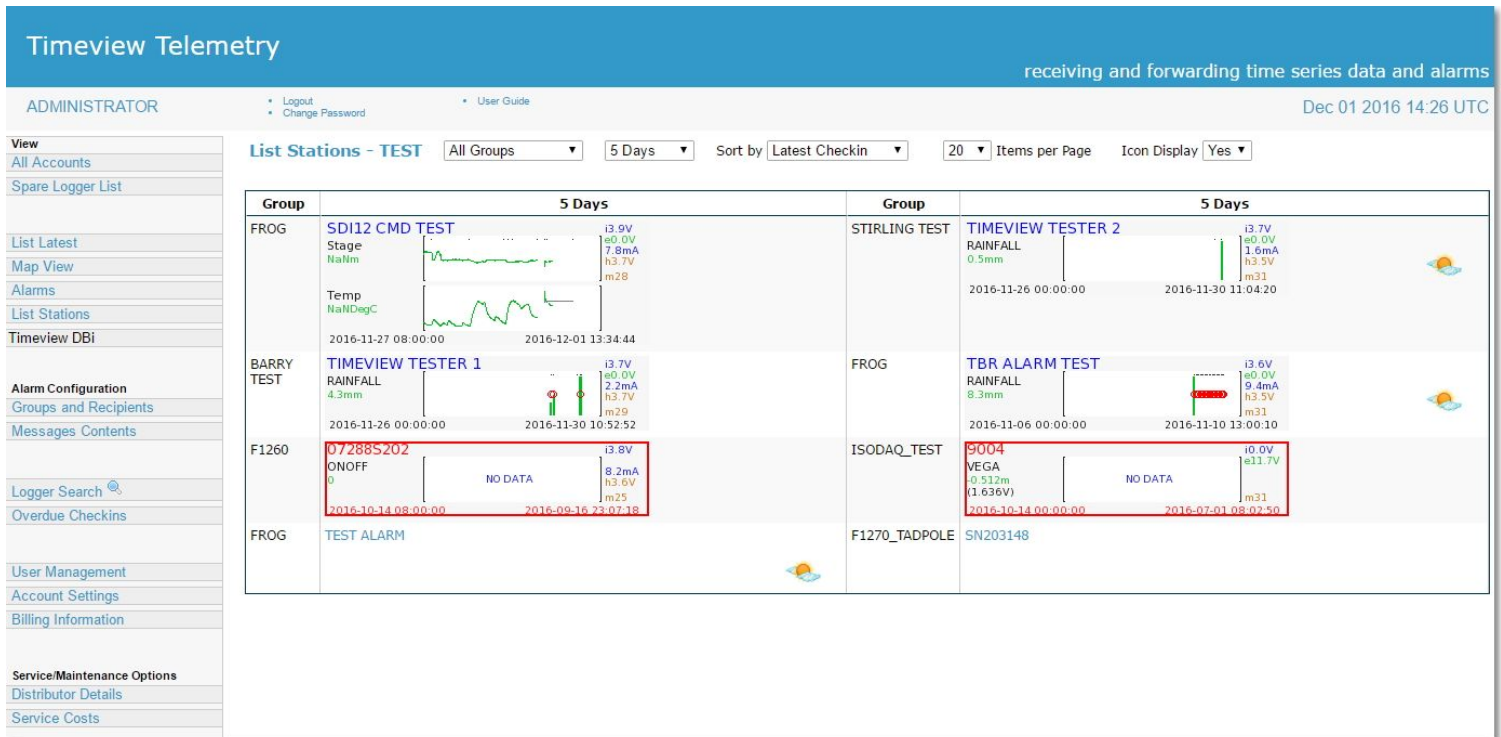


Isodaq Timeview Telemetry

User Guide



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Summary

Isodaq Timeview Telemetry (TT) and TimeView Virtual Appliance (TVA) are telemetry systems dedicated to the receipt of latest data and alarms direct from Isodaq field devices. They retain time series data which can be viewed as charts and downloaded or forwarded in a range of formats for up to **12 months per logger tag** (depending on the volume), with longer term data available in companion products such as TimeView DBi. Alarms can be configured to forward specific messages to groups of recipients as text or email.

www.timeview2.net

Timeview Telemetry has a browser interface where time series data can be displayed without loading any special software to view the plots. Access to TT is restricted to registered users and there are several different levels of access available.

Data comes into TT from GPRS loggers via direct internet connection.

No modem is used at the receiving end for GPRS reception. Loggers connect to a URL (a web address) using their integrated modem and the GPRS service provided by the mobile operator.

Alarms triggered by data loggers can be forwarded by email or by SMS (via web gateway).

Accessing Timeview Telemetry

Accounts and access for users and Loggers

Loggers on Timeview Telemetry belong to a particular Account. Users can be given access to all loggers in an Account or to selected groups of loggers within an Account.

In addition access can be granted to all loggers in all Accounts belonging to a particular Distributor.

User access levels

There are four user access levels on TT.

Users have read-only access and can:

- View plots over various date ranges
- See alarm lists
- See the map view of sites

No data download, reconfiguration or user management is possible.

Intermediates can:

- View logger data and map view of sites
- Download data in CSV or XDQ format

Managers can:

- View logger data and map view of sites
- Download data in CSV or XDQ format
- Change the logger profile and alarm routing
- Have access to basic configuration and resets. (eg. clock, alarm set points/hysteresis)
- Queue full logger reconfiguration requests created via Harvest software

Administrators have Manager privileges, and in addition can:

- Add new Users, Intermediates, Managers and Administrators to the account
- Can view an audit log of user actions including when a User was last logged on
- Delete and modify users for the account

There are 'demo' logins available at "User" and "Intermediate" levels to demonstrate privileges using a demonstration Frog Logger. The log in details of these demonstration accounts are as follows:

Username	Access Level	Password
user	User Level	demo
intermediate	Intermediate Level	demo

User access Types

In addition to the above user levels, there are also different access types allowing individual users to be granted or denied access to loggers at the administrator's discretion.

For example, a user may be given access to all Accounts belonging to a particular Distributor.

Alternatively, a user may only be given access to a particular Account or only a specific Group of loggers.

User Management

Users are granted access to TT by being given a *Username* by Isodaq or by another user with Administrator rights for that account. Users can change their own password.

User names are not case-sensitive, but passwords are.

An Administrator can add a new user by clicking on the “**User Management**” button on the main menu. Once there, clicking on the “**Add User**” link at the bottom will present the following options:

Timeview Username

Password

Name

Email

Default View Type ☐ List ☐ Map

User Access Level

Distributor

Account

When a user is being created under a specific account, a list of Groups from that account can be selected to customize the access of the new user.

You will be adding a user who will have access to ALL Distributors and ALL Accounts

You can add a user with specific/restricted access by returning to the 'All Accounts' list and first selecting a particular Distributor and/or Account

From here, a Username, Password, and Email Address can be set along with what level of access the new user is going to have. (Please see “**User Access Levels**” and “**User Access Types**” sections above for the breakdown on what each access level contains).

The user can be granted access to all accounts belonging to a Distributer or to only a specific Account. If access is to a particular Account only then the access can be further restricted to loggers with particular Group names within the Account.

Access for loggers

Loggers are granted access to a TT account by entering the *serial number* of the logger in a logger profile belonging to the account. These logger profiles can only be created by Isodaq.

The logger profile also contains information about the location of the system (for the map views) and the expiry dates for the TT service. After the expiry date, data will continue to be received by TT but no downloading of data or configuration is possible and details of how to renew access are shown in place of graph views. Plot thumbnails on Map View will also be replaced with a service expiry message.

The logger Group and Tag fields are used for sorting sites in lists.

The Group/Tag combination should be unique within an account.

Using Timeview Telemetry

Timeview Telemetry initially displays a login screen:

Timeview Telemetry

receiving and forwarding time series data and alarms

See how easy it is to:

- Plot and customise graphs
- View different types of time-series data
- View live data

Login on the right using:

- Username: user
- Password: demo

Timeview Telemetry Users

Username

Password

Login

After entering a valid username and password, the account main page is loaded which shows a summary of alarms and current data received from sites. Recent data is shown in thumbnail plots.

Note: Sidebar menus change for different user levels. If the user has access to only one account then the main menu will only show the loggers they have access to in that account. If the user has access to all (or multiple accounts) then they will be presented with a list of accounts instead. Selecting one will present the user with a new main menu with options for that specific account.

Timeview Telemetry

receiving and forwarding time series data and alarms

ADMINISTRATOR

- Logout
- Change Password
- User Guide

Dec 01 2016 14:48 UTC

View

All Accounts

Spare Logger List

Logger Search

Overdue Checkins

User Management

Service/Maintenance Options

Distributor Details

Service Costs

All Accounts

All Distributors

Page 1 of 12, showing 20 records out of 239 total, starting on 1, ending on 20

REF	Account	Billing Email	Credits	Loggers	Cameras	Floodview	Timeview DBi	FTP To Client	Service Expiry Date	Actions		
ID0375			500	1	0	-	-	-	2017-10-31	View	Settings	Billing
ID0351			2027	12	0	-	-	-	2017-04-30	View	Settings	Billing
ID0236			N/A	32	0	-	-	-	2017-03-24	View	Settings	Billing
ID0111			1195	10	0	-	-	-	2017-03-31	View	Settings	Billing
ID0331			247	1	0	-	-	-	2017-11-30	View	Settings	Billing
ID0411			250	2	0	-	-	-	2017-08-31	View	Settings	Billing
ID0084			N/A	8	0	-	-	-	2017-10-31	View	Settings	Billing
ID0422			0	1	0	-	-	-	2017-03-30	View	Settings	Billing
ID0058			653	19	3	-	-	-	2017-04-01	View	Settings	Billing
ID0323			2499	7	0	-	-	-	2019-11-19	View	Settings	Billing

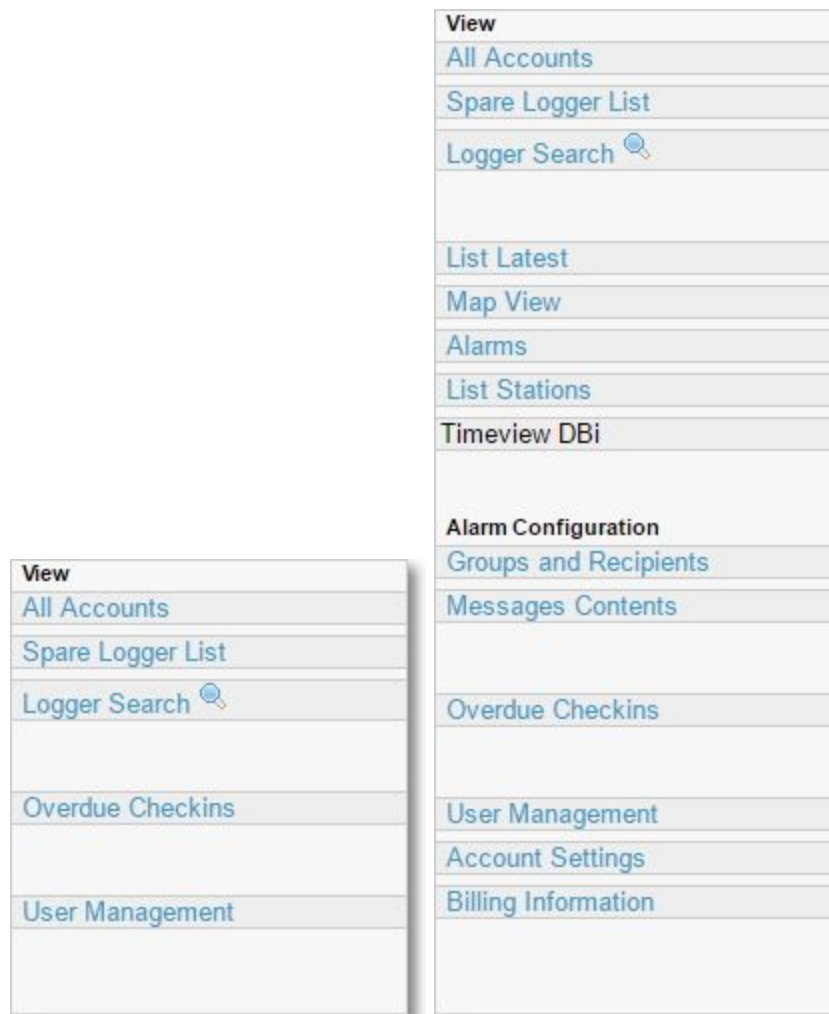
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | next >>

Add a New Account

An example of the Main page after logging in with access to all accounts

View Menu

Once logged in, the user will see a list of links on the left-hand side of the window where they can access the various features of Timeview Telemetry. The options available will differ based on the access level of the user.



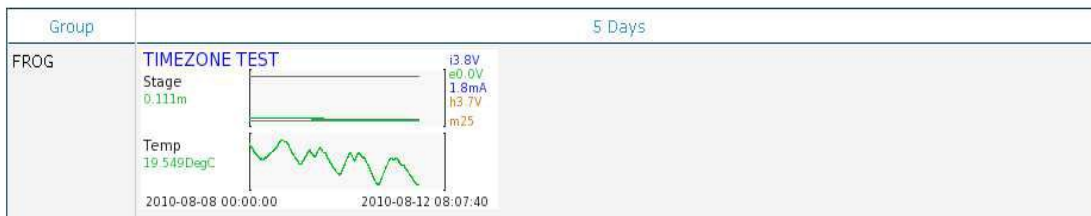
(Left) Main menu option before a specific account has been selected.

(Right) Main menu options after an account has been selected.

List Latest and List Stations

The “List Latest” and “List Stations” headers can each be selected and will display paginated lists of recent Alarms or Data from all Stations respectively.

List Stations - TEST All Groups 5 Days Show 20 Items Back



List Latest page

Latest Alarms - TEST Remaining Alarm Credit - 222

Group	Tag	Serno	Alarm Detail	Alarm Date	Actions
FROG	TIMEZONE TEST	102643	Chan1(Stage):0.139m (>0.1)	2010-07-22 14:45:00	View

Latest Data - TEST currently displaying 1 of 1



List Stations page

Alarms for Stations in a particular “Group” can be selected via a dropdown list, as can the number of alarms per page. The time period covered in thumbnail plots can also be selected via a dropdown list. There is also an option in the time period dropdown to display just the latest channel values rather than a thumbnail plot. This is shown as “List details” in the drop down menu.

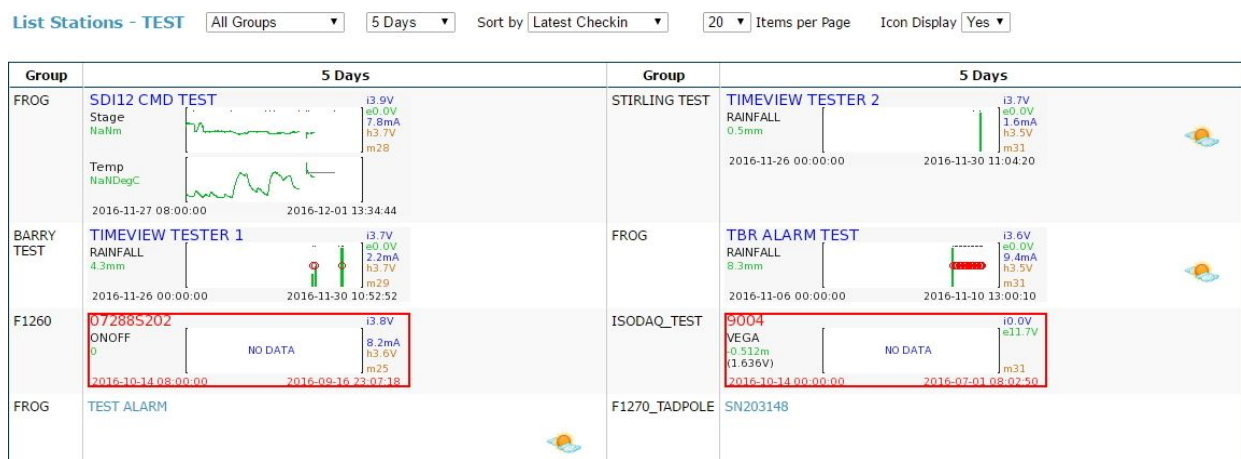
In the event that a logger or camera has expired, a red warning message (as shown below) will appear at the top of the screen to prompt the user to contact sales@isodaq.co.uk (or their Distributor if applicable).

You have items past service expiry date. To restore access please contact sales@isodaq.co.uk quoting REF:

Similarly, if a Logger or Camera is within two months of its expiry date, a message will appear at the top of the screen to inform the user and prompt them to contact sales@isodaq.co.uk (or their Distributor) in order to arrange continuation of the service.

Thumbnail Plot

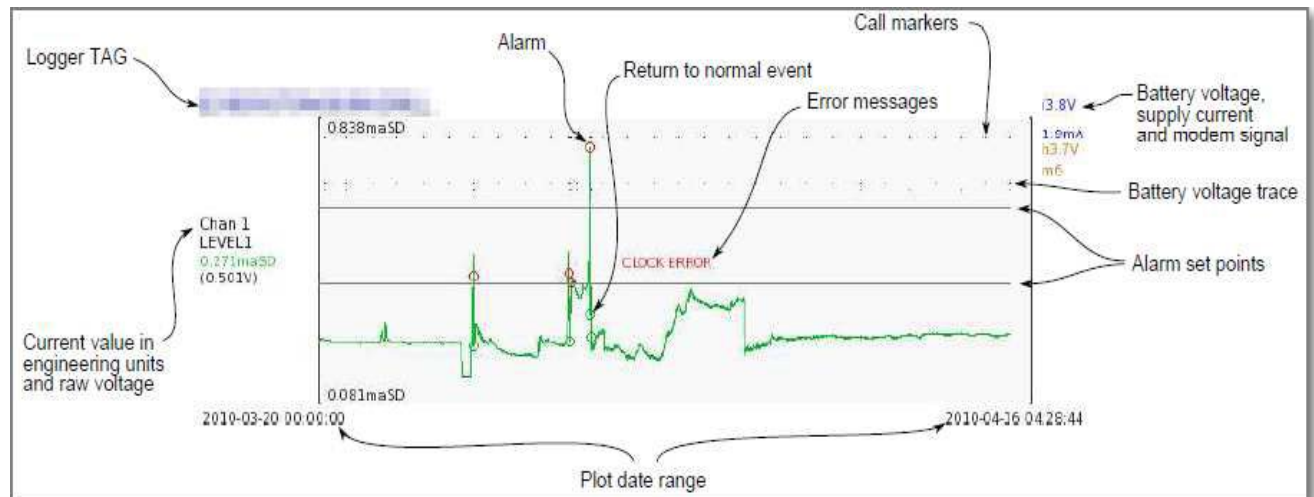
The Thumbnail plots are shown when the user has selected *List Latest* or *List Stations*. The default view of rainfall is a bar graph showing Hourly totals.



Features of thumbnail views on Timeview Telemetry

Detailed Plot

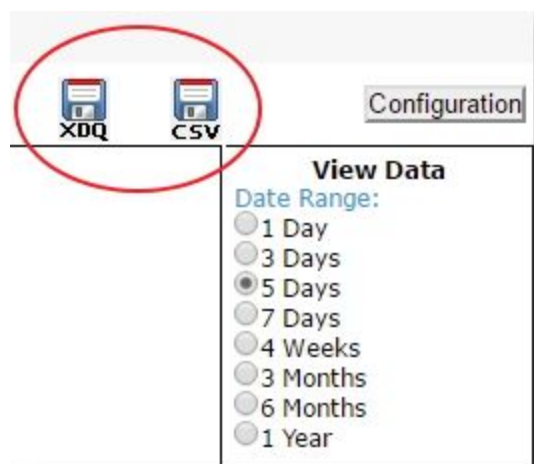
When a thumbnail plot is selected, the user will be taken to a more detailed plot of the station as shown below:



Features of a detailed plot on Timeview Telemetry

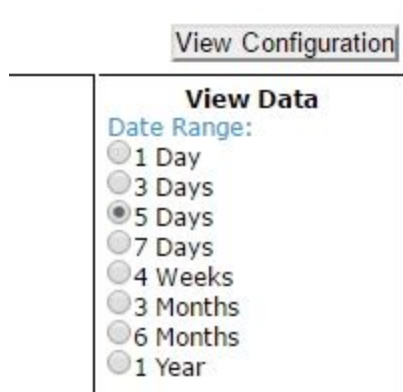
The Current Value from the logger is shown where applicable. For rainfall recording from Tipping Bucket Raingauges this current value is not applicable so no value is shown. For scheduled logging it is the instantaneous reading at the time the logger checked in. For example it is the water level retrieved from the sensor at the time that the logger last checked in, not the last logged value.

The detailed plots have options depending on the privileges of the user: Managers, Intermediates and Administrators have these options:



Managers, Intermediates and Administrators have data download and configure options

A User level login can only view plots:



User level login - no download or configuration options

Information to be displayed is selected via the buttons in the right-hand column.

Date ranges from 1 day through to 1 year are selectable. The channel to be viewed is selectable and the data can be displayed as a static image or interactive plot. Data for all channels can also be displayed simultaneously in either form.

The static image graphs for 1, 3 and 5 Day periods are updated on logger checkin. Static images for periods of 7 Days, 4 Weeks and 3 Months are updated within an hour of data receipt. 6 Months and 1 Year images are updated when server load allows and this may be up to 24 hours.

Detailed views may be used if you want to see updated graphs for 7 days up to 1 year when a logger has just checked in.

In “**Graph (Dynamic)**” view, the user will be presented with an interactive graph. Hovering the mouse over the data plot will display the value below the graph in the “Selected Value” field. To zoom in, click-and-drag the mouse on the graph. Double-clicking the plot will zoom out. Holding down left-shift on the keyboard and clicking and dragging the mouse on the plot will pan the graph horizontally and vertically.

“**Table View**” displays the values of the currently selected channel in a simple table format. **Note:** Table View is not accessible to “User” (read-only) access levels.

“**Logger Status**” displays details of the logger itself such as power consumption, battery voltages, mode, signal etc. This graph can be navigated in the same fashion as the Graph (Dynamic) option described above.

Manager, Intermediate and Administrator level users can download the data currently being viewed in CSV or XDAQ format, but as a general performance guide it is not recommended to manually download more than 4 weeks of data at a time.

CSV Download Option

The CSV Download option lets you download the selected date range of data in a Comma Separated Values format that can be loaded directly into Microsoft Excel for further graphing, analysis, archiving and manipulation. The following screenshot is an example of the Isodaq CSV data file format that is used in the Timeview Telemetry CSV download.

	A	B	C	D	E	F	G
1	Logger tag:	FROMELEVEL					
2	Logger description:	BROMYARD	Logger group				
3	Logger group:	BROMYARD					
4	Description:		Logger description				
5	Serial number:	002028B7					
6	Channel tag:	Stage					
7	Channel no:	1					
8	From:	2015-01-16 00:00:00					
9	To:	2015-01-20 08:00:00					
10	Number of records:	417					
11	Isodaq Data File:						
12	Sensor units:	m					
13	Latitude:		Latitude and Longitude are present in CSV files downloaded from Timeview but will be blank in export from Harvest				
14	Longitude:						
15	16/01/2015 00:00	0.607					
16	16/01/2015 00:15	0.602					
17	16/01/2015 00:30	0.599					
18	16/01/2015 00:45	0.596	Timestamp and engineering value at that time				
19	16/01/2015 01:00	0.593					
20	16/01/2015 01:15	0.592					

The following screenshot shows the relationship between the Group and Tag on the logger and the Logger tag and Logger description in the Isodaq CSV.

Configure FROG Outstation Standard File

Summary | Ch 1 Digital | Ch 2 4-20mA | SDI-12

Group BROMYARD

Tag FROME LEVEL

XDQ Download Option

The XDQ Download Option lets you download the selected date range of data in XDQA format that can be loaded directly into the Harvest software that is used for reading and configuring Isodaq data loggers. If the XDQA data file is large it will be downloaded as a ZIP file which you will have to unpack before it can be loaded into Harvest software for analysis.

Please note that high intensity data (with short interval time steps) and large numbers of channels per logger, can also impact the performance of manual downloads. Data for all loggers in an account can be

transferred automatically to a third party host as described in the section below titled “Third Party Data Transfer”.

Data can also be transferred automatically to TimeView DBi. Timeview DBi is a long term database extension to TimeView, allowing the time series data to be held, viewed, and downloaded indefinitely. Please see the section below titled “TimeviewDbi Database”.

Some types of data have built in support for viewing and downloading Totals derived from that data. These data types include rainfall data from Tipping Bucket Raingauges, Vaisala Weather Stations and OTT Pluvio weighing principle raingauges. Rainfall totalisation currently defaults to a 09:00 water day start. Note, however, when viewing the Dynamic Graph or Table View, values are listed by the hour.

When viewing a static graph and channel of a device supporting derived daily totals, the user can select various 'view modes' from beneath the data plot as shown below:



Data can be viewed in Recorded, Minute, 15 Mins, Hourly, Daily, Weekly and Monthly ranges

When exporting data as a CSV, the user will receive a CSV containing the data of the specified view mode. For example, selecting ‘Daily’ as a view mode before downloading the CSV will result in a file producing and displaying daily totals.

The Recorded data view option shows the data as Minute totals in order to prevent confusion where there are multiple tips in close proximity they would appear on the graph as multiple bars next to one another but would be so close that they would appear just to be a single bar.

The Recorded data download option represents the raw data as it is stored on the logger before any totalisation. For TBR Rainfall Recorded data this represents the timestamp of the tip along with the magnitude of the tip (e.g. 0.1mm). The resolution of the rainfall tip timestamp on the XX logger is 2 seconds. If there are multiple tips within a 2 second period, these will all be recorded as having the same timestamp. For a CSV export where there are multiple tips with the same timestamp there will be one timestamp along with the total value of the tips for that 2 second period e.g. 0.6mm which would represent 3 tips of 0.2mm in a 2 second period. If you are importing these CSV rainfall files you should ensure the software importing it can handle these multiple tips under the same timestamp.

There are also “Logger Properties” and “Channel Properties” display options showing current logger and channel configuration details.

Logger Profile Daily Checkin 0600 0900

Group:	TEST	Internal Battery:	3.7V (Lithium)
Tag:	TIMEVIEW TESTER 1	External Battery:	0V
Description:		HLC:	3.7V
Device Type:	FROG 2	Average Current:	2.2mA
Serial Number:	20411E	Reset Date:	2016-11-30 10:48:02
Firmware:	1.59	Outstation Date:	2016-11-30 10:52:52
Channels:	1	Server Date:	2016-11-30 10:52:56
Time Switch:	1000-1005	SIM Number Ends:	2979
Check-in:	0600-0900	Selected Antenna:	Internal, -0dBm
Master 1 Primary:	idq.webhop.org 1005		
Master 1 Failover:			
Modem Signal:	29		
GPRS APN:	stream.co.uk		
GPRS Username:	streamip		
GPRS Password:	streamip		
Current Network:	Vodafone		

View Data

Date Range:

- ☐ 1 Day
- ☐ 3 Days
- ☐ 5 Days
- ☒ 7 Days
- ☐ 4 Weeks
- ☐ 3 Months
- ☐ 6 Months
- ☐ 1 Year

Display:

- ☐ Graph (Static)
- ☒ Logger Properties
- ☐ Channel Properties
- ☐ Graph (Dynamic)
- ☐ Table View
- ☐ Logger Status

Channel:

- ☒ 1 - RAINFALL

“Logger Properties” display showing current logger details

Through the Logger Properties option, the user can view details on the station such as product serial numbers, SIM settings and battery levels.



Group:

COUNCIL

Date Range:

Previous 7 days (since 2016-11-23 00:00:00). Updated 2016-11-29 04:03:02.

Channel Details

Current Value	Range	Alarm Setpoints	Min	Max
UPSTREAM(Ch1) 0.228maSD	0-3	0.5 0.7 (15mins)	0.225	0.335
DOWNSTREA(Ch2) 0.328maSD	0-3	None (15mins)	0.327	0.422

View Data

Date Range:

1 Day

3 Days

5 Days

7 Days

4 Weeks

3 Months

6 Months

1 Year

Display:

Graph (Static)

Logger Properties

Channel Properties

Graph (Dynamic)

Table View

Logger Status

Channel:

1 - UPSTREAM

2 - DOWNSTREA

All Channels

View Data

Date Range:

- ☐ 1 Day
- ☐ 3 Days
- ☐ 5 Days
- ☒ 7 Days
- ☐ 4 Weeks
- ☐ 3 Months
- ☐ 6 Months
- ☐ 1 Year

Display:

- ☐ Graph (Static)
- ☐ Logger Properties
- ☒ Channel Properties
- ☐ Graph (Dynamic)
- ☐ Table View
- ☐ Logger Status

Channel:

- ☒ 1 - UPSTREAM
- ☐ 2 - DOWNSTREA
- ☐ All Channels

“Channel Properties” display showing current channel (sensor) details

Selecting “Channel Properties” will list the measurements from the currently selected channel within the chosen date range.

If the logger or camera being viewed has expired then the user will no longer have access to the data or camera images and will instead be presented with a message to contact sales@isodaq.co.uk (or Distributor if applicable).

<p style="color: red; text-align: center;"> Logger Service has Expired To renew access please contact sales@isodaq.co.uk quoting Ref: Alarms may not be forwarded </p>			
---	--	--	--

View Data

Date Range:

- ☐ 1 Day
- ☐ 3 Days
- ☒ 5 Days
- ☐ 7 Days
- ☐ 4 Weeks
- ☐ 3 Months
- ☐ 6 Months
- ☐ 1 Year

Display:

- ☒ Graph (Static)
- ☐ Logger Properties
- ☐ Channel Properties
- ☐ Graph (Dynamic)
- ☐ Table View
- ☐ Logger Status

Channel:

- ☒ 1 - IMP210993

Account	Group	Data Number	Serial No
TEST	FLOOD WARNING		203D
Last Checkin Detail	Last Alarm	Service Expiry Date	Enclosure Serial No
2016-09-23 06:16:06, 0.62Kb, 10 secs	2016-09-13 17:00:00	2016-01-07	2038

Exceeding Service Level

If the logger has been supplied with a Standard Service Level and SIM card, it will be limited to **one** check-in per day ie a Daily Checkin option (which can include more frequent checkins when in an alarm condition). If the logger is later configured to check in more than once per day, the following message will be displayed in place of data graphs when viewing the logger profile:

**Timeview is receiving data more frequently than the permitted Service Level
Please re-configure this logger with a daily check-in option**

**Alternatively, to upgrade please contact
sales@isodaq.co.uk quoting Ref: XXXX XXXX XXXX**

Map View plot thumbnails will also be replaced with a “Service Exceeded” message. In order to see the data graphs again, the logger must be returned to a single daily checkin option. This can be done locally or by queuing a reset file. (See “Other Reset Options” section)

Alternatively, the logger can be upgraded to Premium Service Level which will allow for multiple check-ins per day.

Overdue Checkins

On the main menu will be a link called “Overdue Checkins”. This menu lists the loggers on the user group which have not checked in when expected. Clicking the hyperlink in the “Serial No” column will take you to the logger profile screen where data will be displayed.

All loggers will appear in the Overdue Checkin list if they have not checked in. The time allowed before a logger is classed as ‘late’ depends on its checkin settings.

For example if a logger is set to check in daily then it will appear in the ‘Overdue Checkin’ list after 2 days of not checking in. Similarly, hourly checkins will need to be 2 hours late before appearing on the Overdue Checkin list.

Logger Configuration

Configuration options can be selected via the “Configuration” button at the upper right corner on the logger profile data plot screen. User and Intermediate level logins can view but not change the current configuration.

Similarly, loggers which are beyond their service expiry date are restricted to view access only regardless of user level.

Group: BARRY TEST, Tag: TIMEVIEW TESTER 1, Serial No: 20411E

[View Data](#)

Profile Account: TEST Enclosure Serial No: Service Expiry Date: 2017-11-18 Service Level: P Data Number:		CSV Export Settings: Account Defaults GMT Offset: 0 Location: Latitude/Longitude: ,		Configuration <input type="radio"/> Edit Logger Profile <input type="radio"/> Alarm Routing <input type="radio"/> Camera Details <input type="radio"/> Reset Logger Clock <input type="radio"/> Remove/Swap Logger <input type="radio"/> Other Reset Options
Channel or Battery Alarm Routing Alarms from Channel There is no Alarm Routing set for this logger		Set point	Go to Group	
Late Checkin Alarm Routing Late Checkin Notifications There is no Late Checkin Notification set for this logger			With Message	
		Go to Group	With Message	
Logger Properties Server Date: 2016-11-30 10:52:56 Logger Date: 2016-11-30 10:52:52				
		Daily Checkin 0600 0900		
Ch1 RAINFALL(mm):	Storage Interval 2m	Hysteresis	Alarm SetPoints 0.200 Int Period: 10M Supp Period: 1H	

Logger Configuration View Screen

The Configuration Screen has six sections:

- Edit Logger Profile
- Alarm Routing
- Camera Details
- Reset Logger Clock
- Remove/Swap Logger
- Other Reset Options

The section to be edited is selected via the right-hand Configuration menu.

Logger Profile

Group: TEST, Tag: TIMEVIEW TESTER 1, Serial No: 20411E View Data

Profile		Configuration
Account	TEST ▼	<input checked="" type="radio"/> Edit Logger Profile
Service Expiry Date	2017-11-18	<input type="radio"/> Alarm Routing
Data Number	<input type="text"/>	<input type="radio"/> Camera Details
Enclosure Serial No	<input type="text"/>	<input type="radio"/> Reset Logger Clock
	Channel Comments (optional) <input type="text"/>	<input type="radio"/> Remove/Swap Logger
Service Level	P	<input type="radio"/> Other Reset Options
GMT Offset	GMT/UTC/WET - London, Dublin, Edinburgh, Lisbon, Reykjavik, Casablanca ▼	
Location	<input type="text"/>	
Latitude	<input type="text"/>	
Longitude	<input type="text"/>	
Use Account Level CSV Export Settings?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
<small>(Field Separator: comma, Decimal Separator: full stop, Date Format: YYYY-MM-DD HH:MM:SS, Data Gap Fill: no)</small>		
<small>Logger Level CSV Export Settings - (Used only if you have selected No above)</small>		
Field Separator	Decimal Separator	Date Format
comma ▼	full stop ▼	YYYY-MM-DD HH:MM:SS ▼
Data Gap Fill	Gap Fill Value	
no ▼	-9999 ▼	
Update		

Logger Configuration Edit Profile Screen

The Logger Profile consists:

- The Account to which the logger belongs
- The service expiry date (Timeview Telemetry service for a logger is generally renewed annually)
- The SIM card data number can be entered here. This is not filled automatically and this information can be obtained from the SIM supplier.
- Field to include the logger enclosure serial number.
- GMT offset for data storage - used to plot logger data in 'local time'
- Location details - used to site the logger on the map view. The latitude and longitude should be entered directly.
- The option to use account export defaults or select a different export format for the logger.

Logger Alarm Routing

When a logger has checked in to Timeview with an alarm configuration, the user must ensure that the alarm routing has also been configured on Timeview for that particular logger otherwise no alarms will be sent to a recipient.

This option lists details of any current forwarding of alarms received from channels and setpoints on this logger and is where the user can set up new alarm forwarding routes and / or amend or delete existing routes.

For a detailed guide on how to create alarm messages and recipients, set up a logger with alarms and forward alarms on Timeview, please see the “[Alarms Configuration](#)” section in this manual.

Reset Logger Clock

Clicking on “Reset Logger Clock” resets and synchronizes the logger clock with the Timeview Telemetry system time (adjusted by any GMT offset for the logger).

Remove/Swap Logger

If a Distributer is logged in with Manager level access or above then the logger may be swapped with another logger residing in the Spare Logger List (accessible from the main menu). Alternatively the logger can simply be moved to the Spare Logger List without swapping it with another in order to take it out of service. Selecting the option from the configuration list will present the two following options:

Group: STIRLING TEST, Tag: TIMEVIEW TESTER 2, Serial No: 20422F View Data

Remove this Serial Number from Service in Account: TEST

Please Select Between Remove or Swap:

Remove Logger

It will be added to the Isodaq Technology Spare Logger List (ADMIN) Account with it's remaining available service: 2018-03-20
Please ensure you have downloaded any required data prior to proceeding with this request

Swap Logger

If you are Replacing the Logger Currently on Site then you can replace it with a Logger currently in the Spare Logger List
You will then be able to transfer the current Timeview site alarm forwarding, service level and expiry, location info etc to the logger being installed

[Cancel Request](#)

Configuration

- ☐ Edit Logger Profile
- ☐ Alarm Routing
- ☐ Camera Details
- ☐ Reset Logger Clock
- ☒ Remove/Swap Logger
- ☐ Other Reset Options

“Remove Logger” or “Swap Logger” options

Selecting “Remove Logger” will supply the user with information regarding the logger and its destination. Upon final confirmation the logger will be moved to the Spares Logger List where it can be swapped with another logger later or moved to another account belonging to that Distributer.

Group: STIRLING TEST, Tag: TIMEVIEW TESTER 2, Serial No: 20422F

[View Data](#)

You are removing the Logger currently at this site and replacing it with a logger currently in the Isodaq Technology Spare Logger List (ADMIN) Account

Remove Logger:
Enclosure Serial Number: 20422F
PCB Serial Number: 2040CE
last Checkin: 2016-12-02 09:41:26

Select Logger to be Installed from Spare Logger List (ADMIN):

Encl No	Serial No	Last Known Group	Last Known Tag	Last Checkin	Actions
20406C	2040CE	FROG2	SDI12 TEST	2016-09-30 06:55:48	Swap / Install

[Cancel Request](#)

Configuration

- ☐ Edit Logger Profile
- ☐ Alarm Routing
- ☐ Camera Details
- ☐ Reset Logger Clock
- ☐ Remove/Swap Logger
- ☐ Other Reset Options

Selecting “Swap Logger” will present the above list of available loggers in the Spares List to swap with.

If the user would like to swap the currently viewed logger with one that resides in the Spare Logger List then clicking the “Swap Logger” button will present them with a list of available loggers to swap with from the Spare Loggers List. As demonstrated in the picture above, once the desired logger has been located, clicking the “Swap / Install” link will take the user to a final overview of the transaction along with advisories and warnings where applicable. Once satisfied, clicking “Swap Loggers” will process the exchange.

The Logger you are installing has not been configured with the same group and/or tag as the logger being removed
Please ensure you have downloaded any required data prior to proceeding with this request

Group: STIRLING TEST, Tag: TIMEVIEW TESTER 2, Serial No: 20422F

You are removing the Logger currently at this site and replacing it with a logger currently in the Isodaq Technology Spare Logger List (ADMIN) Account

Remove Logger:
Account: TEST
Enclosure Serial Number: 20422F
PCB Serial Number: 2040CE
last Checkin: 2016-12-02 09:41:26
Group: STIRLING TEST
Tag: TIMEVIEW TESTER 2
Service Expiry Date: 2018-03-20

Install Logger:
Account: ADMIN
Enclosure Serial Number: 20406C
PCB Serial Number: 2040CE
last Checkin: 2016-09-30 06:55:48
Group: FROG2
Tag: SDI12 TEST
Service Expiry Date: 2017-09-29

The Current Profile Setup will be transferred to the Logger being installed
Do you wish to include any data received in the ADMIN Account since the last time the logger you are installing was reset? ☒ No ☐ Yes

[Swap Loggers](#) [Cancel Request](#)

Configuration

- ☐ Edit Logger Profile
- ☐ Alarm Routing
- ☐ Camera Details
- ☐ Reset Logger Clock
- ☐ Remove/Swap Logger
- ☐ Other Reset Options

Final summary before swapping loggers.

When swapping loggers via this method, the new logger coming out of the Spare Logger List will inherit the following details from the current live logger:

- Sim Data Number

- Service Expiry Date
- Service Level
- Lat, Lon details
- Camera details (including service and expiry)

Please Note: If alarms from the logger being removed were being forwarded to groups of recipients then these routes will now be associated with the new logger being installed. If the logger being installed does not have the same configuration as the one removed then these alarm routes may have to be updated (via the Logger Profile / Configuration / Alarm Routing screen).

It is advised that upon swapping loggers, the user should check the configuration and alarms of the logger and then trigger a dial out to ensure data can be received before visiting or leaving site.

Resetting the Logger Remotely

'Reset' files can be created to be actioned the next time a logger checks into the system. A reset request can only be queued if data from the logger is received on the system from the logger directly. If data for a logger is received onto Timeview Telemetry via an RSS Feed then a reset cannot be queued as direct contact with the logger is not available.

Other Reset Options

Group: STIRLING TEST, Tag: TIMEVIEW TESTER 2, Serial No: 20422F
View Data

Profile Account: TEST Enclosure Serial No: Service Expiry Date: 2018-03-20 Service Level: P Data Number:				CSV Export Settings: Account Defaults GMT Offset: 0 Location: Somewhere Latitude/Longitude: 50.036457,-1.426000			
Channel or Battery Alarm Routing							
Alarms from Channel There is no Alarm Routing set for this logger		Set point	Go to Group		With Message		
Late Checkin Alarm Routing Late Checkin Notifications There is no Late Checkin Notification set for this logger							
Logger Properties Server Date: 2016-12-02 09:41:26 Logger Date: 2016-12-02 09:41:22		Daily Checkin 0600 0900					
Ch1 RAINFALL(mm):	Storage Interval 2m	Hysteresis	Alarm SetPoints				

Configuration
☐ Edit Logger Profile
☐ Alarm Routing
☐ Camera Details
☐ Reset Logger Clock
☐ Remove/Swap Logger
☒ Other Reset Options
☐ Alarm SetPoints
☐ Level Offset
☐ Logger Group/Tag
☐ Full (via Harvest)

Logger Configuration Reset Options

Clicking on this button will expand the menu (as shown above) and will present the following options. Clicking on one of these options will display the relevant information on the main section of the screen.

- **Alarm Setpoints** - If there are Alarm Setpoints active on the logger, the user will be able to edit the displayed values and then select “Queue Reset”. When this is done, a reset file will be generated the next time the logger checks in and the changes will be applied.
Note: *New* setpoints/hysteresis cannot be set up using this option.
- **Level Offset** - This option allows the user to request an offset to be added to future recorded values. This is only available for loggers that are configured to record Voltage or SDI-12 levels
- **Logger Group/Tag** - This option allows the user to queue a reset that will alter the Group and Tag of the currently selected logger. When this option is selected, a step-by-step guide will also present the user with the option of clearing the logger’s alarm history. This can be useful when moving a data logger from one site to another within the same Account.
- **Full (via Harvest)** - This option allows the user to upload an XDQ file that they have configured using Harvest Software. The user will also be presented with the option to download the latest data file for the selected logger to ensure they are configuring the most recent version. Once the newly configured data file has been uploaded, a reset file will be generated to apply the changes when the logger next checks in.

Map View

Map view allows the user to view the location of Loggers within their user group through an integrated Google Maps interface.

As mentioned above, when editing the Logger Profile the user can enter a location by entering coordinates. Locations of loggers are displayed as “Map Pins” in the traditional Google Maps fashion. The user can hover the mouse pointer over these map pins to view a thumbnail of the logger.

Note: If the service on the logger has expired, the plot thumbnail will be replaced with a “Service Expired” message.

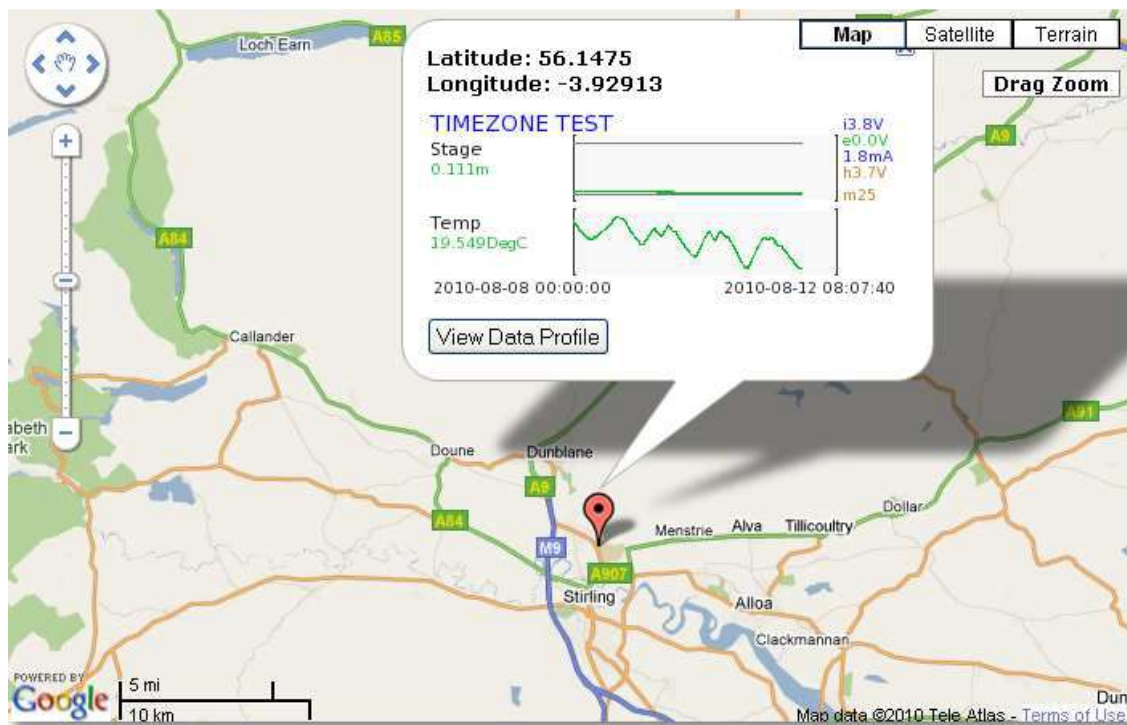
Additionally, a list of all loggers on the user account will be displayed as a list on the right side of the map. Loggers will be listed by their Group and Tag names and clicking on the Group/Tag from the list will center the map on that logger and display the thumbnail preview of its data.

Clicking on the “View Data Profile” button on the thumbnail will take the user to the more detailed version of thumb plot as explained above. Map pins will appear in blue unless the logger is in an alarm state in which the map pin will show as red.

When a logger is no longer in an alarm state, it will return back to a blue map pin.

Note: This feature does not apply for rainfall or status input type alarms as it is not possible to detect when these modes are in an alarm state. As such, the map pin will remain blue when rainfall or status input types enter the alarm state.

TEST



Logger locations using Map View (Google Maps)

Google Maps can be navigated using the Navigation keys and zoom buttons or by ‘clicking and dragging’ the map with the mouse pointer. The user can also select different map display types by choosing one of the options from the top right of the screen.

Weather Reports

If a British latitude/longitude is entered in the logger profile, a weather icon will appear in the List Latest and List Stations views. Highlighting the icon will display a forecast for that area. In map view, the forecast can be found in the 'Weather' tab next to the 'Data' and 'Camera' tabs (if applicable) in the thumbnail window.

Clicking on the weather graph will link the user to www.netweather.tv Weather reports will not show for coordinates outside of Britain.

Alarms configuration

Alarms from Isodaq telemetry loggers can be forwarded via email or SMS message to multiple recipients.

Groups and Recipients

Groups of recipients for an account are set up via the "Groups and Recipients" menu option by Manager or Administrator level users. Selecting "Groups and Recipients" from the left-hand menu will present the user with the Message Group management list as shown below.

Message Groups - TEST [Back](#)

Account	Group Name	Actions
TEST	Test Group	Edit Delete Recipients
TEST	2nd List	Edit Delete Recipients

- [Add a New Message Group](#)

Groups and Recipients list

A destination group for alarm notifications should be configured initially. Selecting "Add a New Message Group" will allow the user to select the account that the group will belong to and a name for the group.

Add a New Message Group

Account

TEST

Group Name

Test Group

Add Destination Group

Cancel

Setting up a new messaging group

When a Group has been set up, recipients can be added to it. Select “Recipients” from the “Action” column for the chosen Group. Any recipients in this group already will be displayed. Select “Add a New Recipient to this Group”. As shown below, the user can now enter a name for this recipient and either their email address or telephone number depending on whether the Email or SMS button is selected.

Account	TEST
Message Group	Example Group

Message Group Recipients [Back](#)

Id	Name	Msg Type	Address	Actions
----	------	----------	---------	---------

- [Add a New Recipient to this Group](#)

Adding new recipients to the messaging group

Add a New Message Recipient

Account

TEST

Name

Destination Group

Example Group

Message Type

☐ EMAIL ☒ SMS

Email/Telephone

Add Recipient

Cancel

Enter the message type and contact details

Once the fields have been filled in, selecting ”Add Recipient” will save the settings and return the user to the Groups and Recipients page.

Message Contents

Once a message group and recipients have been created, users should create messages which can be sent to a message group within an account when an alarm is triggered. The process for this is much like setting up message groups themselves. Again, this can only be performed by Manager or Administrator user levels. Clicking on "Message Contents" on the main menu to the left will present the user with the following page.

Alarm Message Content - TEST Account [Back](#)

Text	Actions
1st level Temp	Edit Delete
High Water	Edit Delete
Very High Water	Edit Delete

- [Add New Alarm Message Content](#)

The message contents setup page

Here the user can add, edit or delete messages to be sent to message groups. Click "Add New Alarm Message Content" to create a new message as shown below.

Add New Message Content

Account

TEST

Message

Test Message

Add Message Text

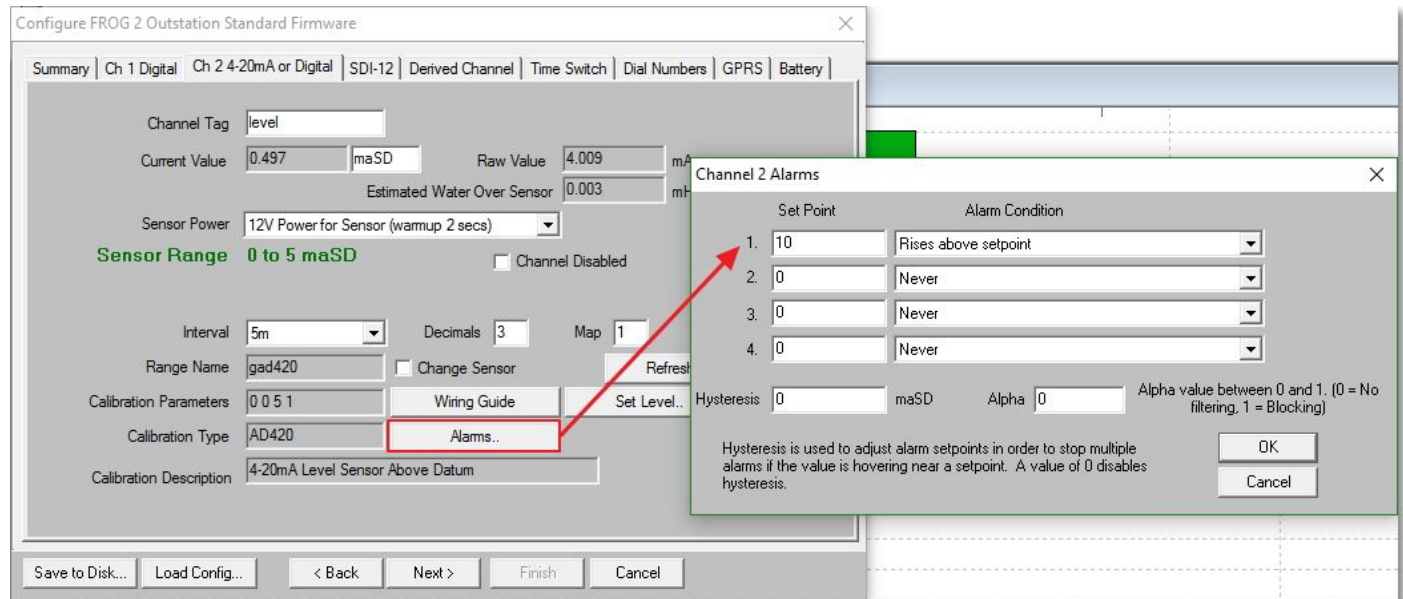
Cancel

The New Message setup page

Once the user is on the Add New Message page, they can select which Account the message will belong to and then the message that will be sent. Once these fields have been filled, selecting "Add Message Text" will save the message and return the user to the Message Contents page where they can add more messages if required.

Setting up an Alarm on a Logger

In order to successfully forward alarms, the logger in question must also be configured with alarms. Below is a simple example on how to set up a basic alarm:



An example of a basic 4-20mA alarm using a FrogR2



First the logger must be read using Harvest Software. Once a data plot as been produced, right click on the graph and select “Configure”. This will allow you to edit the parameters of the data Logger. Navigate to the channel belonging to the sensor that will issue the alarms. In the above example, a 4-20mA sensor is being used in Channel 2. When in the sensor tab, clicking on the “Alarms...” button will summon a new window where the alarm conditions may be set. In this example, we are telling the logger to produce an alarm once the sensor measures a value over 10maSD.

When satisfied with the alarm settings, click “OK” and proceed to confirm the changes you have made by clicking “next” on each prompt until the configuration is complete.



When finished, trigger a dial out so that Timeview receives the new configuration for the logger with the alarms set.

Alarm Routing

Group: TEST, Tag: TIMEVIEW TESTER 1, Serial No: 20411E View Data

Channel or Battery Alarm Routing				Test	Add/Del
Channel	SetPoint	Group	Message		
1	1	Test Group	THIS IS A TEST MESSAGE		
Select ▼	Select ▼	Select ▼	Select ▼		

[Late Checkin Alarm Routing](#)

Late Checkin Notifications		Test	Add/Del
Group	Message		
Select ▼	Select ▼		

Logger Properties

Server Date: 2016-11-30 10:52:56
Logger Date: 2016-11-30 10:52:52

Daily Checkin 0600 0900

Ch1 RAINFALL(mm):	Storage Interval	Hysteresis	Alarm SetPoints
	2m		0.200 Int Period: 10M Supp Period: 1H

Configuration

- ☐ Edit Logger Profile
- ☒ Alarm Routing
- ☐ Camera Details
- ☐ Reset Logger Clock
- ☐ Remove/Swap Logger
- ☐ Other Reset Options

Logger Configuration Edit Alarm Routing Screen

Alarms are received from individual logger channels. Each channel can have up to four setpoints configured (via Harvest software).

“System” alarms can also be configured to provide alerts on low battery conditions. Alarms from each channel/setpoint combination can be routed to the recipients of different Alarm Groups. Several combinations are possible, eg setpoint 1 for all channels, all setpoints for a channel or indeed all channels/setpoints on the logger.

Routes are added by selecting the channel and setpoint in question, the Group to which their alarms should be sent and the message you wish to send (See above). Clicking the green coloured plus sign will add this route to the list. Any routing currently configured will be listed.

Individual routes can be deleted by selecting the red coloured cross listed beside the route. When an alarm is routed and appears on the list, the user may send a test message out to that alarm group by clicking on the blue “Test” arrow. This will send the selected message to the message group.

Note: Sending a test message will consume 1 Credit for each text message included in the test. Routes can only be selected for channels and setpoints held in the current logger setup (these are listed in the Logger Properties section, see below).

Similarly, they can only be forwarded to currently configured Alarm “Groups and Recipients”. If there are ‘Groups and Recipients’ for the user account but the logger has no channels or setpoints configured, then the following message will be displayed:

- “There are no Alarm Setpoints active for this logger. They can be added by queuing a full reset via Harvest”

Alternatively, if there are no ‘Groups and Recipients’ for the user account but the logger has fully configured channels or setpoints, then the following message will be displayed:

- “There are no Alarm Groups and/or Recipients active for this Account. They can be setup via the Alarm Configuration menu option.”

Group: STIRLING TEST, Tag: TIMEVIEW TESTER 2, Serial No: 20422F

[View Data](#)

Channel or Battery Alarm Routing					
Channel	SetPoint	Group	Message	Test	Add/Del
There are no Alarm Setpoints active for this Logger They can be added by queuing a full reset via Harvest.					
Late Checkin Alarm Routing					
Late Checkin Notifications		Group	Message	Test	Add/Del
		Select ▼	Select ▼		
Logger Properties					
Server Date: 2016-12-02 09:41:26			Daily Checkin 0600 0900		
Logger Date: 2016-12-02 09:41:22					
Ch1 RAINFALL(mm):		Storage Interval 2m	Hysteresis	Alarm SetPoints	

☐ Edit Logger Profile
☒ Alarm Routing
☐ Camera Details
☐ Reset Logger Clock
☐ Remove/Swap Logger
☐ Other Reset Options

In this case, a group and recipient(s) should be created and then selected from the “Group” drop down menu when an alarm is being routed. Only ‘Managers’ and ‘Administrators’ can add new message groups and recipients. If there are ‘Groups and Recipients’ as well as channels or setpoints chosen but no message selected then the alarm routing will still be set up. However when a message is sent it will include the data gathered by the logger in relation to the alarm rather than displaying a predefined message.

Alarm Recipient list

Alarm recipient and delivery status details are displayed by selecting to 'View' a particular alarm via the Latest Alarms list on the main page or via the Alarms list in the View/Alarms page.

Alarm

Serial No	Group	Tag	Alarm Detail	Alarm Time	Alarm Received
123456	FROG	TEST	Chan2: 23.762DegC Return to Normal	2016-11-30 19:34:00	2016-11-30 19:35:16

Message Type	Message	Recipient	Delivery Status	Credits
EMAIL	FROG SDI12 CMD TEST Chan2: 23.762DegC Return to Normal Alarm Setpoint: 1, 23.8 Current Value: 23.7622 DegC Alarm Time: 2016-11-30 19:34:00 Alarm Received: 2016-11-30 19:35:16 Serial number: 123456 Channel: 2 Chan Tag: Temp Battery: 3.83462 0	example@email.com		0
SMS	2016-11-30 19:34:00 FROG SDI12 CMD TEST Chan2: 23.762DegC Return to Normal	07712 123456		1
EMAIL	FROG SDI12 CMD TEST Chan2: 23.762DegC Return to Normal Alarm Setpoint: 1, 23.8 Current Value: 23.7622 DegC Received: 2016-11-30 19:34:00 Alarm Time: 2016-11-30 19:34:00 Alarm Received: 2016-11-30 19:35:16 Serial number: 123456 Channel: 2 Chan Tag: Temp Battery: 3.83462 0	example@email.com		0

Alarm recipient and delivery status details

If alarm recipients have been set up for that particular logger then a list like the above will be displayed. If no alarm recipients have been set up then the list will be blank.

Email Alarms

Alarm notifications can be forwarded via email to configured recipients and will not reduce the number of available alarm credits.

Email messages consist:

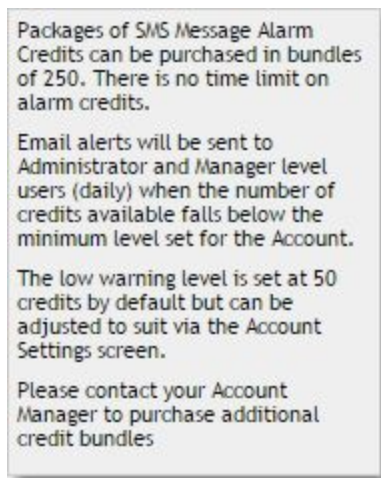
- Group/Tag of the logger the alarm was received from
- The date/time of the alarm
- A user configured 'message' (see above)
- Logger Serial Number, Channel and Setpoint the alarm was received from
- Current recorded value (Not Applicable for Rainfall alarms)
- Current battery voltage

SMS Alarms

Packages of 250 SMS Message Alarms can be purchased for each account. There is no time limit for these. Email alerts are sent to Administrator and Manager level users when the remaining credit level falls below the 'Low Credit Warning Level' for the Account. This level is 50 by default but can be changed to suit via the Account Settings screen.

To purchase credit blocks contact sales@isodaq.co.uk.

When a user is in the "List Latest" menu, a small "?" symbol in the upper right corner will display info on purchasing credit blocks.



Info box on purchasing Credit Blocks.

SMS messages consist:

- The date/time of the alarm
- Group/Tag of the logger the alarm was received from
- A user configured 'message' (see above)

Global SMS delivery is provided by internet SMS gateway www.intellisms.co.uk.

Each forwarded SMS message will reduce the number of available credits for an account by one.

Published service level for message delivery to mobile network is:

- 99.7% of the time, messages will be submitted to mobile network in less than 10 secs
- 99.9% of the time, messages will be submitted to mobile network in less than 20 mins

Once messages have been submitted to the mobile network they may be subject to additional delays, as experienced by normal SMS peer-to-peer.

Note: Alarm messages will only be sent if the logger has been set up correctly with the appropriate Messages/Groups via Alarm Routing in the Logger Configuration menu. (See "Logger Alarm Routing" section)




Third Party Data Transfer

In addition to Timeview Telemetry data download options, data can be transferred automatically via NET::FTP to a third party host.

Note: Data is transferred from ALL loggers in the Account.

The data can be transferred in XDQ, XDQA or CSV format. It is also possible to have images from any cameras in the Account transferred to a third party.

Account Administrators can configure third party transfers via the "Account Settings" menu. Once the transfer details have been added, they can be activated by contacting sales@isodaq.co.uk

Export Host Details								Edit
Host Address	Port	Username	Password	Format	Transfer	Service Expiry Date	Update Add/Del	<input type="radio"/> Account Settings <input checked="" type="radio"/> Export Host Details
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	CSV ▼	Yes ▼	December ▼ - 2 ▼ - 2016 ▼		
<hr/>								
Transfer to TimeviewDbi								
Live Server		Backup Server		Service Expiry Date				
Username	Password	Username	Password	December ▼ - 2 ▼ - 2016 ▼				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>					
<hr/>								
Transfer to Floodview								
Live Server		Backup Server		Service Expiry Date				
Username	Password	Username	Password	December ▼ - 2 ▼ - 2016 ▼				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>					

In order to set up third party data transfer, the user must enter the IP address, username and password for the remote host. The user must then choose the file type that they wish the data to be exported in (CSV, XDQ, XDQA or Camera Image).

Once the fields have been filled, clicking the green “+” symbol will add it to the list of Export Hosts. To finalize a new third party export host, please contact:

sales@isodaq.co.uk

When a third party transfer has been successfully activated, the “Transfer” field will change from “No” to “Yes” and a service expiry date will also be displayed to show when the third party data transfer will end unless the service is renewed (via the sales team) or cancelled by an Administrator.

A third party transfer may be cancelled by an Administrator by clicking the red “X” to the right of the appropriate export host.

TimeviewDBi Database

TimeView DBi is the long term database extension to TimeView, allowing the time series data to be held, viewed, and downloaded indefinitely. Access to TimeView DBi is normally via TimeView itself. There is an entry in the menu on the left hand side of the main TimeView page.

View
Accounts
List Latest
Map View
Alarms
List Stations
Timeview DBi

- Data arriving in TimeView are automatically and seamlessly transferred to TimeView DBi.
- User levels of access in TimeView DBi are very similar to those in TimeView.
- There is an initial licence and setup charge, and then an annual fee for hosting, supporting and maintaining TimeView DBi over a standard contract period.
- To see more please click on the TimeView DBi link in the menu and then read the TimeView DBi User Guide.
- If you have not commissioned TimeView DBi for a particular account, then the demonstration version is opened, showing a small network managed by Isodaq Technology, and the user is given Intermediate Level access mode.

Account, Logger and Camera Expiry

If the overall Account or individual Loggers/Cameras have expired or are approaching expiry then a message will be displayed to advise the user to contact sales@isodaq.co.uk or their Distributor.

Loggers that have expired will only show the tag and will no longer display data. Their service will need to be renewed before they can be accessed again. Similarly, cameras that have expired will show a “Camera Service Expired” message and will not display images from that camera until the service is renewed.

Timeview Telemetry sends Renewal Reminder emails to the Account ‘Billing Contact’ address within 60, 30 and 15 days of service expiry dates listing the items approaching expiry and the cost to renew. In addition, if service has not been renewed prior to expiry a reminder email is sent advising access has been suspended. (Note: service can still be renewed at this point, though it should be noted there may be an additional administration fee to reactivate an already expired access).

Timeview Telemetry Performance

Incoming GPRS call limitation

The only limit on the maximum number of simultaneous GPRS connections from loggers is determined by the way that the Linux OS is configured. On most Linux machines the default maximum number of TCP connections per process is 1024.

You can determine what this maximum value is using the command 'ulimit -n'. This limit can usually be increased easily by modifying the OS settings.

This typical limit of 1024 is a much higher limit than the number of GSM/PSTN modems fitted on typical telemetry servers, and GPRS calls typically connect more quickly, so the simultaneous TCP connection limit is not a serious practical restriction.

Dual system operation

Isodaq telemetry loggers using GPRS can be configured to check-in to a second IP address if the call to the first one fails.

TT is designed for dual operation.

Normally two identical systems run together, each with a different IP address for the loggers and web address for the user interface.

Multiple systems can be synchronized: Data from loggers that is received directly (via modem or GPRS) is made available over an RSS feed that is read by other TT systems.

Other TT systems receive data over the RSS feed in the same way as they do directly, except that alarms are not generated and reconfiguration is not supported.

In this way, if one TVA system is stopped, the second will be up to date and able to take-over data reception and alarm forwarding.

Backup

The primary TT is briefly stopped once per day so that a backup image can be made. The system is then re-started, and the backup image is copied to secure storage. During the backup stop, loggers should be able to check-in to the secondary TT. Loggers should be configured to check-in to the secondary TT with their second dial number.

Resilience and performance improvement

Virtual machines can run on a wide variety of host hardware and software platforms. Restoring TT after hardware failure is as simple as copying the image from a backup to a new VMware host and routing the GPRS reception and user interface to this host. In the same way, it is easy to move the TT virtual machine to a more powerful host and expand memory and disk space.

Telemetry introduction

This section summarizes the telemetry methods used, and how telemetry is configured.

Telemetry protocols

The *telemetry protocol* specifies the exact message format used to transfer data from telemetry loggers. It's not sufficient to specify "GPRS", since this does not state the message format. Telemetry protocols require two-way communications, and are designed so that error-free data delivery is guaranteed.

The Isodaq Telemetry Logger supports two telemetry protocols: A modbus ASCII scheme for transfer of alarms, time series data and configuration, and DNP3, a powerful industry-standard SCADA protocol. These protocols are used to communicate with the following telemetry servers:

Telemetry server	Protocol	Notes
Isodaq Harvest	Modbus	1
Isodaq Timeview	Modbus	2
Isodaq Timeview Virtual Appliance (TVA)	Modbus	5
Isodaq FEP6	Modbus	
Isodaq IdqTel	Modbus	
Serck SCX	DNP3	3 , 4
CSE Servelec Scope-X	DNP3	3 , 4
Kisters SODA	Modbus	3

Notes

1. Suitable for manual dialling only. Necessary for logger configuration.
Not suitable for receiving alarm calls.
2. Simple web-based collection; no software needed for browsing data at the client.
3. Driver and version upgrades may be required from your SCADA supplier to enable DNP3 support.
4. The DNP3 Device Profile Document for the Isodaq Telemetry Logger is available from your Isodaq supplier. A firmware upgrade may be required to support DNP3, but this can be installed remotely over GSM or locally via Harvest without removing the logger from site. Please specify you require DNP3 when you order your loggers by adding the -DNP3 option to the order code.
5. The Timeview Virtual Appliance (TVA) provides the functionality and exibility of Timeview, which is the core of Isodaq alarm and data forwarding systems. Essentially it is a GPRS-only FEP with no hardware. TVA is only suitable for GPRS applications, since there are no modems supplied with it. TVA runs under any MS or other operating system that supports VMware Virtualization Products. TVA can also run under native VMware infrastructure products.

Telemetry physical layer

Isodaq Telemetry Loggers can use the same protocol over several different *physical layers*. The physical layer and the protocol are independent.

	Hawk XT	Hawk RT	Frog RX
GPRS	•	•	•
GSM (CSD)	•	•	•
PSTN	•		

Receiving data via GPRS

GPRS data collection uses no modem at the receiving end. Data comes in directly over the internet - the Isodaq Telemetry Logger “dials out” to a URL (a web address).

Setting up a web address to receive GPRS calls requires IT expertise, and depends on the network configuration at the organization hosting the data collector.

Unless *fixed IP SIMS* are used, only check-in mode (logger originated calls – see below) is supported for GPRS. Loggers can still be polled via Harvest and a modem if the CSD data number of the SIM is known.

Polling or check-in

There are two methods of retrieving data from telemetry loggers:

- Polling, where the data collector originates calls to outstations
- Check-in, where the outstation originates calls to the data collector

Polling has advantages where the logger must be contacted by the data collector on demand.

Check-in has advantages of lower power consumption, and of daily test of potentially critical alarm calls.

Isodaq Telemetry Loggers support both methods, although check-in is generally preferred for reasons outlined in the following sections.

Modem power management

GSM/GPRS modems use significant power when they are left switched on so the logger can receive calls. Power is mainly consumed by the radio receiver, and is higher in weak signal areas.

For extended battery life, the modem should be switched off for most of the time. Time-switching is one way of doing this, where the outstation can be contacted during several 'windows' of time where the modem is powered. However, this still means that the modem can be on for hours each day, waiting for calls.

It can be difficult to contact an entire network of outstations during the time-switch window, leading to a complex system of different windows for different parts of the network.

For good battery life, we recommend the modem is left on for at most 15m per day.

If you leave the modem on for hours per day, you will have significantly reduced battery life.

Note that the Frog RX uses a GSM modem with a special low power mode which greatly extends the battery life when the modem is on.

Time switching

Time switch times must be specified in the format HHMM (eg 2210 for 10:20 pm). Specify them in normal time, not daylight saving time, so you may need to subtract an hour if you are configuring the outstations in the summer. Notes on modem time switching:

- If the remote system loses power, the ON and OFF times will be incorrect and you will not know when the remote modem is switched on. The error will not be the same as the duration of the power failure. It can only be corrected by reconfiguring the time-switch settings, which may be difficult if the site is remote and modem is off!
- The modem will switch on and remain on for 10 minutes after a Frog RX is powered up, after an alarm, or after it is dialled for a (polled) data collection. You can force the modem to switch off after one of these events with a ModemOff command from Harvest either locally or remotely.

Check-in calls

To avoid the problems with time-switched polling, the Frog RX can be programmed to ‘check-in’ every day, automatically switching on the modem, dialling out, waiting for the call to be answered, then powering down the modem.

This method allows the modem to be powered for the shortest possible time. The check-in call is virtually identical to an alarm call, except that the message does not contain an alarm trigger. This is an important feature for enhanced reliability - it is a daily self-test of behaviour that becomes critical in alarm conditions.

You do not get this with systems that rely on polling for data collection. Outstations will attempt to check-in at a random times between the two specified check-in times.

For a small network of outstations, the check-in times can be reasonably close together, say 30m apart. Larger networks can allow all day to check-in, with times of 0030 to 2330 specified.

If either check-in time is set to 0000, the check-in feature will not operate.

Note times must be specified in *normal time*, not daylight saving time, so you may need to subtract an hour if you are configuring them in the summer.

Daily check-in can be used along with time switching. A short time-switch period can be set after the latest check-in time in case the outstation needs to be contacted for reconfiguration, or in case the check-in was unsuccessful.

Note: If the logger has been supplied and configured with a “Standard” service level SIM card, the user should only select a daily check in option. Attempting to have the logger check in more than this will result in the following message being displayed instead of the logger graphs when viewing data:

**Timeview is receiving data more frequently than the permitted Service Level
Please re-configure this logger with a daily check-in option**

**Alternatively, to upgrade please contact
sales@isodaq.co.uk quoting Ref: XXXX XXXX XXXX**

Dial outs

The Frog RX must be set to dial specified numbers on alarms and check-in events.

The Frog RX uses a dual-master dialler that supports check-in calls and alarms to up to two data collection (master) systems.

Only use Dial Numbers 1 and 2 if you are checking in to a single data collection system.

The dial-out sequence is as follows:

1. The modem is powered-up (or power-cycled if it was already on). This is shown by a series of rapid blue flashes on the status LEDs.
2. After power up, the modem is given 2m to get at GSM signal. The modem is polled every 10s to see if there is a signal and that it is registered with the network. As soon as both conditions are satisfied, the *dial-out* procedure (see below) is triggered.
If no signal is obtained after 2m, the modem is power-cycled and there is a further 2m wait. This procedure is repeated 3 times in total. If there is no signal after the 3 cycles, the system waits 30m before trying the same procedure again. The 30m wait procedure is repeated 3 times in total.
3. During the dial-out procedure, one of the stored dial-numbers is sent to the modem, prefixed by an ATD command. The call is given 2m to be answered.
Once the call is answered, the master system issues commands to stop subsequent dial-outs to the current number pair. If there is no answer, the modem is power-cycled and the system repeats the previous signal-waiting procedure.
Each number is tried 3 times in total. Up to 2 numbers can be specified for each master. When each number has been tried 3 times, the system waits for 30m, then the entire procedure is repeated.

The dial numbers (1–4) are tried in the the following sequence:

Master no 1		Master no 2	
1 1 1 2 2 2	→	3 3 3 4 4 4	30m break
			←
1 1 1 2 2 2	→	3 3 3 4 4 4	30m break
			←
1 1 1 2 2 2	→	3 3 3 4 4 4	

If an alarm, check-in or dial-out command occurs during the 30m break, the sleep ends and the dialler restarts as fresh. If they occur when the dialler is active, waiting for signal or waiting to be answered, they do not cause a dialler re-start.

This is so that multiple alarms that occur rapidly do not disrupt the dialler timing. If you are only dialling one master, use either numbers 1 and 2 or numbers 3 and 4, but not all four or you will get duplicate calls for each alarm or check-in.

Logger configuration for Timeview

Important: Do this before you go to site. Everything should be tested and working before you leave for site.

1. Read the logger with Harvest, right-click on the plot that appears and select Configure.
2. Select the Dial Numbers tab. For field 1, enter **tva.webhop.org**, and in field 2, enter **tva2.webhop.org**. These are two distinct servers in geographically separate locations - data can go to either, although the first site has priority.



Dial Numbers for Timeview

3. Select the Time Switch tab. Configure a *check-in time* of typically between 0600 and 0800 hours as shown. Also, configure a time switch window between 1000 and 1005, as shown.

h 1 Digital | Ch 2 4-20mA | SDI-12 | Derived Channel | Time Switch | Dial

On 1000 Off 1005
 On 0000 Off 0000
 On 0000 Off 0000 (UTC)
 On 0000 Off 0000

Check-In
 From 0600 (UTC)
 To 0800

24 hr times for modem switch-on and off and check-in time window. Enter 0000 to disable timeswitch/check-in features. Times should NOT include daylight savings adjustments and need to be specified in UTC.

Timeswitch tab

4. Select the GPRS tab. The APN, Username and Password must suit the SIM you have in the logger. You can use the *Get GPRS Settings* check box to help find these. Set the Server Port to **8443**. Select Daily Check-in.

Ch 1 Digital | Ch 2 4-20mA | SDI-12 | Derived Channel | Time Switch | Dial Numbers | GPRS | Ba

APN stream.co.uk
 Username streamip
 Password streamip
 GPRS Data Usage 0.3063 MB

Check-in to Server Daily Check-in (Check-in Window must be set)

Server Port 8443

☐ Get GPRS Settings for your mobile network operator and country

GPRS parameters need to be entered according to mobile operator settings. SIM card must be GPRS enabled(for the Internet) - this often involves phoning the mobile operator Customer Services to enable it.

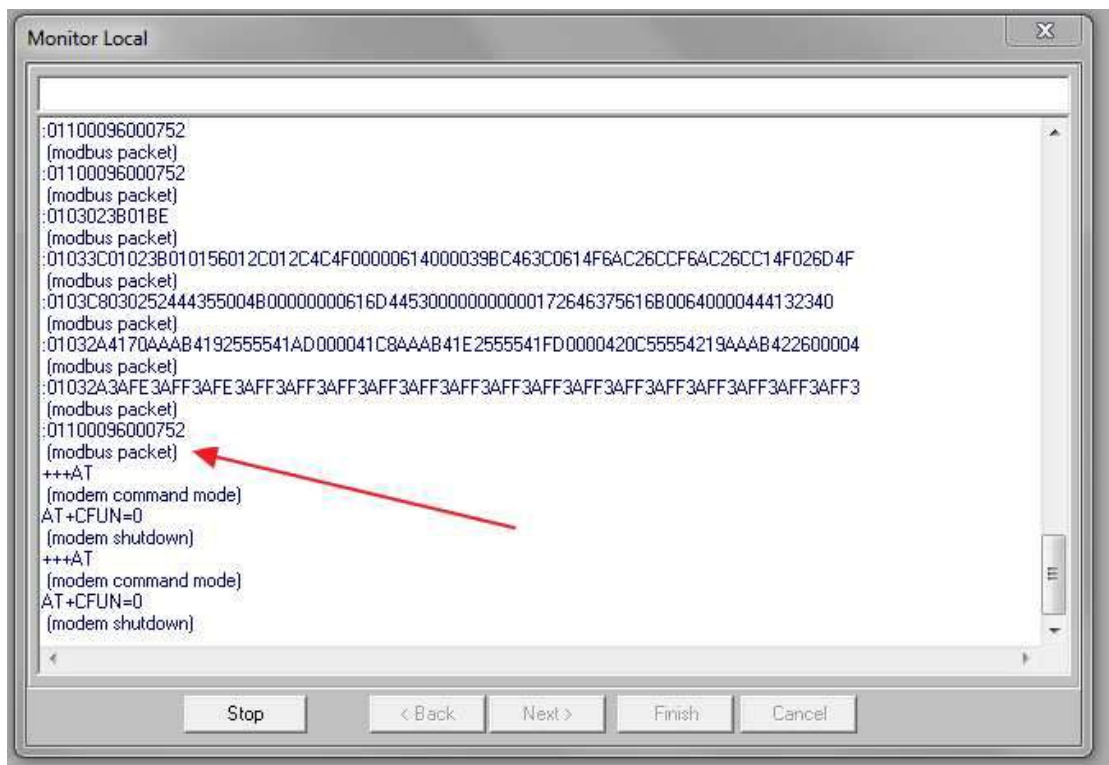
GPRS tab

5. Now press Next, and follow the rest of the steps to write this configuration to the logger.
6. Test the configuration by using Harvest/Send Command to Logger/Trigger Dial-out to Master Station

Ensure the you set the option:

“Monitor Comms After Command is Sent”

Watch the Monitor Local window. If all is well, you should see lines labelled “modbus packet” which are being sent to Timeview.



Monitor comms window after a successful transfer

If, after a few minutes, you don't see any modbus packets, highlight, copy and paste the contents of the Monitor Local window to an email and send it to

support@isodaq.co.uk

We may be able suggest solutions to the problem once we see the log.