM	Open on extended PL or VL failed	When the UIM sends the command to open on extended phase or 3 phase voltage losses and the switch status doesn't change, this message is generated.	All

Category	Event Description	Definition	Log Level
UIM	Profile mismatch error	If the normal profile is supported and the reported status doesn't match, a 30-second timer is started to see if IntelliTEAM is trying to change the profile. If the timer expires without a detected change, a mismatch error is sent.	All
UIM	Protection settings-mapped pts mismatch	When protection settings are enabled in SETUP: Automatic Operation and associated control, analog and status points are not mapped in the UIM. When BEGIN SETUP is set to <i>Running</i> a check is made for the mapped points and a mismatch condition is entered causing a not ready team alarm. When the points are not correct and going to Running has found an error, this message is output.	All
UIM	Protection settings-mapped pts OK	When protection settings are enabled in SETUP: Automatic Operation and associated control, analog and status points are not mapped in the UIM. When BEGIN SETUP is set to <i>Running</i> a check is made for the mapped points and a mismatch condition is entered causing a not ready team alarm. When the points are correct and going to Running finds no errors, this message is output.	All
UIM	Recloser blocked timer expired	After the UIM has verified a close operation, IntelliTEAM will wait an additional amount of time specified at: External Device Menu, SETUP: Automatic Operation, Recloser Block Time.	All
UIM	Recloser/relay is fault cycling	If the recloser/relay is programmed for fault cycling, this message is output when fault cycling is active.	All
UIM	Recloser/relay is in reset state	If the recloser/relay is programmed for fault cycling, this message is output when a reset state is entered.	All
UIM	Recloser/relay not in reset state	The UIM has detected that the external device status is no longer in reset.	All
UIM	Reclosing mismatch cleared	The UIM had detected an unexpected mismatch in Reclosing setting between the present state of the external device and the state as configured in the SETUP: Automatic Operation screen. The mismatch has been cleared and will not prevent the associated team from being Ready.	All
UIM	Reclosing mismatch detected	The UIM has detected an unexpected mismatch in Reclosing setting between the present state of the external device and the state as configured in the SETUP: Automatic Operation screen. Until cleared this mismatch will prevent the associated team from being Ready.	All

Data Logging

Category	Event Description	Definition	Log Level
UIM	Remote mode disabled	The UIM detected that the Remote Mode of the external device has been disabled. When Remote Mode is disabled, the UIM will not be able to operate the external device, whether requested to do so from SCADA or from IntelliTEAM II.	All
UIM	Remot mode enabled	The UIM detected that the Remote Mode of the external device has been enabled. When Remote Mode is enabled, the UIM may be able to operate the external device, whether requested to do so from SCADA or from IntelliTEAM II.	All
UIM	Response timeout from H.D.	The UIM did not receive a response from the external device within the required timeout, which is configured at: External Device Menu, module to control dev polling timeout.	All
UIM	SCADA ctrl point operation Req.	The UIM has received a control request from SCADA to be directed toward the external device. Data 1 displays the actual point number associated with the external device. Refer to your points list for this external device to determine the point's function. Data 2 contains the operation requested on that point from the SCADA master.	All
UIM	Single phase VLoss trip active	When the UIM is programmed to do extended phase loss protection, this message is output.	All
UIM	Single phase VLoss trip cleared	On any close operation, this message is output and clears any previous active status.	All
UIM	Switch position close detected	The UIM has detected that the close state of the external device is reported.	All
UIM	Switch position open detected	The UIM has detected that the open state of the external device is reported.	All
UIM	Three phase VLoss trip active	When UIM is programmed to do extended three phase voltage loss protection, this message is output.	All
UIM	Three phase VLoss trip cleared	On any close operation, this message is output and clears any previous active status.	All
UIM	Tripped to lockout active	The UIM has detected that the external device has tripped to the lockout state as a result of an event. Once in the lockout state IntelliTEAM II may begin the reconfiguration process.	All
UIM	Tripped to lockout cleared	The external device has cleared a previously reported lockout condition.	All

Logging Status Points

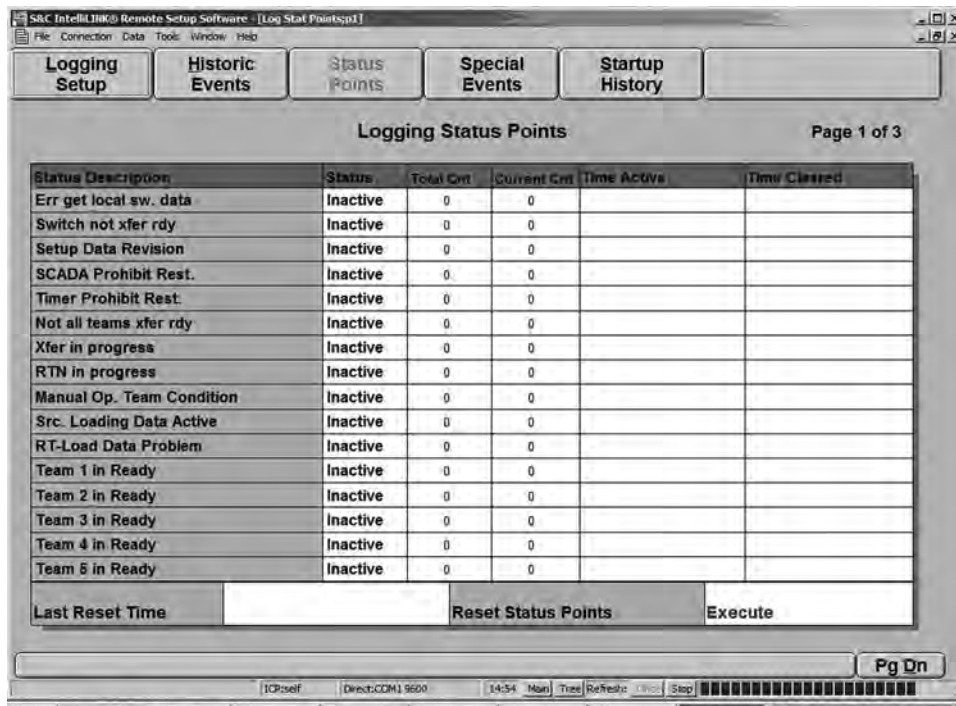


Figure 15. Logging Status Points Screen.

From any Data Logging screen click the *Status Points* button to display the *Logging Status Points* screen.

Status points are used to indicate whether a certain condition is active or inactive right now, as well as how many times it has been active. Timestamps are also supplied to indicate when the condition last became active and when it was last cleared.

There are exactly two historic events (also placed in the Historic Event Log) associated with each status point—one event for the status point becoming active and one for the status becoming inactive. For example, if a status point has become active 100 times and is active now, there will be 199 related events in the Historic Log—100 for the status becoming active, and 99 for the status clearing. Therefore, Status Points screens exist for convenience—they do not provide any information that can not be deduced from the Historic Event Log that resides in memory and/or on Compact Flash.

Each logging status point can optionally be mapped in the DNP point map, see Instruction Sheet 1043-530, page 33. Whenever a status point thus mapped changes its status, Data Logging will notify the DNP communications layer of the UIM software about the change. In this way status point information can be made retrievable via SCADA.

Currently the application may contain up to 48 status points, displayed on three screens that are connected via Page Up/Page Down buttons. Here are the pieces of data associated with each status point, each residing in a separate column of the table on the screens:

Status Description

Describes briefly what the status point is. The list of status points is further down. Note that IL needs to be connected to the control for this column to contain any descriptions.

Status

ACTIVE means that the condition which this status point represents is active right now; while INACTIVE means that the condition which this point represents is not active right now.

Total Cnt

How many times the status point has been active since the application was downloaded first.

Current Cnt

How many times the status point has been active since status points were reset last time (either using the “Clear Status Counters” feature on the Logging Setup screen, or the identical feature in the lower right corner of this screen).

Time Active

At what time the status last became active. This is cleared together with “Current Cnt” by the user, when the “Clear Status Counters” feature is used.

Time Cleared

At what time the status was cleared last. This is cleared together with “Current Cnt” by the user, when the “Clear Status Counters” feature is used.

In addition to showing the status table, the screens allow to clear status point counters and timestamps and show the time of last status clearing. That functionality is available in the lower portion of the *Logging Status Point* screen and is also found on the *Data Logging Setup* screen.

Here is the list of status points currently supported by the UIM. The number in parenthesis is the internal point code, that needs to be supplied in the appropriate DNP mapping screen to make the point accessible to SCADA.

Status Point Description	Category	Explanation
Err get local sw. data (519)	IntelliTEAM	Active when IntelliTEAM fails to receive all data necessary for its operation from the external device.
Manual Op. Team Condition (520)	IntelliTEAM	Active if any team registered a manual switch operation (Open or Close) such that it became <i>not</i> fully operational. Some manual operations will not cause this condition, most notably closing a source switch on a previously faulted team to allow TRN (if RTN is enabled) to take place.

Status Point Description	Category	Explanation
Not all teams xfer rdy (513)	IntelliTEAM	Active if any teams where the local control is a member are not fully operational. This may be due to error conditions at individual team members (see Switch not xfer rdy), or team wide conditions such as isolation of a fault, team configuration errors, team coordination errors, automatic restoration prohibited, and team logic disabled on the TEAM: Setup screen. If Switch not xfer rdy is active in one switch control of a team, this will cause this indication to be set in the other team members.
RT-Load Data Problem (522)	IntelliTEAM	This point is set when the DNP analog output value received is less than the real-time 3-phase total load as reported by the host device, and is also set if the real-time feeder loading data has not updated within the configured time interval. This point will be set to 0 if the real-time feeder loading logic is inactive.
RTN in progress (515)	IntelliTEAM	Active while the team is returning the circuit to its normal configuration.
SCADA Prohibit Rest. (516)	IntelliTEAM	Active when a SCADA command was received to prevent the restoration of any load by this team member. Will also be activated when Prohibit Restoration is requested via IntelliLINK or the Keypad.
Setup Data Revision (518)	IntelliTEAM	Active when the configuration data for an enabled team has been modified. It remains active until the field is disabled and then re-enabled. You can clear this error in two ways: 1. Set the Team Setup setpoint (on the SETUP: Team screen) to Stopped, then set it to Running. 2. Reload the team configuration data using the IntelliLINK software. Select File > Load Setpoints. This process automatically stops and restarts the "Team Setup" setpoint.
Src. Loading Data Active (521)	IntelliTEAM	This point will be set when the real-time feeder loading logic is active and in use. This point does not indicate whether the control is using actual real-time feeder loading data received from a DNP master, or using the Default Source Segment Loading setting.

Status Point Description	Category	Explanation
Switch Not Xfer Rdy (512)	IntelliTEAM	Active when the external device operation is not consistent with the expected team operation (i.e. incomplete or manual switch operation or inconsistent switch position).
Team 1 in Ready (523)	IntelliTEAM	IntelliTEAM active when the team is in the Ready to Transfer state. This point will be inactive if the team is not in use, contains an error condition, or the line section represented by the team contains a fault.
Team 2 in Ready (524)	IntelliTEAM	IntelliTEAM active when the team is in the Ready to Transfer state. This point will be inactive if the team is not in use, contains an error condition, or the line section represented by the team contains a fault.
Team 3 in Ready (525)	IntelliTEAM	IntelliTEAM active when the team is in the Ready to Transfer state. This point will be inactive if the team is not in use, contains an error condition, or the line section represented by the team contains a fault.
Team 4 in Ready (526)	IntelliTEAM	IntelliTEAM active when the team is in the Ready to Transfer state. This point will be inactive if the team is not in use, contains an error condition, or the line section represented by the team contains a fault.
Team 5 in Ready (527)	IntelliTEAM	IntelliTEAM active when the team is in the Ready to Transfer state. This point will be inactive if the team is not in use, contains an error condition, or the line section represented by the team contains a fault.
Team 6 in Ready (528)	IntelliTEAM	IntelliTEAM active when the team is in the Ready to Transfer state. This point will be inactive if the team is not in use, contains an error condition, or the line section represented by the team contains a fault.
Team 7 in Ready (529)	IntelliTEAM	IntelliTEAM active when the team is in the Ready to Transfer state. This point will be inactive if the team is not in use, contains an error condition, or the line section represented by the team contains a fault.
Team 8 in Ready (530)	IntelliTEAM	IntelliTEAM active when the team is in the Ready to Transfer state. This point will be inactive if the team is not in use, contains an error condition, or the line section represented by the team contains a fault.

Status Point Description	Category	Explanation
Timer Prohibit Rest. (517)	IntelliTEAM	<p>Active when the Prohibit Restoration timer for that team runs out. The timer command only affects the team on which it has expired. When enabled the timer count-down will be initiated at the same time a transfer process begins at a team, usually at the time a sectionalizing event occurs. Although it will often be the case that timers in adjacent teams start simultaneously, there is no requirement for this to occur. Each team will decrement its timer independently from other teams, and potentially enter the Prohibit Restoration state asynchronously.</p> <p>WARNING: Because teams may asynchronously enter the Prohibit Restoration state, one or more disconnected teams throughout a circuit, or a system, may be prohibited from further automatic restoration activity, while others may continue as necessary for subsequent events. For this reason it is extremely important that standard safety practices are adhered to when working on a circuit that has been involved in automatic transfer and restoration. Disabling automatic operation and tagging devices are strongly recommended before performing any manual switching or repair.</p>
Xfer in progress (514)	IntelliTEAM	Active while the team is in the process of reconfiguring the circuit and transferring load to an alternate source.
Any Phase LOV (336)	UIM	Active when status points from the external device report voltage losses or the analog input from the external device is less than the Auto setup voltage loss threshold.
E.D. Contacts Bad (355)	UIM	Active when the external device is reporting that the switch open and closed status are the same.
E.D. Comm Lost (353)	UIM	Active when the external device (E.D.) stops communicating, e.g. due to a radio problem.
E.D. Comm Stopped (352)	UIM	Active when BEGIN SETUP is set to "Stopped". Cleared when BEGIN SETUP is set to "Running".
E.D. Trouble (354)	UIM	Active when trouble status points are programmed at the UIM and they become active.

Status Point Description	Category	Explanation
Frequency Trip (339)	UIM	Active when the Interface Module has detected that the host tripped open due to a frequency anomaly on the circuit. The Interface Module forces a Stop Transfer condition, preventing IntelliTEAM II from attempting to operate the relay/recloser device.
Ground Trip Mismatch (340)	UIM	Active when the Interface Module has detected that the state of the host's Ground Trip feature is no longer in the expected state. The Interface Module assumes this change of state is due to human intervention and will force a Stop Transfer condition, preventing IntelliTEAM II from attempting to operate the relay/recloser device.
Hot Line Tag (337)	UIM	Active when the UIM has detected that the hot line tag feature of the external device is active.
LOV Sect. Enabled (349)	UIM	Active when teams are ready and IntelliTEAM instructs the UIM to enable extended loss of voltage operation (if the UIM is programmed for this operation). Set to inactive when teams go out of ready and IntelliTEAM disables the feature.
Over Current (344)	UIM	Active when the external device reports that an overcurrent condition has been detected on one or more phases.
Profile Mismatch (342)	UIM	Active when the normal profile is supported, the reported status doesn't match, and the 30 second timer started to see if IntelliTEAM is trying to change the profile has expired.
Protection Config. Error (343)	UIM	Active when the UIM is programmed to control the profile in the external device, the UIM is programmed to block and unblock reclosing, or the UIM is programmed to initiate extended loss of voltage trips in the external device; and status points, control points or analog inputs have not been programmed to support these features.

Status Point Description	Category	Explanation
Reclose Mismatch (341)	UIM	Active when the Interface Module has detected that the state of the host's Reclosing feature is no longer in the expected state. The Interface Module assumes this change of state is due to human intervention and will force a Stop Transfer condition, preventing IntelliTEAM II from attempting to operate the relay/recloser device.
Recloser Cycling (347)	UIM	Active when the recloser/relay is programmed for fault cycling and fault cycling is active.
Recloser Cycling Reset (348)	UIM	Active when the recloser/relay is programmed for fault cycling and reset state is entered.
Remote Disabled (338)	UIM	Active when the host relay/recloser device indicates it is not able to accept commands from a remote source. The remote source can be either SCADA or the Interface Module itself.
Single Phase Trip (350)	UIM	Active when UIM is programmed to do extended phase loss protection and the switch trips for that reason. Cleared on any close operation.
Three Phase Trip (351)	UIM	Active when UIM is programmed to do extended three phase voltage loss protection and switch trips for that reason. Cleared on any close operation.
Tripped to Lockout (346)	UIM	Active when the UIM has detected that the external device has tripped to the lockout state as a result of an event. Once in the lockout state IntelliTEAM II may begin the reconfiguration process.

Special Event Counters

Event Description	Total Cnt	Current Cnt	Last Time Active	First Time Active
Compact Flash Failure	0	0		
Logging Overflow	1	1	03/08/07 08:57:48.900 am	03/08/07 08:57:48.900 am
CF Data Likely Lost on Err	0	0		
Err. put coach task list	0	0		
Err. put event task list	0	0		
Err. put member task list	0	0		
Err. put comm task on list	0	0		
New coach generated on team	0	0		
Seq num resync	0	0		
Rebuilding coach	0	0		
Team Comm Error	0	0		
Unexpected state change	0	0		
	0	0		
	0	0		
	0	0		
	0	0		

Figure 16. Special Event Counters Screen.

From any *Data Logging* screen click the *Special Events* button to display the *Special Event Counters* screen.

The application considers some historic events “special” and keeps track of how many times they’ve occurred, as well as when they occurred first and when they occurred last. A typical example of a special event would be some event that adversely impacts operation of the UIM, such as a failure of Compact Flash.

Each special event counter can optionally be mapped in the DNP point map. See Instruction Sheet 1043-530, page 33. Whenever a special event thus mapped occurs, Data Logging will notify the DNP communications layer of the UIM software about the occurrence. In this way special event counter information can be made retrievable via SCADA.

Currently, the application can have up to 32 special events, which are contained on two screens, linked with Page Up/Page Down buttons. Here are the pieces of data comprising a Special Event Counter record, each residing in a separate column of the table on the Special Event Counters screens:

Event Description

Describes briefly what the special event is. The list of all special events is further down. Note that IL needs to be connected to the control for this column to contain any descriptions

Total Cnt

How many times the event has occurred since the application was downloaded first

Current Cnt

How many times the event has occurred since the special events were reset last time (either using the “Clear Special Event Counters” feature on the Logging Setup screen, or the identical feature in the lower right corner of this screen)

Last Time Active

When the special event occurred last, since the special event counters were reset

First Time Active

When the special event occurred first, since the special event counters were reset

In addition to showing the Special Events table, these screens allow for clearing special event counters and timestamps and show the time of last clearing. That functionality is available in the lower portion of the Special Event Counters screens and is identical to that on the Logging Setup screen.

Here is the list of all special events currently supported by the UIM. The number in parenthesis is the internal point code, that needs to be supplied in the appropriate DNP mapping screen to make the point accessible to SCADA.

Event Description	Category	Explanation
Compact Flash Failure (768)	Logging	This event occurs when CF disk error is detected while saving logs to CF card. There may be many reasons for this but the message should come up very rarely, if ever. If this happens persistently, replace the CF card to ensure continued logging and notify S&C.
Logging Overflow (769)	Logging	A large but not infinite number of events can be logged per unit of time. This event occurs when that limit is reached or exceeded. When this event occurs data may be lost. If you see this often, please contact S&C.
CF Data Likely Lost on Err (770)	Logging	This event occurs when a compact flash operation was interrupted before completion. The file on which this occurred was saved with a .ERR extension and abandoned. Some events may have been lost from CF log. The primary reason for this condition is a loss of power while CF card is active-- a highly improbable but possible event. Another reason is that the card was pulled out while data was being written to it-- this is why it is necessary to disable CF logging either with the IntelliLINK screen, or the Keypad, before removing the card. Notify S&C if you see this more than a few times.

Event Description	Category	Explanation
New coach generated on team (512)	IntelliTEAM	This event occurs when the coach does not arrive within a predetermined timeout. This causes the team member to generate a new coach and attempt to restore team synchronization.
Team Comm Error (513)	IntelliTEAM	This event occurs when any team related message is not successfully transmitted via DNP.
Unexpected state change (514)	IntelliTEAM	This event occurs if in the course of team transfer an unexpected sequence of steps is taken.
Rebuilding coach (515)	IntelliTEAM	This event occurs if the coach is lost during operation of the system. The team circulates a special coach to restore synchronization. This counter increments whenever the special coach arrives at a member.
Err. put coach task list (516)	IntelliTEAM	This event occurs when a list of pending tasks that the coach carries between team members is full. No more tasks can be put on this list until one or more of the existing tasks have been completed.
Err. put event task list (517)	IntelliTEAM	This event occurs when a list of pending team-related events is full. No more events can be put on this list until one or more of the existing events have been completed.
Err. put member task list (518)	IntelliTEAM	This event occurs when a list of pending member-process tasks is full. No more tasks can be put on this list until one or more of the existing tasks have been completed.
Err. put comm task on list (519)	IntelliTEAM	This event occurs when the coach or the team member needs to send a new message to another team member and the DNP communications buffer is full. Existing transactions must be completed before more are put on the communications list.
Seq num resync (520)	IntelliTEAM	This event occurs when the sequence numbers of events have fallen out of synchronization.

System Startup History



Figure 17. System Startup History Screen.

The control keeps track of the times when the system stops running and starts running. The most recent system down/system up events are reflected in a table kept in the memory of the control. The table has eight slots and is sorted in ascending chronological order. There are two columns:

System Down Time

Time when power to the control was lost. Note that in the case when the system started up as a result of an application download this item is going to be empty.

NOTE: this time is approximate, with the precision of about half a second.

System Up Time

Time when power to the control was restored or the application was downloaded. The System Down Time in the same row subtracted from this value equals the amount of time the system was not running.

Historic Event Log

IntelliLINK Historic Event View screens can show only a small portion of all historic events stored in the control memory. To view the 4,096 events stored in control memory, use the IntelliLINK HTML log feature. To access the IntelliLINK HTML Log:

1. Go to the Data > Event/Data logs menu in IntelliLINK to open the “Select Log Dialog. Expand the item in the dialog and choose the “Historic Event Log” option.
2. Click OK. You may check the “Save To File” checkbox to generate an HTML file on your disk.
3. Wait several minutes while event data is downloaded from the control.
4. The log containing all historic events in the control memory will be displayed in an Internet Explorer window (unless the “Save To File” checkbox was checked).

The resulting log is sorted chronologically and contains up to 4,096 of the newest historic events that have been logged.

The columns in the HTML log table are identical to those on the Historic Event View screens. The HTML file can be opened with Microsoft Excel, or copied and pasted into Excel, where it can be re-arranged in any way that the spreadsheets will allow.

Compact Flash Log

Compact flash logging requires a 1GB, or larger capacity, compact flash card. S&C supplies and recommends the SanDisk Extreme® III CompactFlash® 1GB card. **The CF card must be formatted as FAT, rather than FAT32** (all cards shipped by S&C have been correctly formatted).

When compact flash logging is enabled (from the *Logging Setup* screen or the keypad), every historic event generated by the UIM application is written to the Compact Flash, even if historic event logging has been stopped for the in-memory event log, or the event does not satisfy logging criteria.

The UIM uses 100 pre-allocated fixed-size files to store historic event data in the compact flash, holding a total of over 1,000,000 events. The files are named LOG00.VM, LOG01.VM...LOG98.VM, LOG99.VM and are of very similar size. The files are continuously reused: once Data Logging fills all 100 files, LOG00.VM will be opened again, and new events written, starting from the file's beginning, and replacing the oldest events. This means that after all 100 files have been used, at any given moment, one of the files is circular, without a fixed beginning.

NOTE: the number of event entries in a full file is around 14,000 entries, but this is not a precise count, and varies slightly for each file. This means that a reused file is likely to contain a small amount of very old data at the end. The older events are obvious because they are timestamped.

Sometimes data being stored to a file is interrupted, normally by a power loss or CF removal. In this case Data Logging assumes that the file is corrupted, saves it under a unique name such as “AABBCCDD.err”, and creates a new file for future use. A corrupted file like this can still be useful, because usually only a small amount of data is lost. There is a Special Event Counter associated with the saving of a corrupted file, called “CF Data Likely Lost on Error,” that can be viewed on the Special Events screen.

CAUTION: do not remove the Compact Flash card when Compact Flash logging is active (which can be seen on the “Logging Setup” IntelliLINK screen or on the LCD). Doing so may corrupt the card and cause loss of data. Disable compact flash logging first, either with IntelliLINK, or with the keypad.

Viewing Compact Flash Data

CF logs cannot be viewed through the IntelliLINK screens. To view a compact flash log, the following steps need to be followed:

1. After making sure that Compact Flash logging is disabled, remove the card from the device.
2. Insert the CF card into a compact flash reader, connected to your PC. You should see LOGXX.VM files in the card's root directory.
3. Run IntelliLINK.
4. Use the File > Open Snapshot IntelliLINK menu to select the compact flash logging file that interests you. The "Last Modified" timestamp in the IntelliLINK Open Snapshot File dialog is that of the latest event in the file. Screens will not contain any meaningful data, because the snapshot solely has the CF log in it.
5. Use Data > Event/Data logs menu of IntelliLINK to open the "Select Log" Dialog. Expand the item in the dialog and choose the "CF Event Log (SNAPSHOT ONLY!)" option.
6. Click OK and ignore any warnings by clicking OK in the dialogs that appear. You check the "Save To File" checkbox if you want to generate an HTML file on your disk.
7. The log containing all events, in the CF file you opened as a snapshot, will be displayed in an Internet Explorer window, unless the "Save To File" check box was selected.

The columns in the HTML log table are identical to the columns on the Historic Event View screens, with the exception of the Log Level column, which has been added to make filtering/sorting more powerful. The HTML file can be opened with Microsoft Excel, or copied and pasted into Excel, where it can be rearranged in any way that the spreadsheets allow.

Additional information is included with the HTML file: the application version, and the local RTU address and location information from the device that generated the CF file.

NOTE: Do not manually modify any Compact Flash files generated by the UIM application. Reinserting a compact flash card with modified files into the UIM may cause parts of the logged data to become unreadable. The only safe modification of UIM-generated CF files, that can be performed on a PC, is the deletion of ALL the files, or reformatting the card for FAT file system.

