## Contents

1 Preface .................................................. 3

1.1 Before You Begin .................................. 3

1.2 Important Notice .................................. 3

1.3 Copyright and Trademarks .......................... 4

2 Introduction to C.A.T Manager Online ........... 5

2.1 About C.A.T Manager Online .................... 5

2.2 System Requirements .............................. 5

2.2.1. Updating your gC.A.T4 locator’s software 5

2.3 Android compatibility ............................. 6

2.4 iOS compatibility .................................. 6

3 Radiodetection Portal account ..................... 7

3.1 Accessing your Radiodetection Portal Account ........................................ 7

3.1.1. Sign in ........................................... 7

3.2 Portal Home Page .................................. 8

3.3 C.A.T Manager Subscriptions .................... 9

3.3.1. Features ........................................ 10

3.3.2. Accessing Subscription information 11

3.4 Create a C.A.T Operator .......................... 11

3.5 Monitoring C.A.T Manager Online Mobile status 16

3.6 Unlocking an account / Forgot Password ........................................ 17

3.7 Reset a C.A.T Operator password / unlock or deactivate an account ........... 19

4 C.A.T Manager Online Dashboard ............... 20

4.1 Dashboard ............................................. 20

4.2 C.A.T Operators Usage Overview ............ 23

4.2.1. Tools, options and filters ................. 24

4.2.2. Summary window .............................. 25

4.2.3. Overview Table ............................... 26

4.2.4. Using the Usage Overview screen .... 27

4.2.5. Mode usage scoring feedback .......... 27

4.2.6. Genny signal scoring feedback ....... 28

4.2.7. Using the C.A.T Dashboard Usage overview screen - Example .................. 28

4.3 C.A.T Scans Overview Screen ............... 30

4.3.1. Overview Table ................................ 31

4.3.2. Using the Scans Overview screen .. 33

4.4 Managing surveys ................................. 38

4.4.1. Automatic Survey grouping ............... 39

4.4.2. Manual Survey creation .................... 39

4.4.3. Editing surveys ............................... 39

4.5 Creating a survey report ....................... 40

4.5.1. Survey report structure ...................... 41

4.5.2. Exporting scans data ........................ 43

4.5.3. CSV Data Structure ........................ 43

4.6 Upload C.A.T usage data ....................... 46

4.7 Export Usage Data ................................. 49
1 Preface

1.1 Before You Begin

Please read this user manual before accessing or using the Radiodetection Portal.

Where appropriate, sections or paragraphs will start with an indication of the company’s users and C.A.T Manager subscription level access rights.

Main user
Administrators
Managers/Supervisors
C.A.T operators

C.A.T Manager subscription levels

For further information about company users and subscription levels read section 3.

Scans and surveys scoring feedback provided by the C.A.T Manager online system is intended to be used for reference only. It cannot be used as an indication of the true performance of the operators and the quality of their surveys. You should always analyse all scans details and keep in consideration the type of survey being carried out and the nature of the location.

Google’s Chrome is the only fully supported web browser, other browser will be added soon.

Note that this manual and all its contents are subject to change. Radiodetection products are under continuous development. Radiodetection Ltd reserves the right to modify the product without notice and some product changes may have taken place after this user manual was published.

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2 Introduction to C.A.T Manager Online

2.1 About C.A.T Manager Online

The CAT Manager Online system is an internet based remote management tool that enables near real-time usage monitoring of gC.A.T4 and Genny4 fleets, helping to drive best practice.

2.2 System Requirements

To take fully advantage of the C.A.T Manager online system the following components are required:

- gC.A.T4 locator updated to the latest software
- Genny4 transmitter
- A compatible Android or Apple device with C.A.T Manager online app installed and a live data connection
- PC or other computing devices with a live internet connection and with the Chrome internet browser installed
- USB 2.0, or higher standard, A-Male to Mini-B, mini to USB link cable
- A valid Radiodetection Portal Account

2.2.1. Updating your gC.A.T4 locator’s software

To update your gC.A.T4 locator to the latest software available install and use the C.A.T Manager for PC. This can be downloaded by visiting https://www.radiodetection.com/resources/software-downloads/cat-manager.

To use C.A.T Manager for PC you will need a Windows PC with XP or higher operating system.

For further information please refer to the C.A.T Manager for PC operational guide.
2.3 Android compatibility

All gC.A.T4 models offer Bluetooth connectivity to Radiodetection’s C.A.T Manager app for android, available from the Google’s Play Store.

gC.A.T4 models manufactured before August 2016 are compatible with android devices with Bluetooth connectivity and Lollipop (5.0) or higher operating system.

gC.A.T4 models manufactured from August 2016 onwards are equipped with Bluetooth Low Energy (BLE) connectivity and are compatible with BLE equipped android devices using Lollipop (5.0) or higher operating system.

To quickly identify if a gC.A.T4 is equipped with Bluetooth Low Energy connectivity check if the sentence “Works with Android and iOS devices” is present at the bottom of the label directly above the battery compartment.

2.4 iOS compatibility

All gC.A.T4 models manufactured from August 2016 onwards are compatible with iOS devices running 9 or higher operating system.
3 Radiodetection Portal account

Companies can create a Portal Company account by registering at https://portal.radiodetection.com. Registration is free. For further information on how to register and use the Radiodetection Portal account consult the Radiodetection Portal guide or copy and paste this link http://online.radiodetection.com/doclib/Radiodetection_Portal_User_Guide.pdf in your web browser (only Google Chrome is fully supported, other browser will be added soon).

3.1 Accessing your Radiodetection Portal Account

3.1.1. Sign in

Any company users can access theirs Company’s Radiodetection Portal account using a standard web browser.

Access to function and/or screens depends on the user type and the C.A.T manager Subscription level.

To learn more about users and their hierarchy read here

To access your company account:

1. Navigate to https://portal.radiodetection.com:

![Radiodetection Online Portal](image)

   Sign In

   Username or e-mail: joe.smith@joesmith.com

   Password: *********

   Sign In or Register as a new user

2. Enter your login details. The password field is case sensitive

3. Sign in

Warning: Your account will get locked if you enter your password wrong 5 consecutive times. To unlock your account click the Forgot password link or contact your system administrator.
3.2 Portal Home Page

The Radiodetection Portal Home page is the landing page for all company users accessing their account. On the screen all users will see the company name and their registered name on the top bar.

The Navigation panel on the left side provides access to all accessible features, based on your company C.A.T Manager Online subscription level and users' permissions.
3.3 C.A.T Manager Subscriptions

When a guest user creates a company account he also subscribes to the C.A.T Manager online system.

The C.A.T Manager Online system currently offers 2 subscription levels open to the general public in the UK and Ireland only:

<table>
<thead>
<tr>
<th>Subscriptions Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Features</strong></td>
</tr>
<tr>
<td>Android and Apple* mobile app</td>
</tr>
<tr>
<td>C.A.T fleet management</td>
</tr>
<tr>
<td>Online Storage</td>
</tr>
<tr>
<td>C.A.T operator feedback</td>
</tr>
<tr>
<td>Survey Analysis &amp; Usage reporting</td>
</tr>
<tr>
<td>PC Backup</td>
</tr>
<tr>
<td>E-mail Ticket support</td>
</tr>
<tr>
<td>Phone Support</td>
</tr>
<tr>
<td>Teams and Account management</td>
</tr>
<tr>
<td>Advanced statistical analysis</td>
</tr>
</tbody>
</table>

* Apple device compatibility requires the use of a gC.A.T4s supporting Bluetooth 4 (all models produced after July 2016)

** Only scan summary stored after 12 months

The Enterprise subscription is available to selected UK customers only. Please contact your Radiodetection Sales representative or contact us to us for more information.

The Standard subscription is free to use.

The Professional subscription is licensed per gC.A.T4 operator. Contact us for more information or for a free trial of the Professional subscription.
3.3.1. Features

Android and Apple mobile app
C.A.T Manager mobile for Android and Apple is free to download and use from their respective app stores.

C.A.T fleet management
Register and maintain all your gC.A.T4 and Genny 4 products. Check calibration expiry date, see who last used the locator. Download the data as CSV file to use them with your company system

Online Storage
The C.A.T Manager Online system stores and backs up all your company's gC.A.T4 data on a secure cloud based server. No need to change or use your company's IT infrastructure.

C.A.T operator feedback
C.A.T Manager Mobile app allows the operators to receive immediate on-site feedback, helping them to improve their performance and to operate more safely

Survey analysis & Usage reporting
All scans received from C.A.T Manager Mobile, or uploaded using the web upload function, are automatically grouped into surveys and can be reviewed using a Google’s Chrome or Microsoft IE web browser. Usage analysis and Survey reports can be generated and downloaded as PDF files

Backup option
Retrieve all your data from C.A.T Manager cloud to store on your PC or local network

Teams and work management
gC.A.T4 operators can be organised in areas and depots, field operations in accounts and contracts.
This allows managers to review the performance of different groups of users. Reports can be generated for customers and stakeholders, showing adherence to best practice, or documenting ongoing improvements

Advanced statistical analysis
Access detailed analysis to assess users, regions and accounts. This allows objective performance reviews to aid continuous improvement processes
3.3.2. Accessing Subscription information

Navigate to Account Management ► Subscriptions

The Subscriptions overview screen, available only to main users and administrators, gives access to a list of all the subscriptions active for your company.

By default companies are automatically subscribed to the Standard/Basic level for C.A.T Manager online system.

The Standard subscription level is free of charge and you can start using it immediately.

If you wish to discuss or upgrade to another subscription level, click on the Subscription upgrade request.

The system will automatically contact a member of the Radiodetection Sales team who will contact you shortly.

3.4 Create a C.A.T Operator

NOTE: You may not have access to the User's feature or to all the functionality described in this paragraph.

A C.A.T operator is a user that can use the C.A.T Manager mobile app with a compatible gC.A.T4.

For more information about how to use the C.A.T Manager mobile app refer to the C.A.T Manager Online – mobile user guide.

In general C.A.T operators are organised as Field Operators but small companies may prefer to set any user to be an operator.
Creating a user is subject to the following, role based rules:

**Main User**
Able to create and manage all company users

**Administrator**
Able to create and manage Administrators, Manager/Supervisor and C.A.T field operators

**Manager/Supervisor**
Able to create and manage C.A.T field operators

Company users can be easily created, organised and managed by authorised users by navigating to the Overview screen:

**Account Management ► Users ► Overview**
To create a C.A.T field operator:

1. Press the **Create user** button to access the Create user form

   ![Create user form](image)

   - **First name**
   - **Last name**
   - **Email**
   - **Job title** C.A.T Operator
   - **Address**
   - **Telephone no.**
   - **Mobile no.**
   - **Is a contractor**
   - **Expiry date**
   - **User role** Field Operator
   - **Supervisor** Joe Smith
   - **Area** South
   - **Depot** Bristol
   - **Username** User1
   - **Password** P55&jyc

   *Required fields

2. Fill the form. All fields marked with a red * are mandatory

**NOTE** Mandatory fields vary with the User role.

3. If required you can expand the **Address** field

4. Indicate if the user you are creating is a contractor. **NOTE: This feature is not currently active.**

5. If required set an **Expiry date** for this account. The account will be automatically de-activated on the chosen date at 00:00

   The account may be re-activated but a new expiry date will have to be provided. **NOTE: This feature is not currently active.**

6. Select **Field Operator** as **User role**

7. Select a **Supervisor**

**NOTE: you can also allow other user types to become a C.A.T operator, but only Field Operators can be associated to Supervisors.**
8. **Area** and **Depot** are mandatory fields if the user role is a field operator (only available to Professional and Enterprise accounts). **Default** is the only choice available if areas and depot have not been defined.

### Professional  
### Enterprise

9. Enter or modify the **Username** (this will be set automatically to match the e-mail address if present)

   Username rules:
   - **Must** only contain letters (a-z A-Z), numbers (0-9), dashes (-), apostrophes (‘), underscores (_), e-mail (@) and periods (.)
   - **Cannot** contain more than one period (.) in a row
   - **Cannot** start or finish with a period (.)
   - **Must** be less than 50 characters

10. Indicate if you want the system to automatically generate and e-mail a temporary password for the user (**Send by e-mail** - this requires a valid e-mail address) or if you want to enter one manually (**Create now**)

   Password rules:
   - **Must not** contain the user’s account name or parts of the user’s full name that exceed 3 consecutive characters
   - **Must** be at least 8 characters in length
   - **Must** contain at least 1 character from 2 of the following categories:
     - English uppercase characters (A - Z).
     - English lowercase characters (a - z).
     - Base 10 digits (0 - 9).
     - Non alphanumeric characters (for example, !, $, #, %)

11. Press **Create**

   **NOTE:** The user will be prompted to change the password at the first use of his login details.
12. Press the **User privilege** button for the user you just created

<table>
<thead>
<tr>
<th>User privileges</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Name: Fred Stone</td>
</tr>
<tr>
<td>Role: Field Operator</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>privilege</th>
<th>Description</th>
<th>Enable</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.A.T Manager mobile app</td>
<td>Allows use of the C.A.T Manager mobile app</td>
<td></td>
</tr>
</tbody>
</table>

13. Enable the **C.A.T Manager mobile app** privilege
14. Press **Save**

**NOTE:** Any user can be allowed to become a C.A.T operator by setting the C.A.T Manager mobile app privilege.

**WARNING:** For Professional and Enterprise subscriptions, any C.A.T operator, regardless of his role, will count towards the maximum number of C.A.T operators allowed by the subscription limit.
3.5 Monitoring C.A.T Manager Online Mobile status

If the user’s app is running on the end user’s mobile device, it sends a status report to the cloud server every 30 minutes.

The C.A.T manager column provides the time elapsed since the last status report or data connection for a standard survey data. The data is characterised using a traffic light system:

- **Seen in the last 30 minutes**
- **Seen between 30 min and 6 hours ago**
- **Not seen for at least 6 hours**

The system reports as **Unknown**, in purple, all users that have not used the app at least once:

A warning symbol is displayed if there are further information, such as using an older version of the app. Use the mouse to hover on the warning symbol to display the message:
NOTE: C.A.T Manager Online mobile app send a status update every 30 minutes, if the mobile device has a working data connection. The C.A.T Manager timer is updated every time the cloud system communicates with the mobile device. Warning messages are only updated by a status update resulting in a possible temporary discrepancy between the warning message and the timer status.

3.6 Unlocking an account / Forgot Password

A user account is locked after 5 consecutive attempts to log in with a wrong password.

If you are trying to Sign In into your account and you receive the message The account is locked you will need to unlock your account. You can contact an account administrator or, if your username is valid e-mail address, you can follow the Forgot Password procedure:

1. Click on the Forgot Password link
2. Enter your registered E-mail

3. Press Continue

If your e-mail is registered with us you will receive an e-mail with a reset link

4. Go to your e-mail inbox and open the Radiodetection’s reset password e-mail

NOTE: Try again if you have not received the reset password e-mail within 5 minutes. Before doing so:

- Make sure you have entered your registered e-mail
- Check your spam folder to make sure it didn’t end up there
- Try adding DoNotReply@radiodetection.com to your address book

- Some email account security will disable the link, the https address will need to be copied and pasted into a web browser

5. Click on the reset link

6. Enter and confirm your new password

Password rules:
Must not contain the user's account name or parts of the user's full name that exceed 3 consecutive characters.

Must be at least 8 characters in length.

Must contain at least 1 character from 2 of the following categories:

- English uppercase characters (A - Z).
- English lowercase characters (a - z).
- Base 10 digits (0 - 9).
- Non alphanumeric characters (for example, !, $, #, %)

7. Press the Reset Password button. If successful you will be logged in and redirected to your home page.

3.7 Reset a C.A.T Operator password / unlock or deactivate an account

If you are managing C.A.T operators who may have forgotten their password or locked their account or if you wish to deactivate their access to the Radiodetection Portal and the C.A.T Manager Online system, read the Manage Company Users article.
4 C.A.T Manager Online Dashboard

You can access the C.A.T Manager features by navigating to **C.A.T Manager Online**

![C.A.T Manager Online Dashboard](image)

### 4.1 Dashboard

The C.A.T Manager Online dashboard gives users access to the company's C.A.T operators usage history, and for Professional and Enterprise account to a detailed statistical analysis of the C.A.T operators operations.

Standard users can review the last 3 months of data.

Professional and Enterprise users can see all their data.
This screen is accessible by every active company user:

- **Main Users and Administrators**
  They have access to all of their company’s C.A.T operators usage data and statistical analysis

- **Managers/Supervisors**
  They have access to their operators’ C.A.T usage data and statistical analysis

- **C.A.T Operators**
  They have access to their own data and statistical analysis use the mobile app and may log into the portal to review their performance

- the **Operators Usage Overview /Analysis** is the top level which is split into 2 tabs:
  - **Operators** tab which offers the C.A.T summary overview screen
- Analysis tab which provides a detailed statistical analysis of the operator operations. This is only available to Professional and Enterprise subscription users.

- the Scans Overview is the bottom level and gives access to more detailed, x scan based, overview analysis.
### 4.2 C.A.T Operators Usage Overview

The C.A.T Usage overview screen has 3 different sections:
4.2.1. Tools, options and filters

This section provides a number of commands, options and filters to help review your company's data.

Area, Depot, Account, Contract and Supervisor are only available for Professional or Enterprise subscriptions.

Available commands are:

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear filters</td>
<td></td>
</tr>
<tr>
<td>Download a PDF summary report of the data shown in the overview table</td>
<td></td>
</tr>
<tr>
<td>Refresh</td>
<td>to obtain the latest data from your C.A.T operators in the field</td>
</tr>
<tr>
<td>Hide</td>
<td>this section</td>
</tr>
</tbody>
</table>

Professional and Enterprise users have the option to change the grouping of the table data:

**Group by Area and Depot** (default option)

- Area: North, Depot: Liverpool, Supervisor: John White, C.A.T Operator: Chris Stone, SN: 10/C4EN03-2380
- Area: North, Depot: Newcastle, Supervisor: Mike Lane, C.A.T Operator: Ed Smith, SN: 10/C4EN03-3
- Area: North, Depot: Newcastle, Supervisor: Mike Lane, C.A.T Operator: Fred Stone, SN: 10/C4EN03-9333
- Area: North, Depot: Newcastle, Supervisor: Mike Lane, C.A.T Operator: Fred Stone, SN: 10/C4EN03-9555
- Area: South, Depot: Southampton, Supervisor: John White, C.A.T Operator: John Ford, SN: 10/C4EN03-1
- Area: North, Depot: Liverpool, Supervisor: Mike Lane, C.A.T Operator: Jordan Lord, SN: 10/C4EN03-2

or by **Account and Contract**

- Account: Default, Contract: Default, Supervisor: Mike Lane, C.A.T Operator: Fred Stone, SN: 10/C4EN03-9333
- Account: Default, Contract: Default, Supervisor: Mike Lane, C.A.T Operator: Fred Stone, SN: 10/C4EN03-9555
- Account: Bristol Water, Contract: Mop And Fix, Supervisor: John White, C.A.T Operator: Chris Stone, SN: 10/C4EN03-2380

Filters provide a quick and easy way to narrow down usage data to a specific subset.
1. Filter by Areas, Depots, Contracts, Accounts and Supervisors (Professional and Enterprise only)
2. Filter by C.A.T operators and C.A.T serial numbers
3. Filter by a date range
   The From - To date range cannot be empty

Filters are automatically applied when a selection is made and will affect all the others. For example if you select a specific user all the other filters will only show values available to that specific user.

To reset the filters press the clear filter button.

NOTE: When opening the dashboard screen the date filter range is set to the current date: the overview table and the filters may be empty if no C.A.T usage is available for the day.

4.2.2. Summary window

The summary window becomes active when hovering with your mouse over the C.A.T data in the overview table below and shows the scans summary of the day or survey highlighted in yellow

You can lock a specific survey by clicking anywhere on the desired row which will turn partially orange

To unlock click again on the highlighted row
### 4.2.3. Overview Table

The overview table shows the data available for the applied filters, grouped by users and C.A.T SN.

**NOTE: When you first access the dashboard, the date range filter is set to today’s date.**

The overview table provides the following information:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
</table>
| Date | **Survey number** for a specific day  
Shown when the overview shows a surveys summary |
| Daily or Survey **scans count**  
Daily or Survey **average scan duration***  
Mathematical scan average duration for the scans in that day or survey |
| Daily or Survey **swing warnings count** |
| Daily or Survey **overall duration***  
How long the C.A.T was used in that day or survey |
| **Genny duration***  
How long the C.A.T was used in Genny mode in that day or survey |
| **Power duration***  
How long the C.A.T was used in Power mode in that day or survey |
| **Radio duration***  
How long the C.A.T was used in Radio mode in that day or survey |
| **Avoidance duration***  
How long the C.A.T was used in Avoidance mode in that day or survey |
| **Low Frequency Genny signal duration***  
How long the C.A.T has detected a low frequency Genny signal with a strength greater than 10% of full scale on the display - Avoidance and Genny mode only |
**4.2.4. Using the Usage Overview screen**

Using the C.A.T Usage Screen overview:

1. Choose how to summarise the data: by Areas and Depots or Accounts and Contracts (Professional and Enterprise only)
2. Use the filters to narrow down to the desired subset
3. If the table shows any results, click on any row to show the overview summary
4. Hover with the mouse on the expanded data, the summary window will display a more detailed summary for the survey highlighted in yellow
5. Click on the survey to select it and lock the summary view screen. The row will be highlighted in orange
6. Click on the left arrow, which activates when a survey is selected, to navigate to the C.A.T scans overview screen for the day selected

**4.2.5. Mode usage scoring feedback**

The C.A.T Manager online system provides a visual feedback on the overall, daily or survey, C.A.T mode usage using a traffic light style colour scoring.
Each mode overall use (duration) is compared to the overall usage during the specific survey or day. Colour scoring follows the following table.

<table>
<thead>
<tr>
<th></th>
<th>Less than 10%</th>
<th>Between 10% and 20%</th>
<th>More than 20%</th>
</tr>
</thead>
</table>

NOTE: The scoring feedback provided by the C.A.T Manager online system is intended to be used for reference only. It cannot be used as an indication of the true performance of the operators and the quality of their surveys.

4.2.6. Genny signal scoring feedback

The C.A.T Manager online system provides a visual indication if a Genny signal, with a strength above 10% of the full scale on the display, was received or not.

<table>
<thead>
<tr>
<th></th>
<th>No signal above 10%</th>
<th>Presence of signal above 10%</th>
</tr>
</thead>
</table>

This rule is used to score High Frequency and Low Frequency Genny duration in the table and Good Genny (HF Genny + LF Genny) in the summary window.

NOTE: The scoring feedback provided by the C.A.T Manager online system is intended to be used for reference only. It cannot be used as an indication of the true performance of the operators and the quality of their surveys.

4.2.7. Using the C.A.T Dashboard Usage overview screen - Example

Let's assume you want to review one specific operator

1. Select a date range and C.A.T operator’s name
2. Select the C.A.T Serial Number you want to review and expand the data
3. Hover with the mouse on the expanded rows in the table overview to review usage

On the 02/10/2017, C.A.T operator Martin Barry, belonging to Western Drive depot of the Bristol area, was using C.A.T serial number 10/C4EN03-2131. He completed 2 surveys.

Looking in more detail at the highlighted survey above we can see (left to right) that on that day the C.A.T operator:

- In survey 2
  - completed 19 different scans
  - was averaging 37 seconds per scan
  - he had 9 swing warnings
  - used the locator for 11 minutes and 52 seconds in total
  - used Genny for 6 minutes 29 seconds in total – green score (55% of the total time)
  - used Power for 3 minutes 9 seconds in total – green score (27% of the total time)
  - used Radio for 1 minute 28 seconds in total – orange score (12% of the total time)
  - used Avoidance for 46 seconds in total – red score (6% of the total time)
  - located a valid Low Frequency Genny signal for 5 minutes 33 seconds – green score
  - located a valid High Frequency Genny signal for 7 seconds – green score
4.3 C.A.T Scans Overview Screen

To navigate to the Scans overview screen, you must first select the survey you want to analyse: click with your mouse on the desired survey and then press the left arrow.

The C.A.T Scans Overview screen has 4 different sections:

- **Commands**
- **Header**
- **Summary**
- **Overview table**
Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Return to previous screen</td>
</tr>
<tr>
<td><img src="image" alt="CSV" /></td>
<td>Export Data as CSV file</td>
</tr>
<tr>
<td><img src="image" alt="PDF" /></td>
<td>Generate a PDF report for a specific Survey</td>
</tr>
</tbody>
</table>

Header

The header section identifies the date shown, the locator’s serial number, the C.A.T operator and his supervisor (if applicable), area and depot (Professional and Enterprise only)

Summary

The summary section is divided into 3 different areas; these are (from left to right): Survey, Scan and Map. The map links the survey and/or scan under observation to a specific location.

NOTE: The map function is only available for gC.A.T4 locators if they had a valid GPS position at the time of the scan and/or paired to a mobile device running C.A.T Manager mobile app, where the Location mode is enabled.

4.3.1. Overview Table

The overview table provides a detailed view of all surveys conducted and distinct scans associated to them.
Surveys are colour banded, alternating blue and grey. All the scans associated to a specific survey are displayed with the same colour.

This section provides the following commands, used to edit surveys:

<table>
<thead>
<tr>
<th>Command</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Previous day</td>
<td>See Previous day (active if available)</td>
</tr>
<tr>
<td>See Next day</td>
<td>See Next day (active if available)</td>
</tr>
<tr>
<td></td>
<td>Cancel edit operation</td>
</tr>
<tr>
<td></td>
<td>Merge Scans</td>
</tr>
</tbody>
</table>

The overview table provides the following information:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>📅</td>
<td>Date</td>
</tr>
<tr>
<td>✍️</td>
<td>Contract</td>
</tr>
<tr>
<td></td>
<td>Contract associated to the survey</td>
</tr>
<tr>
<td>📍</td>
<td>Scan number</td>
</tr>
<tr>
<td>🕒</td>
<td>Start time</td>
</tr>
<tr>
<td>🕒</td>
<td>Scan duration*</td>
</tr>
<tr>
<td>🕒</td>
<td>Genny duration*</td>
</tr>
<tr>
<td></td>
<td>How long the C.A.T was used in Genny mode in that day or survey</td>
</tr>
<tr>
<td>🕒</td>
<td>Power duration*</td>
</tr>
<tr>
<td></td>
<td>How long the C.A.T was used in Power mode in that day or survey</td>
</tr>
<tr>
<td>🕒</td>
<td>Radio duration*</td>
</tr>
<tr>
<td></td>
<td>How long the C.A.T was used in Radio mode in that day or survey</td>
</tr>
<tr>
<td>🕒</td>
<td>Avoidance duration*</td>
</tr>
<tr>
<td></td>
<td>How long the C.A.T was used in Avoidance mode in that day or survey</td>
</tr>
<tr>
<td>🕒</td>
<td>Low Frequency Genny signal duration*</td>
</tr>
<tr>
<td>Icon</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| ![HF Icon](image.png) | **High Frequency Genny signal duration**<sup>*</sup>  
How long the C.A.T has detected a high frequency genny signal with a strength greater than 10% of full scale on the display - Avoidance and Genny mode only |
| ![Sensor Icon](image.png) | **Maximum sensitivity gain** |
| ![Sensor Icon](image.png) | **Minimum sensitivity gain** |
| ![GPS Icon](image.png) | **Scan GPS % duration**<sup>*</sup>  
Compared to the overall survey duration |
| ![Survey Icon](image.png) | **Survey number** |

* Measured in hh:mm:ss

### 4.3.2. Using the Scans Overview screen

When the Scans overview screen is accessed, the Map screen shows all the surveys conducted by the user on that day. The surveys are represented by yellow icons.

All individual scans are colour banded into surveys in the scans table.

**To use the Scans Overview screen using the map Icons:**
1. Click on any survey’s icon to show all the associated scans.

Scans are identified by icons coloured in their predominant mode

- Genny
- Power
- Radio
- Avoidance

2. Use the Google’s maps commands to switch from a map to a satellite picture, zoom in and out or to switch to Street View

3. Hover with a mouse on any icons on the map to see information about the scans associated with it
The correspondent row in the scans table is highlighted in yellow

4. Left-click on any icons on the map to lock the scans on the map and overview table (row is highlighted in orange)

5. Use the UP and DOWN buttons to scroll through the icons

6. Press on the Centre button to move the icon to the centre of the map
7. Press on the **Reset to Day View survey** to zoom out and show all the icons associated with the survey.

8. Press on the **Reset to Surveys View** to zoom out and show all the surveys.

To navigate the Scans Overview screen using the scans table:

1. Hover your mouse on the table area
   - The survey underneath is selected and changes colour to light blue (Survey 2 in the example below)
   - The Survey summary displays a detailed overview of the survey highlighted.
2. Click once on any scan (row) to select it:
   - The selected scan will turn yellow
   - The Scan summary will display a detailed overview of the survey
   - The map will show the average location point as an icon, showing the scan number and route followed, coloured as for the predominant C.A.T mode (Genny, Power, Radio or Avoidance) for that scan operation.

3. Click again on the row to lock the scan and icon:
   - The selected scan will turn orange

4. Press on the Centre button to move the icon to the centre of the map
5. Unlock the scan by clicking again on the scan highlighted in orange or by pressing on the *Reset to Day View survey*.

### 4.4 Managing surveys

C.A.Ts and Gennys are used to survey an area prior and during an excavation. Depending on the complexity of the area surveyed it is normal for C.A.T operators to perform a large number of scans in different modes. All the scans preformed to survey an area are grouped into a single **Survey**.
4.4.1. Automatic Survey grouping
The C.A.T Manager Online system automatically groups different scans into survey as they are received. The system looks at time difference and distance between subsequent scans. Scans which are within 30 minutes or 30m apart are considered part of the same survey.

4.4.2. Manual Survey creation
C.A.T field operators can start and stop a survey manually to ensure that only the correct scans are part of the survey being conducted and which will be monitored and analysed by their supervisor.

For example if before starting a survey, the gC.A.T4 is tested in different modes and with its Genny in the same area in which the survey will be conducted, these “test” scans may be considered as a part of the same survey by the C.A.T Manager Online system.

Refer to the C.A.T Manager Online – Mobile operation manual for further information on how to start and stop a survey using a Android or iOS mobile device.

4.4.3. Editing surveys
You can edit a survey by using the overview table:

1. Click on the previous or next day buttons to show scans from these days

NOTE: The calendar buttons will only work if there are scans data on a contiguous day.

2. Select all the scans on the table which belong to the same survey by pressing the CTRL key on the keyboard and left-click with the mouse
3. Press the Merge scans button to group all the scans in a new survey or Cancel

NOTE: The survey numbers are automatically changed to take into account the changes applied
4.5 Creating a survey report

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Once you have reviewed all the scans and the surveys for a specific day you may want to download a report for a specific survey:

1. Press the PDF button. The Report generation window will appear

   ![Report Generation Window]

2. Enter a **Title** and a **Description**
3. Select a **Survey**
4. Press **Generate**.

   Note the status message at the bottom right corner of your web browser

5. Depending on your security settings the report will be automatically downloaded

   ![Downloaded Report]

6. Press **Close** to exit the Report generation window

4.5.1. **Survey report structure**

The PDF report can be found in the default download folder. The default name is

```
pdfReport_dd-mm-yy hh-mm-ss.pdf
```

where dd-mm-yy hh-mm-ss are the date and time of when the report was generated.

**NOTE: You need a PDF viewer to open and review the report.**

Depending on the size and presence of location data the report may comprise of more than one sections:

The first section is the summary overview for the specific survey.
The next section is available only for scans with location (GPS) coordinates, and provides a more detailed overview of the single scan alongside a map showing the scan location. Latitude and Longitude are also provided.

<table>
<thead>
<tr>
<th>Date</th>
<th>Scan</th>
<th>Start</th>
<th>Duration</th>
<th>Swing</th>
<th>Warning</th>
<th>Mode</th>
<th>Gain</th>
<th>Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/05/2016</td>
<td>11</td>
<td>11:47</td>
<td>00:03:08</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>12</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>13</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>14</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>15</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>16</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>17</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>18</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>19</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>20</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
<tr>
<td>03/05/2016</td>
<td>21</td>
<td>11:47</td>
<td>00:03:02</td>
<td>0</td>
<td>0</td>
<td>Avoid</td>
<td>06:00:00</td>
<td>65.3 to 65.9</td>
</tr>
</tbody>
</table>
4.5.2. Exporting scans data

You can export the data for all the scans you are displaying in the Scans overview screen in a Comma Separated Value (CSV) format:

1. Click on the download CSV button
   Note the status message at the bottom right corner of your web browser

2. Depending on your security settings the report will be automatically downloaded

The CSV data file can be found in the default download folder. The default name is gCAT.CSV

4.5.3. CSV Data Structure

The CSV data file is the same as the for data file generated by C.A.T Manager for PC.

The table below gives an explanation of the available fields.
<table>
<thead>
<tr>
<th>Field</th>
<th>Field explanation</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Number</td>
<td>Unit serial number</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>Not Used</td>
<td>Schema version – Reserved</td>
</tr>
<tr>
<td>Log Reference</td>
<td>Not Used</td>
<td>Log reference produced by C.A.T Manager for PC</td>
</tr>
<tr>
<td>Plant Number</td>
<td>16 free characters</td>
<td>User editable - requires C.A.T Manager</td>
</tr>
<tr>
<td>Free Text</td>
<td>70 free characters</td>
<td>User editable - requires C.A.T Manager</td>
</tr>
<tr>
<td>Date</td>
<td>Date(dd-mm-yyyy)</td>
<td>gC.A.T4 time</td>
</tr>
<tr>
<td>Time</td>
<td>Time (hh-mm-ss)</td>
<td>gC.A.T4 time</td>
</tr>
<tr>
<td>RTC Updated</td>
<td>Indicates if the RTC has been updated using a GPS source</td>
<td>GPS models only</td>
</tr>
<tr>
<td>Depth Measured</td>
<td>Metric / Imperial</td>
<td>User configured Depth Units - requires C.A.T Manager + models only</td>
</tr>
<tr>
<td>Signal Strength</td>
<td>Bargraph %</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>Power signal received as % of scale</td>
<td></td>
</tr>
<tr>
<td>Radio</td>
<td>Radio signal received as % of scale</td>
<td></td>
</tr>
<tr>
<td>Genny 33 kHz</td>
<td>Genny 33kHz signal received as % of scale</td>
<td>Presence of this signal indicates that a Genny was used</td>
</tr>
<tr>
<td>Genny HF</td>
<td>Genny HF signal received as % of scale</td>
<td>Absence of this may indicate that the Genny was used only in induction mode and not in direct or clamp mode</td>
</tr>
<tr>
<td>Sensitivity Control</td>
<td>Sensitivity (Gain) control as % of scale</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>Mode in use</td>
<td>Power, Genny, Radio and Avoidance, Unit OFF (Used to indicated the GPS Lock mode, if a valid GPS has been acquired), Hard OFF</td>
</tr>
<tr>
<td>Depth Mode</td>
<td>Line / Sonde</td>
<td>Indicate type of depth measurement</td>
</tr>
<tr>
<td>Warnings Disabled</td>
<td>Enabled / Disabled</td>
<td>Indicates current status of Warnings (Strike Alert and Swing). They momentarily de-activated by the user in the field.</td>
</tr>
<tr>
<td>Swing Warning</td>
<td>Yes / No / Disabled</td>
<td>Yes indicates that the C.A.T reported a Swing Warning</td>
</tr>
<tr>
<td>StrikeAlert Warning</td>
<td>Yes / No /Disabled</td>
<td>Yes indicates that the C.A.T reported a StrikeAlert Warning</td>
</tr>
<tr>
<td>Battery Status</td>
<td>Good / Poor / Critical</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Field explanation</td>
<td>Notes</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DOP Status</td>
<td>Normal / Protecting</td>
<td>Indicates if the DOP (Dynamic Overload Protection) is active (Protecting) or not (Normal)</td>
</tr>
<tr>
<td>Overload Warning</td>
<td>Normal / Overload</td>
<td>Overload indicates that the C.A.T recorded an overvoltage status</td>
</tr>
<tr>
<td>Blade Angle</td>
<td>integer scale figure</td>
<td>Angle in the plane of the receiver, passing through the central vertical axis</td>
</tr>
<tr>
<td>Paddle Angle</td>
<td>integer scale figure</td>
<td>Angle of the plane perpendicular to the plane of the receiver, passing through the central vertical axis – imagine using the C.A.T as a canoe paddle!</td>
</tr>
<tr>
<td>Power Audio Indicator</td>
<td>1 or 0</td>
<td>1 Indicates that the C.A.T is giving audio feedback for a detected Power signal</td>
</tr>
<tr>
<td>Radio Audio Indicator</td>
<td>1 or 0</td>
<td>1 Indicates that the C.A.T is giving audio feedback for a detected Radio signal</td>
</tr>
<tr>
<td>Genny 33 Audio Indicator</td>
<td>1 or 0</td>
<td>1 Indicates that the C.A.T is giving audio feedback for a detected 33KHz Genny signal</td>
</tr>
<tr>
<td>Genny HF Audio Indicator</td>
<td>1 or 0</td>
<td>1 Indicates that the C.A.T is giving audio feedback for a detected HF Genny signal</td>
</tr>
<tr>
<td>GPS Date</td>
<td>DD/MM/HHHHH or MM/DD/HHHHH</td>
<td></td>
</tr>
<tr>
<td>UTC</td>
<td>HHMMSS.SS</td>
<td></td>
</tr>
<tr>
<td>Horizontal Dilution</td>
<td>GPS Data</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>In Meters</td>
<td></td>
</tr>
<tr>
<td>Geoid</td>
<td>INVALID/METERS</td>
<td></td>
</tr>
<tr>
<td>DGPS Time</td>
<td>GPS Data</td>
<td></td>
</tr>
<tr>
<td>DGPS ID</td>
<td>GPS Data</td>
<td></td>
</tr>
<tr>
<td>Geoid Units</td>
<td>INVALID/METERS</td>
<td></td>
</tr>
<tr>
<td>Number of Satellites</td>
<td>Number of satellites used</td>
<td></td>
</tr>
<tr>
<td>GPS Fix</td>
<td>NO_GPS_FIX / GPS_FIX / ESTIMATED / DISABLED</td>
<td></td>
</tr>
<tr>
<td>Altitude Units</td>
<td>Invalid or Meters</td>
<td></td>
</tr>
<tr>
<td>Latitude</td>
<td>GPS Data</td>
<td></td>
</tr>
<tr>
<td>Longitude</td>
<td>GPS Data</td>
<td></td>
</tr>
<tr>
<td>Time Reference</td>
<td>System, GPS, Unused</td>
<td></td>
</tr>
<tr>
<td>Heading</td>
<td>GPS Data</td>
<td>Degrees</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Field</th>
<th>Field explanation</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Speed</td>
<td>GPS Data</td>
<td>Km/h</td>
</tr>
</tbody>
</table>

**NOTE: Location information is only available for gC.A.T locators, if a valid GPS location was recorded**

4.6 **Upload C.A.T usage data**

eC.A.T4 and gC.A.T4 locators are equipped with an automatic recording system which stores up to 2 years’ worth of usage data in its internal memory. When the locator’s memory is full the recording system will start overwriting the older records.

Data stored includes parametric information about the settings of the device (time, mode, gain, etc.), the signals it is receiving and any alerts being generated. gC.A.T4 models will store location information if a GPS signal is available. All parameters are logged once per second when the locator is used.

Users can use **C.A.T Manager for Windows PC** to quickly retrieve usage data and stored them in the C.A.T Manager online for storage or data analysis.

For further information on how to download C.A.T Manager for PC and retrieve data logs from your compatible C.A.T4 visit the software’s webpage by clicking this link or by copying and pasting it into your web browser address box: [https://www.radiodetection.com/en-gb/resources/software-downloads/cat-manager](https://www.radiodetection.com/en-gb/resources/software-downloads/cat-manager)

When exporting data from C.A.T Manager for PC, you need to ensure you use the C.A.T Data Collector default field settings. In the C.A.T Manager for PC’s **Data Collector** window:
1. Press Field Chooser
2. Click on Reset
3. Restore Factory Settings

To upload eC.A.T4 or gC.A.T4 usage data to the C.A.T Manager Online system:

1. Using C.A.T Manager for PC create a compatible CSV file
2. Navigate to In C.A.T Manager Online ➤ Upload usage data

3. If required, choose a C.A.T operator from the list of available field operators

**NOTE:** Field operator users can only upload data assigned to themselves. Supervisors can choose between their field operators.

4. Select Accounts and Contracts (if available)

**NOTE:** When selecting an account you must also select a contract

5. Press Choose File to browse to the folder containing your CSV data
6. Select the file you wish to upload and press **Open**

7. Press **Upload** to start the data transfer.
   The upload progress is available at the bottom right of the browser screen

8. Wait for the end of the process for a success or failure message:

   - ✓ The C.A.T Usage data upload was successfully completed
   - ✓ The C.A.T Usage data upload was successfully completed with some duplicate logs ignored
   - ✗ The selected file is not a valid datalogs file
4.7 Export Usage Data

You can use the Export Usage Data screen to download CSV files of your company's C.A.T4 data logs. This is useful if you want to maintain a local backup copy of your users' data or for further in depth analysis.

![Export Usage Data Screen]

To export C.A.T4 data to your PC follow these steps:

1. Select the **C.A.T4 field operator**

   NOTE: Field operator users can only download their own data. Supervisors can choose between their field operators.

2. Select a date range
3. Select a **Contract**
4. Select a **Depot**
5. Press **Export to CSV**

A CSV will automatically start downloading to your default downloads location.