SIGINT Systems

HARVESTER COMINT Suite

Version 2.0

Collection Operator Terminal
User's Manual

SIGINT Systems

Signals Intelligence Collection Software

Document Version Control

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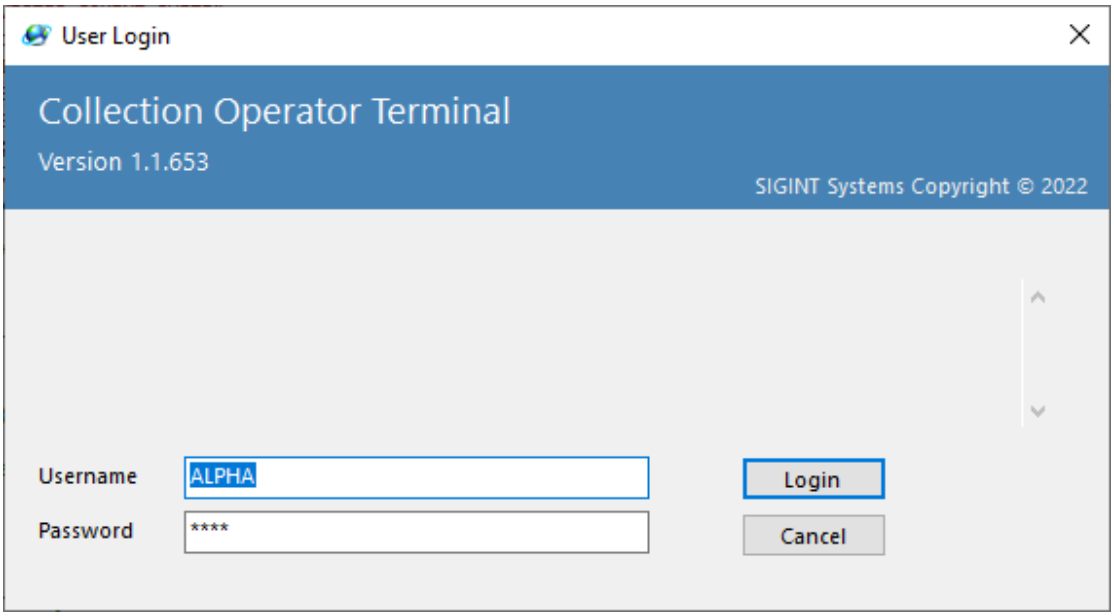
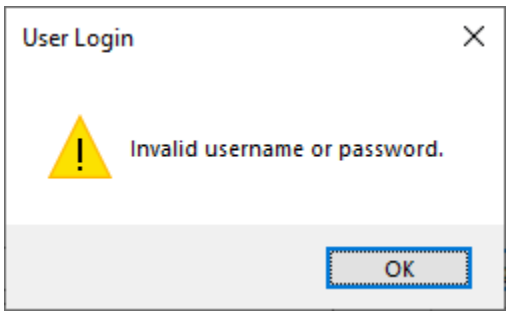
1. Logging Into Collection Operator Terminal

When you run any of the HARVESTER COMINT Suite applications, you will first be presented with the standard login screen. The screen will display the name and version of the application being run. It may also display user security warnings and caveats. These notifications are maintained by your system administrator.

The screen will ask you to enter your username and password and once entered, you should click the Login button to proceed with the login process.

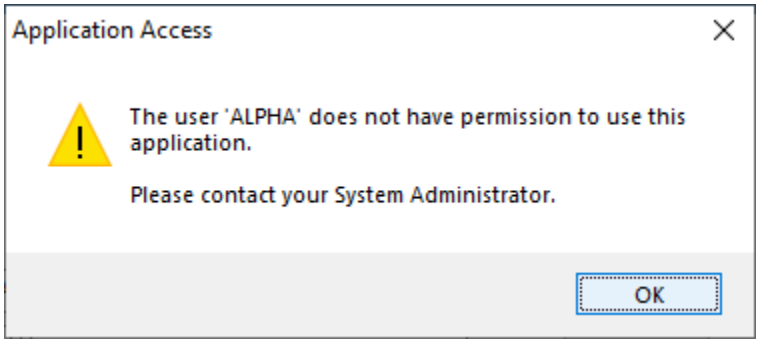


If both username and password are correct, the application will open as normal. However if either or both credentials cannot be authenticated, the following warning message will be displayed:

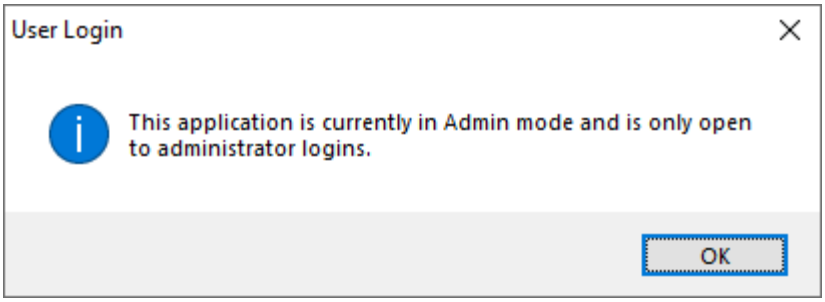


Ensure that both your username and password have been entered correctly and try logging in again. If you are still denied access, contact your system administrator.

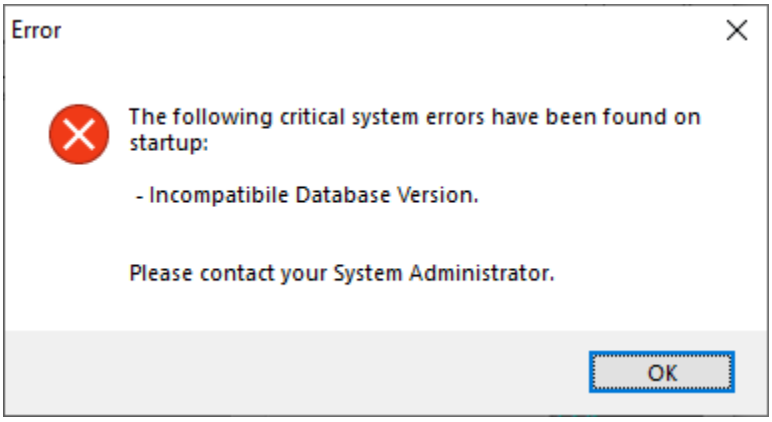
If your credentials are correct and authenticated by the system but you do not have user permissions to run the application, then the login process will be halted and you will be presented with the following warning:



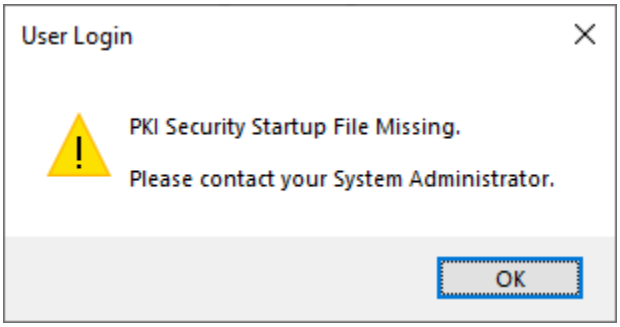
Applications may also be disabled by system administrators for maintenance or other operational reasons. If the application you are trying to log into has been disabled, you will see the following warning:



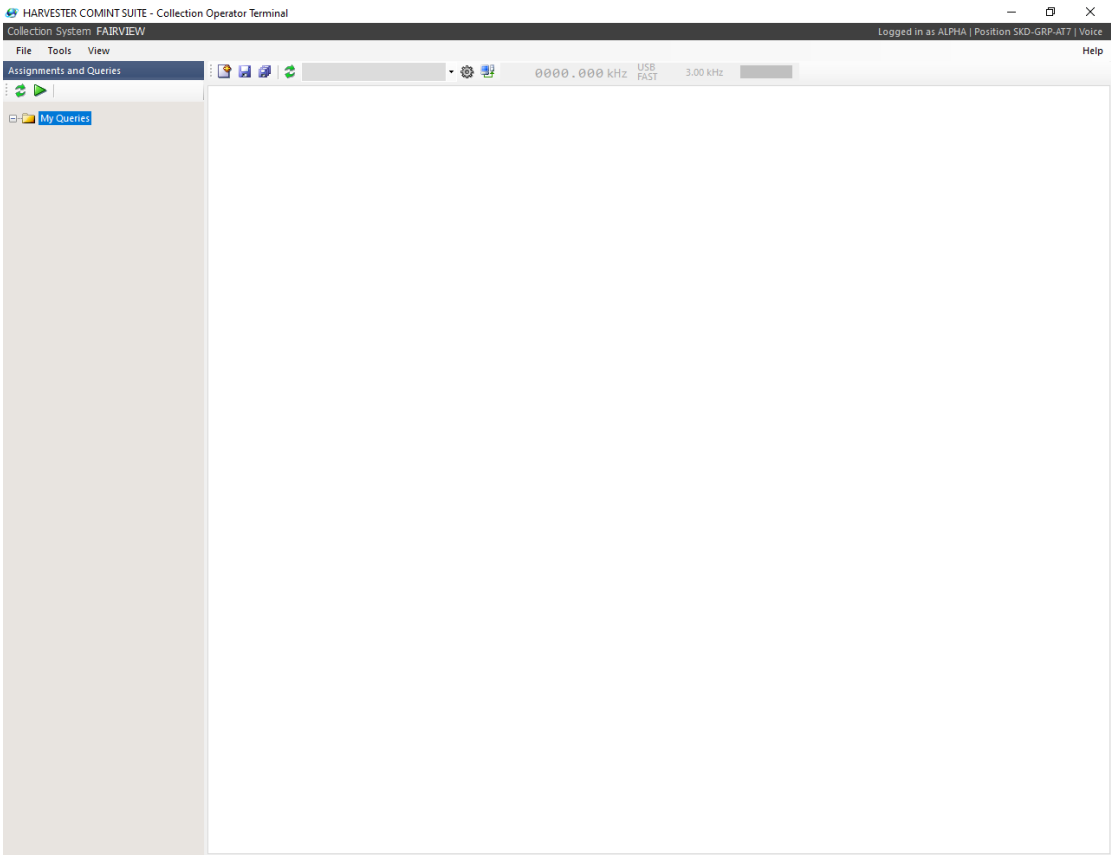
If the HARVESTER COMINT Suite database has recently been upgraded by a System Update and you have not yet deployed updated applications, logging into an application may result in the following warning being displayed:



If the application is started and no PKI security file is present, then following warning message will be displayed. Contact your system administrator and request the *harvester.pki* file to be added to your local installation.



Once you have successfully logged into the application, the main Collection Operator Terminal will open. The screen is comprised of two panels. The left panel contains a folder structure where frequency search queries can be stored. The main panel supports frequency and collection pages as well as a number of support modules that operators can access under the View option in the menu bar.

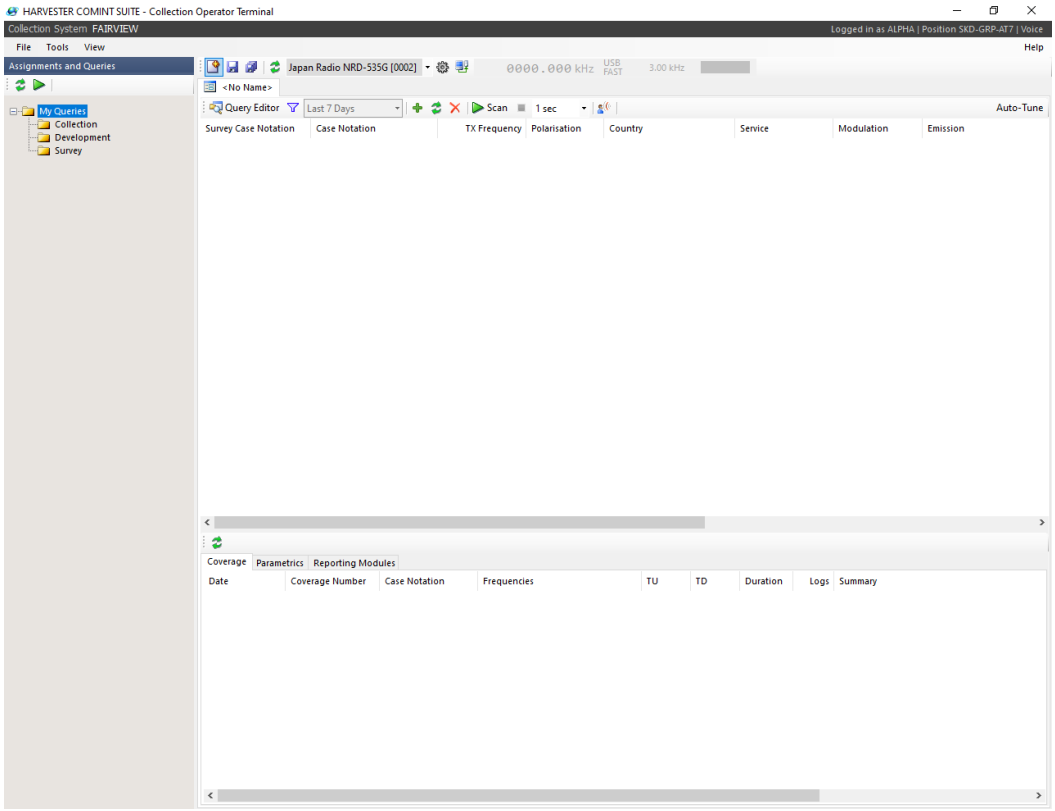


2. FREQUENCY LISTS

2.1 Frequency Pages

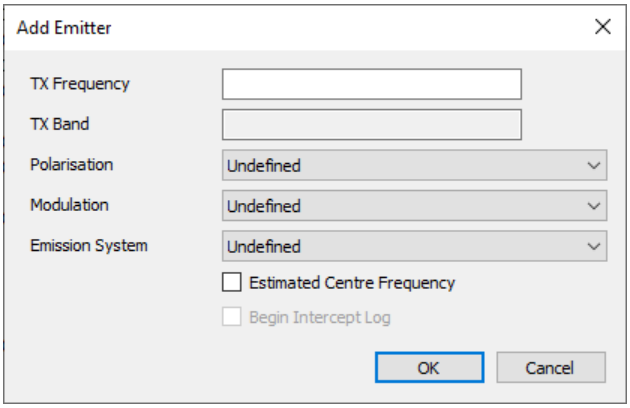
The heart of the Collection Operator Terminal is the Frequency Page. From here, you can begin to enter new frequencies and amend existing emitters, log various reports including parametrics and LOBs, build and save queries of your frequency lists that provide you with targetted frequency lists to monitor, and begin the all important process of creating coverage sessions and intercept logs.

Click the New Frequency Query button in the toolbar to open a new frequency page. Frequency pages support all the operator requirements for searching, amending and log emitters, and provides the access to dedicated collection pages.



2.2 Adding a new frequency

To add a new frequency, or emitter, to the HARVESTER COMINT Suite database, click the Aaa button in the Frequency Page toolbar, press the F5 function key or right-click the frequency list and select the Add Emitter option from the menu. This will open the Add Emitter window.



Enter the frequency, and if identifiable, the modulation and emission systems. Polarisation is only required for UHF and SHF frequencies. If you are unsure of the emitter's exact centre frequency, check the Estimated Centre Frequency box to flag uncertainty in the frequency. Frequencies that have this box checked will appear in the Frequency Page with an 'E' prefix, highlighting that it is an estimated centre frequency.

> **NOTE:** When you are entering frequencies, you can use the K, M or G suffixes to indicate kiloHertz, MegaHertz or GigaHertz. The frequency will automatically be formatted into the correct frequency format for each frequency band.

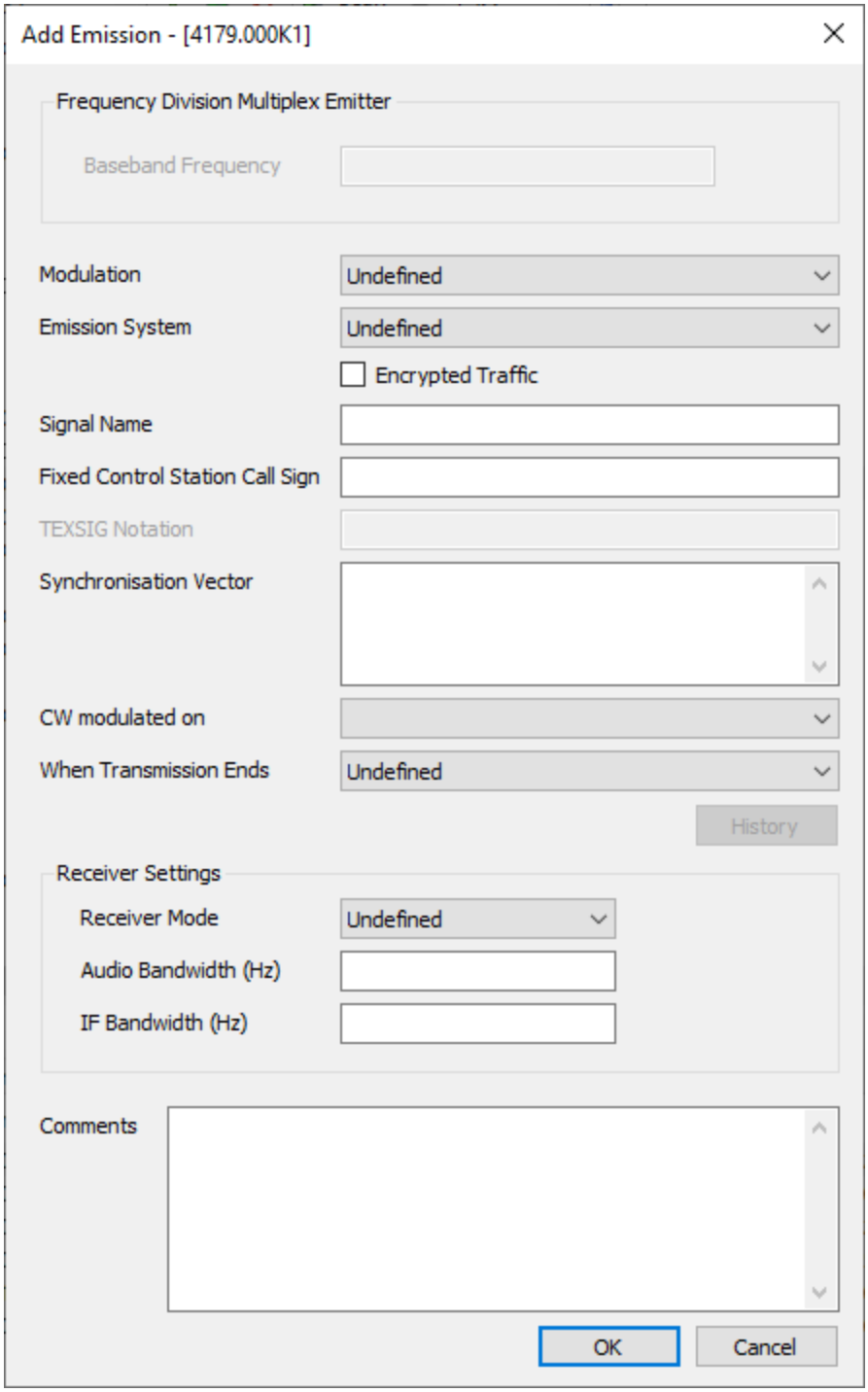
Once you have entered all the emitter information, click the OK button to add the frequency. The window will close and the frequency will appear in the Frequency Page. If you have already defined a frequency query on the Frequency Page, the new frequency may not appear if it is outside your defined search criteria.

2.3 Adding an Emission to an existing Emitter

There are often occasions when a known emitter will suddenly switch from one emission system to another, such as from Voice to Teletype or from Teletype to Morse Code. Providing that the new emission is being transmitted by the same network of stations, the new emission system can be added to the existing emitter.

> **NOTE:** Care should be taken when adding a new emission system to an existing emitter. Make sure that the new emission system is not just another station using the same frequency. In such a case, a new frequency is required as it is a completely different network that just happens to share the same frequency.

Select the frequency on the Frequency Page and either press the F6 function key or or right-click the frequency list and select the Add Emission option from the menu to open the Add Emission window.



Select the new modulation and emission systems and enter any other information that is available then click the OK button to save the record. The new emission will appear under the selected emitter in the frequency list.

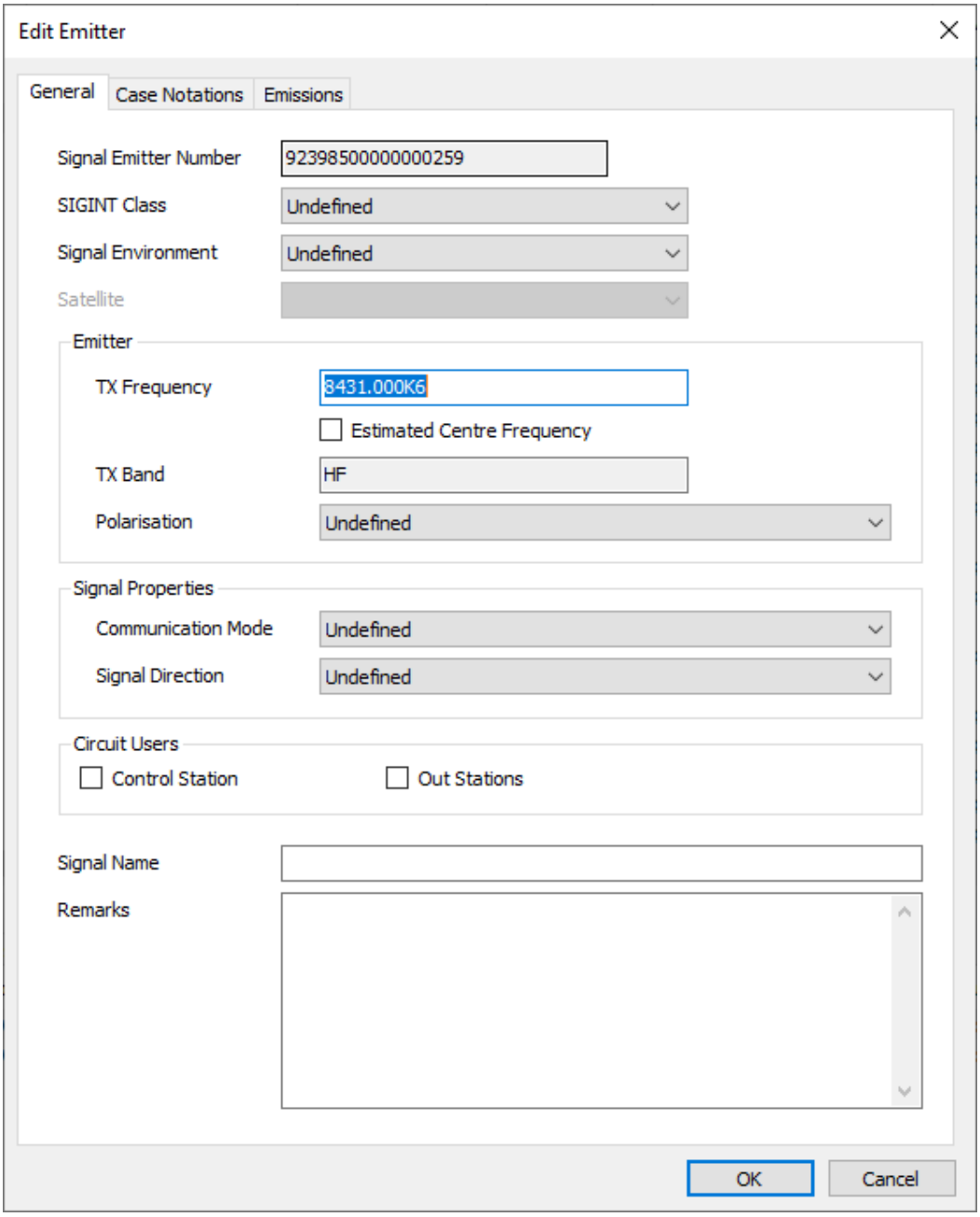
> **NOTE:** Before saving the new emission, select the Receiver Mode that best suits the modulation and emission systems. This is crucial when using the Receiver Control function so that the correct receiver mode is set on the receiver.

2.4 Amending and Updating an Emitter

As new information is revealed about emitters from intercepts and analysis, emitter details will require to be amended or updated. To edit an emitter, select and double click the emitter, or any one of it's emission systems, or right-click the emitter and select the Edit Emitter option from the menu to open the Edit Emitter window. The Edit Emitter window is divided into three tabs: General, Case Notations and Emissions.

2.4.1 General

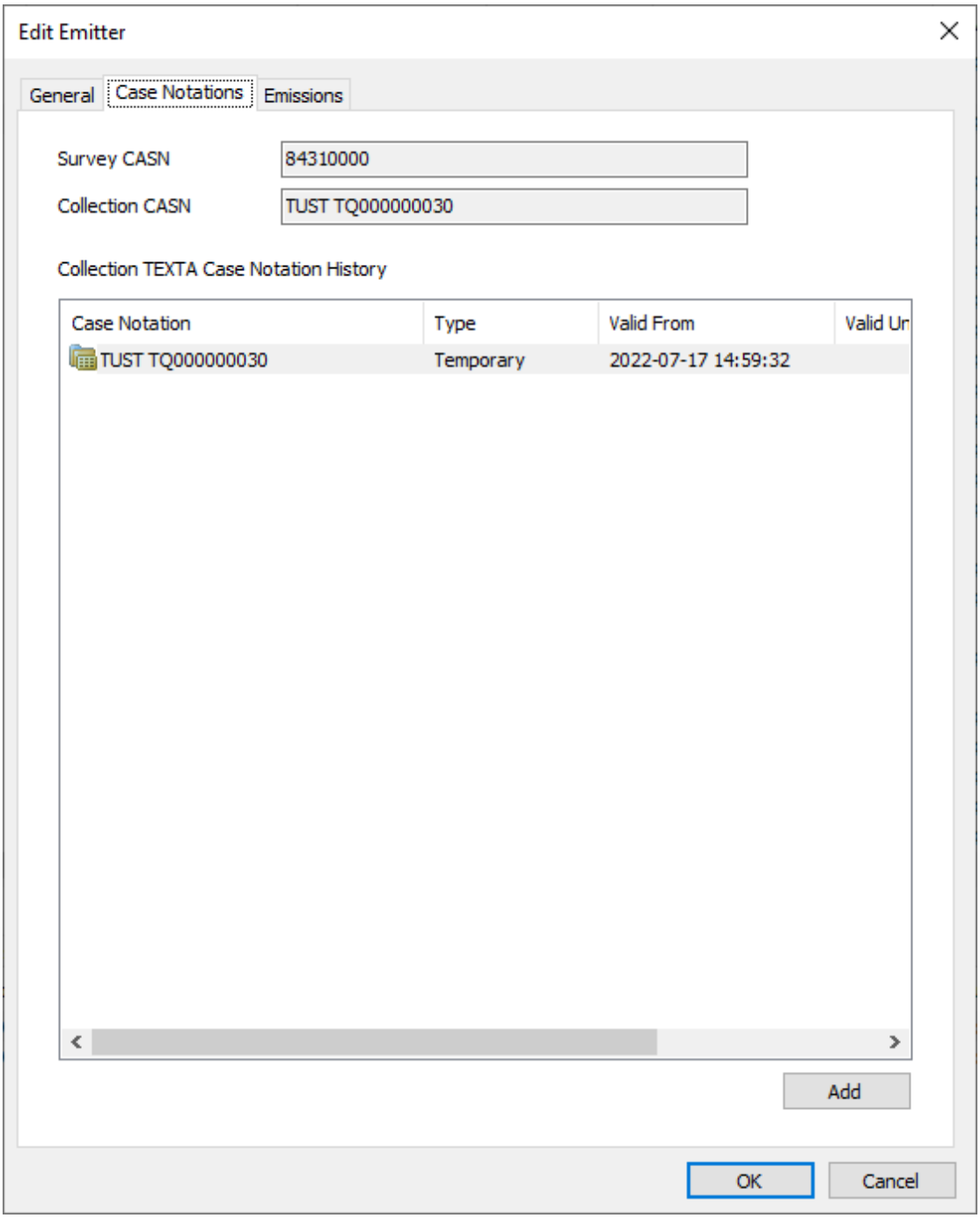
On the General tab, you can amend the basic properties of the emitter. These properties apply to the emitter in general and to all the emission systems supported by the emitter.



NOTE: If you amend the emitter frequency, you will be prompted to provide a reason for the frequency change.

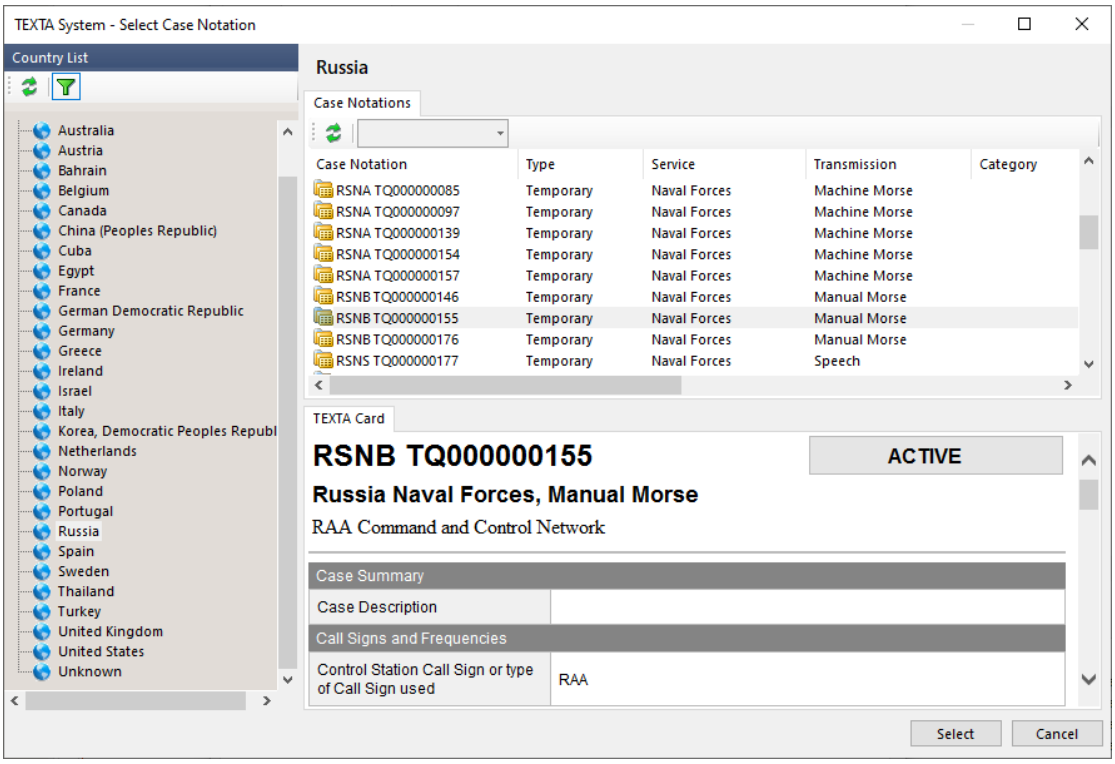
2.4.2 Assigning a Collection Case Notation

The Case Notation tab focuses on defining the ownership of the emitter and this is accomplished by use of Case Notation. Two separate Case Notations are used. Survey Case Notation is a more generalised system of identification that is used to reference intercepts on specific frequencies whereas Collection Case Notations provide identification of individual networks on the frequency. Collection Case Notations are derived from Technical Extracts of Traffic Analysis (TEXTA) which is managed in the Traffic Analysis Workbench application.



NOTE: Survey Case Notations are automatically allocated by the system and are based on the centre frequency of the emitter.

To add a new Collection Case Notation, right-click the Collection TEXTA Case Notation History box and select the Add option from the menu to open the Select Case Notation window.

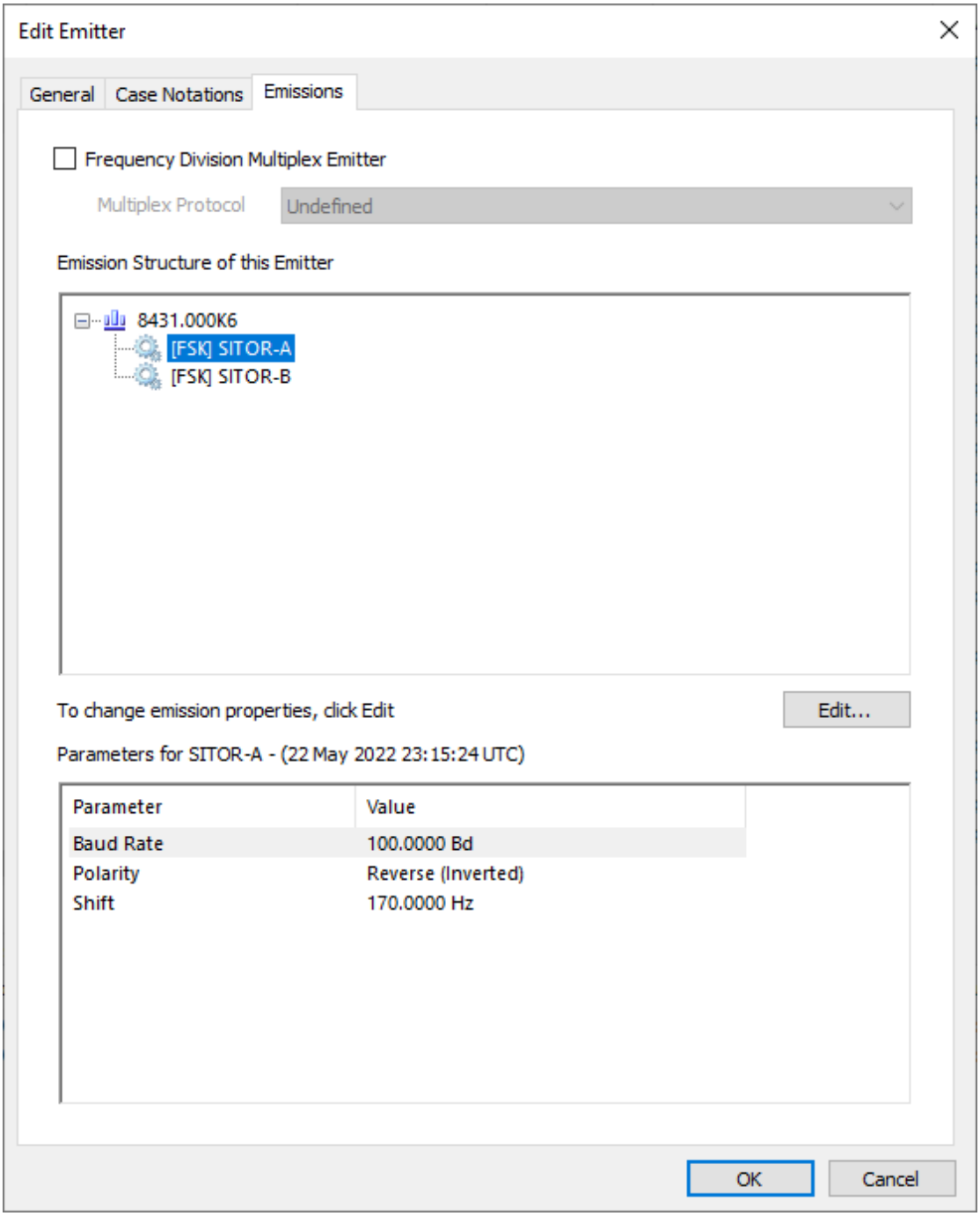


Navigate to the appropriate country in the Country menu then select the required Case Notation from the list of Case Notations and click the Select button. This will automatically populate the emitter with the selected Case Notation details.

2.4.3 Editing an Emission

The Emissions tab provides a summary of the signal configuration and structure of the emitter. It is not uncommon for an emitter to support more that one emission system but this is normally done with users switching between modes. Frequency Division Multiplexed emitters on the other had can support several channels and emission systems simultaneously. If the emitter being intercepted is supporting an FDM signalling configuration, check the Frequency Division Multiplex Emitter box which will allow you to define baseband frequencies for each supported emission system.

The “Emission Structure of this Emitter” displays all the emission systems that have been intercepted and are currently known to be supported by the emitter. By selecting each emission, the most recent parametric log will be displayed in the lower box. Click the Edit button to open the selected emission in the Edit Emission window.

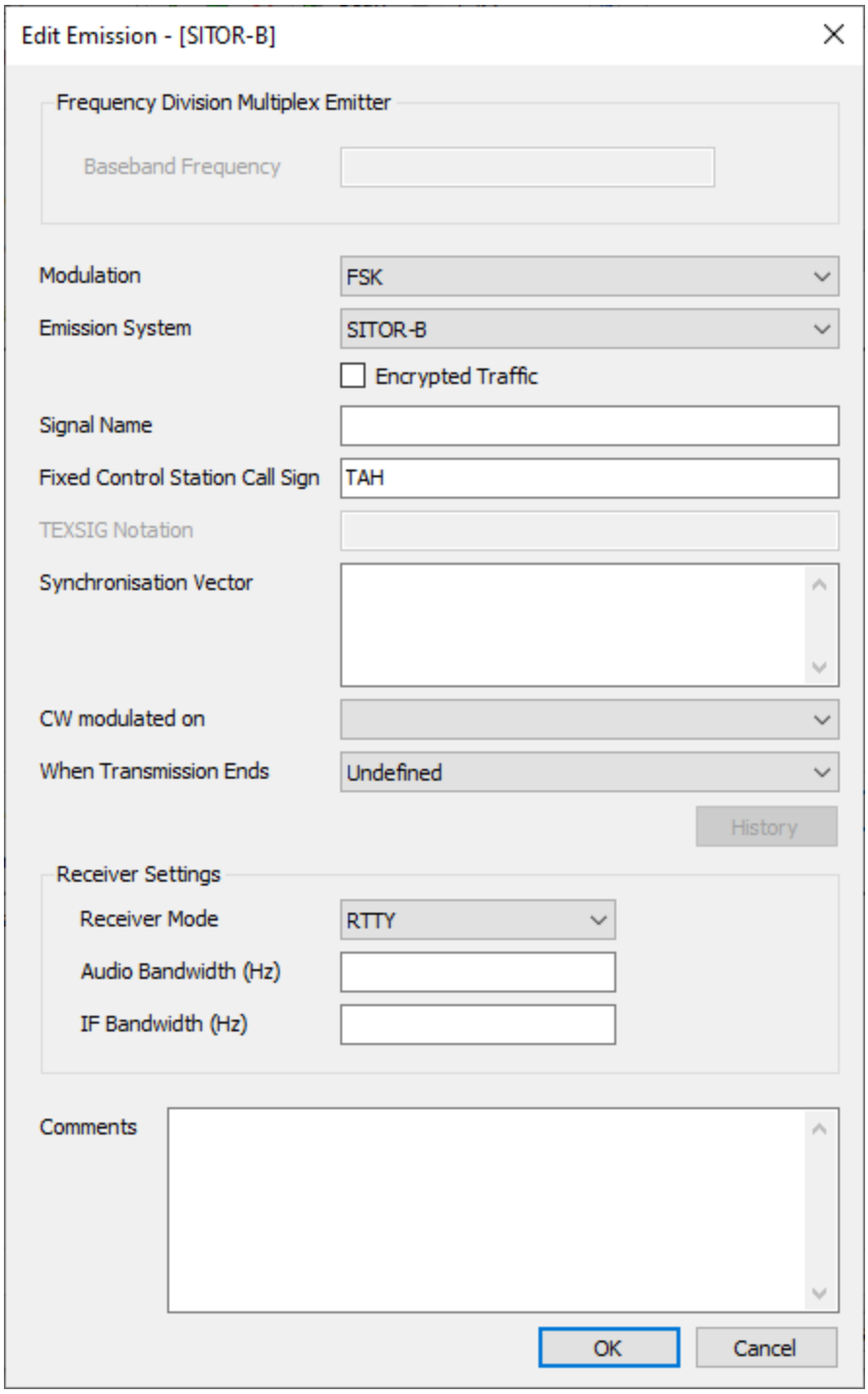


The Edit Emission page allows you to set and define various characteristics of the emission system.

> **NOTE** If you are adding or amending an emission, ensure that you set the correct Receiver Mode that supports demodulation. This is done automatically when emitters are added but must be done manually when new emissions are added or systems are changed to different modulation types. If you do not set the receiver mode, the receiver will default to USB.

Use the Fixed Control Station Call Sign box to record the fixed ITU or voice call signs used by the net control station. These will appear against the emission in the

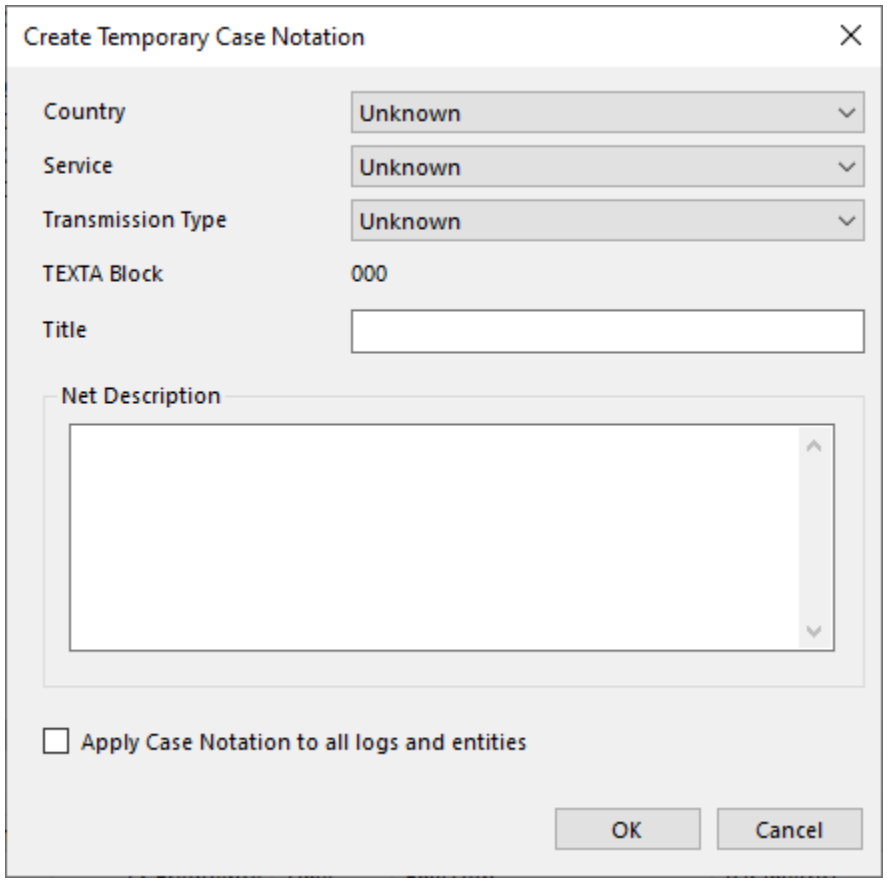
frequency list on the Frequency Page. Synchronisation or Initialisation vectors can also be recorded from systems that display a distinct binary pattern at the beginning of transmissions.



2.5 Generating a Temporary Collection Case Notation

When a new frequency is intercepted and its characteristics cannot be matched to existing Case Notations, intercept operators can generate a new temporary case notation for the emitter. Right click on the emitter and select the Generate

Temporary Case Notation option to open the Generate Temporary Case Notation window.



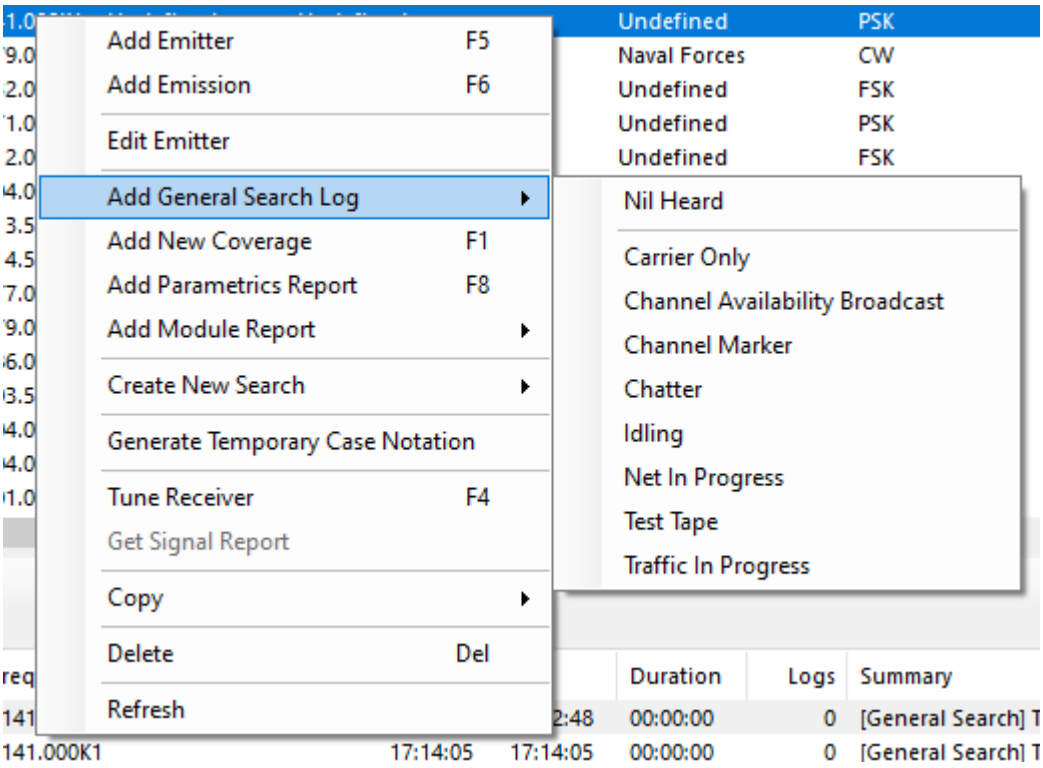
Enter in as much information as possible that is available from the intercept and click the OK button. A new case notation will be automatically generated according to the country, service and transmission type that has been selected and the new case notation will be populated throughout the system so that intercept operators will see it assigned to the emitter and traffic analysts will be able to further develop the case in Traffic Analysis Workbench.

2.6 Creating a New General Search Log

The work of an Intercept Operator can broadly be divided into the tasks of general searches and targetted collection. Where targetted collection will focus on a single target for days, months or even years to glean as much information as possible from the network, general searches operate across broad sections for the radio spectrum, looking for new frequencies and emissions. Often referred to as Surveys, they are a fundamental part in the process of setting up any new intercept site and provide detailed lists of targets that are audible from the site. They are an equally valuable tool when regularly assessing the signal environment at your intercept site.

A General Search Log can often be thought of as a high level summary of the activity on a particular frequency. It will usually only capture the general activity of the frequency though there is always the option to log more detailed intercepts should the search reveal something of interest.

To create a General Search Log, select and right-click the intercepted frequency to open the Frequency menu:



Select the Add General Search Log option then select one of the various log options available. Click the most appropriate option that best describes the intercepted activity and the log will automatically created and will appear in the Coverage tab at the bottom of the Frequency Page with the summary description of "[General Search]" followed by the selected activity.

> **NOTE:** The Nil Heard option should not be overlooked. Logging no activity is often just as valuable as logging actual activity. It can reveal when a schedule has ended or can be used to confirm or disprove assumptions made about a network's operating procedures and schedules.

Noting signal activity is usually sufficient for a general search or survey but if you wish to add more detail to the log, this can be done by double-clicking the log in the Coverage tab to open a dedicated Intercept Page. The workings of the Intercept Page are discussed in Chapter 3 – Collection.

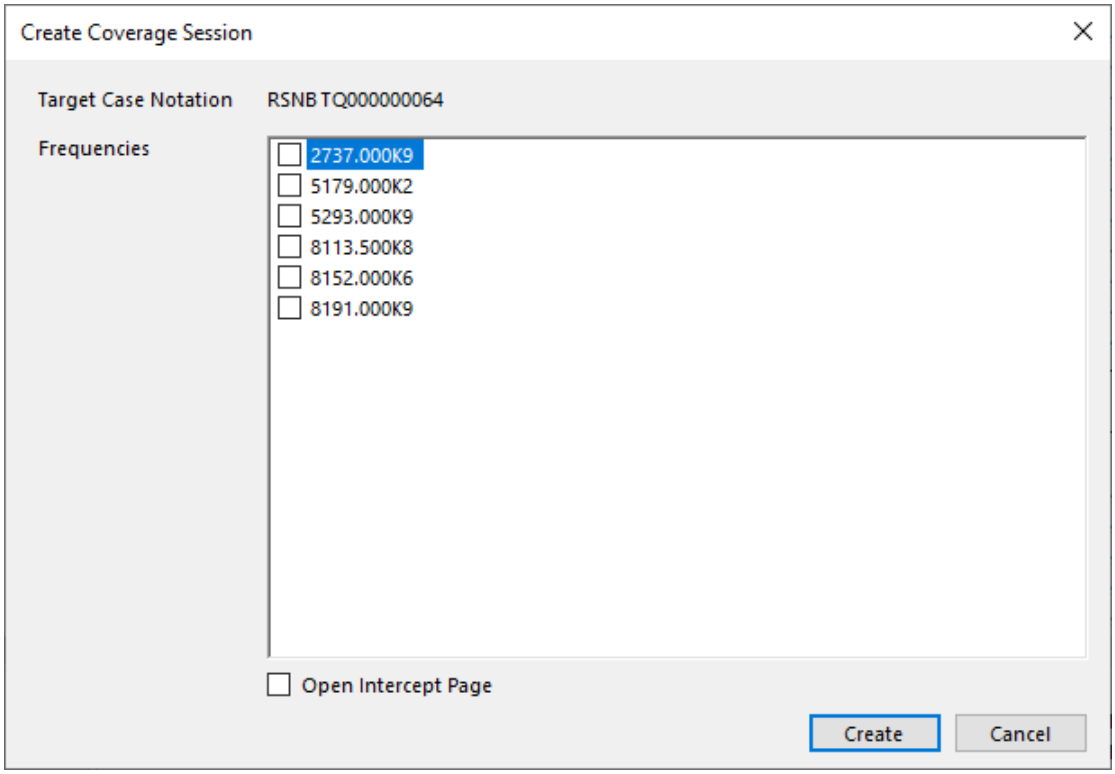
2.7 Creating a Coverage Session

Targetted collection invariably involves specific coverage of a network, either 24 hours per day or for set periods during the day during which all network activity is intercepted and logged. To achieve this type of focussed and consistent logging, the Coverage Session is used to record the start and end time of an intercept session. It supports all the logging necessary to accurately copy all the activity on the network and also provides a clear record of the times during which specific networks were being monitored. From a Collection Management point of view, the coverage log can

also be used to assess the effectiveness of collection and provide accurate information on the number of hours being spent on a particular target.

To create a Coverage Session, select and right-click the intercepted frequency to open the Frequency menu then select the Select the Add New Coverage Session option or press F1 to open the Create Coverage Session window.

When the window opens, it will automatically list the frequency you have selected. If the selected intercept frequency is assigned a Case Notation, the case notation will be displayed beside the “Target Case Notation” and all frequencies associated with that case notation will be listed.



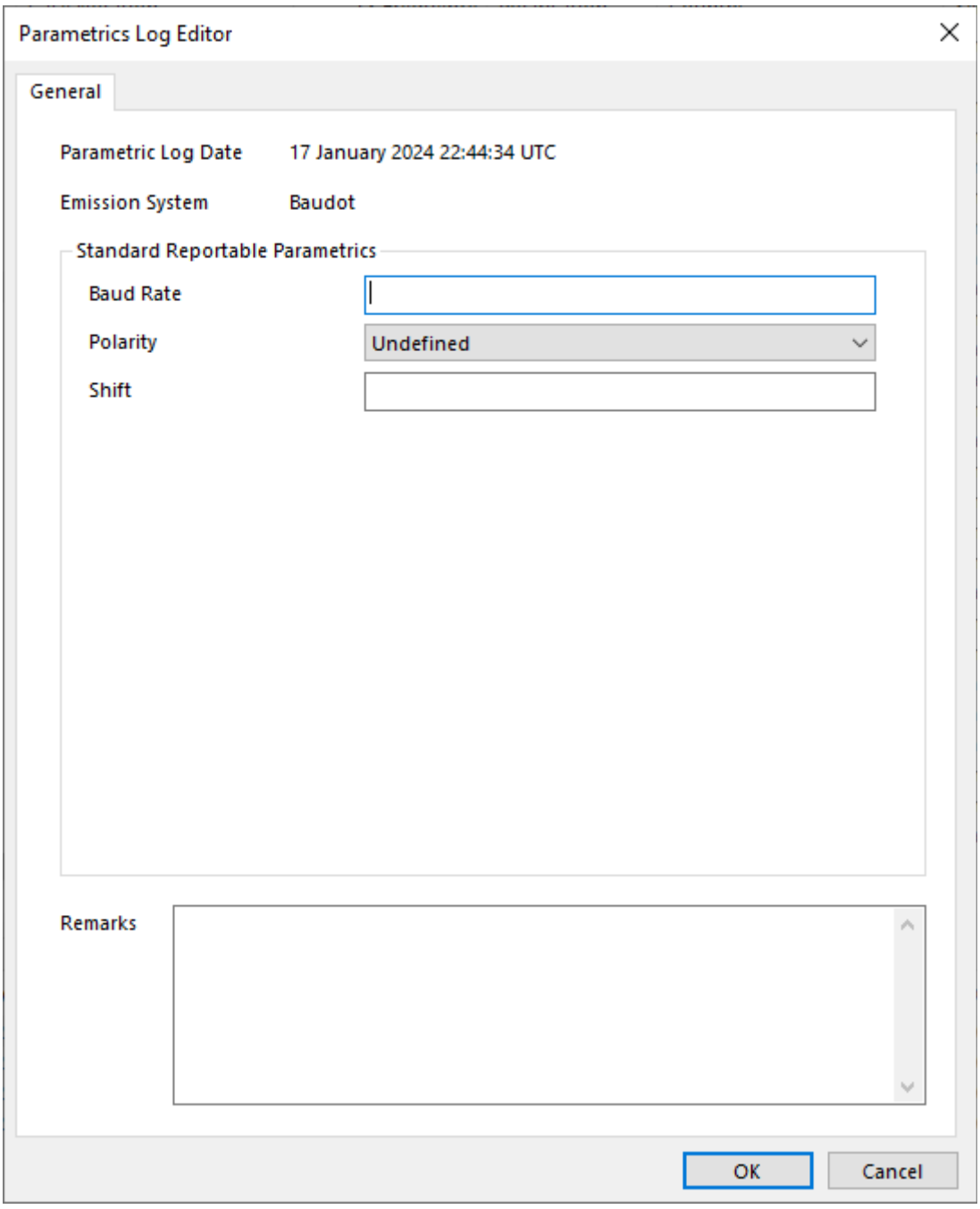
Select and check the frequency or frequencies that you are covering with this session. In many cases, you will only need to select one frequency but if you are covering a network with duplex or complex working, you may need to select more then one frequency. Check the Open Intercept Page option if you wish to immediately open the Intercept Page when the Coverage session is created.

Click the OK button when you have selected all the required frequencies and the log will automatically created and will appear in the Coverage tab at the bottom of the Frequency Page with the summary description of “[Collection]”. If you have selected the Open Intercept Page option, the Intercept Page will open immediately otherwise you can open it by double-clicking the log in the Coverage tab to open the Intercept Page. The workings of the Intercept Page are discussed in Chapter 3 – Collection.

2.8 Adding a Parametrics Log

An important part of logging emission systems is that you also log the operating parameters that these systems are using. Such a parametric log will provide a valuable record of what settings a system is using but it will also act as a useful identification for future intercepts. For example, if two totally unconnected networtks use identical emissions systems on the same frequency, the only way to distinguish them from each other may be a single operating parameter such as baud speed, shift or the polarity of the signal.

Select the emission system from the frequency list and press the F8 function key or right-click the emission system and select the Add Parametrics Report option to open the Parametrics Log Editor window.



NOTE The Standard Reportable Parametrics box will only display parameters that are used by the selected emission system. These reportable parameters can be set for each emission system in Field Station Manager.

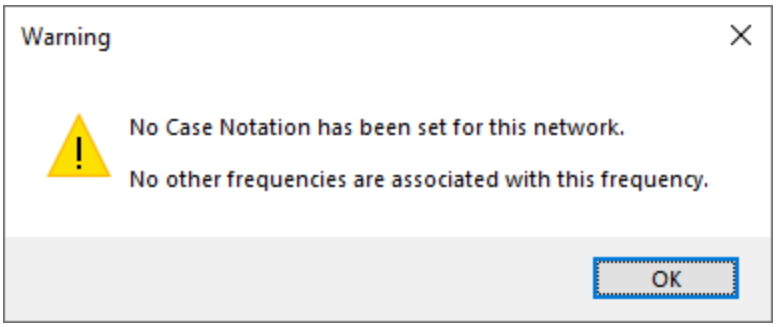
Enter the parameter details for the selected emission system and click the OK button when you are finished. The new parametrics log will automatically appear in the Parametrics tab at the bottom of the Frequency Page and the parametrics will also appear next to the selected emission system in the frequency list.

2.9 Adding a Module Report

HARVESTER COMINT Suite has a number of tailored reports that address specific reporting needs. All reports can be accessed by right-clicking on a selected frequency in the frequency list and selecting the Add Module Report option.

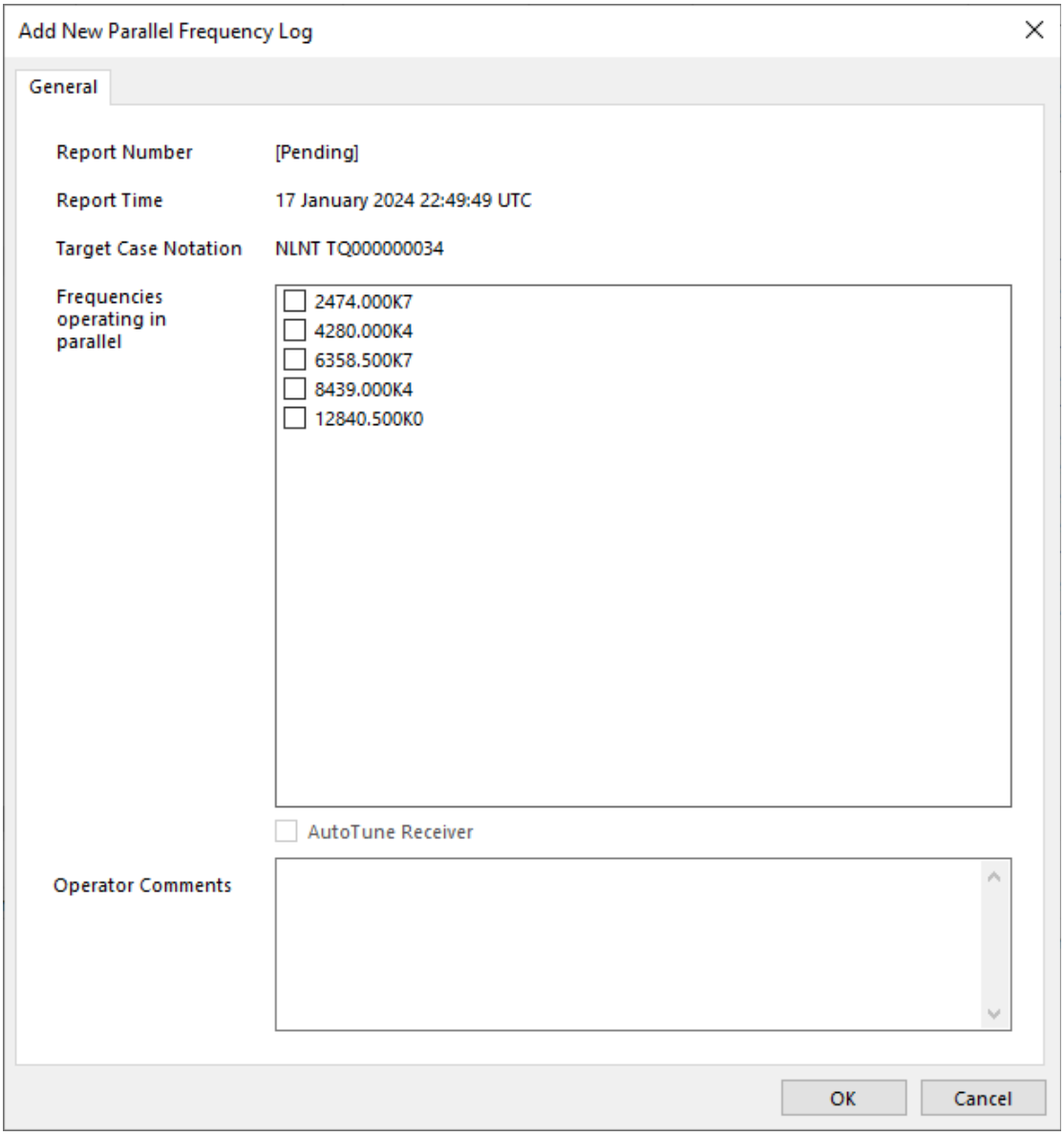
2.9.1 Parallel Operating Frequencies

From the Add Module Report menu, select the Parallel Operating Frequencies option to open the Add New Parallel Frequency Log window. If the frequency you have selected does not have an assigned Case Notation, the following error will be displayed.



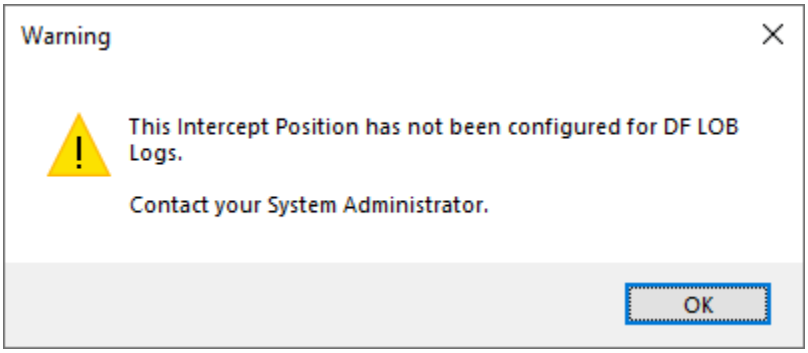
NOTE The Parallel Operating Frequencies log is only available on networks which have been assigned a Case Notation.

When the Add New Parallel Frequency Log window opens, it will display all the operating frequencies associated with the Case Notation. Select and check all the frequencies that are being transmitted in parallel, add any additional information then click the OK button to save the record.

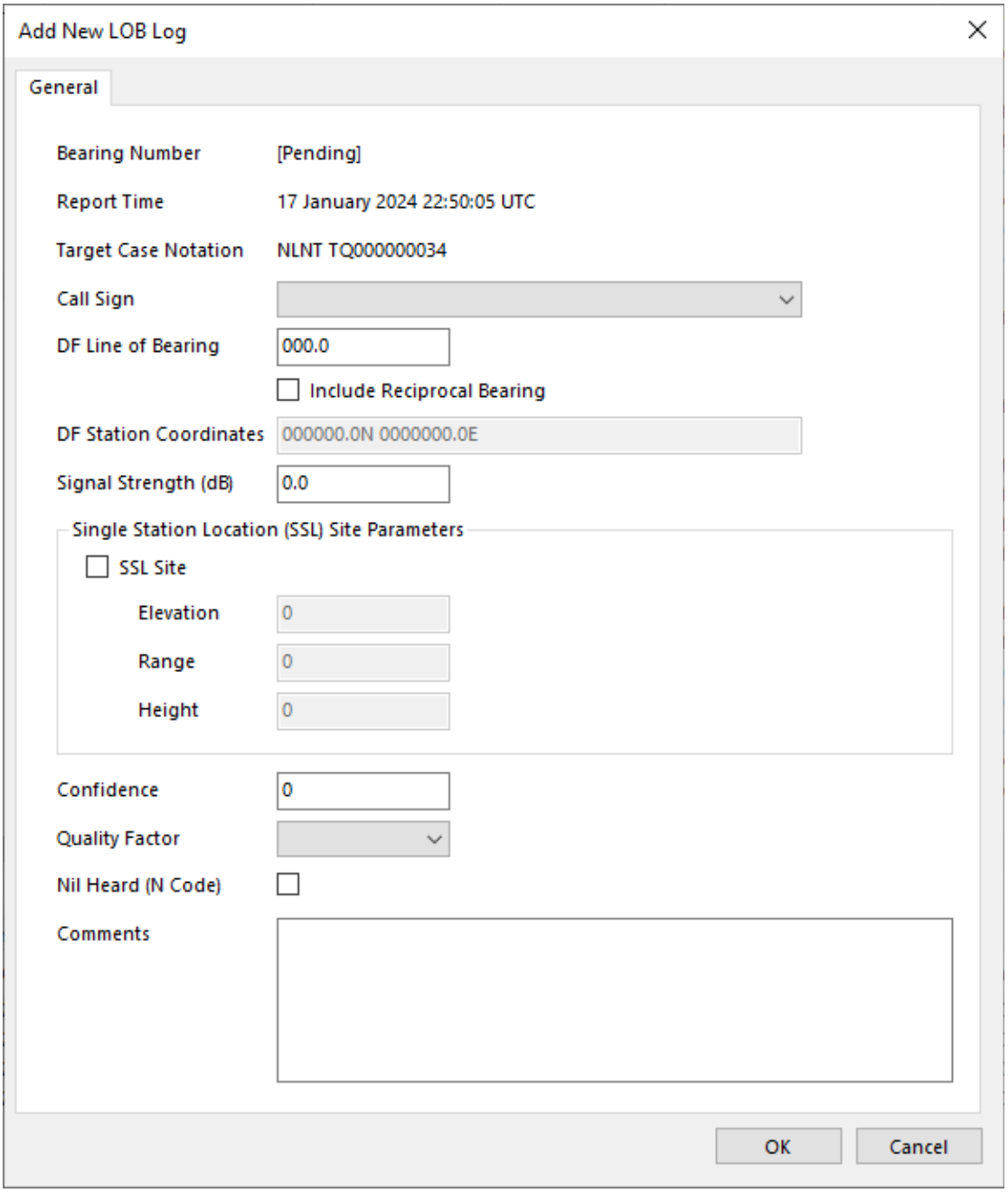


2.9.2 LOB Report

From the Add Module Report menu, select the LOB Log option to open the Add New LOB Log window. If your Intercept Position has not been configured to support LOB reporting, the following error will be displayed.



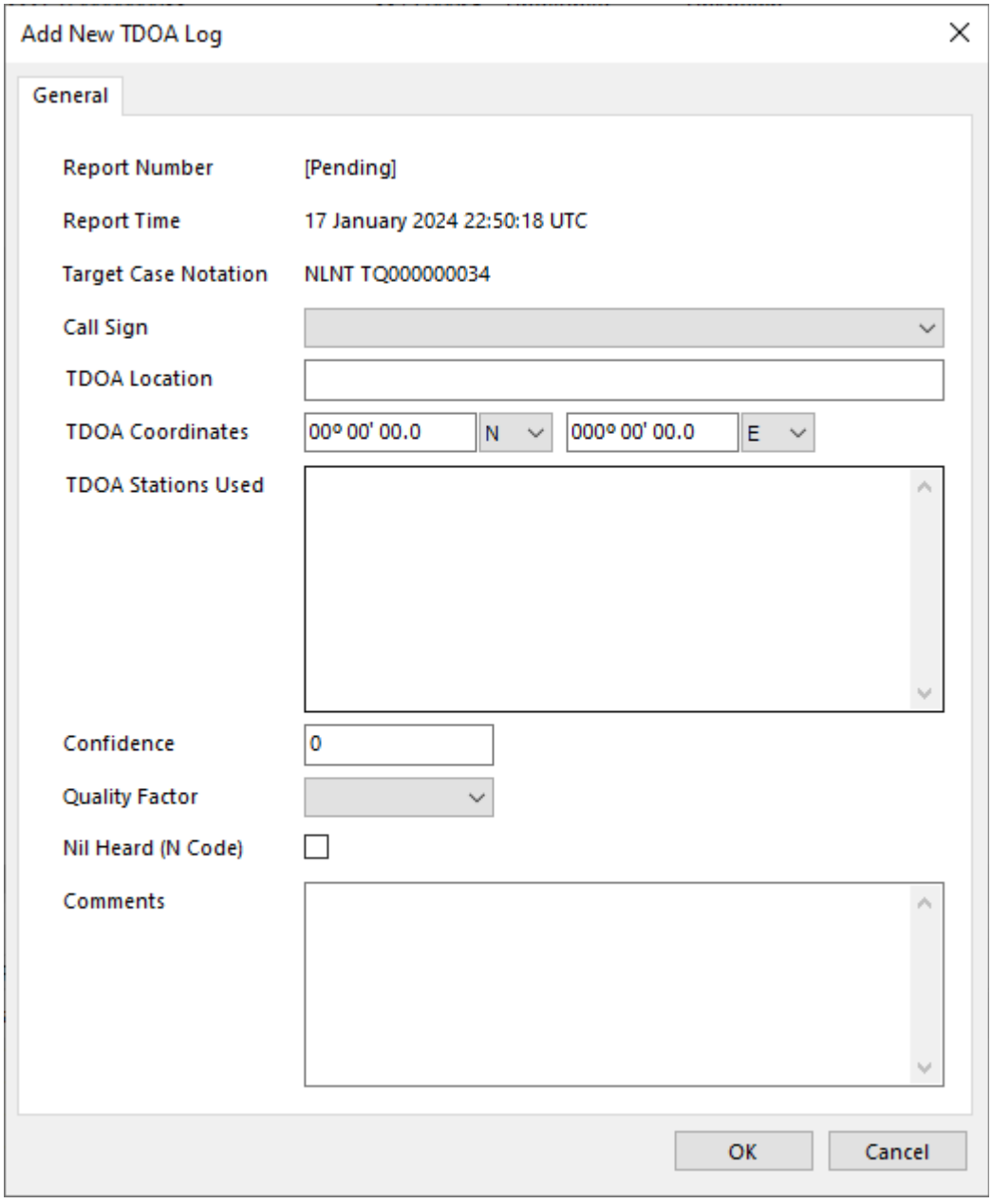
Contact your System Administrator to have your Intercept Position configured to support LOB reporting.



Select the callsign that the LOB is being performed against from the dropdown box then enter the DF Line of Bearing. If your site cannot accurately distinguish between forward and backward signal bearings, check the Include Reciprocal Bearing option. If no signal was heard on the frequency, check the Nil Heard option. Click the OK button to save the record.

2.9.3 TDOA Location

This module is specifically for the results of TDOA analysis which can be performed on a number of online SDR websites. From the Add Module Report, select the TDOA Location option to open the Add New TDOA Log window.

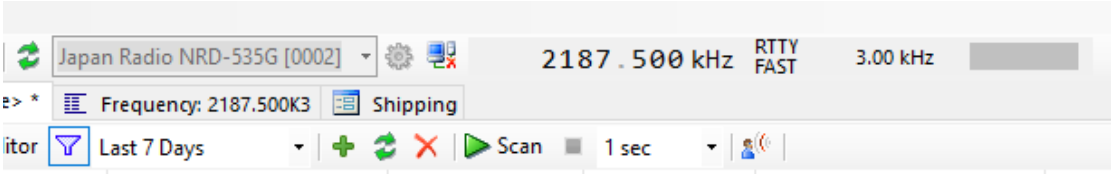


Select the callsign that the TDOA analysis has being performed against from the dropdown box then enter the location, coordinates and TDOA sites used for the analysis. If no signal was heard on the frequency, check the Nil Heard option. Click the OK button to save the record.

2.10 Receiver Control

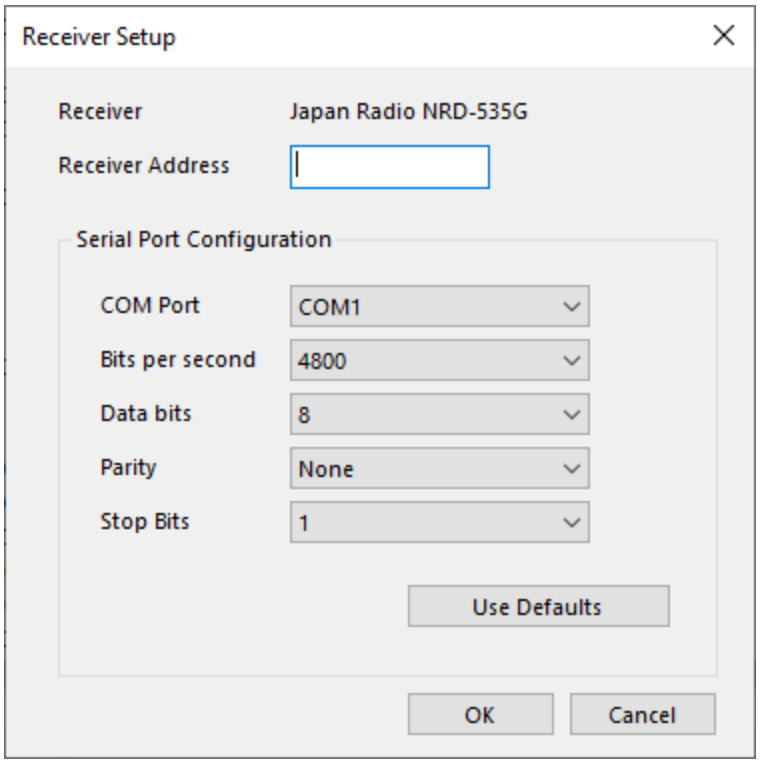
The Receiver Control module provides intercept operators with the ability to allow HARVESTER COMINT Suite to control their receiver making tuning far quicker and

more efficient, and providing the possibility of rapid switching between frequencies at the click of the mouse, as well as automatic scanning of frequencies in a frequency list. The Receiver Control module appears in the toolbar at the top of the screen and includes a list of available receivers, a receiver properties button, a connect and disconnect button and a frequency display showing the currently set frequency, receiver mode, AGC setting and bandwidth.



NOTE Receivers are configured for each intercept position by the System Administrator in Field Station Manager and these receivers will appear the receiver dropdown box.

Select the receiver you wish to use from the receiver dropdown box then click the Properties button to check that the connection settings are correct.



Depending on the type of cable used to connect to the receiver, a serial port or USB port will be required with the latter operating as a virtual COM port. Software is usually supplied with the receiver connection cables and this will need to be installed to enable a COM connection via USB. Select the correct COM port to connect to the receiver and click OK to save the settings. To connect to the receiver, click the

Connect button in the toolbar and the receiver will now be controlled by the application.

Once the receiver is successfully connected, the Receiver Module can operate in several different modes:

1. **Manual Selection** In this mode, a frequency can be selected from the Frequency List but the frequency and mode will only be set on the receiver when the F4 function key is pressed, or the Tune Receiver option is selected from the Frequency List menu.

2. **Automatic Selection (Auto-Tune)** This mode is enabled then when the Auto-Tune option is selected at the right hand side of the Frequency List toolbar. When Auto-Tune is engaged, the receiver frequency and mode as set as soon as a frequency is selected in the Frequency List. This function is not available in Demo mode.

3. **Scan** The scan function allows you to repeatedly scan all the frequencies in the Frequency List with a selectable pause on each frequency of 250 ms, 500 ms, 1 sec, 2 secs, 5 secs or 10 secs. This function is not available in Demo mode.

4. **Intercept** This mode is exclusively used on the Intercept Page and allows you to rapidly switch between frequencies associated with the Case Notation being intercepted.

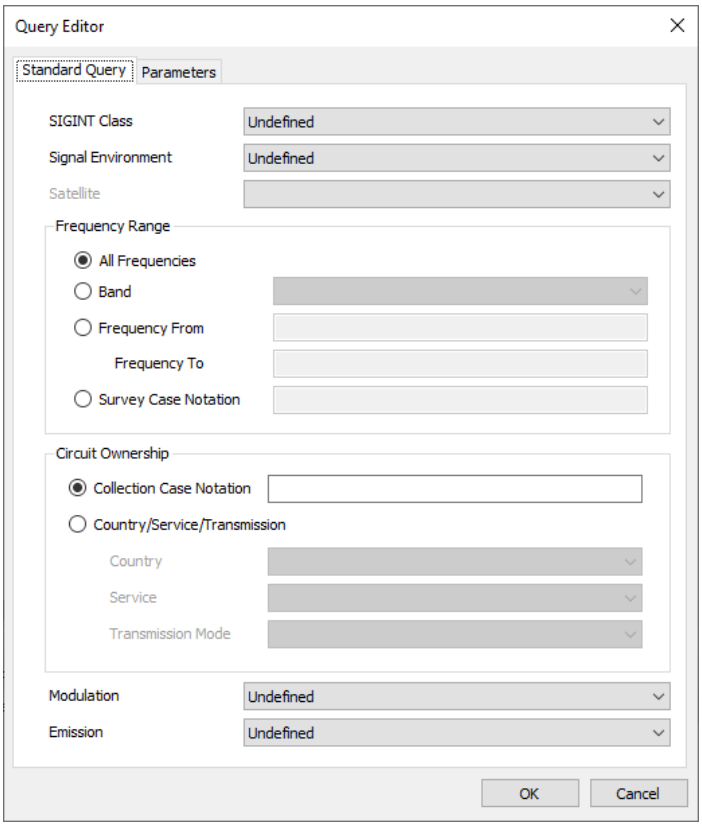
Currently, the Receiver Module is compatible with the a number of Icom, Japan Radio and Winradio receivers.

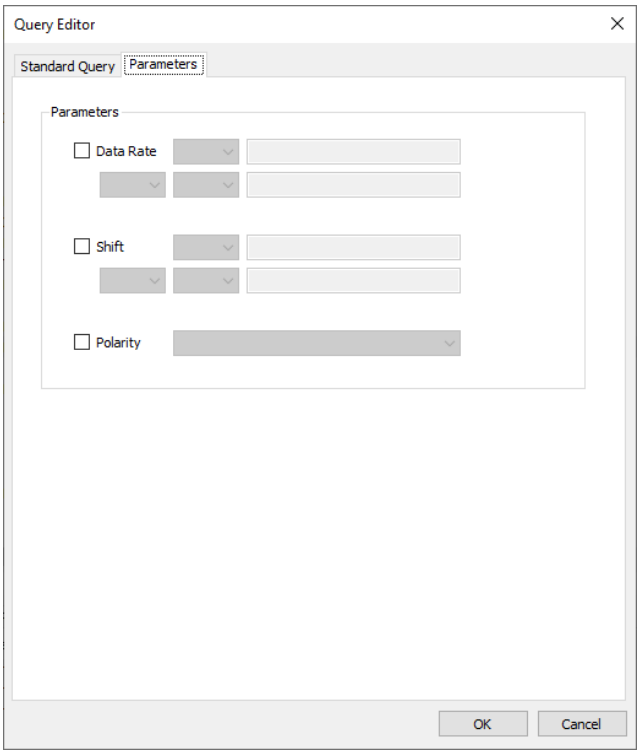
2.11 Queries

The Query Editor window is a powerful and intuitive query builder that allows you to rapidly develop specific queries to meet your collection requirements. The Standard Query tab allows you to specific general frequency and user criteria, which can be further narrowed down by entering details on the Parameters tab.

> **NOTE** Before running a general query, it is often useful to select the “Last 7 Days” option in the date filter to show the most recently active frequencies and avoid having your search results being swapped with frequencies that are not currently active.
>
> **TIP** Create a set of simple frequency queries that divide your collection frequencies into manageable segments, such as into 1 MHz blocks for HF collection or a broader bandwidth for VHF and UHF frequencies, then save them so that they can be easily recalled and re-used.

Click the Query Editor button in the toolbar to open the Query Editor window. Queries can be made from as few or as many conditions as are required to identify the specific list of frequencies that you are interested in monitoring.





Once you have entered all your search requirements, click the OK button to run the query and the results will be displayed in the Frequency List. If the results do not quite meet your requirements, click the Query Editor button again to amend your query.

> **TIP** Once you have a query that is returning the results you require, remember to save it in My queries so that it can be used again in the future.

2.11.1 My Queries

The Assignments and Queries panel on the main Collection Operator Terminal screen supports the My Queries folder, a user specific home folder for all of your search, survey, development and collection queries. All of your queries can be saved here and as the My Queries folder is unique to each operator, your queries can be accessed from any workstation you log into. My Queries works like any file system with both folders and files being able to be created, moved around, renamed and deleted to best meet your needs. Double-clicking any query will automatically open and run the query with the results displayed in a new Frequency Page.

> **TIP** When you first log into the Collection Operator Terminal, take a few minutes to create a some top level folders to hold you queries. Folders such as Collection, Development and Survey might be a good starting point for your queries.

3. COLLECTION

The Collection Page sits at the heart of the Collection Operator Terminal and provide the core functionality for collection within a managed environment leaving intercept operators free to focus their attention on the process of interception. Collection Pages support collection for both general search and targetted coverage, and provide operators with all the informational and textual tools they require to effectively carry out their assignments.

3.1 Understanding the concepts of frequencies, coverage and intercepts

The operation of the Collection Page within the Collection Operator Terminal is based on a hierarchical data model increasing granularity to encompass all the eventualities that an intercept operator is likely to encounter on a frequency. The top level of this model is the frequency. It may be a standalone frequency or it may be just one in a series of frequencies within a network assigned a Case Notation but at it's most basic, it is a frequency to which an intercept operator can tune a receiver.

Immediately below the frequency in this model is the coverage session. Coverage is the actual process of the intercept operator monitoring the frequency. It will have an up time and a down time, and thus a duration. A frequency can support multiple coverage sessions and there can been as many coverage sessions against that frequency as is required to satisfy collection requirements. Coverage can last from a few minutes to a few hours to a full 24 hours per day depending on collection requirements and on the activity of the target. By the end of the coverage session, the operator may heard nothing but that frequency will still have been monitored for activity.

> **REMEMBER** Not all networks continuously transmit traffic. Some do but others work to pre-defined schedules while others are much more sporadic and unpredictable in their operating habits. Continuous coverage of a network over a specific time period will ensure the all traffic is collected.

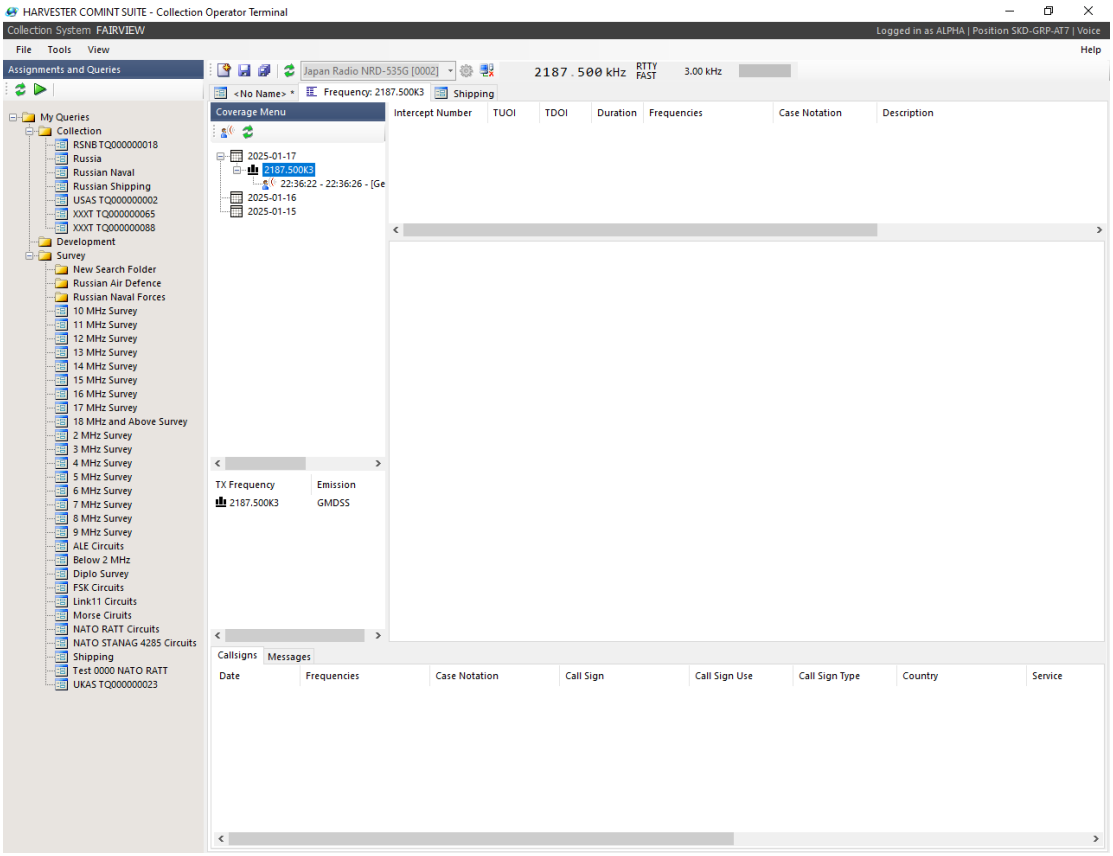
The final layer of this data model is the Intercept. This is the actual traffic that is transmitted by the network and is intercepted during the coverage session. Like the coverage session, each intercept will have an up time and a down time, and a duration. A coverage session can support multiple intercepts. The actual number of intercepts within any coverage session will depend on the activity of the network. A network that is transmitting traffic continuously may only require one intercept log for the entire coverage session while a network that transmits infrequently might

benefit from a new intercept for each transmission. It is often down to local intercept requirements and operator discretion to decide when an intercept has come to a natural end and a new intercept log is required to record the next transmission.

> **NOTE** The Time Up Of Intercept (TUOI) is automatically recorded when a new intercept is created giving a timestamp on any network activity. Always REMEMBER to click the TDOI button at the end of an intercept to capture the down time and duration of the intercept.

3.2 The Collection Page

The Collection Page are accessed by double-clicking any General Search or Collection log in the Coverage tab on the Frequency Page.



> **NOTE** Collection Page names are defined in accordance with a naming convention. If the originating Collection or General Search log was against a frequency that had a Case Notation assigned to it, then the Collection Page name will be prefixed with the word “Case Notation” followed by the assigned Case Notation, for example “Case Notation: RSNB TQ000000018” otherwise the Collection Page name will be prefixed with the word “Frequency” followed by the selected intercept frequency.

The Collection Page is divided into five main areas:

- **Coverage Sessions** – Located at the top-left hand corner of the Collection Page. This menu contains all the coverage sessions associated with the frequency or frequencies that you are monitoring.

- **Frequency List** – Located immediately below the Coverage Menu. All the frequencies associated with the Case Notation you are intercepting will be listed here. If Receiver Control is enabled, clicking each frequency will re-tune the receiver. If you are intercepting a frequency that is not assigned a Case Notation then only the intercept frequency will be listed here.

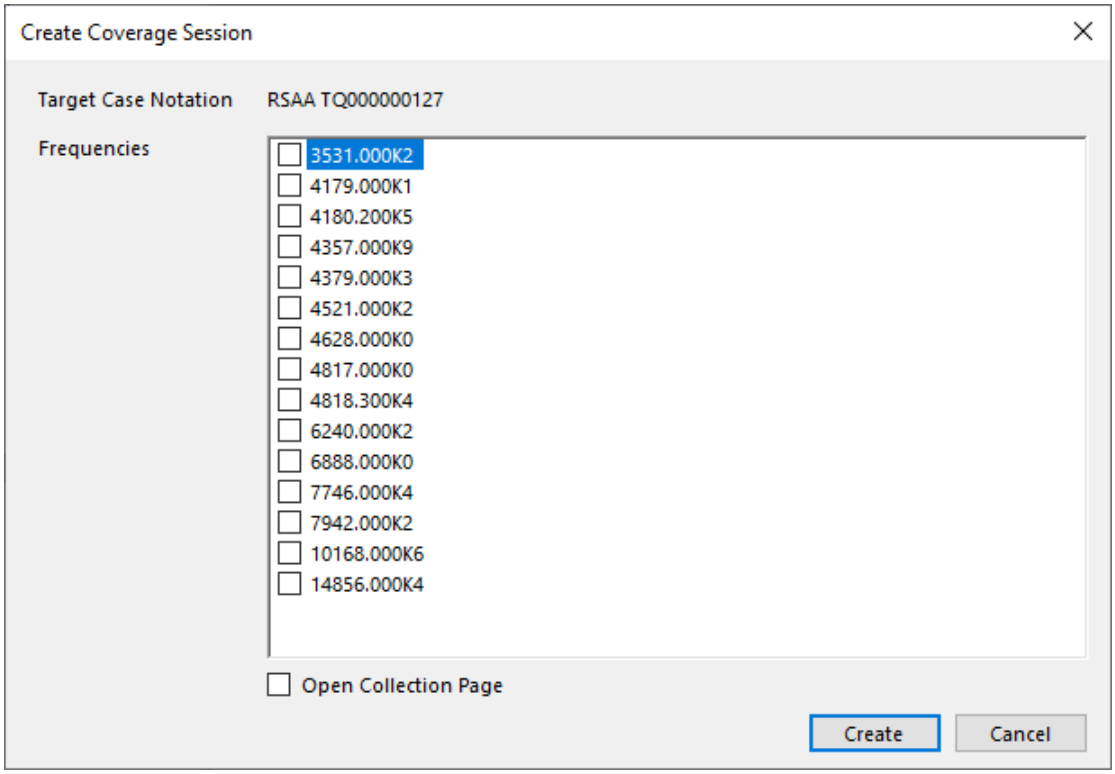
- **Intercept Logs** – Located at the top of the Collection Page. Provides a list of all the intercept logs that have been submitted for a selected coverage session.

- **Intercept Pages** – Located immediately below Intercept Logs. These are the physical intercepts created by intercept operator during the process of interception.

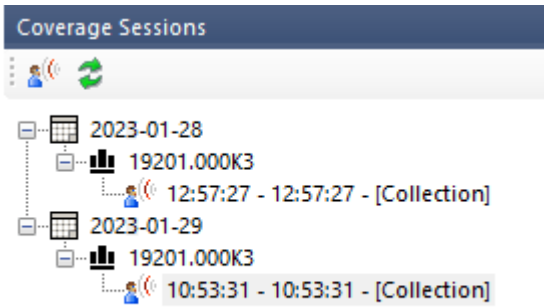
- **Callsigns and Message Logs** – Located at the bottom of the Collection Page.

3.2.1 Creating a new Coverage Session

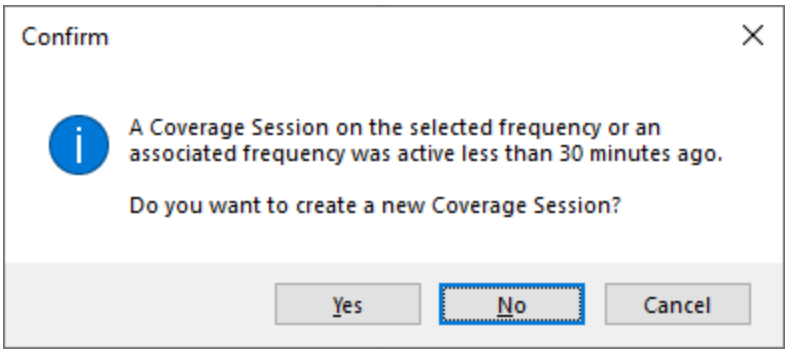
In the Coverage Sessions panel, click the New Coverage Session button in the toolbar or right-click on the panel and select the New Coverage Session option from the menu to open the Create Coverage Session window.



Check all the frequencies that you are currently monitoring and click the Create button to create the session. The new session will be automatically added to the Coverage Sessions panel, ready for new Intercept Logs to be created.



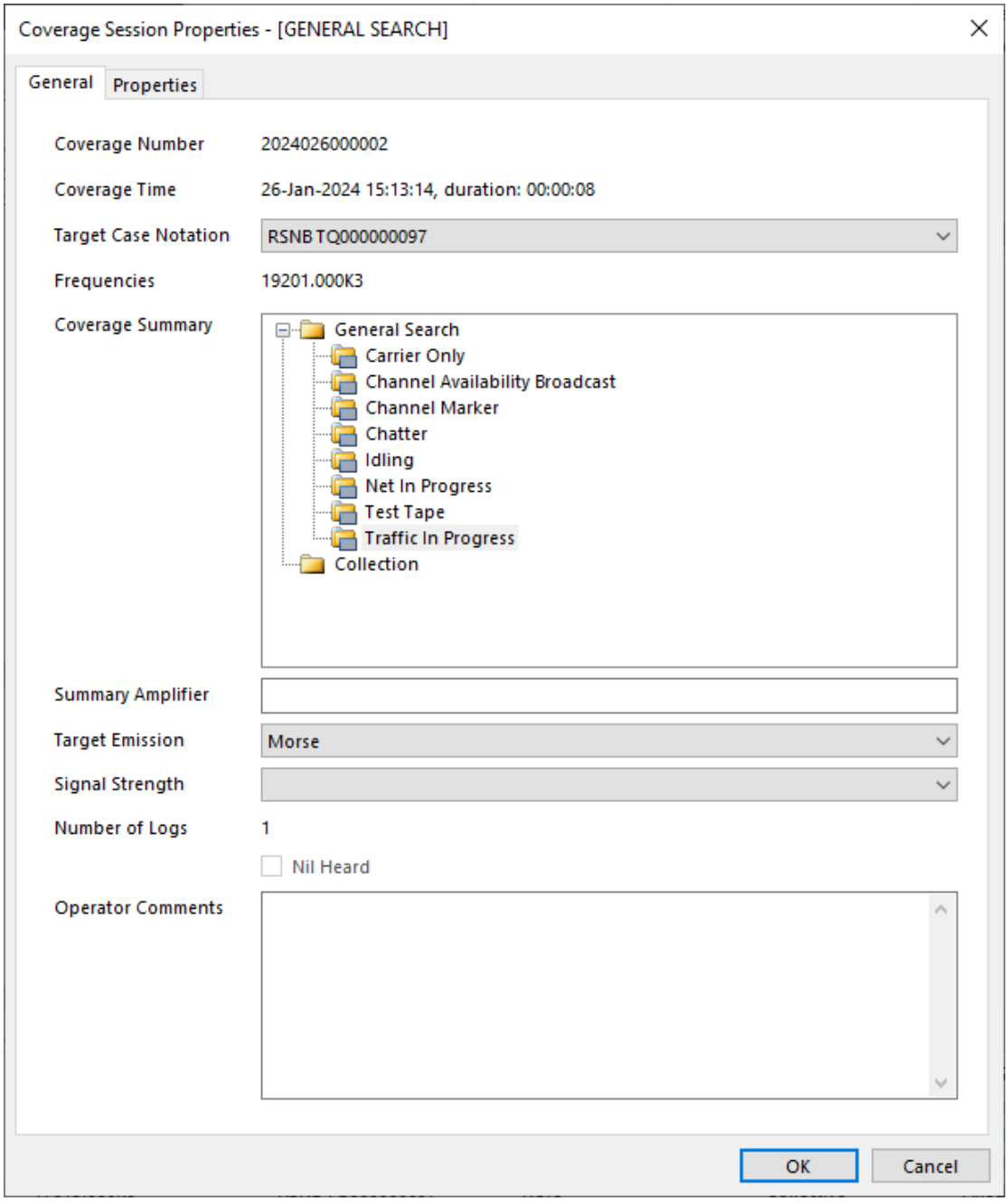
When you create a new coverage session, the system first checks to see if there is another session that you have used in the last 30 minutes on the selected frequency or Case Notation. If theer is no such session, the new coverage session is created however if a session exists, you will see the following message.



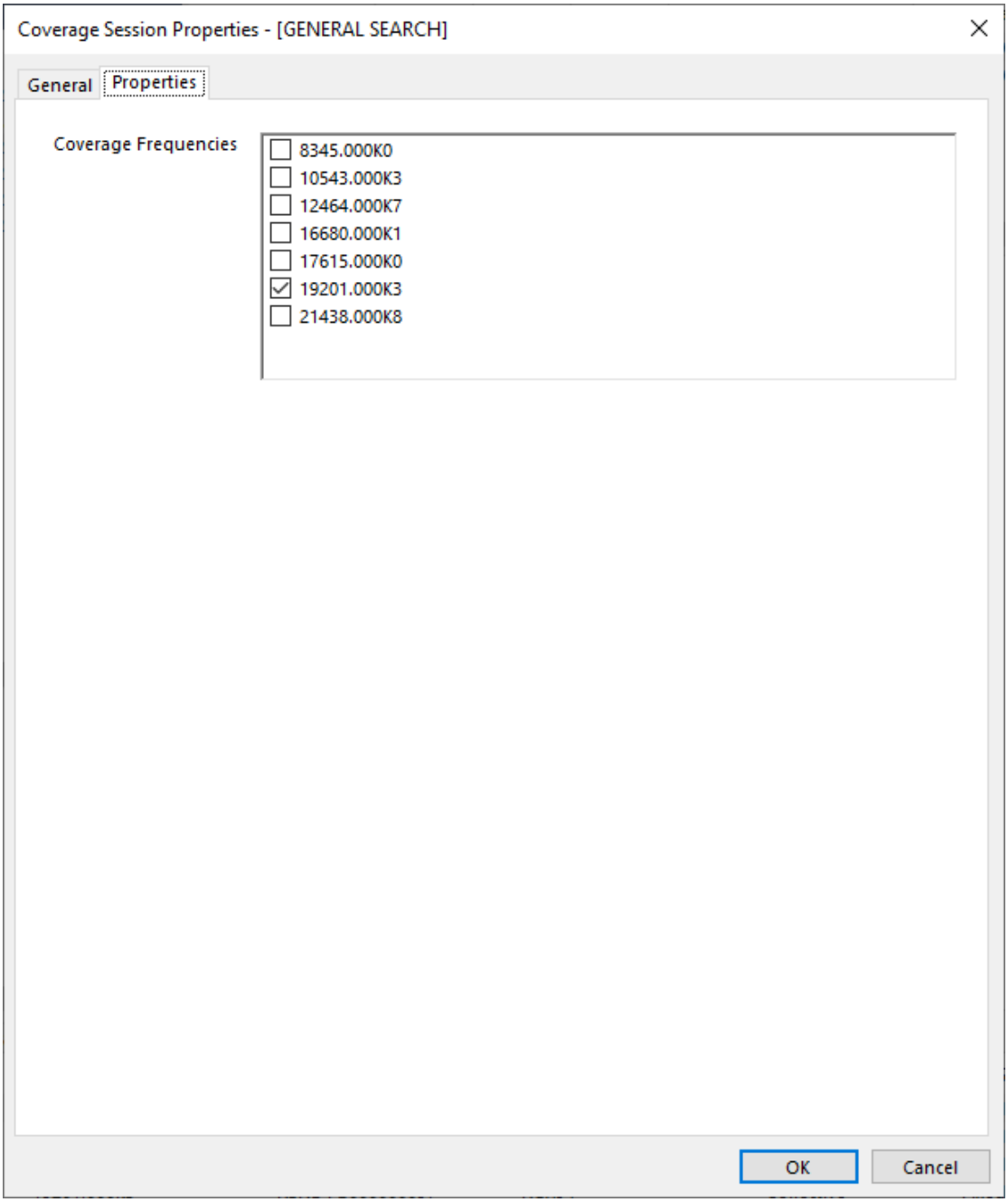
There may be a genuine need to create a new coverage session and this can be done by clicking the Yes button, other click the No button and proceed with logging intercepts against the previous session.

> **NOTE** If you create a Coverage Session from within the Intercept Page, the Coverage Session will always default to a Collection Coverage Session but this can be amended in the Properties window.

To view the properties of the coverage session, select and right-click the session in the coverage session box and select the Properties option from the menu to open the Coverage Session Properties window.



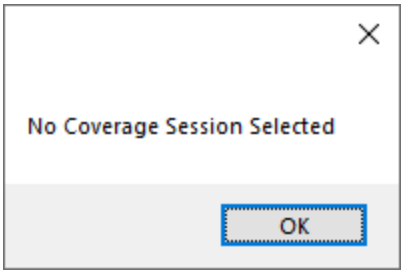
The Properties window can be used to amend the type and activity of the coverage session (the available options are the same as those available on the Frequency Page), add amplifying information, record the signal strength and add any additional operator comments. Coverage session frequencies can be amended on the Properties tab.



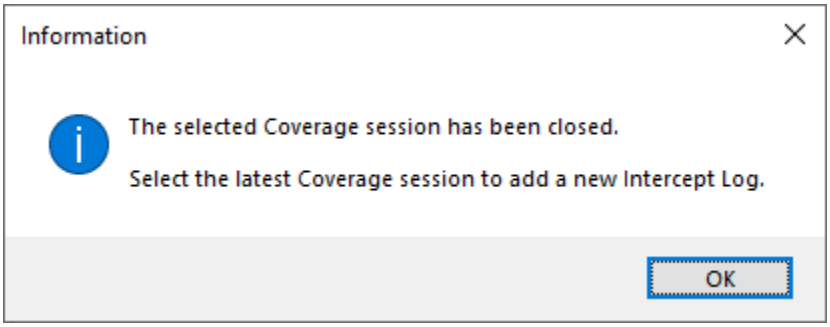
3.2.2 Creating an Intercept Log

With the current coverage session selected in the Coverage Menu, right-click the Intercept Logs list and select the Add New Intercept option from the menu or press the F5 function button to open a new Intercept Page.

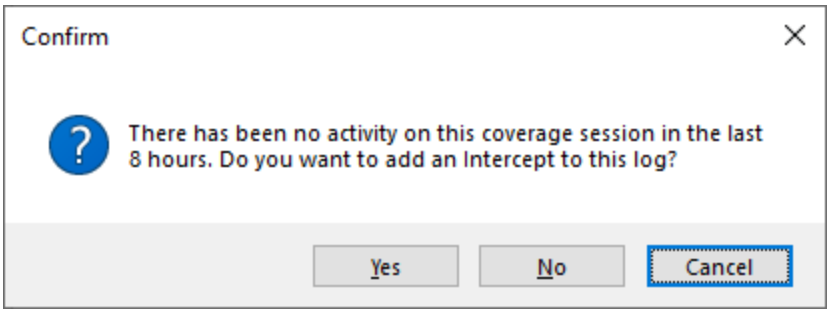
If you have not selected any coverage session and have instead selected a date or frequency, then the following message will be displayed.



If the current coverage session is not selected, the following message will be displayed.



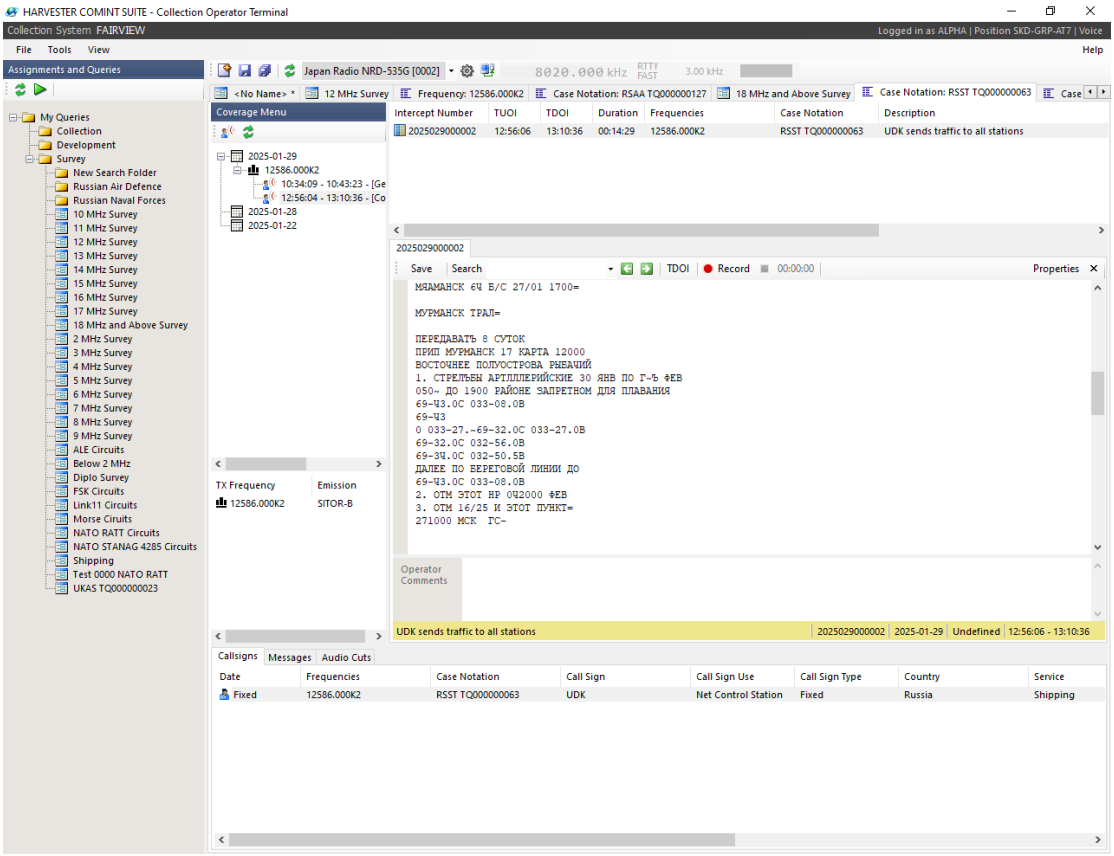
If the most recent coverage session has had no activity in the last 8 hours, the following message will be displayed. The 8 hour time period is derived from a typical intercept operator shift pattern and is attempting to guard against intercept logs being added to inactive sessions.



It is, of course, entirely possible that a collection based coverage session may well have nothing to report for an extended period of time only to have traffic sent after many hours of inactivity. In such cases, click the Yes button and proceed with the intercept log. This check is not designed to impede operations, but is merely a sense-check when a coverage session is inactive for an unusually long period of time.

As soon as the new intercept log is open, you can immediately begin entering details from the intercept. The up time of the intercept is automatically logged against the intercept log and the coverage session time will be updated to reflect the new intercept. You can use the TDOI (Time Down of Intercept) button in the Intercept Log

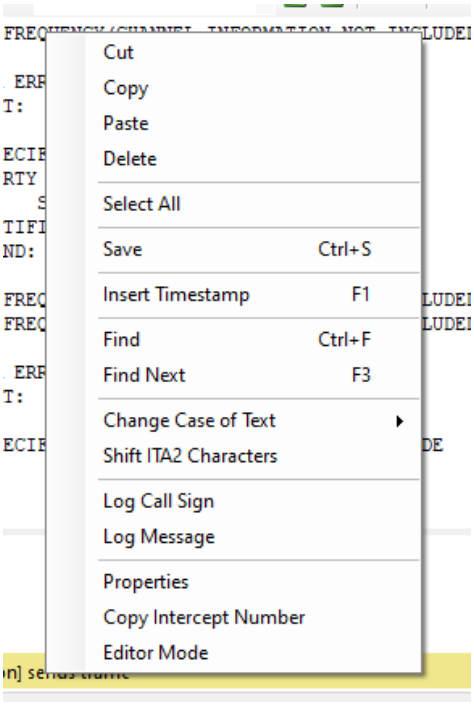
toolbar to update the end time of the intercept, which will be displayed along with the calculated duration in the list of intercept logs at the top of the Intercept Page.



NOTE The Intercept Page now supports Unicode character sets so that traffic sent in non-standard character sets can now be accurately recording in intercept logs.

3.2.3 Intercept Log Menu

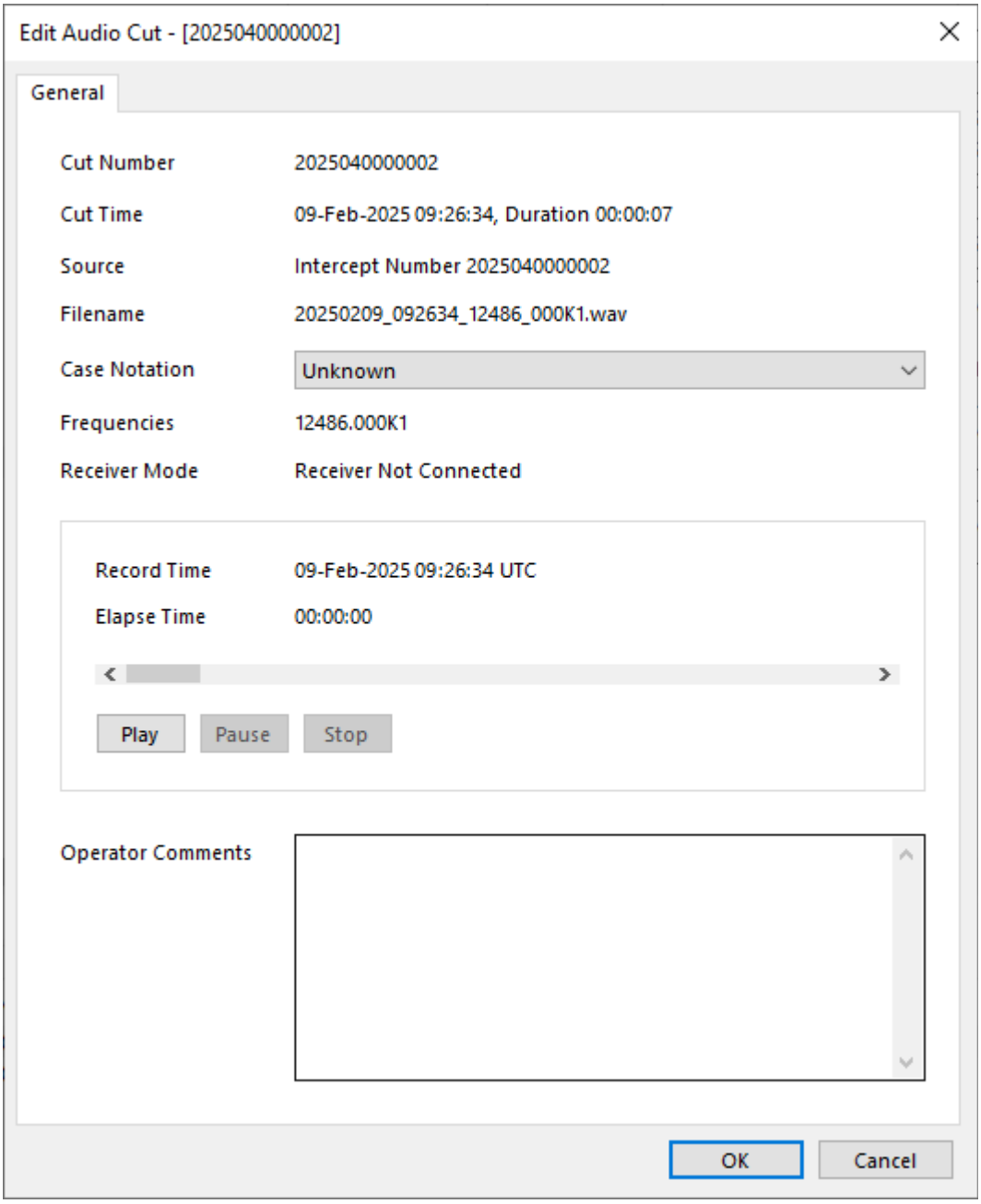
Right-click anywhere on the Intercept to access the Intercept Log menu, which provides access to a number of useful text manipulation and logging functions. Shift ITA2 Characters is very useful when trying to correct teletype broadcasts with poor reception. The logging of callsigns and messages is discussed below.



3.2.4 Recording an Intercept

To produce a recording of an intercept, click the Record button on the Intercept Page toolbar. Audio files are saved to the folder defined in the Audio File Path. If this folder has not been set, an error will be displayed. Select the Settings option from the File menu to open the Settings window to set or update the Audio File Path.

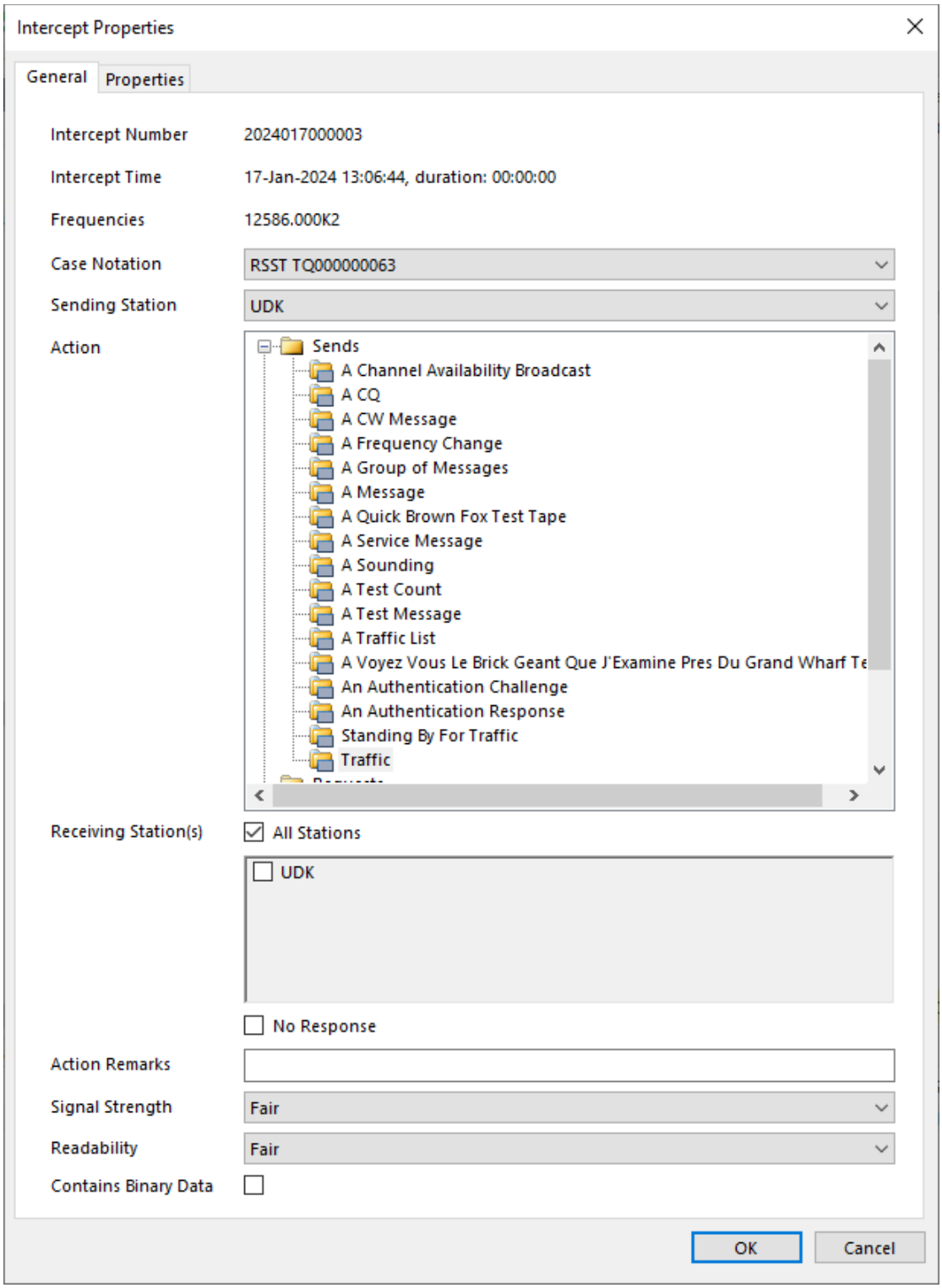
To stop the recording, click the Stop button on the Intercept Page toolbar. The audio file record will be displayed in the Audio Cuts page at the bottom of the Intercept Page. Double-click on the audio record to open the file in the Edit Audio Cut window.



Use the Play, Pause and Stop buttons to control the playback of the recording.

3.2.5 Intercept Log Properties

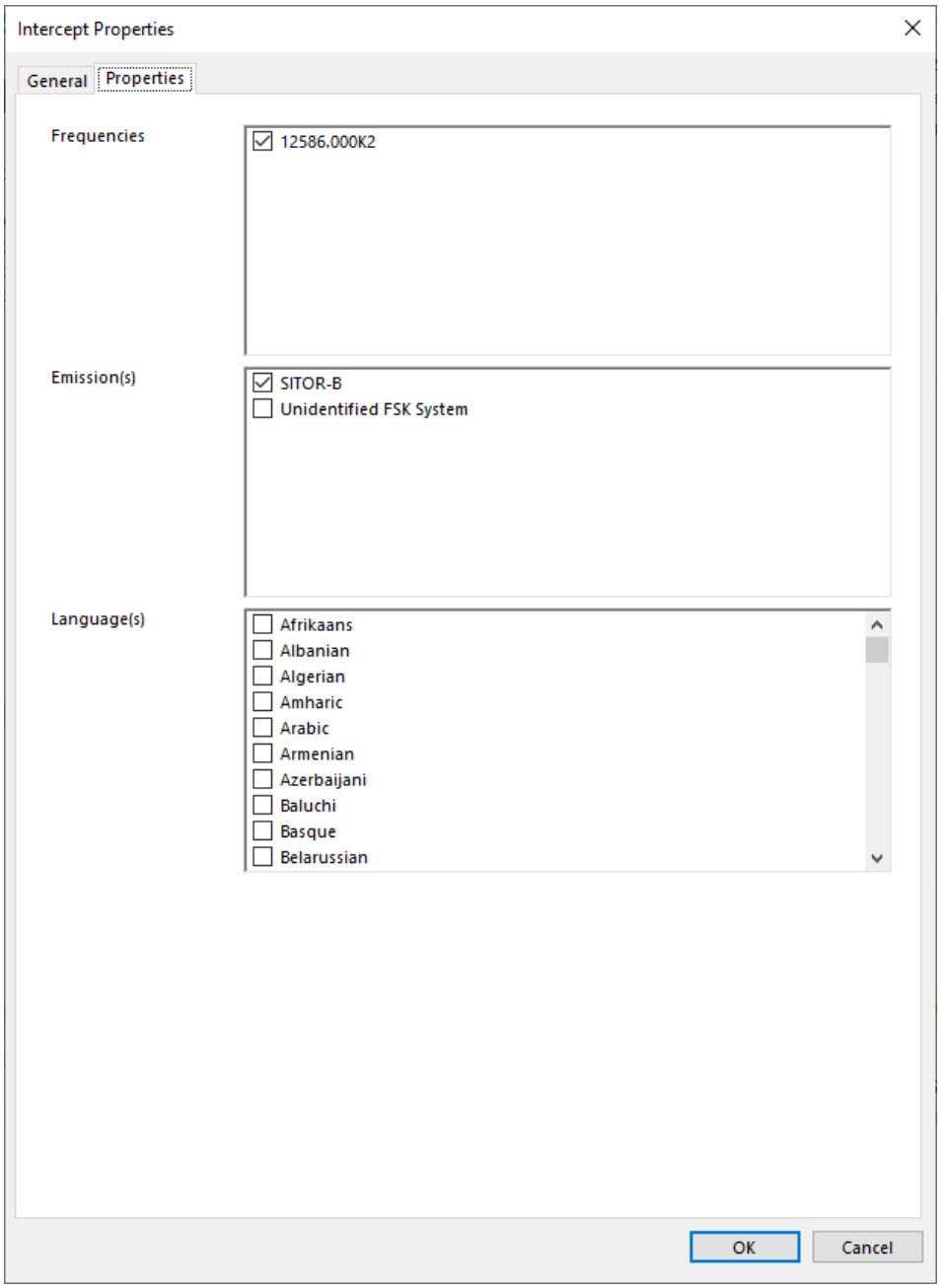
Click the Properties button on the Intercept Page toolbar or select the Properties option on the Intercept Log menu to open the Intercept Properties window.



Use the General tab on the Intercept Properties window define the summary of activity of the intercept, which station was sending and which station or stations were receiving, signal strength and readability of the traffic, and whether or not the

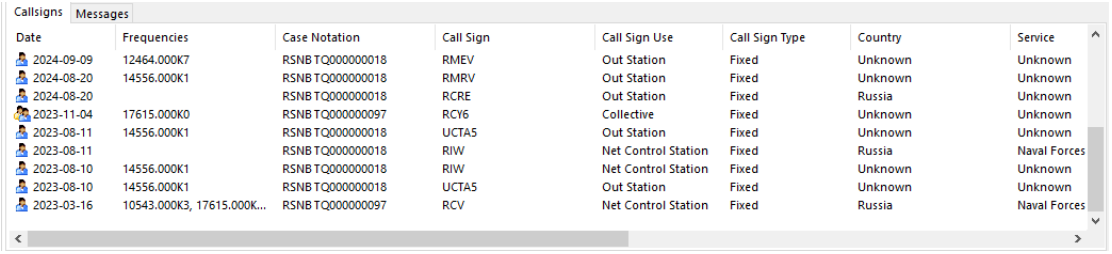
log contains binary data – a useful flag for later analysis of unknown emission systems for the purposes of signal development.

The Action tree can be used to build up a description of the intercept using the ‘Sending Station’, ‘Receiving Station(s)’ and the ‘sends’, ‘requests’, ’calls’ and ‘tells’ actions as well as the miscellaneous and special action codes. Both Sending Station and Receiving Station(s) boxes are populated from the list of logged callsigns (see below) which is why it is so important to log callsigns during an intercept.

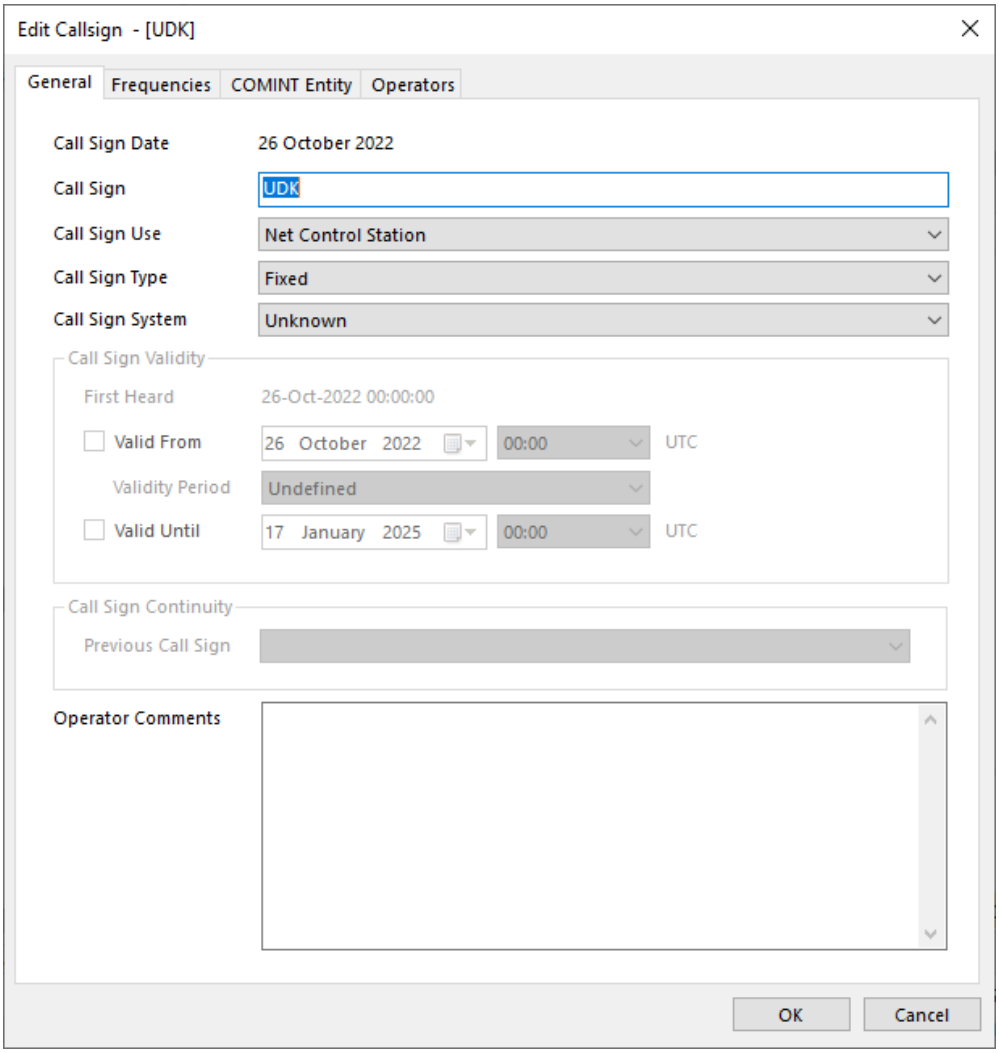


3.2.6 Logging a Callsign

When a new callsign is discovered in an intercept or a known callsign appears on a new frequency, it is good practice to always log it against the frequency or Case Notation for future reference, for the purposes of analysis, and so that it can be used in log descriptions and summaries. Highlight the callsign in the intercept then right-click it to access the Intercept menu. Select the Log Call Sign option from the menu and this is automatically log the selected callsign in the Callsigns tab at the bottom of the Intercept Page.



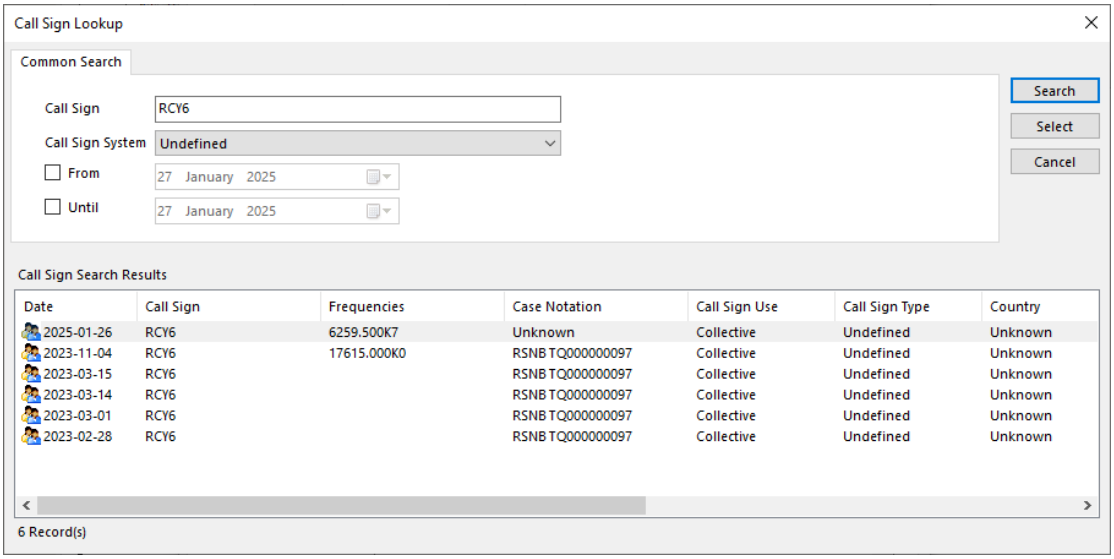
To edit a callsign, double-clicking on the callsign log or by right-click the callsign and selecting the Edit option from the menu to open the Edit Callsign window.



The Edit Callsign window is divided into four tabs, each focussing on a different aspect of the callsign's properties:

3.2.6.1 General Callsign Properties

The General tab allows for the recording of the general use, type and system of the callsign as well as the period of a semi-permanent or random callsign's validity. A check of the callsign can be performed by right-clicking on the callsign text box and selecting the Lookup option from the menu or by pressing the F2 function key to open the Call Sign Lookup window.

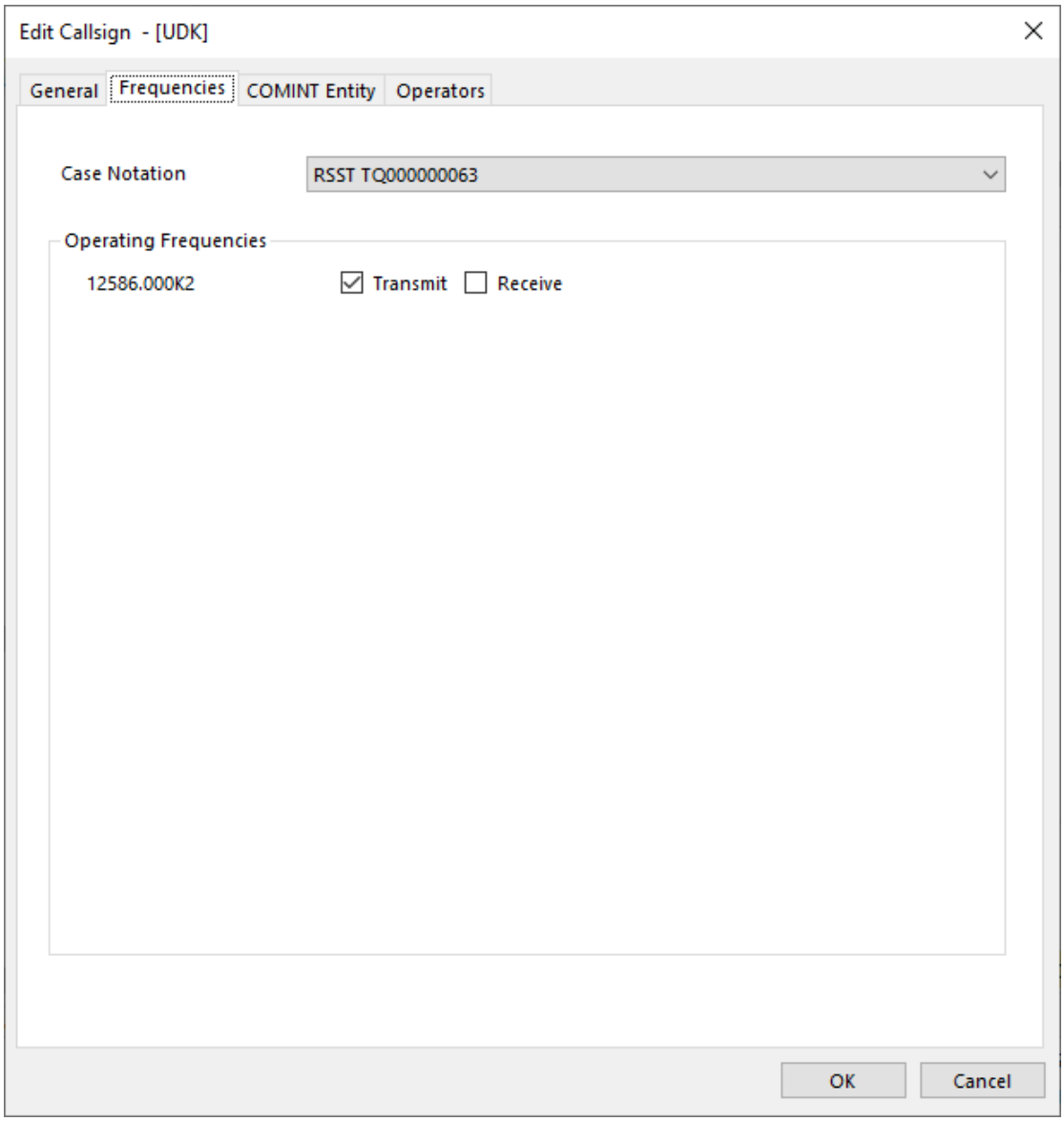


With the call sign auto-populated, click the Search button to check whether the call sign has been used previously. If a match with the current call sign is found, select the matching record and click the Select button to populate the Edit Callsign window with the details.

> **NOTE** Take care when setting a callsign's type as this setting also drives callsign validity which can affect the length of time a non-fixed callsign will remain in the list of callsigns available to reports. If you are unsure, keep the default option of Undefined or choose Fixed until an accurate assessment can be made.

3.2.6.2 Frequencies

The Frequencies tab allows you to set the transmit and receive frequencies for the callsign. On simplex networks, transmit and receive will be the same frequency however on duplex and more complex types of working, transmit and receive may be on different frequencies.

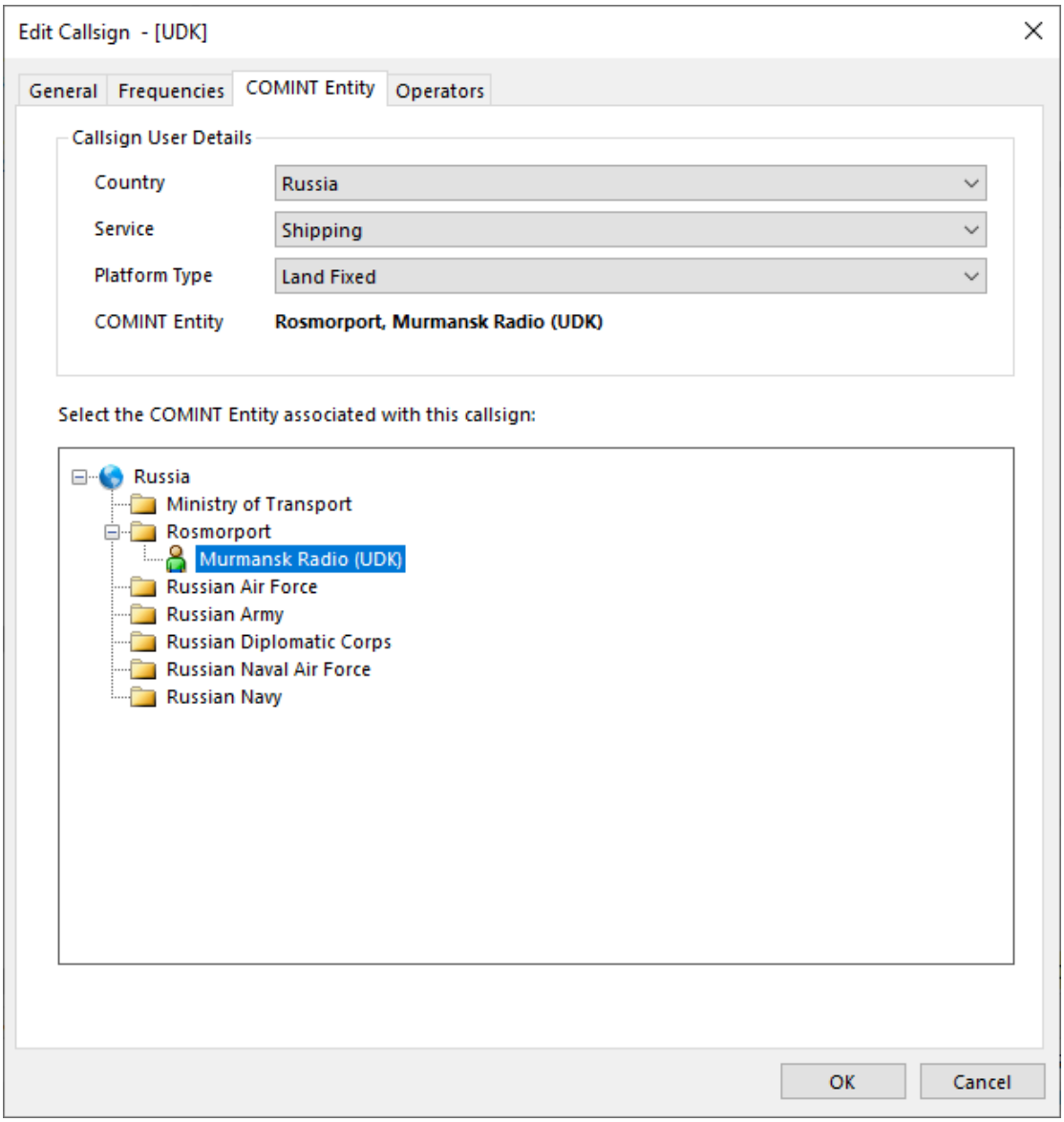


NOTE Only transmit frequencies are displayed in the Callsign tab as these are the frequencies on which you will hear the callsign operating. This is also true of collective callsigns which never transmit but will have a receive frequency.

3.2.6.3 COMINT Entity

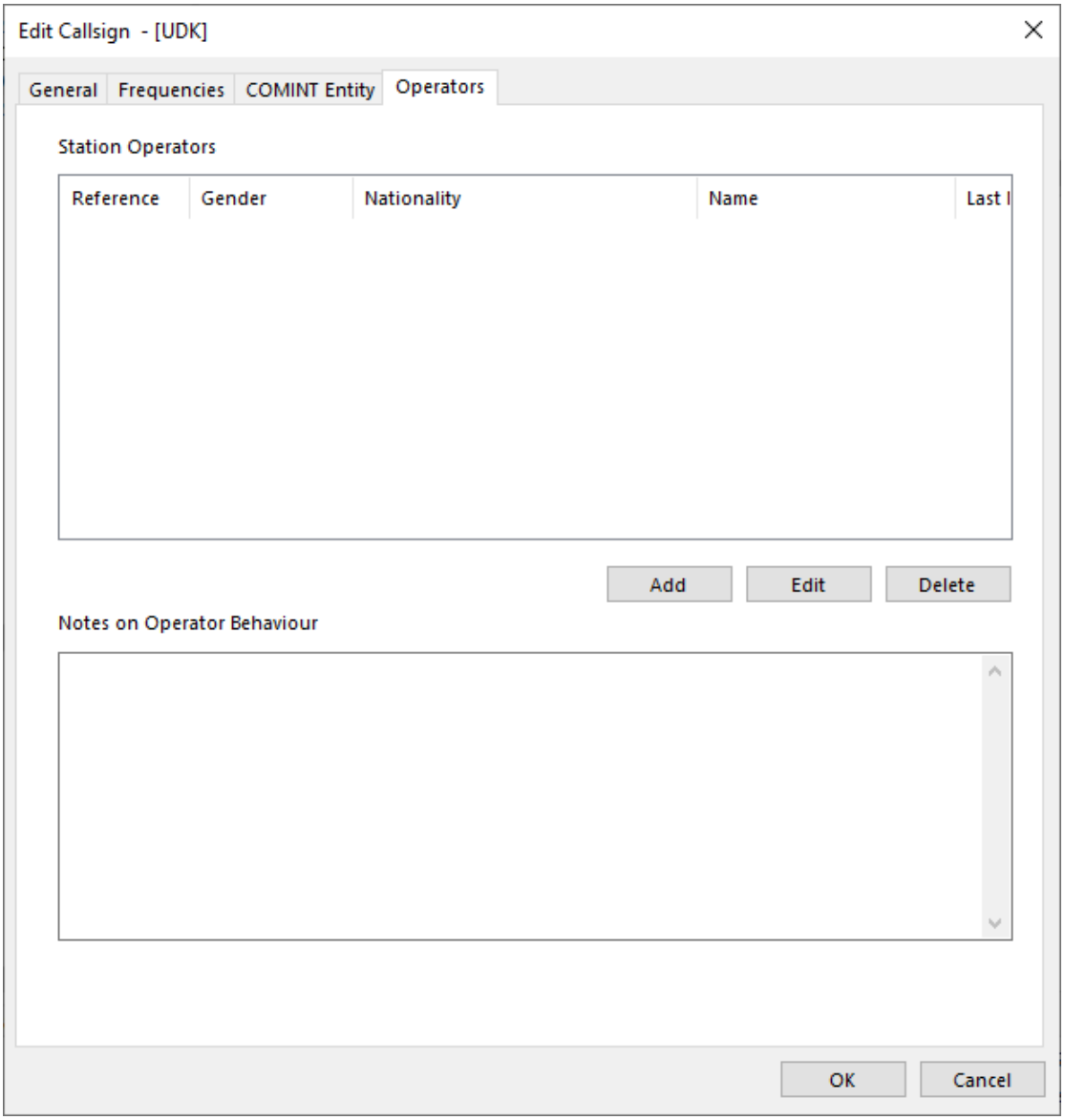
The COMINT Entity tab allows you set the country, service and platform type of the callsign if known. When you select a country, the COMINT Entity tree at the bottom of the window is automatically populated with that country's Order of Battle (OOB)

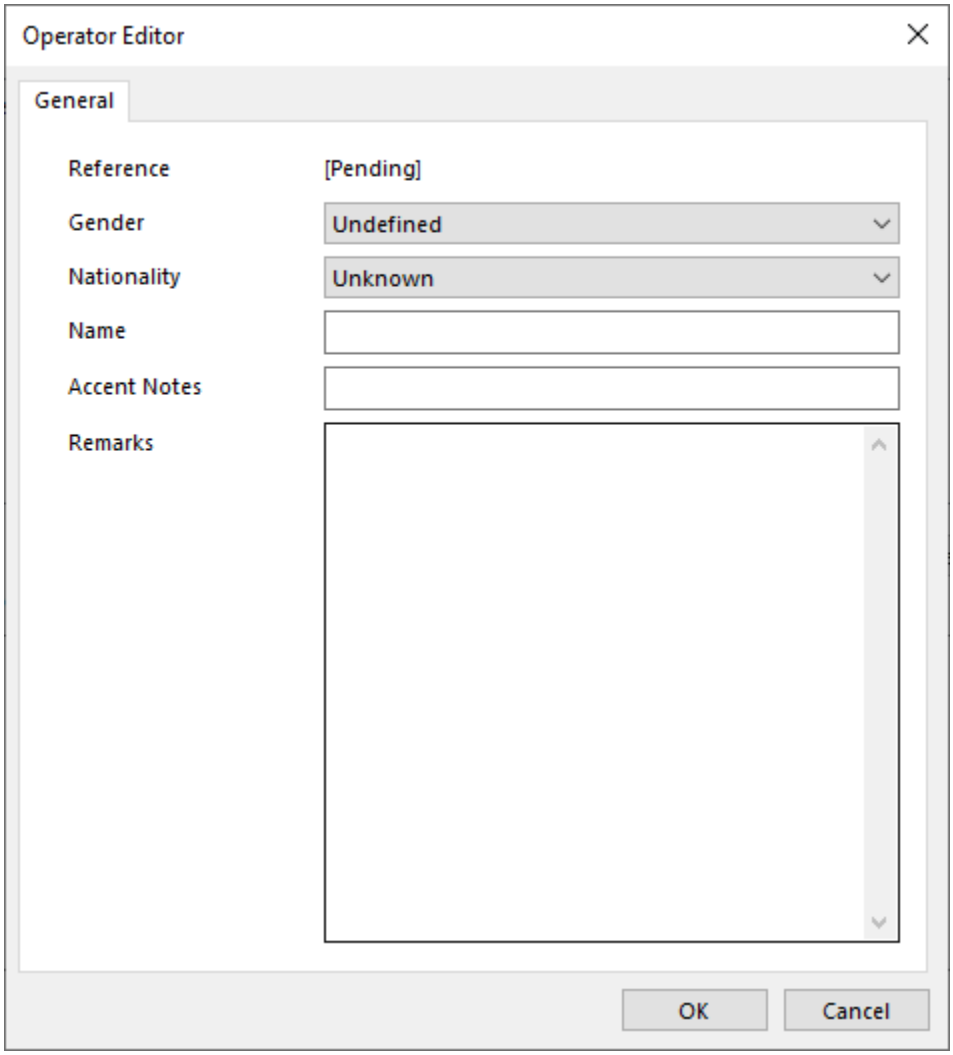
as produced and maintained by the OOB module in the Traffic Analysis Workbench. Select the COMINT entity that is associated with the callsign if it is known.



3.2.6.4 Operators

If network security is observed, there should be very little chance of being able to to identify individual operators. However many operators still have distinguishing features that network security cannot protect against. Whether it is a distinctive accent, the way particular words are spoken, the way certain Morse characters are sent by hand or a peculiar habit

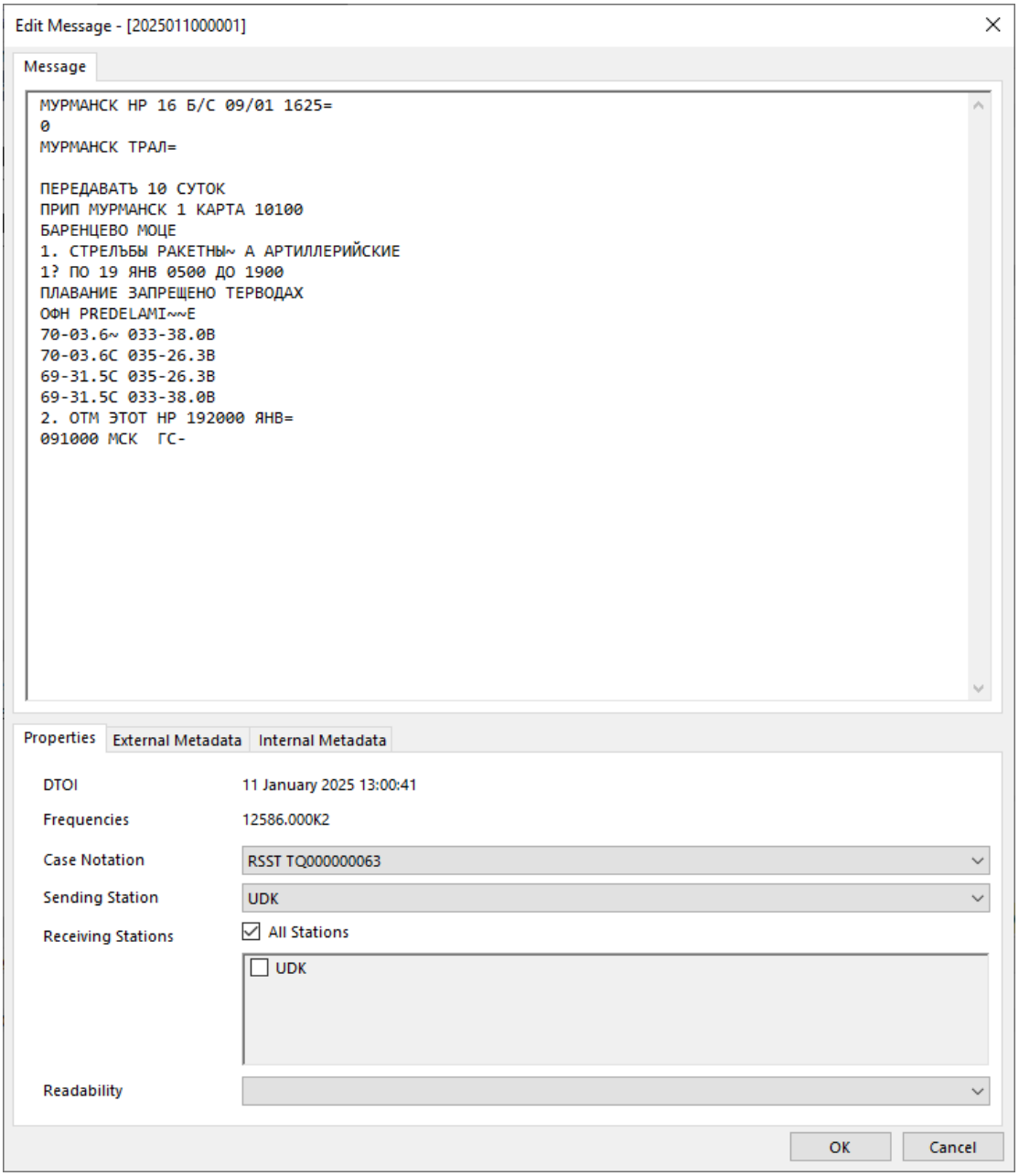

Edit Callsign - [UDK]
General
Frequencies
COMINT Entity
Operators
Station Operators
Reference
Gender
Nationality
Name
Last I
Add
Edit
Delete
Notes on Operator Behaviour
OK
Cancel



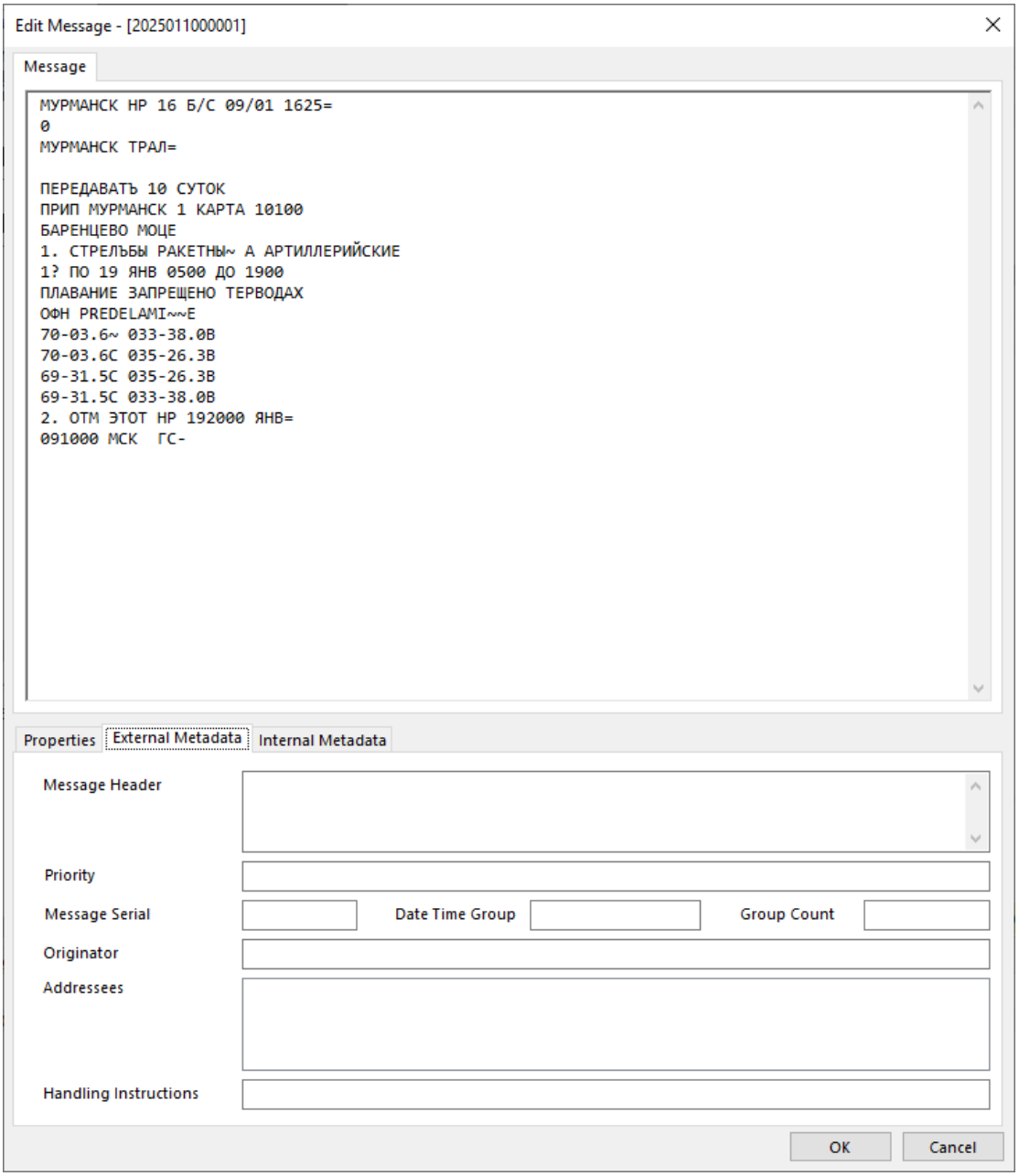
3.2.7 Logging a Message

Highlight the message in the intercept including all any header details then right-click it to access the Intercept menu. Select the Log Message option from the menu and this is automatically log the selected message in the Messages tab at the bottom of the Intercept Page. Once the message appears in the Messages tab, it can be edited by double-clicking the record to open the Edit Message window.

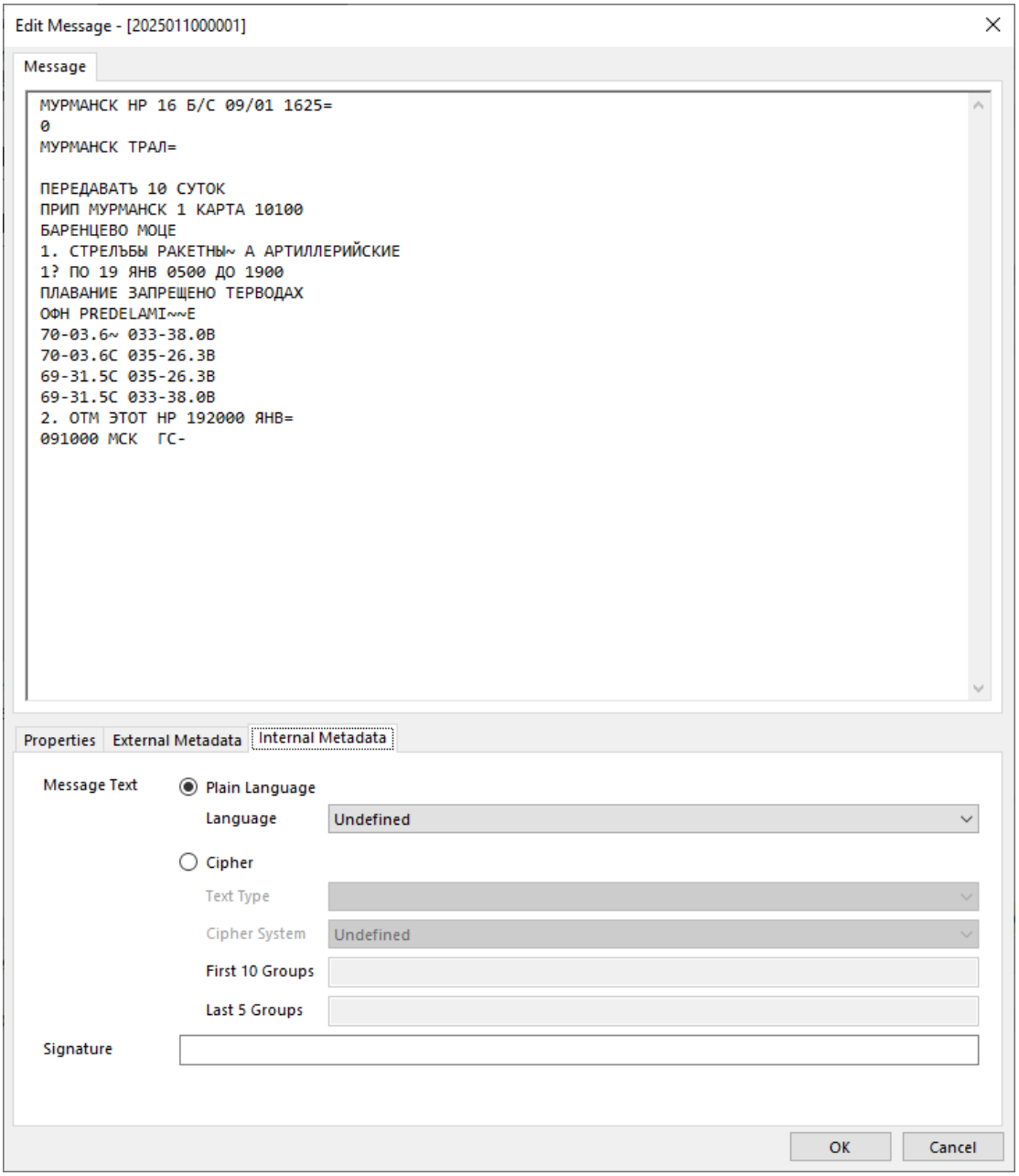
> **NOTE** Both Intercept and Message editors now support Unicode character sets so non-Roman scripts such as Russian can now be pasted and saved.



On the Properties tab, details of the message sender and recipients can be selected along with an overall estimate of the readability of the message.



The External metadata tab allows specific external characteristics of the message to be recorded. These are all useful clues in traffic analysis.

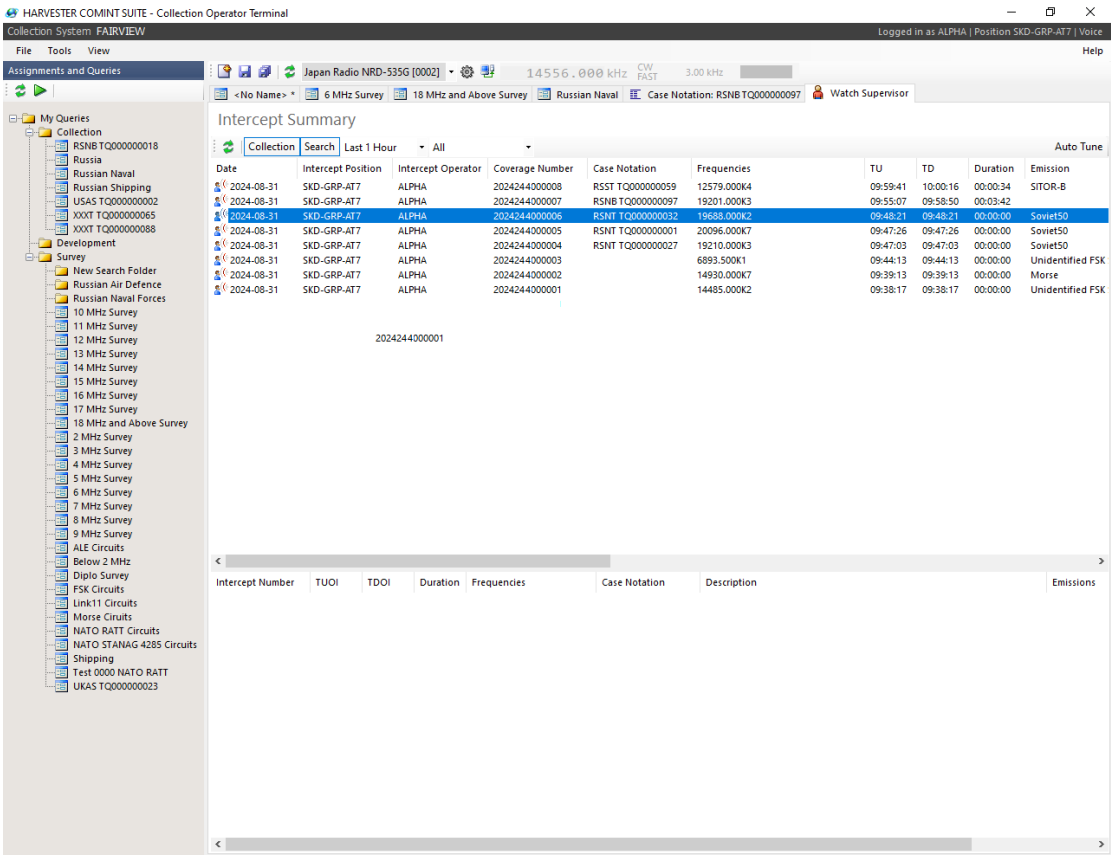


The Internal metadata tab allows specific internal characteristics of the message to be recorded. These are all useful clues in both traffic analysis and cryptanalysis.

4. WATCH SUPERVISOR

The Watch Supervisor page is an extremely useful tool in multi-intercept position environments where a watch or block supervisor is responsible for a group of intercept positions. Select the Watch Supervisor option from the View menu to open the Watch Supervisor module.

NOTE This module is not available in the demo mode.

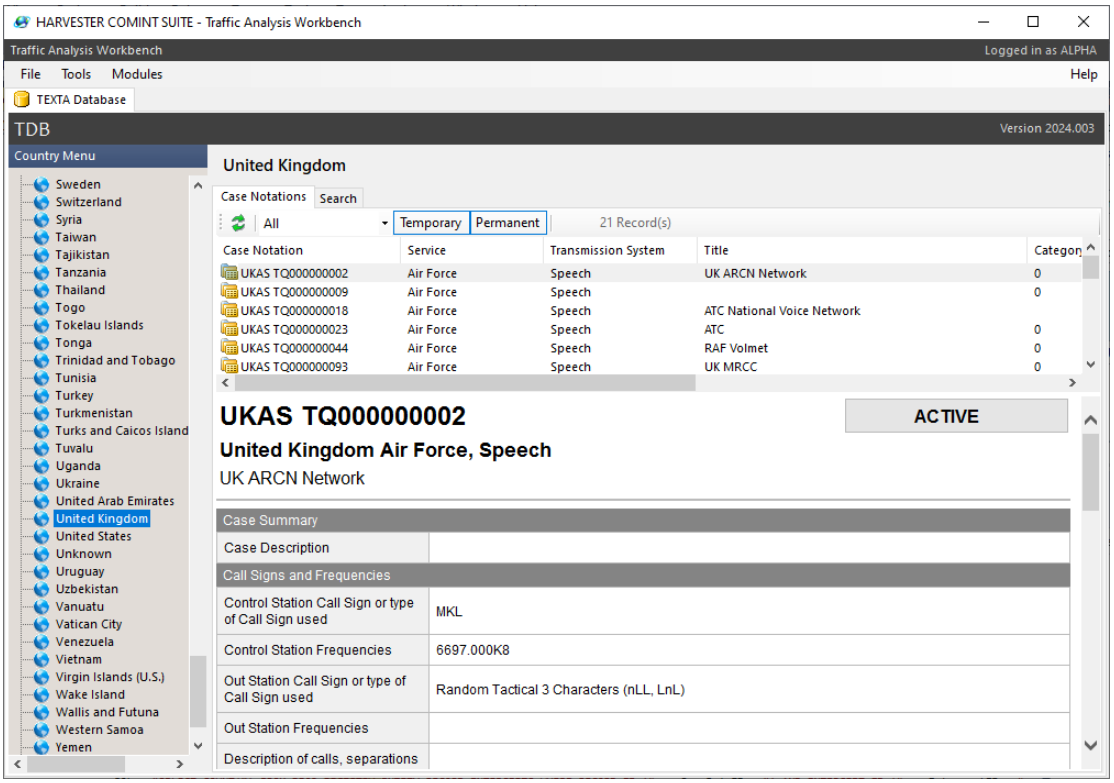


The toolbar contains a number of filtering options covering the types of coverage (Collection or General Search), time blocks ranging from the last hour to the last 24 hours, and the selection of individual intercept positions. Clicking on the coverage session reveals the associated intercept logs in the box below. The Watch Supervisor page also supports receiver tuning and the creation of new frequency searches based on reported intercept operator activity.

5. TEXTA DATABASE (TDB)

The TEXTA Database (TDB) module provides a country by country list of all the currently published TEXTA for networks and nets currently identified or under analysis. Each TEXTA page is divided into seven specific areas that are organised into topics that will help Intercept Operators rapidly identify communications.

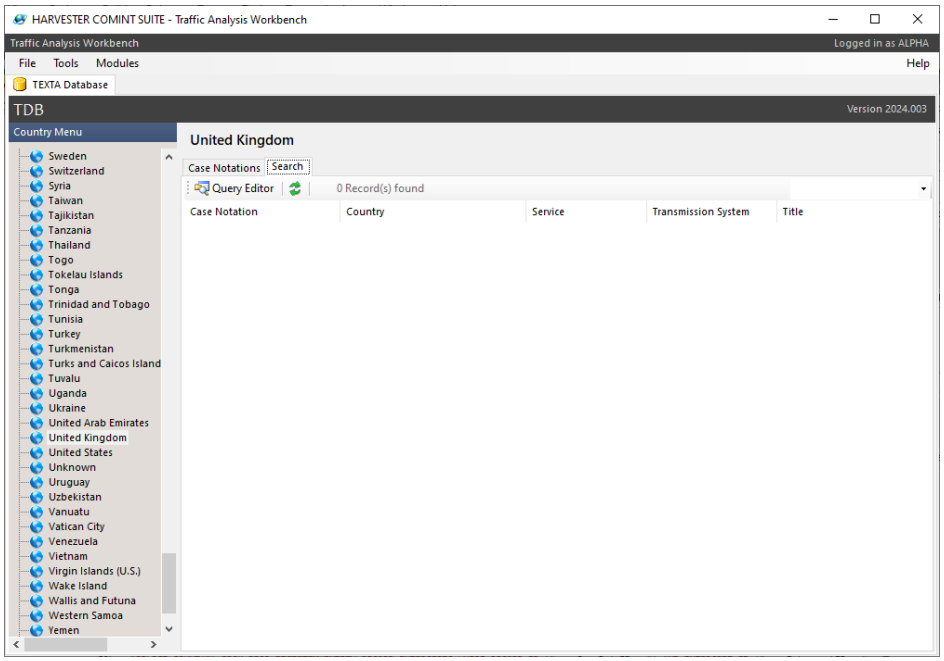
Select the TEXTA Database option from the View menu to open the TEXTA Database module.



Select the country of interest in the Country Menu and the current list of published TEXTA for that country will be displayed in the right-hand panel. Select a Case Notation from the list to display the TEXTA page. Each TEXTA page is organised into TEXTA areas:

- Case Summary
- Callsigns and Frequencies
- Schedules
- Operating Procedures
- Traffic
- Locations and Identities
- History

TEXTA pages should be viewed as “latest available information” but are works in progress as they constantly evolve as new information is gleaned from Traffic Analysis. It is the responsibility of the Traffic Analysis process to keep TEXTA pages up-to-date. As well as viewing specific countries, the TEXTA Database can also be searched.



Select the Search tab then click the Query Editor button to open the Query Editor window. Here Case Notations can be searched using the wildcard character %, by Country, Service or Transmission System. Results can be further refined by defining the originator of the TEXTA, the Case title and any specific words that might be used in the TEXTA page, again using the wildcard character %.