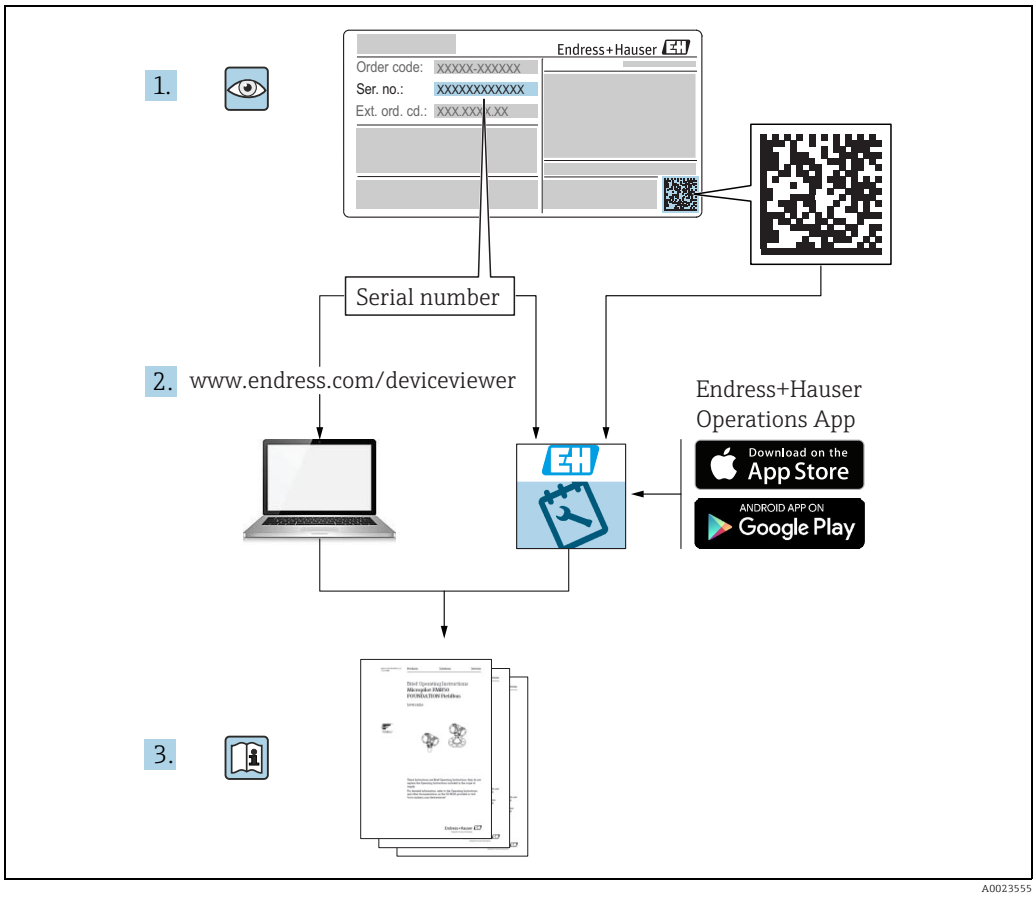
BA01582G/00/EN/05.24-00
71644591
2024-01-26

Valid as of software version:
18.3.3

Operating Instructions
Terminalvision NXS85
Terminal Management Software
Configuration Guide

Endress+Hauser
People for Process Automation



Make sure the document is stored in a safe place such that it is always available when working on or with the device.
To avoid danger to individuals or the facility, read the "Basic safety instructions" section carefully, as well as all other safety instructions in the document that are specific to working procedures.
The manufacturer reserves the right to modify technical data without prior notice. Your Endress+Hauser distributor will supply you with current information and updates to these Instructions.

Change history

Document version	Valid for SW version	Changes to the previous version
BA01582G_02.18	18.2.3	New functionalities included for driver and vehicle licenses as well as new concept for Loading Islands and new configuration of Field equipment.
BA01582G_03.19	18.2.5	Features implemented: ▪ Seal numbers enforcement
BA01582G_04.22	18.3.2	Features implemented: ▪ Bookstock support of liquid phase ▪ Isoil VEGA 3 batch controller support ▪ Product characteristics chapter
BA01582G_05.24	18.3.3	Features implemented: ▪ Added support for facilitated loading – Configuration options for manual transactions added – Additional filters on Transaction History screen

Table of Contents

1 About this document

1.1 Document function

This manual should support during the configuration of Terminalvision. It deals with the configuration steps to setup Terminalvision.
It is recommended receiving a training on the system by Endress+Hauser.

1.1.1 Symbols

Safety symbols

Symbol	Meaning
 A0011189-EN	**DANGER!** This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.
 A0011190-EN	**WARNING!** This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.
 A0011191-EN	**CAUTION!** This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
 A0011192-EN	**NOTICE!** This symbol contains information on procedures and other facts which do not result in personal injury.

Electrical symbols

Symbol	Meaning
 A0011197	**Direct current** A terminal to which DC voltage is applied or through which direct current flows.
A0011198	**Alternating current** A terminal to which alternating voltage is applied or through which alternating current flows.
 A0011200	**Ground connection** A grounded terminal which, as far as the operator is concerned, is grounded via a grounding system.
 A0011199	**Protective ground connection** A terminal which must be connected to ground prior to establishing any other connections.

Symbols for certain types of information

Symbol	Meaning
 A0011193	**Tip** Indicates additional information.
 A0011195	**Reference to page** Refers to the corresponding page number.
1., 2., 3...	Series of steps
 A0018373	Result of a sequence of actions

Symbols in graphics

Symbol	Meaning
1, 2, 3...	Item numbers
1., 2., 3....	Series of steps
A, B, C...	Views
 A0011187	**Hazardous area** Indicates a hazardous area.
 A0011188	**Indicates a non-hazardous location** Safe area (non-hazardous area)

1.2 Documentation

For an overview of the scope of the associated Technical Documentation, refer to the following:
- Device Viewer: Enter the serial number from the nameplate
www.endress.com/deviceviewer
- Endress+Hauser Operations App: Enter the serial number from the nameplate or scan the matrix code on the nameplate

1.3 Registered trademarks

Microsoft®, Windows® and Internet Explorer®
Registered trademarks of the Microsoft Corporation

Modbus™
Modbus is a registered trademark of Schneider Electric USA, Inc.

Java®
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iPhone® and iPad® are trademarks of Apple® Inc., registered in the U.S. and other countries.

2 Basic safety instructions

2.1 Requirements for the personnel

The personnel for installation, commissioning, diagnostics and maintenance must fulfill the following requirements:

- Trained, qualified specialists must have a relevant qualification for this specific function and task.
- Are authorized by the plant owner/operator.
- Are familiar with federal/national regulations.
- Before starting work, read and understand the instructions in the manual and supplementary documentation as well as the certificates (depending on the application).
- Follow instructions and comply with basic conditions.

The operating personnel must fulfill the following requirements:

- Are instructed and authorized according to the requirements of the task by the facility's owner-operator.
- Follow the instructions in this manual.

2.2 Intended use

2.2.1 Application

Terminalvision is a terminal management and loading monitoring software designed to meet the requirements of depots and terminals. Interfacing to most vendor devices used for access control, batch controllers, flow computers, and weighbridges, Terminalvision provides a secure and controlled loading and off-loading procedure for all movement types. Terminalvision also enables site control and overview, allowing operators to access details of all gantries, loading arms, vehicles, drivers, and products in use on site.

Terminalvision can be provided as a simple standalone station for small depots, or be configured on larger sites as a full Client/Server system where multiple operator stations are required. Printers can be distributed throughout the system, for example placed within the terminal control room and control rooms for internal reporting, as well as at the exit gate for the automatic printing of BOLs.

2.3 IT security

A warranty on our part can only be provided if the software application is installed and used as specified in the operating manual. The software application contains safety mechanisms to protect it against inadvertent changes to the software settings.
IT security measures that are in accordance with the operator's safety and security standards and designed to additionally protect the software application and the transfer of data must be implemented by the operator.

3 Identification

3.1 Product identification

The following options are available for identification of the software:

- Nameplate specifications
- Order code with breakdown of the software features on the delivery note
- Enter serial numbers from nameplates in *W@M Device Viewer:* www.endress.com/deviceviewer - All information about the software is displayed.

3.2 Nameplate

The information that is required by law and is relevant to the device is shown on the nameplate, e.g.:

- Manufacturer identification
- Product Name
- Order code
- Extended order code
- Serial number
- Barcode
- CE mark

3.3 Manufacturer address

Endress+Hauser SE+Co. KG
Hauptstraße 1
79689 Maulburg, Germany

Place of manufacture: See nameplate.

3.4 Order code and device version

To find out the version of your software, enter the order code indicated on the nameplate in the search screen at the following address: www.products.endress.com/order-ident

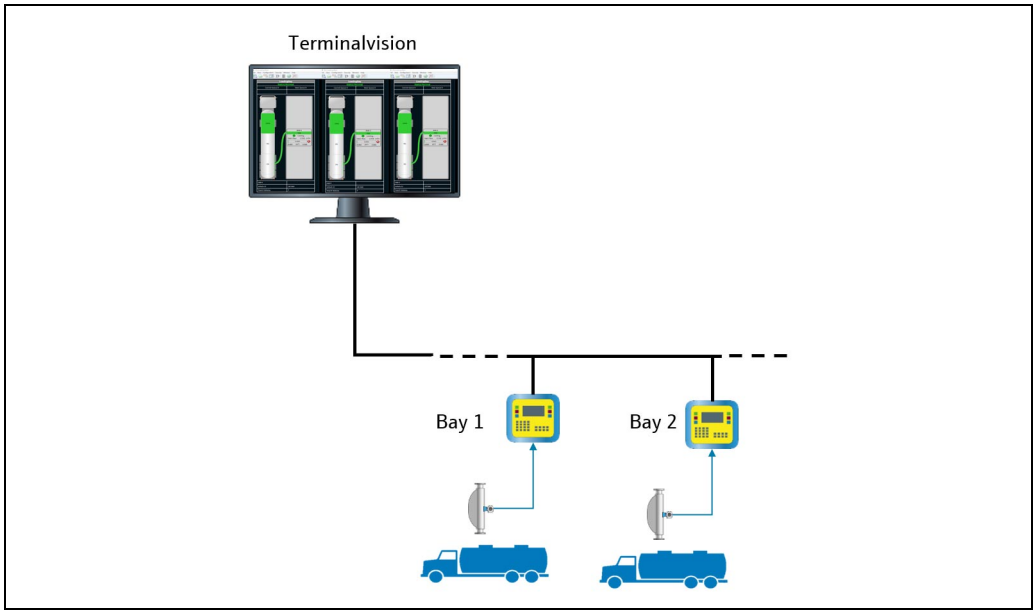
4 Introduction

The system can be configured for many different applications.
A number of different architectures can be supported by the Terminal Automation System (Terminalvision) and prior to configuration it is useful to know the architecture of the system to be configured. This will save time later.
A number of simple architectures are considered in the following sections.

4.1 Standalone Application using a Batch Controller

The following is assumed in this application:
- No Entry/Exit Control.
- No Load Scheduling.
- A single loading bay.
- A batch controller supporting this function (like the Contrec 1010 with Firmware Version: 1010BJ).

See the system architecture shown in figure below.



Terminalvision_Configuration_EN_088

In this example under normal operation the Contrec 1010 operates in Standalone mode and therefore is able to operate without the Terminal Automation System.
All user/driver details are entered into the 1010 unit. Alternatively all driver and vehicle details can be maintained by the system and downloaded to the 1010.
The 1010 can be used to perform loading transactions and up to 200 transactions are stored in the memory of the 1010. The oldest transactions are overwritten by new ones as they occur.
When the system communicates with the load computer it compares the transaction numbers in the 1010s memory with those in its database and retrieves those it has no record of.
All drivers and vehicles are authorised at the 1010 using either touch keys or PIN numbers.

4.2 Pipeline Monitoring Application using Isoil Impianti Vega II

The Vega II can be used to monitor pipelines used to receive or export product from a site. In this mode the Vega preset is used in the **Load Scheduling** mode (set to Remote in the preset), however no data (driver, vehicle, order, etc.) is entered at the device. The software simply records all transfer of product as new transactions in the Terminalvision software.

4.3 Load Scheduling Application using Contrec 1010

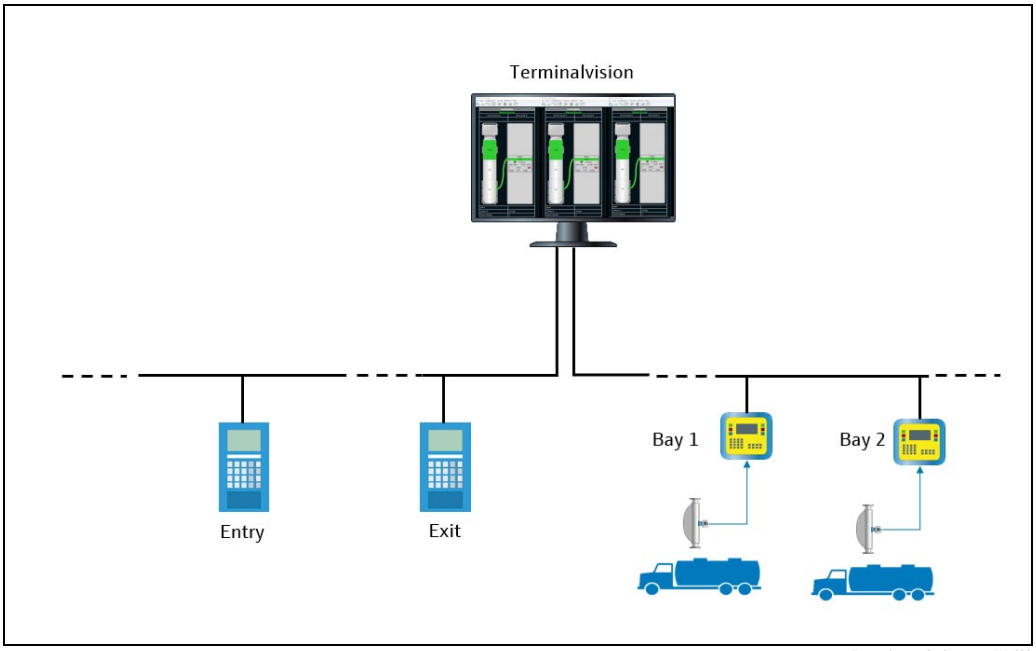
When the 1010 is configured for **Remote Authorisation** and **Load Scheduling**, it is up to the Terminalvision system to authorise the following:

- Drivers
- Vehicles
- Loads

Normally orders would be entered into Terminalvision either ahead of a truck arriving or on demand as required.

4.4 Addition of Entry Exit Control

On larger Terminals where entry and exit of drivers and trucks is controlled entry/exit terminals can be added to the system.
Normally a terminal would be provided at the entry gate and at the exit gate as shown in the figure below.



Terminalvision_Configuration_EN_089

Furthermore, a BOL printer might also be located at the exit gate for the driver to collect the BOL as they leave the site.
These additional devices have to be added to the system through the configuration tools provided.

5 System Configuration

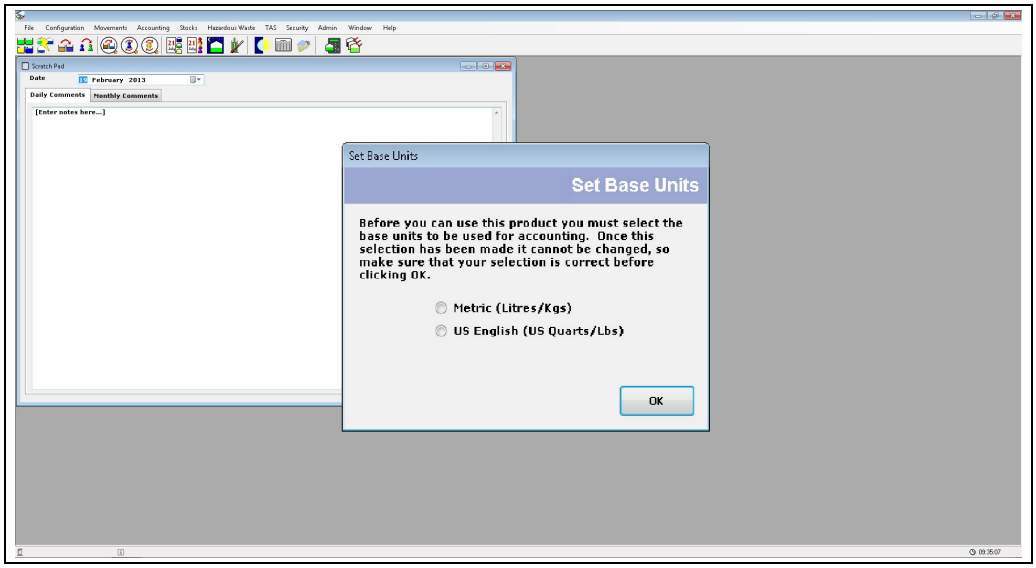
This manual assumes that the Terminalvision application has been installed correctly. If it has not, please refer to the Installation Manual for further information.
The configuration examples in this manual have been biased toward the Contrec series of devices. For information on the configuration of other vendor devices please ask your supplier for the relevant manuals.
It is recommended that the system is configured in the same order as the sections of this manual.

5.1 Desktop and Menu Configuration after Installation

There will be a shortcut icon to Terminalvision on the windows desktop. In addition, the **Start** → **All Programs** menu contains a new Endress+Hauser folder with a number of applications including Terminalvision.

5.2 Launching Terminalvision for the First Time

Double click the shortcut on the desktop or select Terminalvision from the menu.
The splash screen will be displayed for a few seconds followed by the screen shown in figure below.



Terminalvision_Configuration_EN_004

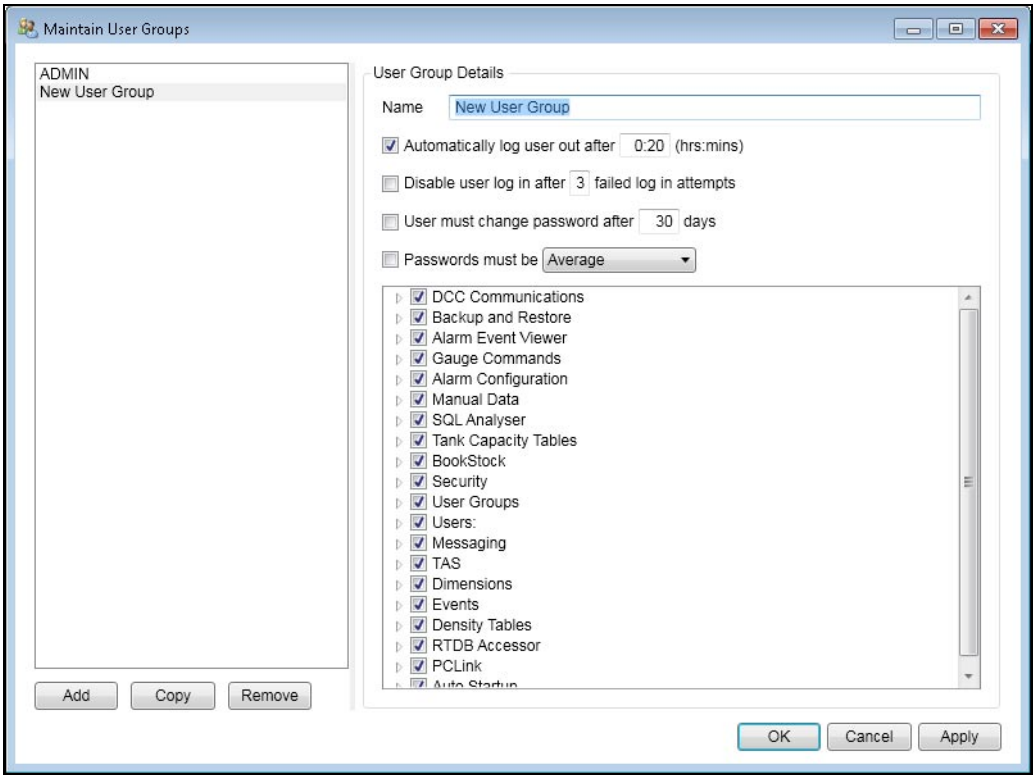
Select the base units for accounting purposes and click **OK**. Take care with this selection as it cannot be changed at a later date. Once base units have been set you are left with the **Home Page** for Terminalvision. This is the route to all features of the application.
A menu bar and tool bar are provided for quick access to all the main features of the system. The application is now ready for configuration.
Most of the configuration tools are contained within the **Configuration** menu shown on the menu bar.

5.3 User Configuration

As part of the security features of the system, operators can be configured to have different levels of access. Users are created with individual passwords and assigned to a User Group with a specific set of access features. It is generally preferable to configure the user groups first to define the access rights. Users are then allocated to a group as they are entered onto the system.
A default Administrator account is created when the system is installed.

5.3.1 User Groups

Select the **Configuration** → **User Groups** menu.
Click the **Add** button. The window shown in figure below will be displayed.



Terminalvision_Configuration_EN_005

Field	Task
Name	Type a name for the user group, for example **Operator**.
Automatically log user out after	Users will be logged out if no system entries are made within the specified time period.
Disable user log in after	Specifies the number of times an invalid password may be entered before the user is locked out of the system. This can be reset by a user with administrative privileges.
User must change password after	Sets the expiry period for passwords.
Passwords must be	Select the required password strength from the drop down menu. There are seven levels ranging from Very Weak to Very Secure.

The list in the large pane shows all items, sorted into groups, that are subject to access control.

Symbol	Description	Meaning
 Terminalvision_Configuration_EN_006	A ticked box	Indicates full access is permitted.
 Terminalvision_Configuration_EN_007	An empty box	Indicates no access is permitted.
 Terminalvision_Configuration_EN_008	A full box	Indicates partial access is permitted.

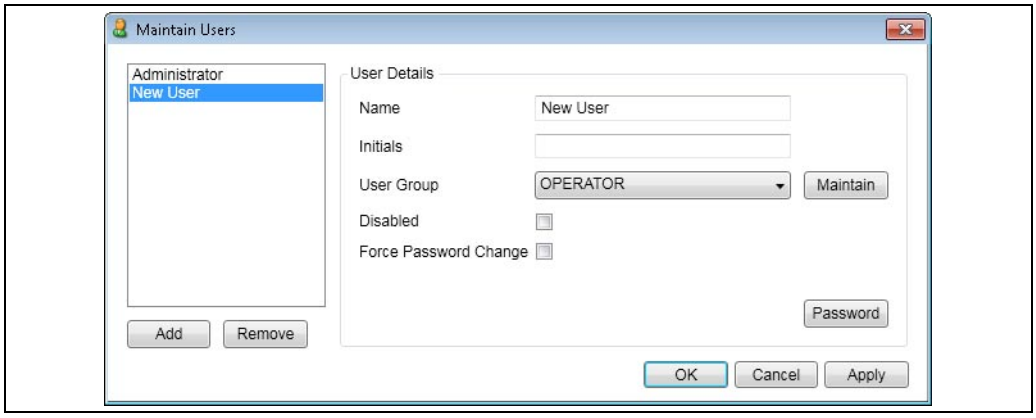
Click on the arrow symbol to expand a group to see the individual access rights for the group.

Terminalvision_Configuration_EN_009

Click  to close the group again.
Click **OK** to save the changes and exit.

5.3.2 Users

Select the **Configuration** → **Users** menu.
Click the **Add** button. The window shown in figure below will be displayed.



Terminalvision_Configuration_EN_011

Field	Task
Name	Enter a **Name** and **Initials** to identify the user.
User Group	Select the user group with the correct level of access from the drop down menu. Click on the **Maintain** button to edit the user group settings.
Disabled	This box will be checked when a user has been locked out. Uncheck to allow the user access to the system.
Force Password Change	When checked the user is forced to change their password when they next log on.
Password	Click this button to set the password for the user. Passwords can be from 0 to 12 characters and range in strength from Very Weak to Very Secure.

Terminalvision_Configuration_EN_012

Terminalvision_Configuration_EN_013

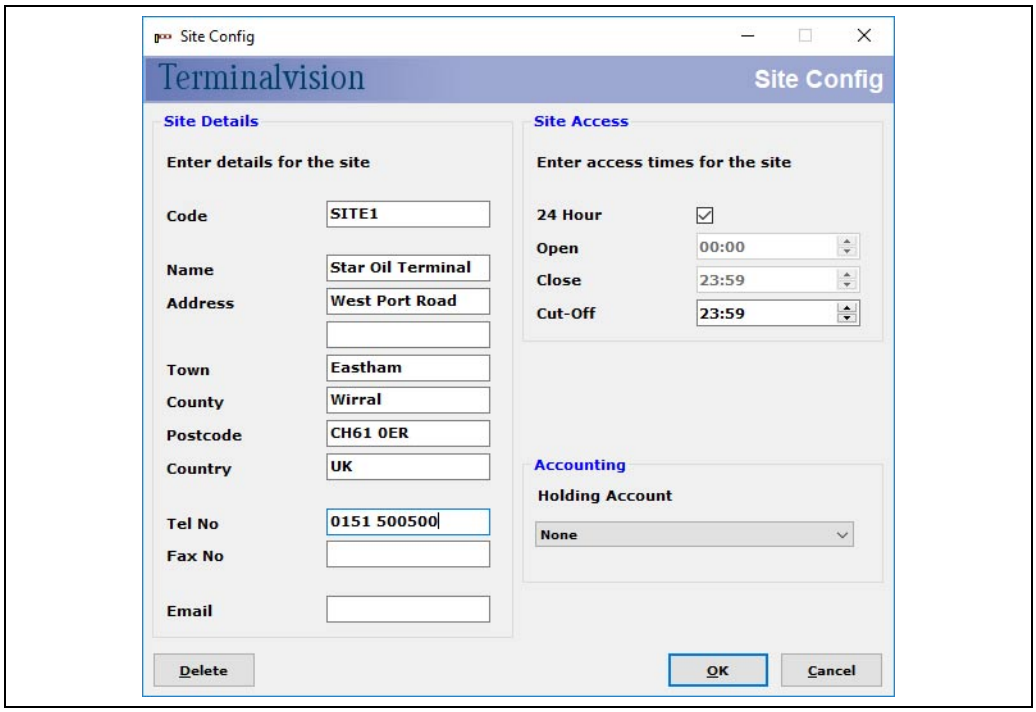
Click **OK** to save changes and exit.

5.4 Sites

Terminalvision is capable of handling multiple sites.
In this manual, only a single site is considered. For multi-site installations consult your approved service provider.

5.5 Site Configuration

Select the **Configuration** → **Site Config** menu.
Click the **New** button. The window shown in figure below will be displayed.



Terminalvision_Configuration_EN_052

This Site is the location of the tanks and road loading gantries.

The following fields are mandatory:
- **Code**
- **Name**

The remaining fields are optional but it is recommended that all fields are completed to make the system more usable.

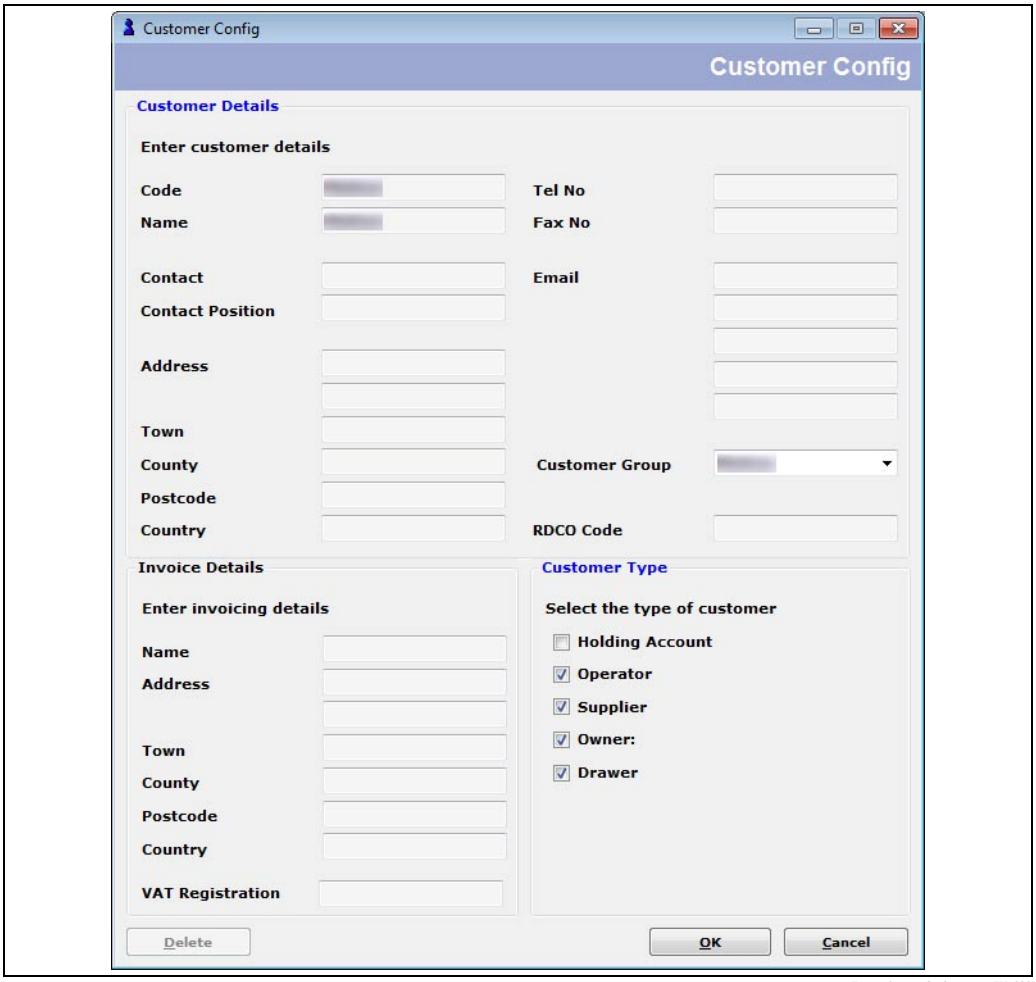
5.5.1 Field Descriptions

Field	Description
Site Details	Site contact details and addresses. Details entered here are generally reproduced on reports and Bills of Lading.
Site Access	This section details the opening/closing times of the site. In addition the cut-off time can be specified. This is the time that all transaction will be consolidated for the day and the closing book stock will be calculated.
Accounting	In a multi-site system it is occasionally necessary to transfer stock between customers and sites. In order to do this the system uses a holding account to facilitate the transfer. You nominate the 'customer' in this field that will be used for the holding account. The holding account role is exclusive, so the holding account cannot own, load or receive stock.

All optional fields can be configured at any time. Indeed most fields can be edited at any time.

5.6 Customer Details

Customers are the organisations that own the product in the tanks. This could also include the owner of the Site configured earlier.
Select the **Configuration** → **Customer Config** menu.
Click the **New** Button. The window shown in figure below will be displayed.



Terminalvision_Configuration_EN_090

The following fields are mandatory:
- **Code**
- **Name**
- **Operator**
- **Supplier**
- **Owner**
- **Drawer**

The remaining fields are optional but it is recommended that all fields are completed to make the system more usable.

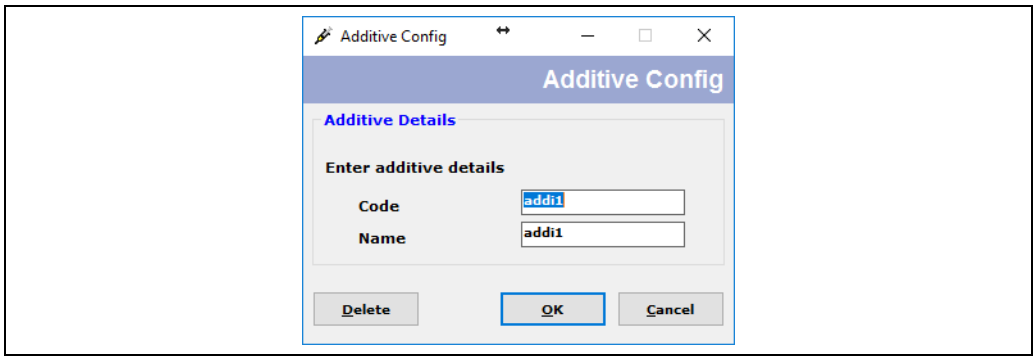
5.6.1 Field Descriptions

Field	Description
Customer Details	These details are not used by the system, but are available as a means to store the information.
Invoice Details	These are used when the invoicing module has been enabled. This specifies the invoice address for this Customer.

Field	Description
Customer Group	Normally customers are in a group of their own. In situations where you have a group of customers that share a stock of oil, but still need to identify which group members removed or supplied stock to the site, you can use Customer Groups. One customer in the group must be designated the owner, and the other customers in the group will be designated as drawers and/or suppliers. When a movement occurs the drawer/supplier will debit/credit the group owner's stock account rather than their own.
Customer Type	A Customer can assume various roles as far as the Site and Product are concerned.
Holding Account	On a multi-site system where you wish to transfer stock between both customers and sites a holding account is used to facilitate the transfer. The holding account role is exclusive, in that the account cannot have any of the other roles.
Supplier	A commercial entity that can supply product to the site(s) on their own behalf or on behalf of another Customer/Owner.
Operator	The commercial entity responsible for operating the facility. A site must have one (and only one) Operator configured.
Owner	A Company who owns product in the tanks.
Carrier/Drawer	A Company who delivers or takes product from the Site. This could be a third party on behalf of a Customer.

5.7 Additives

The **Additive Config** module allows you to enter the details of the additives used on site.
Select the **Configuration** → **Additive Config** menu.
Click the **New** button to create a new additive. The window shown in figure below will be displayed.

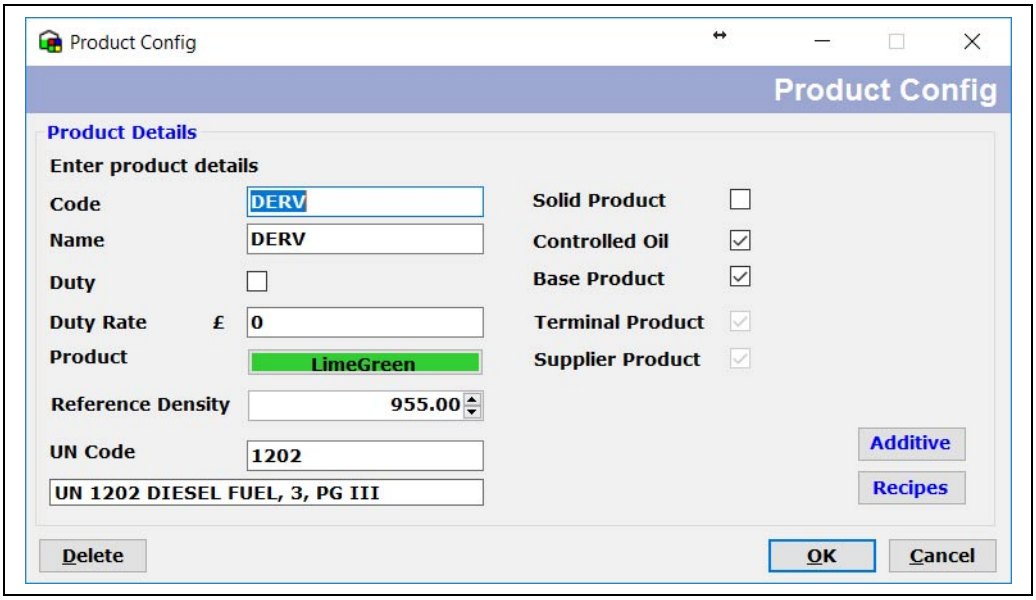


Terminalvision_Configuration_EN_053

Enter the **Code** and **Name** for the additive.

5.8 Products

The **Product Config** module allows you to enter the details of the products stored on site.
Select the **Configuration** → **Product Config** menu.
Click the **New** button to create a new product. The window shown in figure below will be displayed.



The following fields are mandatory:
- **Code**
- **Name**
- **Controlled Oil**
- **Base Product**
- **Terminal Product**
- **Supplier Product**

The remaining fields are optional but it is recommended that all fields are completed to make the system more usable.
Enter the mandatory fields and select a colour to represent the product in the loading screens.
Repeat the exercise for each product to be created.

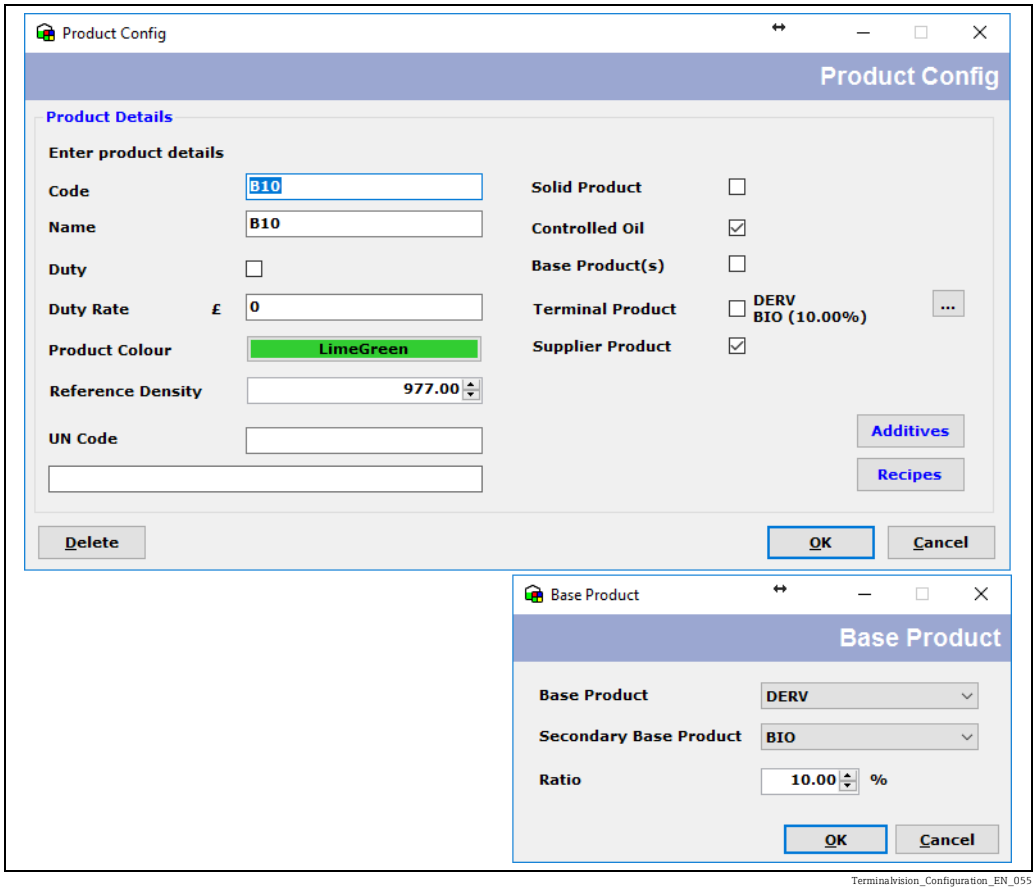
5.8.1 Field Descriptions

Field	Description
Code	A unique code identifying the product.
Name	A unique name/description identifying the product.
Duty	Deprecated – no functionality.
Duty Rate	Deprecated – no functionality.
Reference Density	A reference density may be set for this product. If a loading bay is not set to manual correction then this is the density that will be downloaded to the load computers to be used in any loading/unloading actions.
Solid Product	Set if the product is a solid. Quantities can only be entered in terms of mass.
Controlled Oil	If the site is a Registered Dealer in Controlled Oils with HMRC, then setting this flag marks the product as being controlled oil and the product will be included on the relevant reports.

Field	Description
Base Product	In Terminalvision applications a Base Product is the product that is stored in the tank. Normally this is the name of the product as it is known on site. If the Base Product is also to be available to be loaded on the Gantry, then make sure the Terminal and Supplier products are ticked. This is normally the case on most sites.
Terminal Product	Generally represents a different name for a product stored on site. Terminal products might be identical to base products, but customers may use different names for their products. If the Terminal Product is not also a Base Product (i.e. **Base Product** is not ticked) then one must be selected.
Supplier Product	Represents the product available commercially through the loading bays. This is the product description that will be displayed on the Loading Computers. If the Supplier Product is not also a Terminal Product (i.e. **Terminal Product** is not ticked) then one must be selected. For Blending applications two Terminal products may be selected, plus a blend ratio.
UN Code	The information is printed on the Bill of Lading in order to comply with EU legislation with regard to the movement of dangerous goods.

5.8.2 Blended Products

For blended products, ensure that only the **Supplier Product** is ticked and select the two Terminal Products to be blended as shown in figure below.



Terminalvision_Configuration_EN_055

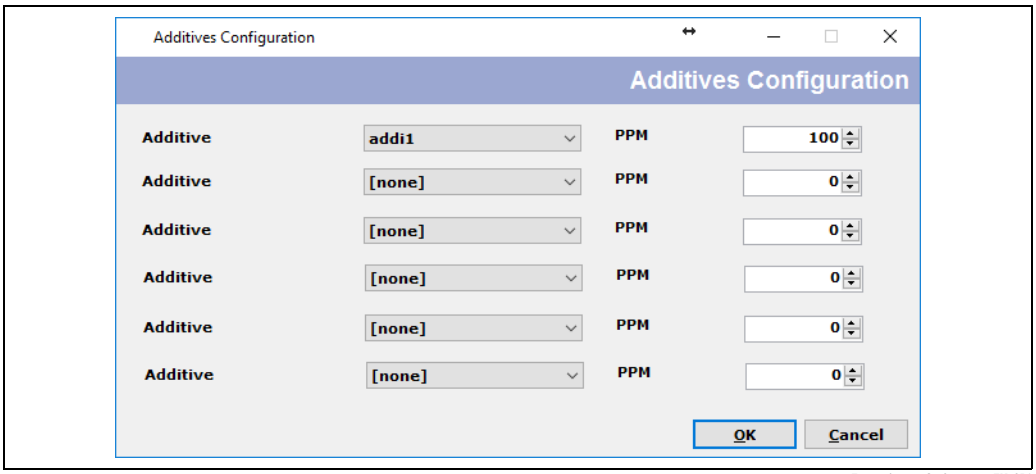
The **Base Product** is mandatory, the others are only required in blending applications.

Field	Description
Base Product	Generally represents the product in the tank. For blending applications this is the MAIN product line connected to the arm.
Secondary Base Product	Represents the product in the blend tank. For blending applications this is the BLEND product line connected to the arm.

Field	Description
Ratio	This is the percentage of **Secondary Base Product** to be included in the final blended product.

5.8.3 Additives

If additives are to be injected at the loading bays then they can be configured for products, up to a maximum of six additives per product.
Click the **Additives** button to configure the additives to be used for this product. The window shown in figure below will be displayed.

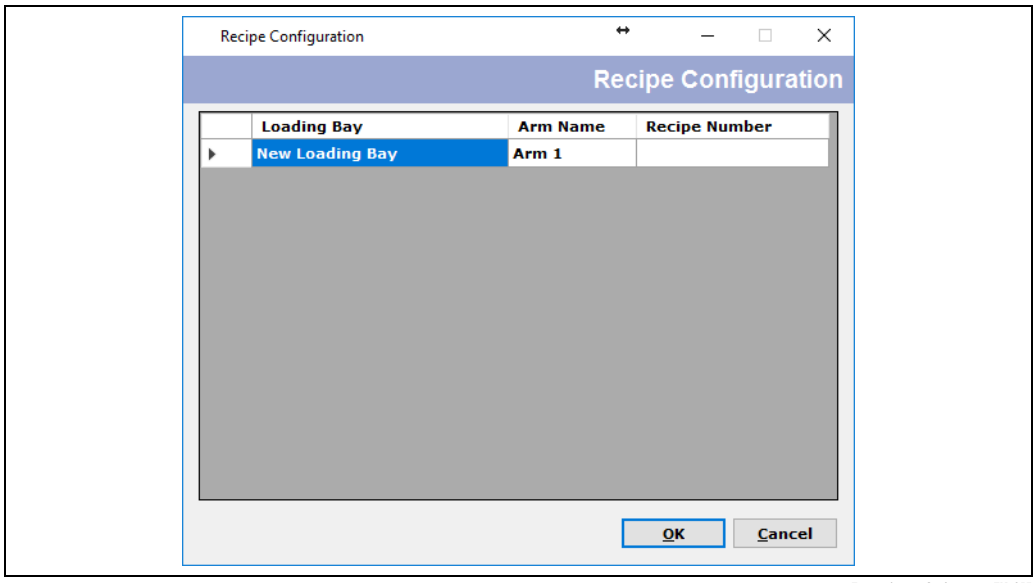


Terminalvision_Configuration_EN_056

Select the additive name and the Parts Per Million (PPM) figure. Some load computers do not allow the PPM figure to be dynamically controlled, in which case just set a non-zero PPM figure for the additive to be used for this product.

5.8.4 Recipes

All Loading/Unloading actions at the bays are carried out using recipes programmed into the load computers. These are normally selected automatically based upon the product details (such as blend ratio and additives) that match a recipe in the load computer. However the recipe used for a product may be explicitly set for each loading arm.
It is generally recommended that the recipes are automatically selected and NOT explicitly set for the product; however for advanced configuration they may be set here.
Click the **Recipes** button to configure the recipes to be used for this product. The window shown in figure below will be displayed.



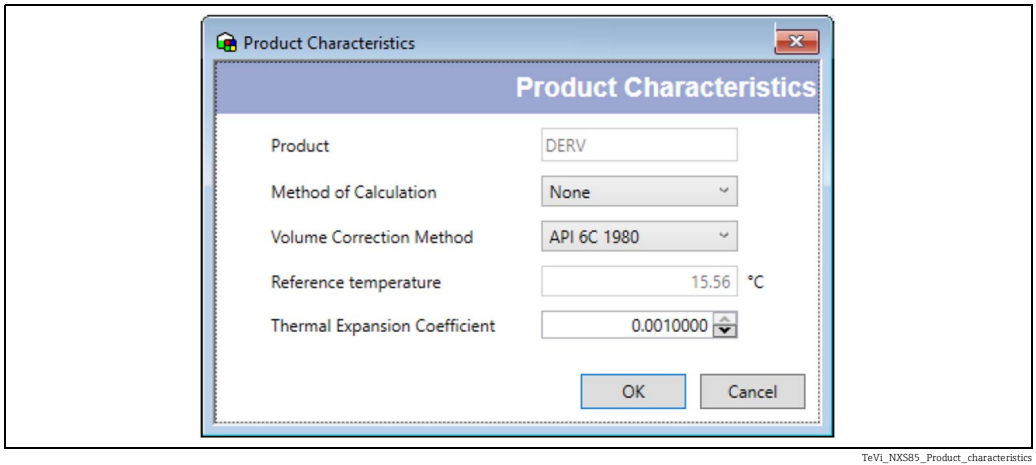
Terminalvision_Configuration_EN_057

Enter the **Recipe Number**(s) that will be used for this product. This must be done for each loading/unloading arm that can use this product.
The actual recipe numbers will be found in the load computer configuration.

5.8.5 Product Characteristics

If this product is to be used for movements and/or adjustments then characteristics can be added which are used as the default configuration for inventory calculations for customers.

Click the **Characteristics** button to configure the inventory settings to be used for this product. The window shown will be displayed.



TeVi_NXS85_Product_characteristics

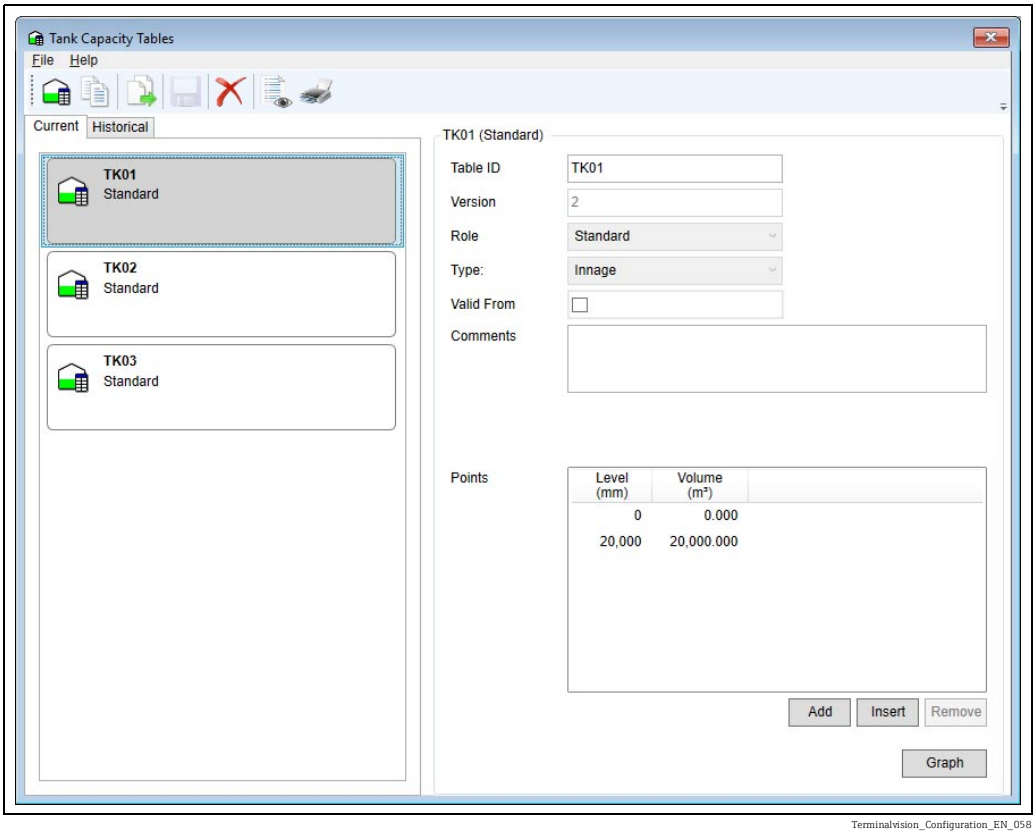
This window has the following fields:

- **Product**
  The name of the product. For information only.
- **Method of Calculation**
  The method of calculation to be used. The IP and API standards differ slightly in the order in which inventory volumes are calculated. This setting allows the user to choose which standard to follow.
- **Volume Correction Method**
  The volume correction method to be used. This determines the method that will be used to calculate the volume correction factor (VCF).

- **Reference Temperature**
  The reference temperature to be used for the calculation. This will only be displayed if a reference temperature is relevant for the volume correction method. If the chosen volume correction method specifies a fixed reference temperature then that value will be set and the field will be disabled for editing. Only a small number of volume correction methods allow user entered reference temperatures to be employed.
- Additional Parameter
  Depending on the choice of volume correction method an additional field may be displayed to allow relevant data to be entered. This may be:
  – **DCF** - Density Correction Factor
  – **TCF** - Temperature Correction Factor
  – **Manual VCF** - User entered Volume Correction Factor
  – **Thermal Expansion Coefficient** - The Thermal Expansion Coefficient of the product (for example when using the API Table 54C volume correction method).
  – **Molecular Mass** - The molecular mass of the product. The software allows for consideration of products that are a composition of chemicals; albeit in a simplistic fashion. In this case the software will treat the product as a pure product and choose the chemical with the closest match to the molecular mass provided. (For example, if the molecular mass entered most closely matches that of Propane then the product will be assumed to be 100% pure Propane).

5.9 Tank Capacity Tables

Each Tank must be provided with a **Tank Capacity Table**. **Tank Capacity Tables** can be loaded electronically from properly formatted CSV files.
Tank calibration tables are normally available as spreadsheets. The spreadsheets can be used to export the data to a CSV file suitable for loading directly into Terminalvision.
Select the **Configuration** → **Tank Capacity Tables** menu. The window shown in figure below will be displayed.



Terminalvision_Configuration_EN_058

5.9.1 Creating a New Table

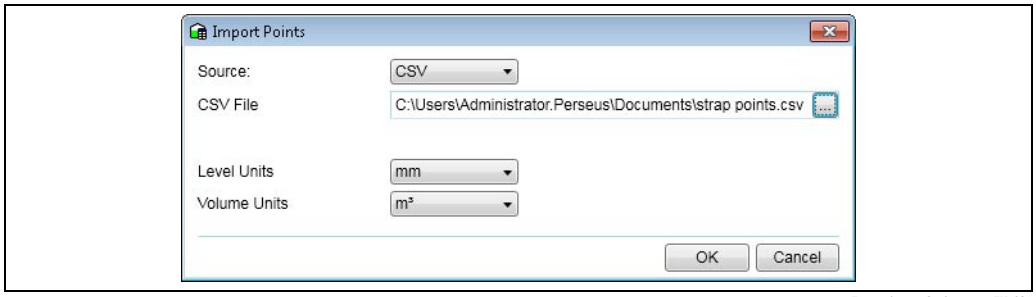
Select the **New** icon ( ) from the tool bar.
Enter a unique **Table ID**.
Select from the drop down menus for **Role** and **Type**. Generally the **Role** will be either **Standard** or **Water** and the **Type** will be either **Innage** or **Ullage**.

5.9.2 Manually Entering Data

If manually entering the table, complete the Level and Volume table in ascending order of Level/Volume, starting from zero level. The **Add** button will add a new line to the bottom of the table (highest level/volume), the **Insert** button will add a new line above the highlighted line and the **Remove** button will delete the highlighted line.

5.9.3 Importing Data

If loading from a file select the **Import Points** icon ( ) from the tool bar and use the file dialogue window (figure below) to navigate to the saved .CSV file.



Terminalvision_Configuration_EN_021

5.9.4 Copying an Existing Table

To copy an existing table, select the table and click on the **Copy Table** icon ( ) on the tool bar. An exact duplicate of the table will be created with the Tank ID suffixed by **(Copy)**. For example, copying **TK001** will produce **TK001 (Copy)**. The table may be renamed and edited as required. Entering a **Valid From** date and deleting the "(Copy)" suffix will create a table that comes into effect on the specified date, the original table be moved to the **Historical** Tab and labelled as **Valid To** the specified date. It will remain in force until this date.

5.9.5 Deleting a Table

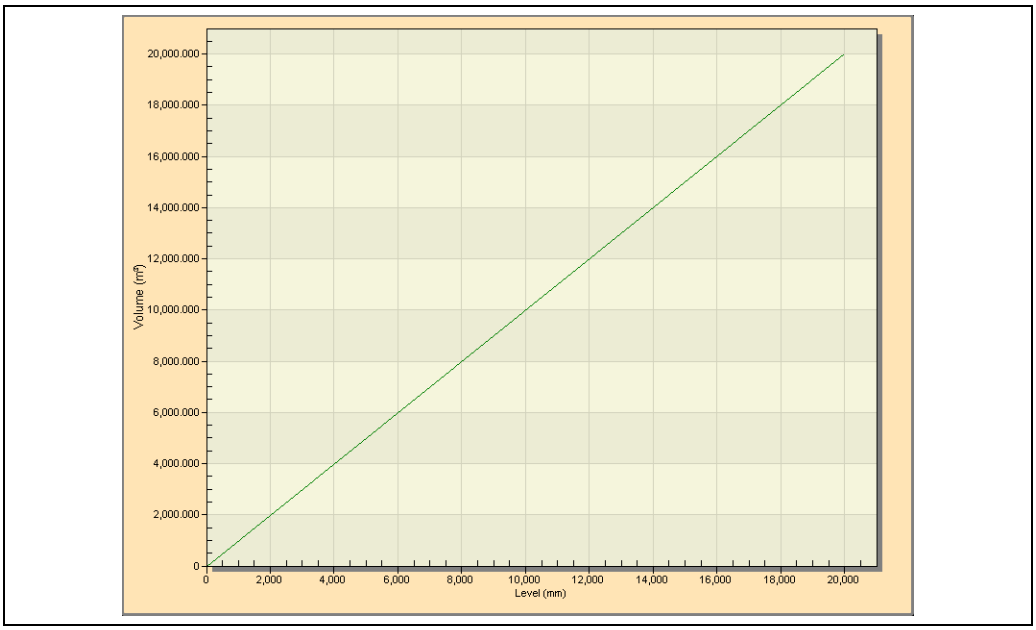
To delete an existing tank capacity table, select the table to highlight it then click select the **Delete** icon ( ) on the tool bar.

5.9.6 Saving Changes To A Table

Once a table has been successfully created or modified the changes need to be saved by selecting the **Save Changes** icon ( ) on the tool bar.

5.9.7 Displaying Graphical Data

Select the required table then click the **Graph** button to show the capacity profile in graph form as shown in figure below.

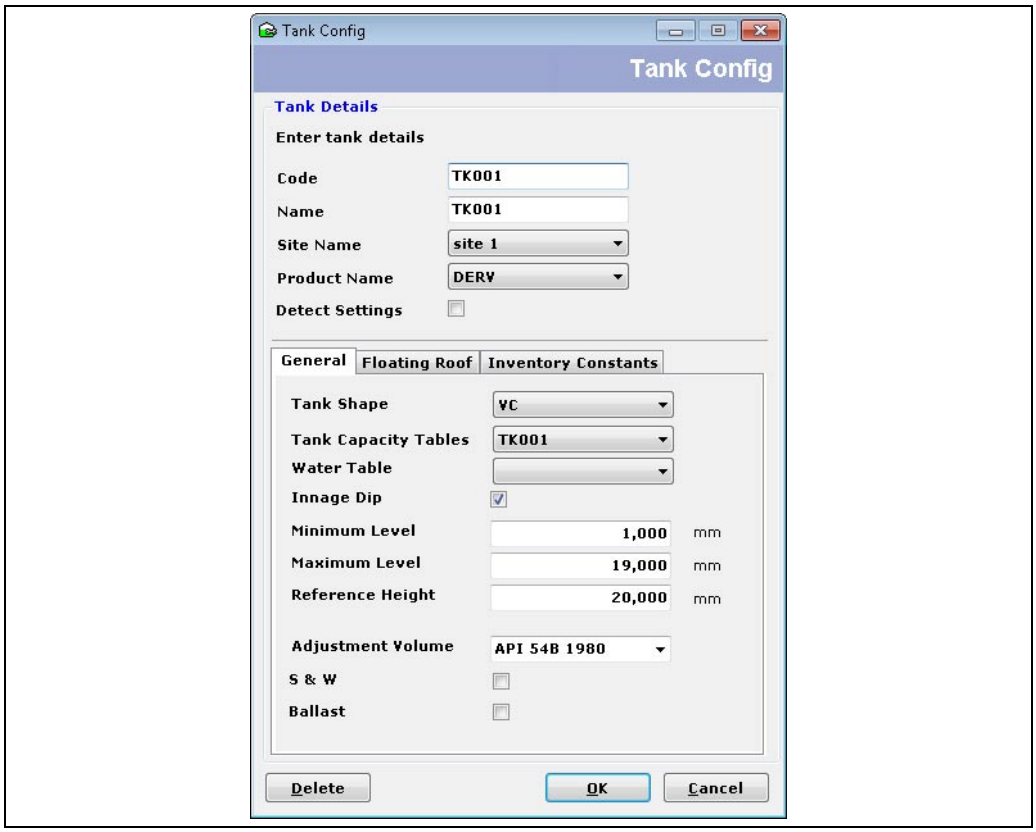


Terminalvision_Configuration_EN_026

The **Tank Capacity Table** loader will assume the dimensions of the level and volume fields to be the same as those set for the system. See the later section on Dimensions (→ 27).

5.10 Tanks

When Terminalvision is used in a standalone mode without a tank gauging system it is necessary to configure all the tanks present on site.
If Terminalvision is used with an approved Tank Gauging System this data can be read directly, therefore it is not necessary to configure it within Terminalvision.
If you need to configure tanks, select the **Configuration** → **Tank Config** menu.
Click the **New** button. The window shown in figure below will be displayed.



Terminalvision_Configuration_EN_026

The following fields are mandatory:
- **Code**
- **Name**
- **Site Name**
- **Product Name**
- **Tank Shape**
- **Tank Capacity Table**
- **Innage Dip**
- **Minimum Level**
- **Maximum Level**
- **Reference Height**
- **Volume Correction**

The remaining fields are optional but it is recommended that all fields are completed to make the system more usable.

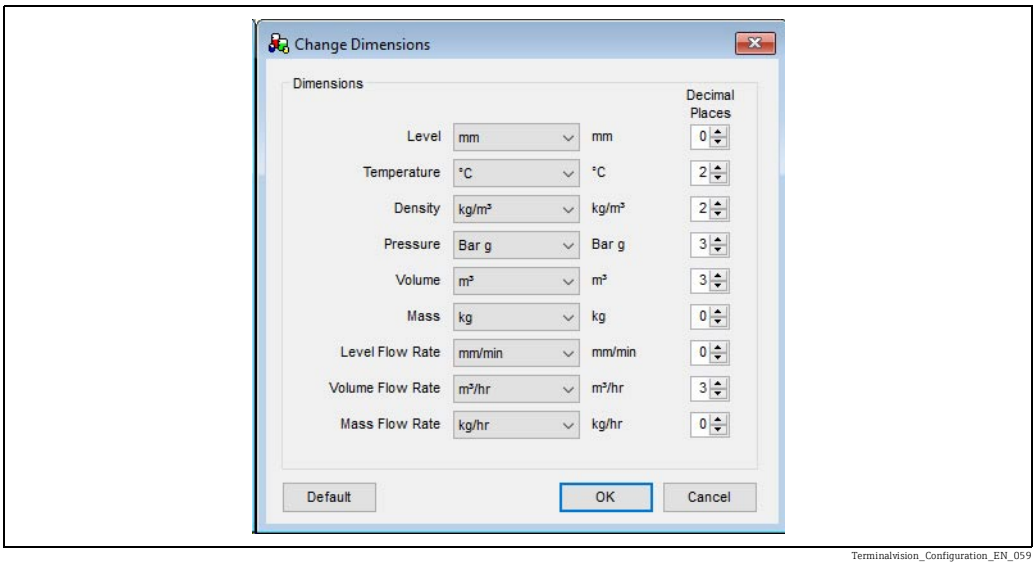
5.10.1 Field Descriptions

Field	Description
Code	A unique code for the Tank.
Tank	A unique Tank Identity for the Tank. This would normally be an alphanumeric string.
Site Name	This drop down list should already be populated with the site names from the earlier Site Configuration.
Product Name	This drop down list should already be populated with the product names from the earlier Product Configuration.
Detect Settings	Check if you want the settings to be automatically detected from a linked Tank Gauging System.
Tank Shape	Select the shape of the tank from the drop down list.

Field	Description
Tank Capacity Table	This drop down list should already be populated with the tank capacity tables from the earlier Tank Capacity Table Configuration.
Water Table	Select from the drop down list if a separate tank capacity table is available for water volume calculation.
Innage Dip	Check to indicate that dips represent innage levels.
Minimum Level	Enter the Minimum Operating Level for the Tank. Below this level will be considered as Dead Stock. This level will be used to calculate the amount of available volume.
Maximum Level	Enter the Maximum Operating Level for the Tank. This level will be used to calculate the Ullage Volume in the Tank.
Reference Height	Enter the Reference/Dip height of the Tank.
Volume Correction	Select the volume correction method to be applied for this tank.
S&W	When set, the sediment and water percentages are required to be entered.
Ballast	When set, the tank is regarded as being a ballast tank (i.e. principally containing water with a small quantity of oil). When set, the free water level is calculated by subtracting the oil depth from the product level. For typical oil storage vessels leave this turned off.

5.11 Dimensions

The engineering units for a number of the system variables have to be set according to your requirements.
Select the **Configuration** → **Dimensions** menu. The window shown in figure below will be displayed.



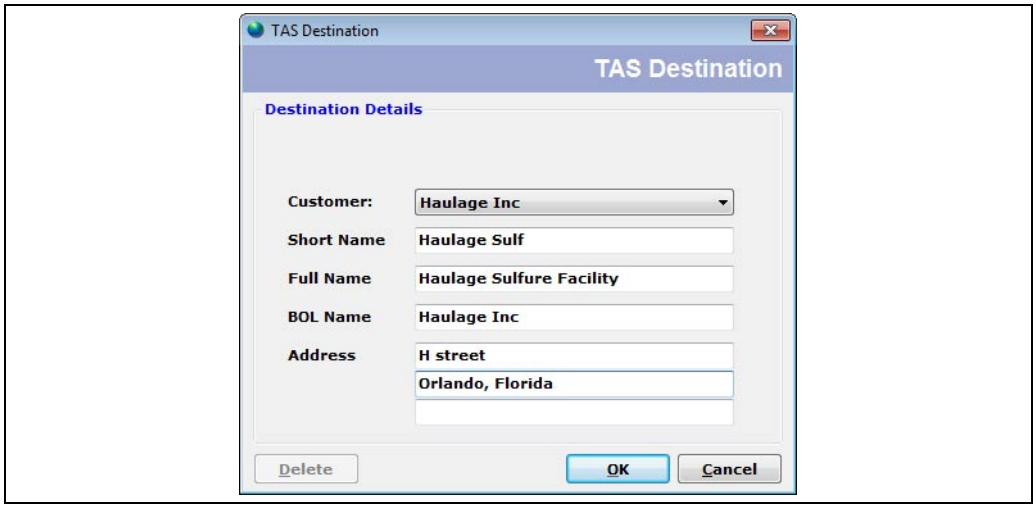
Terminalvision_Configuration_EN_059

From the drop down list of each variable select the units and numbers of decimal places that you wish to be used throughout the application.
Click the **OK** button when complete.

The loading of the Tank Capacity tables from external electronic files is sensitive to the settings for **Level** and **Volume**. Please ensure these are set correctly prior to loading the Tank Capacity tables.

5.12 Destinations

These represent the locations/businesses to which product will be delivered.
Select the **TAS** → **TAS Destinations** menu. The following window will be displayed.
Click the **New** button. The window shown in figure below will be displayed.



Terminalvision_Configuration_EN_027

The following fields are mandatory:
- **Customer**
- **Short Name**
- **Full Name**
- **Address**

The remaining fields are optional but it is recommended that all fields are completed to make the system more usable.
Enter the mandatory fields and then click **OK** to save and exit.

5.12.1 Field Descriptions

Field	Description
Customer	Select the Customer from the list. The product delivered to the Destination will be attached to this Customers account.
Short Name	This is a short name identifying the destination.
Full Name	This is the full name of the Destination. It would normally be the company name.
BOL Name	This will be displayed on the BOL printout, in addition to the **Full Name** and **Address**.
Address	This represents the address of the Destination.

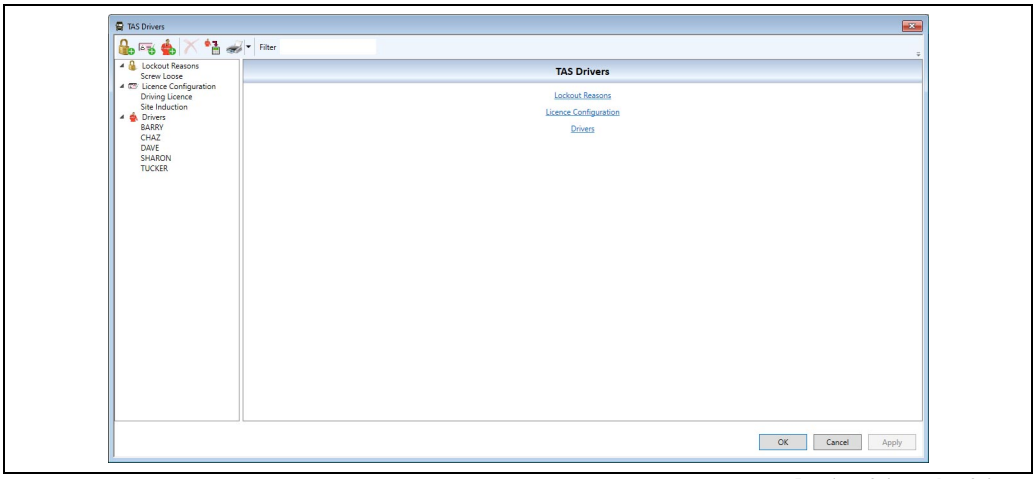
The details of a Destination can be edited at any time.
A Destination can be deleted from the system at any time by selecting the Destination and using the **Delete** button as long as there are no uncompleted orders for it.

5.13 Lockout Reasons

This feature allows the user to configure a database of reasons why a driver/vehicle might be denied access to the Site or denied access to load at the loading bay. Lockout reasons can be configured from either the **Driver Configuration** (→ 29) or **Vehicle Configuration** (→ 33) screens.

5.14 Driver Configuration

Configuration of drivers and driver licences is performed from the driver configuration screen.
To open the driver configuration screen, select the **TAS** → **TAS Drivers** menu item. The window shown in figure below will be displayed.



Terminalvision_Configuration_Driver-Configuration

5.14.1 Navigation

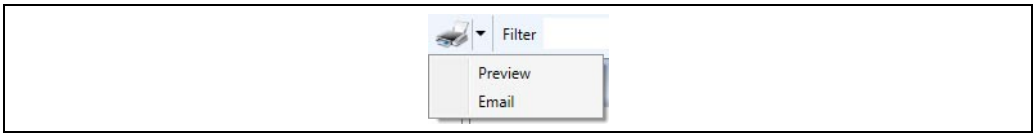
The various items that can be configured are displayed in a tree on the left-hand side of the window. These are shown in three groups - **Lockout Reasons**, **Licence Configuration** and **Drivers**. Each group will have the associated items for configuration listed underneath them. If no items are visible, click on the triangle to the left of the group name to expand the group and show all the items for that group. When one of the groups is selected, the items in that group will also be shown in the details panel in the right-hand part of the window. To view/edit an existing item, either click on the entry in the tree to select it, or (if the appropriate group is selected in the tree), click on the link for that item displayed in the right-hand part of the window.

5.14.2 Download Drivers

The driver data may be downloaded to the preset meters by clicking on the **Download Drivers** button ( ).
The download function is currently only supported for the Contrec 1010 device, and may take some time to complete (perhaps 10 – 20 minutes), but other operations may be carried out at the same time. This feature is normally used when the Contrec 1010 preset is in Standalone mode. In Load Scheduling mode it is not normally required.

5.14.3 Print/Preview/EMail

A report detailing the driver data can be produced by clicking the **Print Drivers** button ( ). If a hard copy of the report is not required, it can be previewed, or emailed by clicking on the arrow to the right of **Print Drivers** button. The menu shown in figure below will be displayed.



Terminalvision_Configuration_Print-Menu

Click on **Preview** to preview the drivers report, or **Email** to send the report by e-mail.

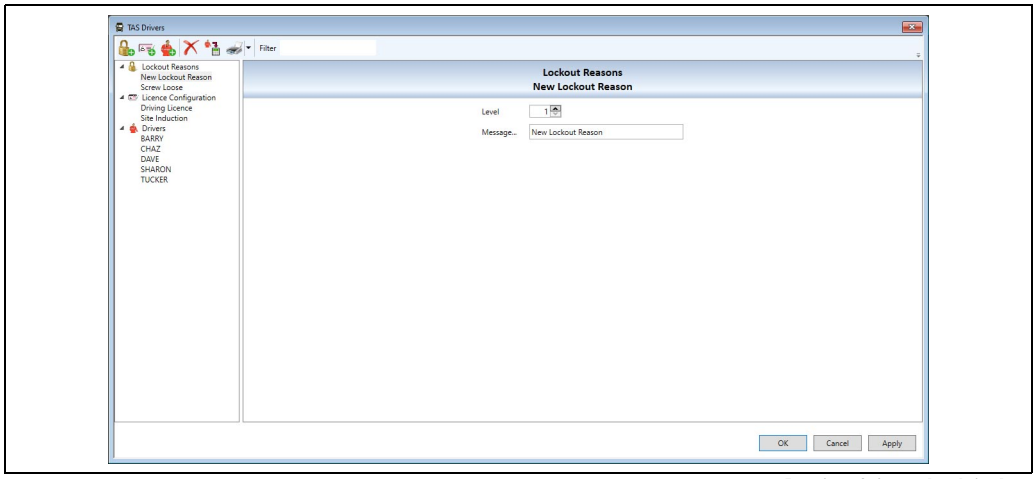
5.14.4 Filter

Where there are a large number of drivers configured in the system it may be useful to filter them to make finding a specific driver easier. To filter the entries displayed in the tree on the left-hand side of the screen, click on the **Filter** box (Filter)and start typing the name of the lockout reason/licence/driver of interest. Only items that contain the entered text will be visible in the tree on the left-hand side of the window.

The filter is applied to lockout reasons and licences as well as drivers.

5.14.5 Lockout Reasons

To add a new lockout reason, click on the **Add Lockout Reason** button ( ). A new lockout reason will be created and selected for edit as shown in figure below.
To edit an existing lockout reason, select the lockout reason from the tree on the left-hand side of the window (under **Lockout Reasons**). The selected lockout reason will be displayed for edit as shown in figure below.



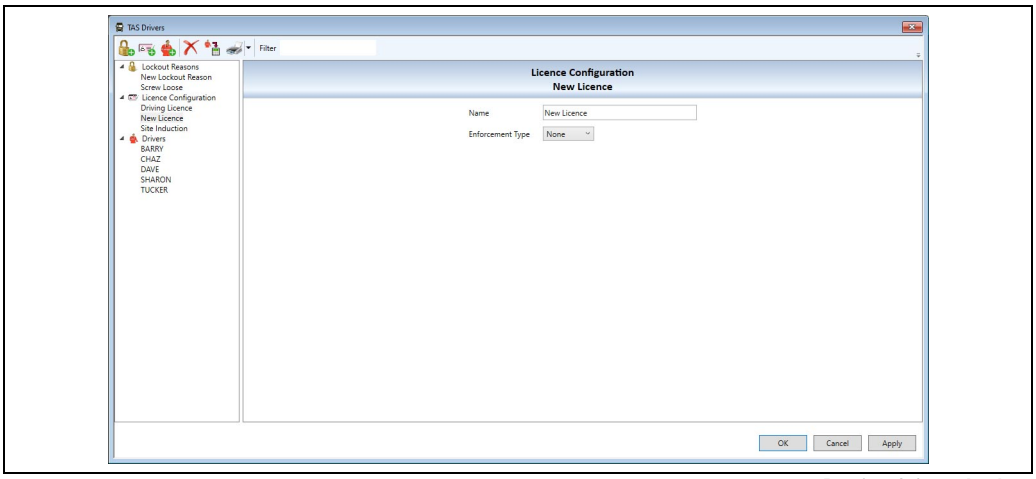
Terminalvision_Configuration_Driver-Lockout-Reason

Both **Level** and **Message** must be entered for a lockout reason.
To delete a lockout reason, select the lockout reason from the tree on the left-hand side of the window (under **Lockout Reasons**) and then click the **Delete Lockout Reason** button ( ).

5.14.6 Licence Configuration

These are global licence types set for all drivers visiting the site. Details of an individual driver's licences are configured in **Driver Details** as described in Driver Details (→ 31).

To add a new driver licence type, click on the **Add Licence Configuration** button ( ). A new driver licence type will be created and selected for edit as shown in figure below.
To edit an existing driver licence type, select the licence type from the tree on the left-hand side of the window (under **Licence Configuration**). The selected driver licence type will be displayed for edit as shown in figure below.



Terminalvision_Configuration_Driver-Licence

The name of the licence type must be entered, and the **Enforcement Type** for the licence selected from the following:

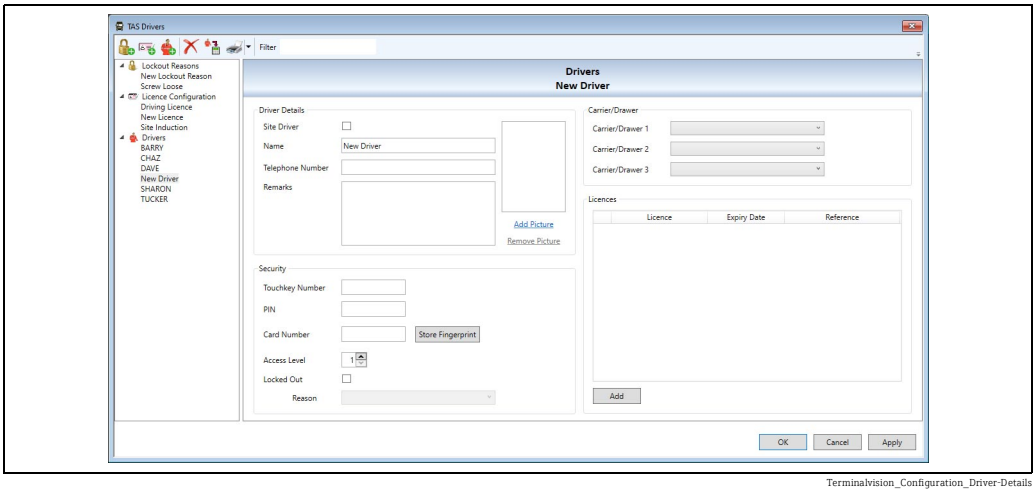
- **None**
  Does not present a warning when the licence has expired. Access will be granted.
- **Check**
  Will present a warning within the user interface when the licence has expired. Access will be granted.
- **Warn**
  Will display a warning within the Alarm Event Viewer when the licence has expired. Access will be granted.
- **Deny**
  Will display a warning within the Alarm Event Viewer when the licence has expired. Access will be denied.

  These warnings will be presented when a driver attempts to access the site via an entry/exit controller, or attempts to authenticate at an ACU.

To delete a driver licence type, select the licence type from the tree on the left-hand side of the window (under **Licence Configuration**) and then click the **Delete Licence Configuration** button ( ).

5.14.7 Driver Details

To add a new driver, click on the **Add Driver** button ( ). A new driver will be created and selected for edit as shown in figure below.
To edit an existing driver, select the driver from the tree on the left-hand side of the window (under **Drivers**). The selected driver will be displayed for edit as shown in figure below.



Terminalvision_Configuration_Driver-Details

The following are the mandatory fields:

- **Name**
- **Touchkey Number**, **PIN**, or **Card Number**
- **Carrier** (at least 1)

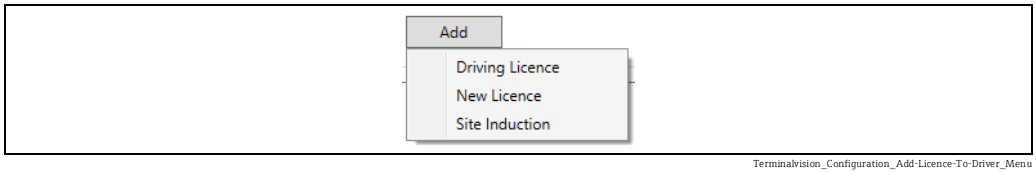
The remaining fields are optional but it is recommended that all fields are completed to make the system more usable.
There is also an option to add a photograph of the driver. This is utilised in several places throughout the system.

Field Descriptions

Field		Description
Driver Details	**Site Driver**	Indicates if the driver works for the site. This is intended for use with facilitated loading. During authentication/loading a site driver will not be validated against the carrier on an order.
	Name	The name by which the driver is to be known.
	Telephone Number	The telephone number which can be used to contact the driver.
	Remarks	Any additional remarks required to be stored for the driver.
Security	**Touchkey Number**	The unique number of an electronic touch key allocated to the driver.
	PIN	A unique Personal Identification Number allocated to the driver.
	Card Number	The unique number of a swipe/proximity card allocated to the driver.
	Store Fingerprint	If the card allocated to the driver can store fingerprint(s), click this button to read the driver's fingerprint(s) and add them to the card.
	Normally only one of the above identification methods would be used, either Touchkey, PIN or Card.	
	Access Level	The access level assigned to this driver. Must be equal or greater than the access level assigned to a meter or entry/exit device to be able to access that device.
	Lockout Reason	If a driver is locked out from site, the reason will be displayed to the driver the next time they try to enter the site.
Carriers	**Carrier 1**, **Carrier 2**, **Carrier 3**	Each driver can be assigned up to a maximum 3 Carriers.
Licenses	–	To add a licence to a driver, click the **Add** button in the **Licences** section.

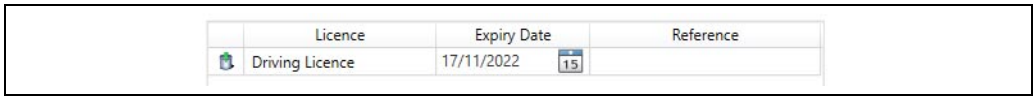
Adding Licence(s) to a driver

To add a licence to a driver, click the **Add** button in the **Licences** section. A list of the driver licence types that are not currently allocated to the driver will be displayed as show in figure below.



Terminalvision_Configuration_Add-Licence-To-Driver_Menu

Click on the required licence to add it to the list of licences for the driver:



Terminalvision_Configuration_Driver-Licences_List

Field	Description
Delete 	Remove this licence type from the driver.
Licence	The name of the licence (read-only).
Expiry Date	**Mandatory.** The date that the licence is due to expire for the driver. When this date is earlier than the current date, the licence will be validated as described in figure Driver Licence Configuration (→ 31).
Reference	**Mandatory.** The unique driver reference for the licence. For example the ID number shown on a driver's licence.

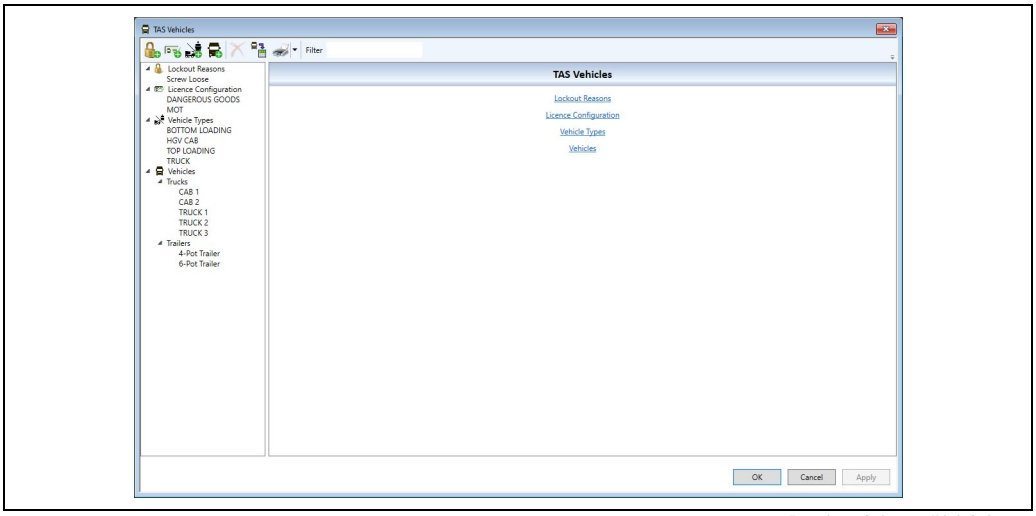
Deleting Drivers

To delete a driver, select the driver from the tree on the left-hand side of the window (under **Drivers**) and then click the **Delete Driver** button ().

A driver can be deleted from the system at any time, so long as there are no uncompleted orders for them.

5.15 Vehicle Configuration

Configuration of vehicles, vehicle types and vehicle licences is performed from the vehicle configuration screen.
To open the vehicle configuration screen, select the **TAS** → **TAS Vehicles** menu item. The window shown in figure below will be displayed.



Terminalvision_Configuration_Vehicle-Configuration

5.15.1 Navigation

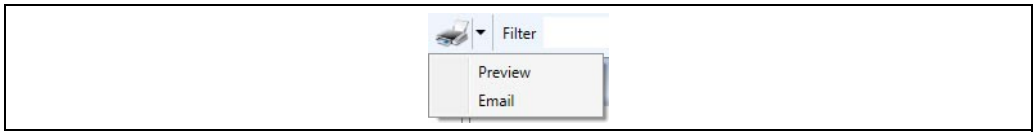
The various items that can be configured are displayed in a tree on the left-hand side of the window. These are shown in four groups - **Lockout Reasons**, **Licence Configuration**, **Vehicle Types** and **Vehicles**. Each group will have the associated items for configuration listed underneath them. Depending on the vehicles that are currently configured in the system, the Vehicles group will contain groups for each type of vehicle configured (Trucks, Locomotives, Boats, Trailers, Railcars and Barges).
If no items are visible, click on the triangle to the left of the group name to expand the group and show all the items for that group. When one of the groups is selected, the items in that group will also be shown in the details panel in the right-hand part of the window.
To view/edit an existing item, either click on the entry in the tree to select it, or (if the appropriate group is selected in the tree), click on the link for that item displayed in the right-hand part of the window.

5.15.2 Download Vehicles

The vehicle data may be downloaded to the preset meters by clicking on the **Download Vehicles** button ( ).
The download function is currently only supported for the Contrec 1010 device, and may take some time to complete (perhaps 10 – 20 minutes), but other operations may be carried out at the same time. This feature is normally used when the Contrec 1010 preset is in Standalone mode. In Load Scheduling mode it is not normally required.

5.15.3 Print/Preview/EMail

A report detailing the driver data can be produced by clicking the **Print Vehicles** button ( ). If a hard copy of the report is not required, it can be previewed, or emailed by clicking on the arrow to the right of **Print Vehicles** button. The menu shown in figure below will be displayed.



Terminalvision_Configuration_Print-Menu

Click on **Preview** to preview the drivers report, or **Email** to send the report by e-mail.

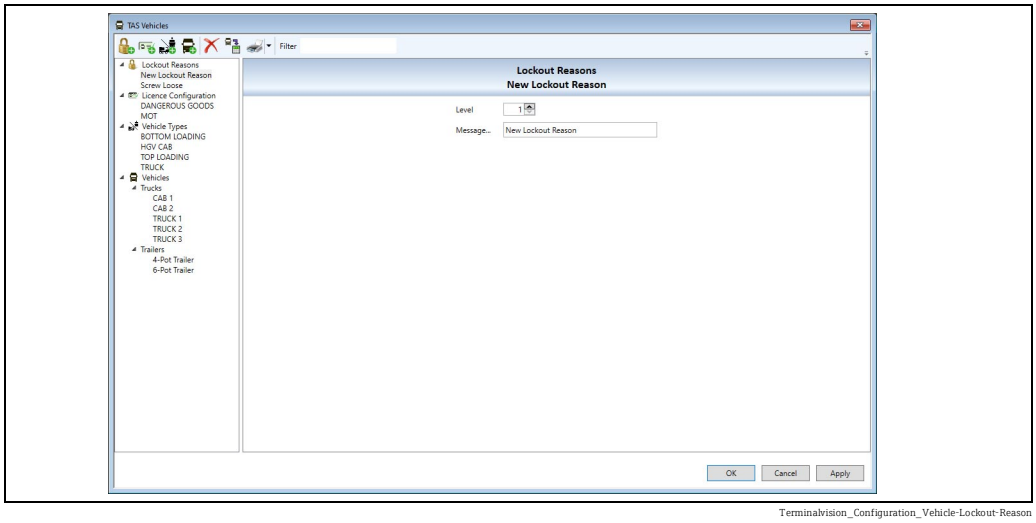
5.15.4 Filter

Where there are a large number of vehicles configured in the system it may be useful to filter them to make finding a specific vehicle easier. To filter the entries displayed in the tree on the left-hand side of the screen, click on the **Filter** box (Filter)and start typing the name of the lockout reason/licence/vehicle type/vehicle of interest. Only items that contain the entered text will be visible in the tree on the left-hand side of the window.

The filter is applied to lockout reasons, licences, and vehicle types as well as vehicles.

5.15.5 Lockout Reasons

To add a new lockout reason, click on the **Add Lockout Reason** button ( ). A new lockout reason will be created and selected for edit as shown in figure below.
To edit an existing lockout reason, select the lockout reason from the tree on the left-hand side of the window (under **Lockout Reasons**). The selected lockout reason will be displayed for edit as shown in figure below.



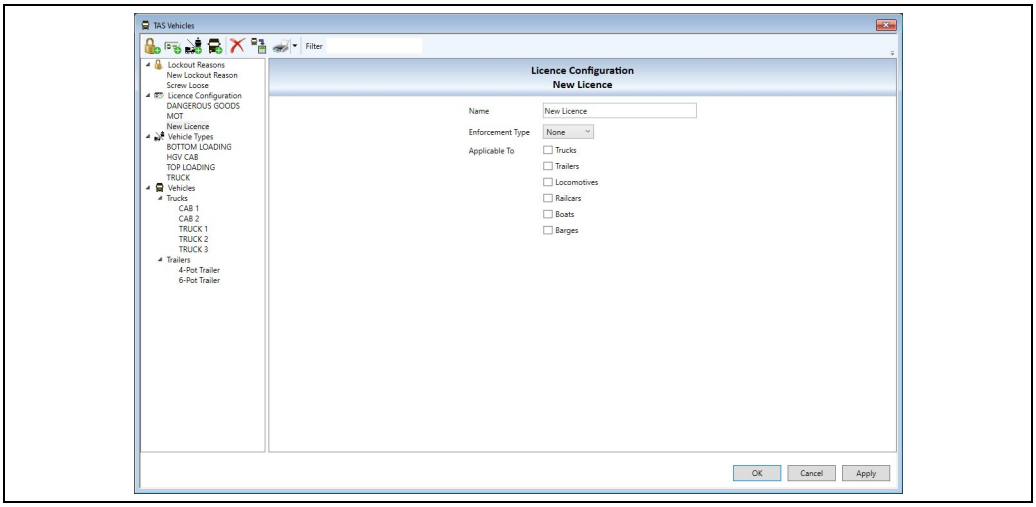
Terminalvision_Configuration_Vehicle-Lockout-Reason

Both **Level** and **Message** must be entered for a lockout reason.
To delete a lockout reason, select the lockout reason from the tree on the left-hand side of the window (under **Lockout Reasons**) and then click the **Delete Lockout Reason** button ( ).

5.15.6 Licence Configuration

These are global licence types set for all vehicles visiting the site. Details of an individual vehicle's licences are configured in **Vehicle Details** as described in section Vehicle Details (→ 37).

To add a new vehicle licence type, click on the **Add Licence Configuration** button ( ). A new vehicle licence type will be created and selected for edit as shown in figure below.
To edit an existing vehicle licence type, select the licence type from the tree on the left-hand side of the window (under **Licence Configuration**). The selected vehicle licence type will be displayed for edit as shown in figure below.



Terminalvision_Configuration_Vehicle-Licence

The name of the licence type must be entered, and the **Enforcement Type** for the licence selected from the following:

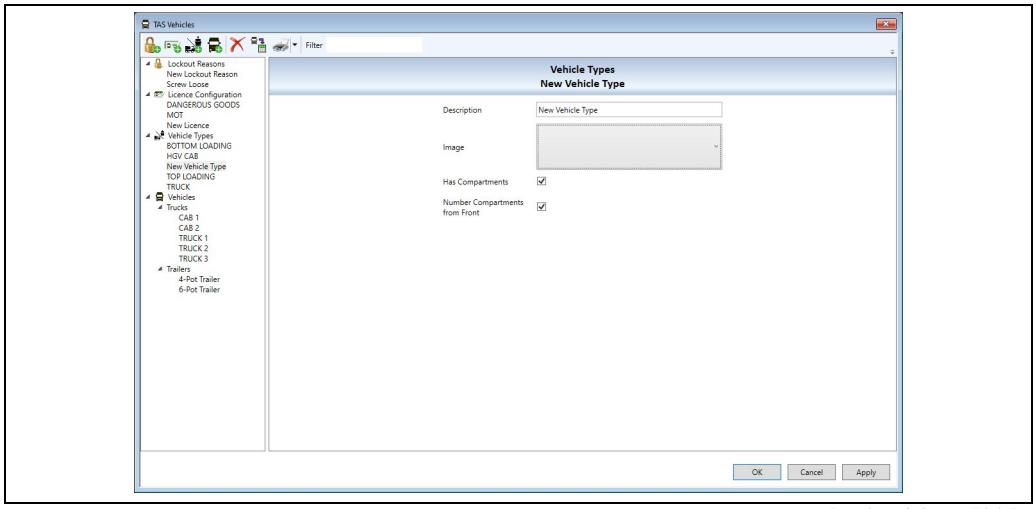
- **None**
  Does not present a warning when the licence has expired. Access will be granted.
- **Check**
  Will present a warning within the user interface when the licence has expired. Access will be granted.
- **Warn**
  Will display a warning within the Alarm Event Viewer when the licence has expired. Access will be granted.
- **Deny**
  Will display a warning within the Alarm Event Viewer when the licence has expired. Access will be denied.

  These warnings will be presented when a driver attempts to access the site via an entry/exit controller, or attempts to authenticate at an ACU.

The **Applicable To** boxes indicate the type of vehicles for which the licence is applicable. This criteria is used to limit the list of available licences when adding a licence to a specific vehicle.
To delete a vehicle licence type, select the licence type from the tree on the left-hand side of the window (under **Licence Configuration**) and then click the **Delete Licence Configuration** button ( ).

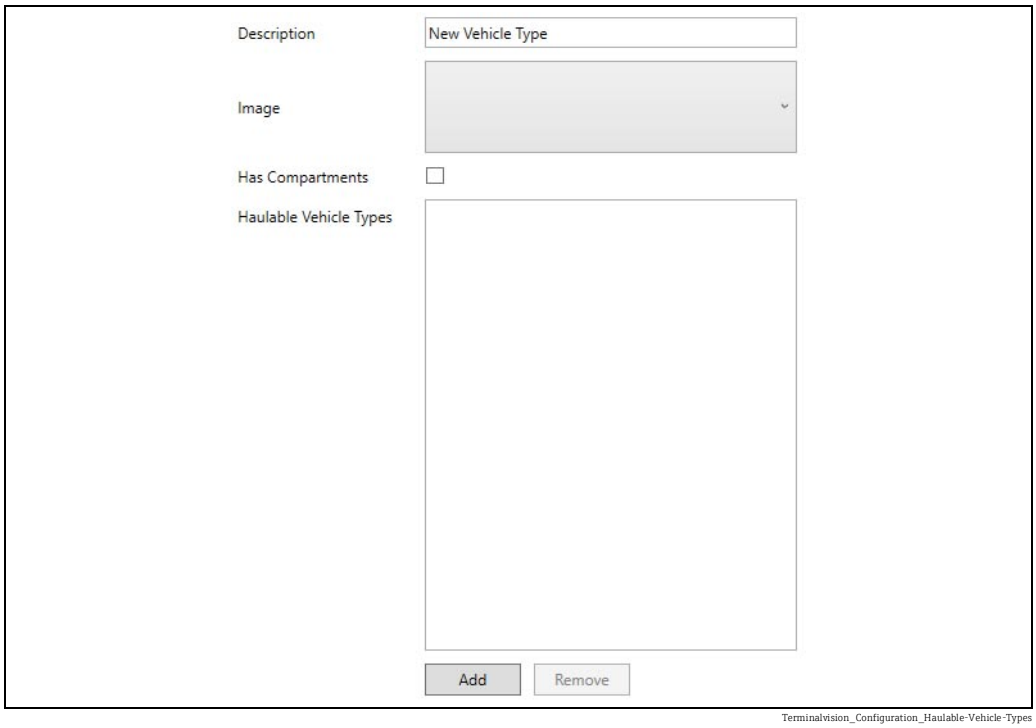
5.15.7 Vehicle Types

To add a new vehicle type, click on the **Add Vehicle Type** button ( ). A new vehicle type will be created and selected for edit as shown in figure below.
To edit an existing vehicle type, select the vehicle type from the tree on the left-hand side of the window (under **Vehicle Types**). The selected vehicle type will be displayed for edit as shown in figure below.



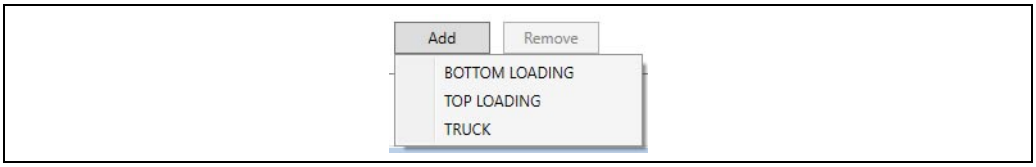
Terminalvision_Configuration_Vehicle-Type

Enter the description of the vehicle type and select the image that best represents that vehicle type. The system provides images for a Rigid Body Truck, Articulated Truck, and Railcar.
Some vehicle types will not have compartments (i.e. tractor units, locomotives, tugs). This can be indicated by unchecking the **Has Compartments** box.
For compartmented vehicle types there is the option of numbering the compartments either from the Front by checking the box or the Rear by leaving the box unchecked.
For non-compartmented vehicle types, the vehicle types that the vehicle type can haul should be configured:



Terminalvision_Configuration_Haulable-Vehicle-Types

To add a vehicle type to the list, click the **Add** button. A list of the available vehicle types (those with compartments that are not already in the list) will be displayed:



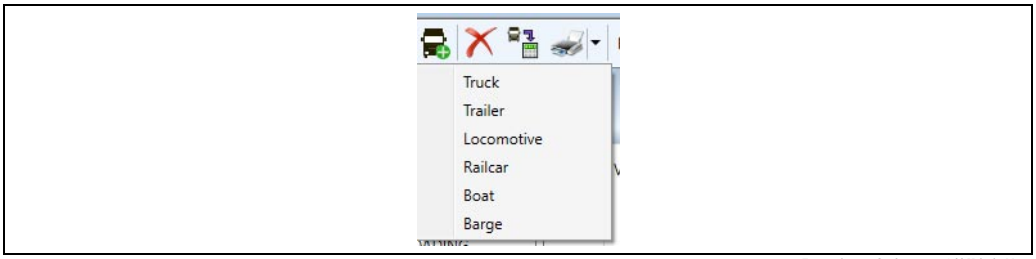
Terminalvision_Configuration_Add-Haulable-Vehicle-Type

Click on the required vehicle type to add it to the list.
To remove a haulable vehicle type, click on the entry in the list to select it, and then click the **Remove** button.
To delete a vehicle type, select the vehicle type from the tree on the left-hand side of the window (under **Vehicle Types**) and then click the **Delete Vehicle Type** button ( ).

A vehicle type can be deleted from the system at any time, so long as there are no vehicles configured for the selected type and it is not included in the list of haulable vehicle types for another vehicle type.

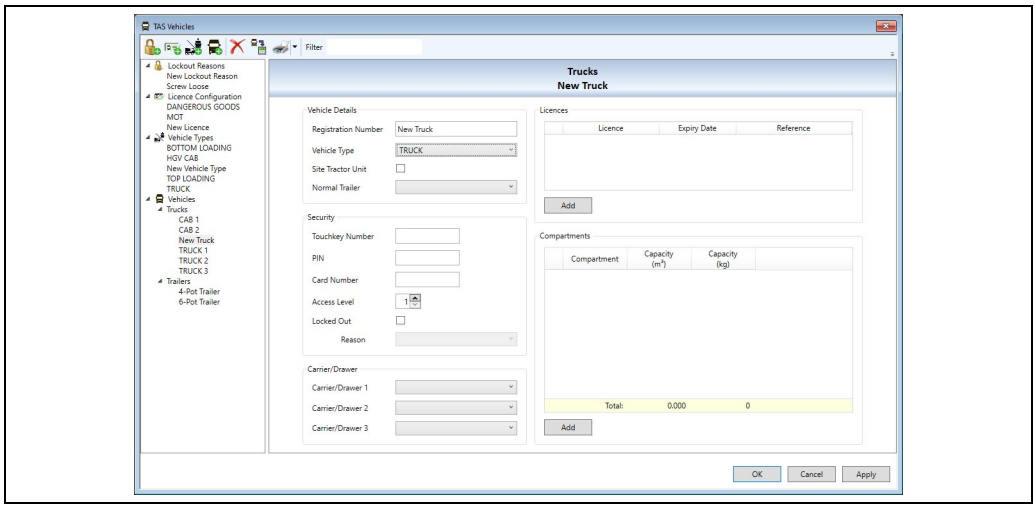
5.15.8 Vehicle Details

Vehicles can be broadly divided into two categories, engines (trucks, tractor units, locomotives, tugs, boats) and loading parts (trailers, barges, railcars). Engines may or may not have compartments depending on the vehicle type, but must have security and carrier information. Loading parts always have compartments but cannot be authenticated independently at an ACU.
To add a new vehicle, click on the **Add Vehicle** button ( ). A list of available types of vehicles will be displayed:



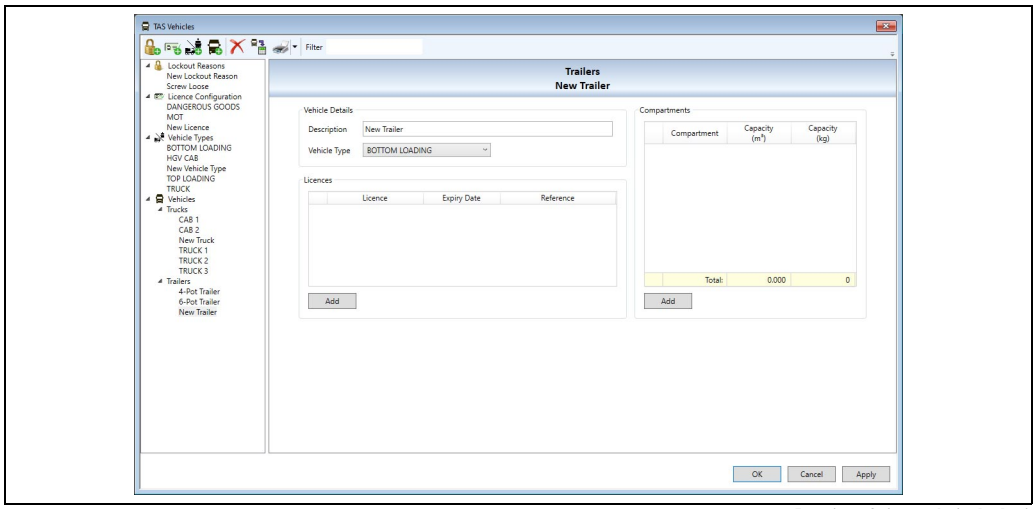
Terminalvision_Configuration_Add-Vehicle-Menu

Click on the type of vehicle to be added. A new vehicle will be created and selected for edit (see figure → 38 (engine) and figure → 38 (loading parts)).
To edit an existing vehicle, select the vehicle from the tree on the left-hand side of the window (from one of the groups under **Vehicles**). The selected vehicle will be displayed for edit as shown below.



Terminalvision_Configuration_Vehicle-Details

The following are the mandatory fields:
- **Registration Number**
- **Vehicle Type**
- **Touchkey Number**, **PIN**, or **Card Number**
- **Carrier** (at least 1)



Terminalvision_Configuration_Loading-Part-Details

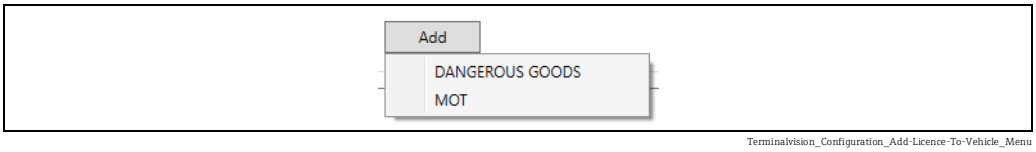
The following are the mandatory fields:
- **Description**
- **Vehicle Type**

Field Descriptions

Field		Description
Vehicle Details	**Registration Number**/ Description	The human-readable identifier for the vehicle.
	Vehicle Type	The vehicle type of the vehicle.
	Site Tractor Unit	Indicates if the tractor unit works for the site. This is intended for use with facilitated loading. During authentication/loading a site tractor unit will not be validated against the carrier on an order.
	Normal Trailer	The trailer that is usually hauled by the truck or tractor unit. If the system is not configured to allow selection of an order at a loading bay then this trailer contributes to the compartments available to be loaded. It is also used when the truck or tractor unit is selected during entry of an order.
Security	**Touchkey Number**	The unique number of an electronic touch key allocated to the vehicle.
	PIN	A unique Personal Identification Number allocated to the vehicle.
	Card Number	The unique number of a swipe/proximity card allocated to the vehicle.
	Normally only one of the above identification methods would be used, either Touchkey, PIN or Card.	
	Access Level	The access level assigned to this vehicle. Must be equal or greater than the access level assigned to a meter or entry/exit device to be able to access that device.
	Lockout Reason	If a vehicle is locked out from site, the reason will be displayed the next time the vehicle attempts to enter the site.
Carriers	**Carrier 1**, **Carrier 2**, **Carrier 3**	Each vehicle can be assigned up to a maximum of 3 Carriers.
Licenses		To add a licence to a vehicle, click the **Add** button in the **Licences** section.
Compartments		Click the **Add** button in the Compartments section to add a new compartment.

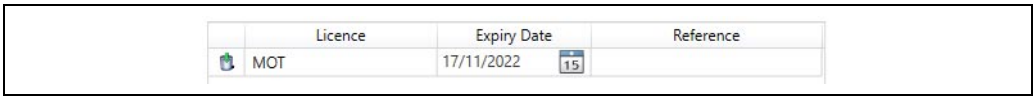
Adding Licence(s) to a vehicle

To add a licence to a vehicle, click the **Add** button in the **Licences** section. A list of the vehicle licence types that are applicable for the type of vehicle and are not currently allocated to it will be displayed as show in figure below.



Terminalvision_Configuration_Add-Licence-To-Vehicle_Menu

Click on the required licence to add it to the list of licences for the vehicle:



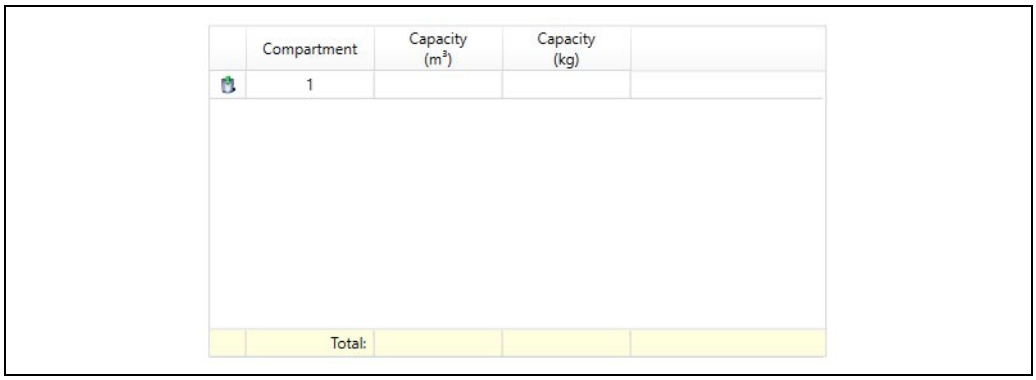
Terminalvision_Configuration_Vehicle-Licences_List

Field	Description
Delete	Remove this licence type from the vehicle.
Licence	The name of the licence (read-only).
Expiry Date	**Mandatory.** The date that the licence is due to expire for the vehicle. When this date is earlier than the current date, the licence will be validated as described in figure Vehicle License Configuration (→ 35).

Field	Description
Reference	**Mandatory.** The unique vehicle reference for the licence. For example the number shown on an MOT certificate.

Adding Compartment(s) to a vehicle

Compartments can only be entered for vehicles which have a vehicle type which has compartments. If a vehicle can have compartments, it must have at least one compartment configured. The compartments section will only be available if the selected vehicle type has the **"Has Compartments"** box ticked.
Click the **Add** button in the **Compartments** section to add a new compartment. A new compartment will be added to the list of compartments:



Terminalvision_Configuration_Vehicle-Compartments_List

Field	Description
Delete	Remove this compartment from the vehicle.
Compartment	The compartment number (read-only).
Capacity (m^3)	The volume capacity of the compartment.
Capacity (kg)	The weight capacity of the compartment.

Either the volume capacity or weight capacity must be entered for a compartment. If a volume capacity is entered for any compartment, a volume capacity must be entered for every compartment.
Similarly, if a weight capacity is entered for any compartment, a weight capacity must be entered for every compartment.

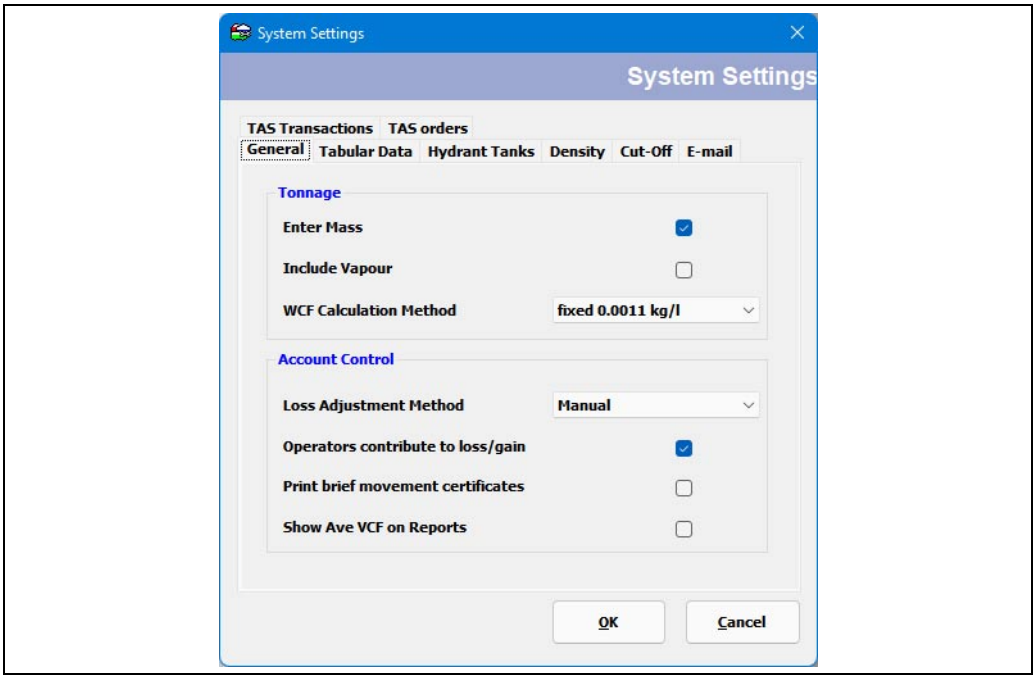
Deleting Vehicles

To delete a vehicle, select the vehicle from the tree on the left-hand side of the window (from one of the groups under **Vehicles**) and then click the **Delete Vehicle** button ( ).

A vehicle can be deleted from the system at any time, so long as there are no uncompleted orders for it.

5.16 System Settings

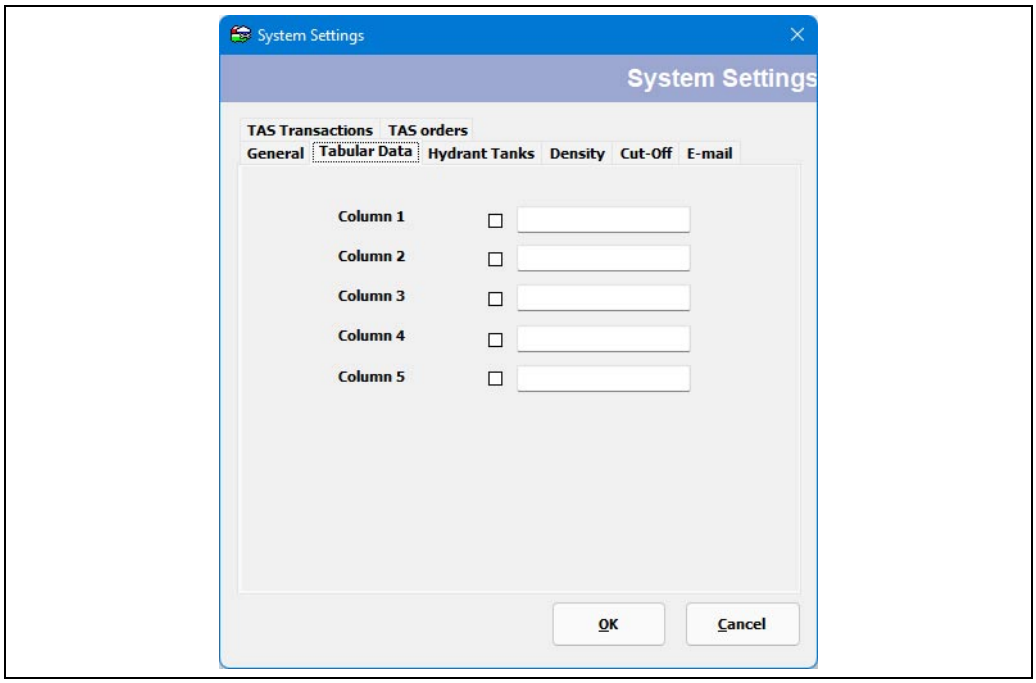
There are some global system settings which must be configured for the installation.
Select the **Admin** → **System Settings** menu.
The **General** tab is shown in figure below.



Terminalvision_Configuration_System-Settings

Field	Description
Enter Mass	Default is ticked.
Include Vapour	Indicates if vapour is to be included in calculations. Defaults to unticked.
WCF Calculation Method	Select the weight correction factor, used to calculate mass, from the drop down list.
Loss Adjustment Method	This option controls how any losses or gains are shared between the Customers of the site. Select the appropriate method from the drop down list.
Operators contribute to loss/gain	If the operator of the site is also an owner of product for which there are transactions, ticking this box indicates that the operator should share in the losses/gains as determined by the selected method.
Print brief movement certificates	If the box is checked only tank movement data will be printed, if you require the customer details to be printed on your movement certificates leave this box unchecked.
Show Ave VCF on Reports	Select this box to show the VCF from the daily average temperature and density on the daily movements report.

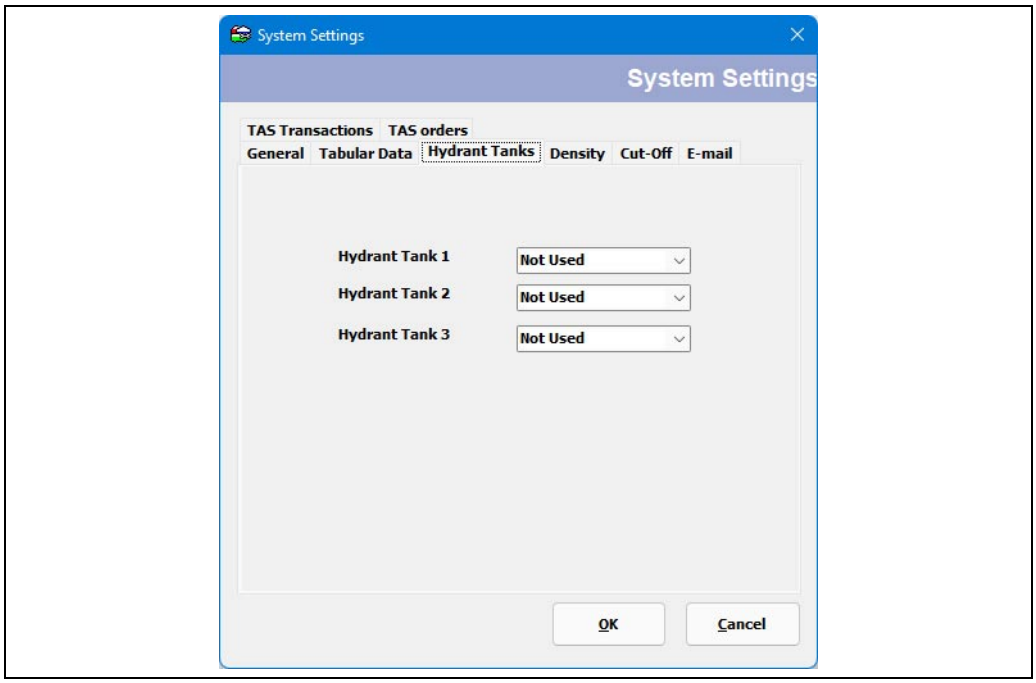
5.16.1 Select the Tabular Data Tab



Terminalvision_Configuration_Tabular-Data

The headings for the optional columns for tabular data in movements can be configured here. Check the box to enable a column and enter the heading in the adjacent field.

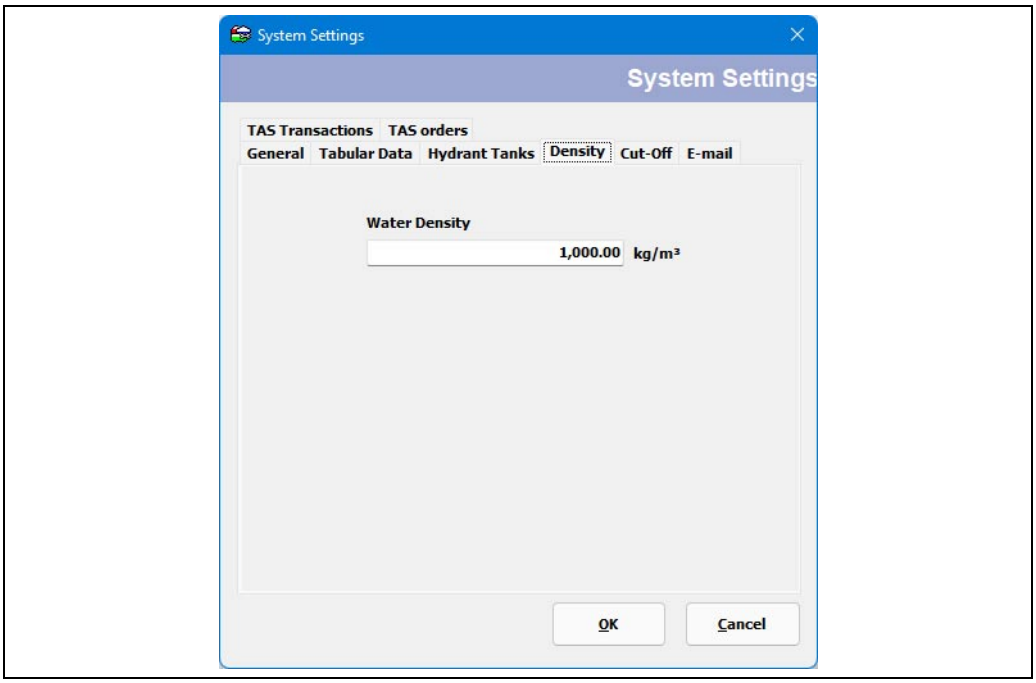
5.16.2 Select the Hydrant Tanks Tab



Terminalvision_Configuration_Hydrant-Tanks

Tanks to be used as hydrant tanks can be selected from the drop down menu.

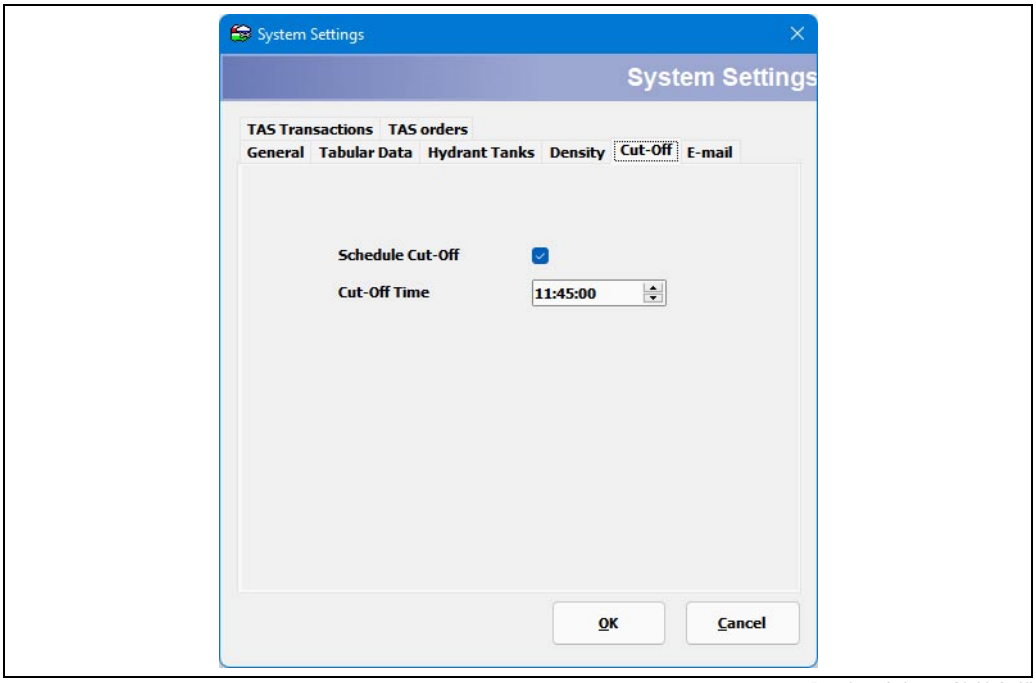
5.16.3 Select the Density Tab



Terminalvision_Configuration_Density

Enter water and sediment densities.

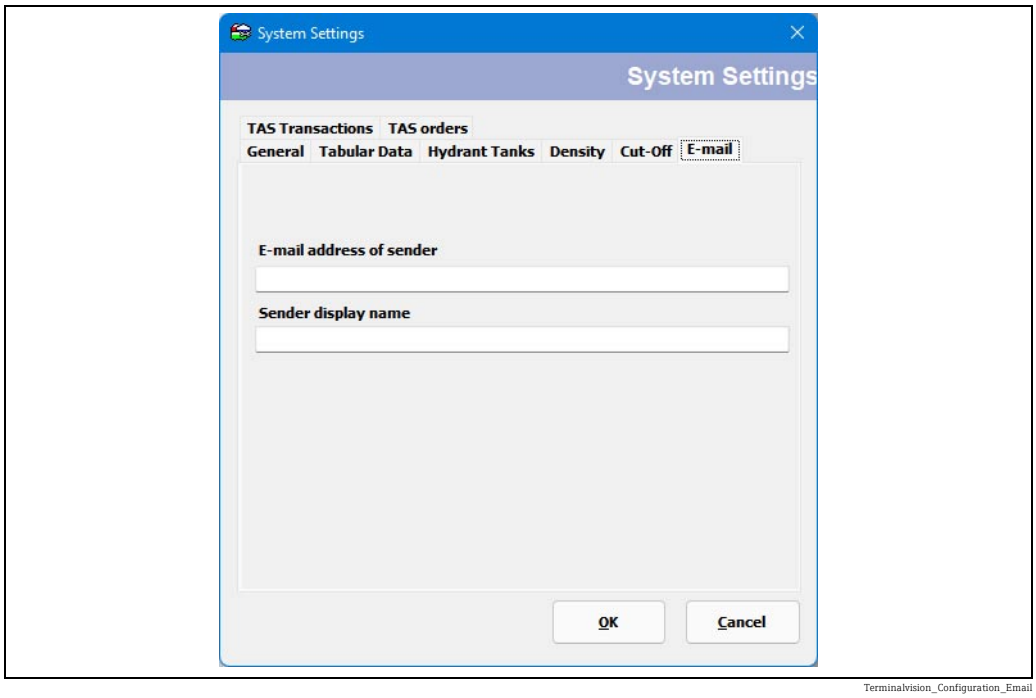
5.16.4 Select the Cut-Off Tab



Terminalvision_Configuration_Schedule-Cut-Off

Indicate whether cut-off is to be run automatically each day at a specified time.

5.16.5 Select the E-mail Tab

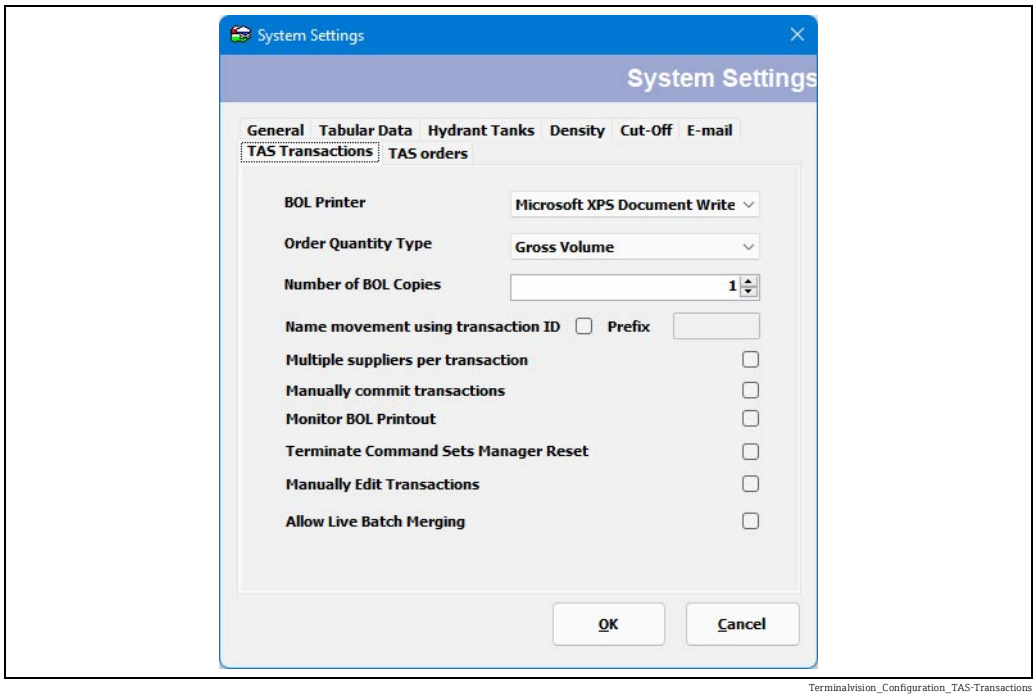


Terminalvision_Configuration_Email

Configure your e-mail settings.

Settings for the mail server should now be configured in the Messaging Service configuration screen.

5.16.6 Select the TAS Transactions Tab



Terminalvision_Configuration_TAS-Transactions

Select the default **BOL Printer** from the drop down list. Gantries may have their own BOL printer specified when configuring the Gantry.

Select the default **Order Quantity Type** from the options:
- **Gross Volume**
- **Net Volume**
- **Weight**

This sets the parameter that is used when specifying order quantities and checking vehicle compartment capacities. Individual orders may have a different type specified, although it is normal to have only one quantity type used for a site.

Select the **Number of BOL Copies** to be automatically printed at the end of a transaction.

If any movements that Terminalvision generates automatically in BookStock are required to be marked with a prefix then tick **Name movement using** box and enter the **Prefix**.

Tick **Multiple suppliers per transaction** to allow individual product items in an order to have different supplier codes. Normally only one supplier is selected for an order.

Tick **Manually commit transactions** if Terminalvision transactions are NOT to be automatically committed as new movements in BookStock.

Tick **Monitor BOL Printout** if the outcome of printing a BOL is to be monitored. A failure will then be indicated by generating an alarm.

Tick **Terminate Command Sets Manager Reset** if a Manager Reset is required to continue operations on the loading bay after a the Terminate Transaction command has been issued.

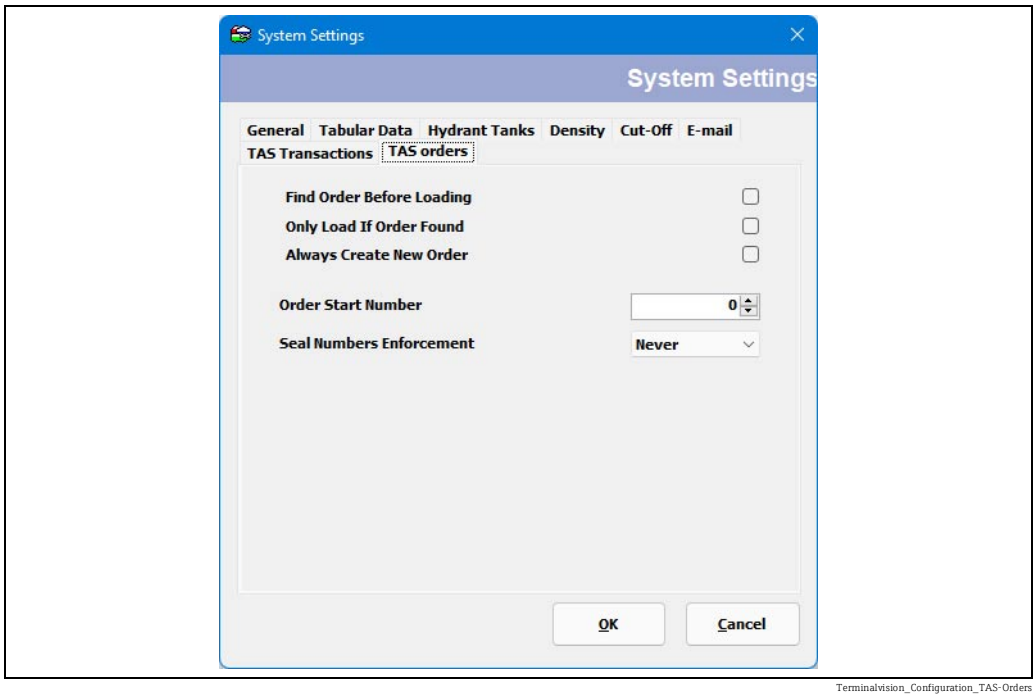
A **User Stopped Load alarm** will be generated after the terminate transaction, requiring a Manager Reset.

Note: Tick **Manually Edit Transactions** to permit the entry of manual transactions and editing of data obtained from loading/receiving bays. This is useful for collating loads into one transaction where an issue with the loading operation causes a load to have to be restarted on another bay.

Note: Tick **Allow Live Batch Merging** extends the manual editing of transactions to allow the live data returned from the loading bays to be changed, by merging batches together.

Editing transactions and merging batch data is useful as it prevents problems at the loading bay from generating complex documentation, such as multiple BOLs for a single load. If inline blending is involved this can lead to confusion as to the composition of the eventual load. The major repercussion of use of these features is that the transaction records in Terminalvision may not reconcile with the non-volatile data stored in many bay batch controllers and loading computers.
If your site's auditing policies require inviolable transaction data do not enable these features.

5.16.7 Select the TAS Orders Tab



Terminalvision_Configuration_TAS-Orders

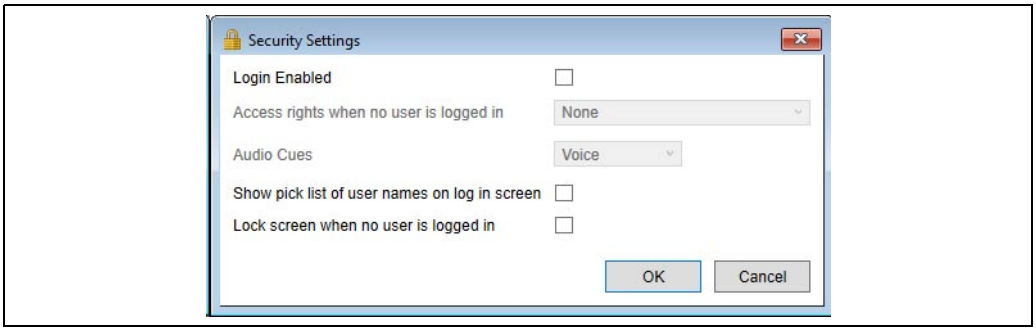
Some sites do not allow the operator to select the order when loading on a gantry, in which case the Terminalvision system must either auto-select an order before loading or auto-create an order after loading.
This tab allows the order selection settings to be configured, and only applies to gantries where no order is selected by the operator on the gantry. If an order is selected/entered by the operator on a gantry then the order must exist and be valid before loading can commence.

Field	Description
Find Order Before Loading	Tick this field to auto-find a valid order before loading. If a valid order is not found then loading can still take place, but an order will be auto-created at the end of loading.
Only Load If Order Found	Tick this field if a valid order must be found before loading is allowed. If no order is found that matches the Driver/Vehicle/Product details then no loading is allowed. The **Find Order Before Loading** field should also be ticked.
Always Create New Order	Tick this field to always create an order after loading is completed. Terminalvision will never try to find an existing order, so leave the fields **Find Order Before Loading** and **Only Load If Order Found** unticked.
Seal Numbers Enforcement	Use this field to define how seal numbers are to be enforced on an order. Possible values are: ▪ **Never** - Seal numbers cannot be entered on an order ▪ **Optional** - Seal numbers may be entered on an order ▪ **Required** - Seal numbers must be entered on an order

5.17 Security Settings

Prior to enabling **Security Settings** it is advisable that the **User** and **User Group** accounts have been created and configured.

A default Administrator account will be created when the system is installed.



Terminalvision_Configuration_EN_072

Field	Description
Login Enabled	If this option is checked, the system will prompt for a **Username** and **Password** before providing access.
Access rights when no user is logged in	If **Login** is enabled, there is obviously a state when the user logs out or when the system starts up. You can assign a user group for this state and then define what actions the system will accept without a user being logged on. For instance you may allow users to change the arrangement of tanks on the screen without logging on, but require that users log in to acknowledge an alarm.
Audio Cues	Changes the way that users are informed of a need to log in.
Audio	A spoken announcement is made, currently the only language spoken is English.
Sound	A simple 'beep' noise is generated.
None	There is no audible indication of a need to log on.
Show pick list of user names on log in screen	Determines whether a pick list of user names is displayed on the log in screen instead of the user name text field. Use of this setting is not recommended since it reduces security.
Lock screen when no user logged in	Determines whether the screen is locked when no user is logged in. If this option is ticked, the screen is locked when the user logs out. Before anything can be accessed on the computer, a user must log in.

6 Configuring Devices

Any electronic devices (e.g. loading computers, access control terminals etc.) which are to be connected to the Terminalvision system need to be configured.

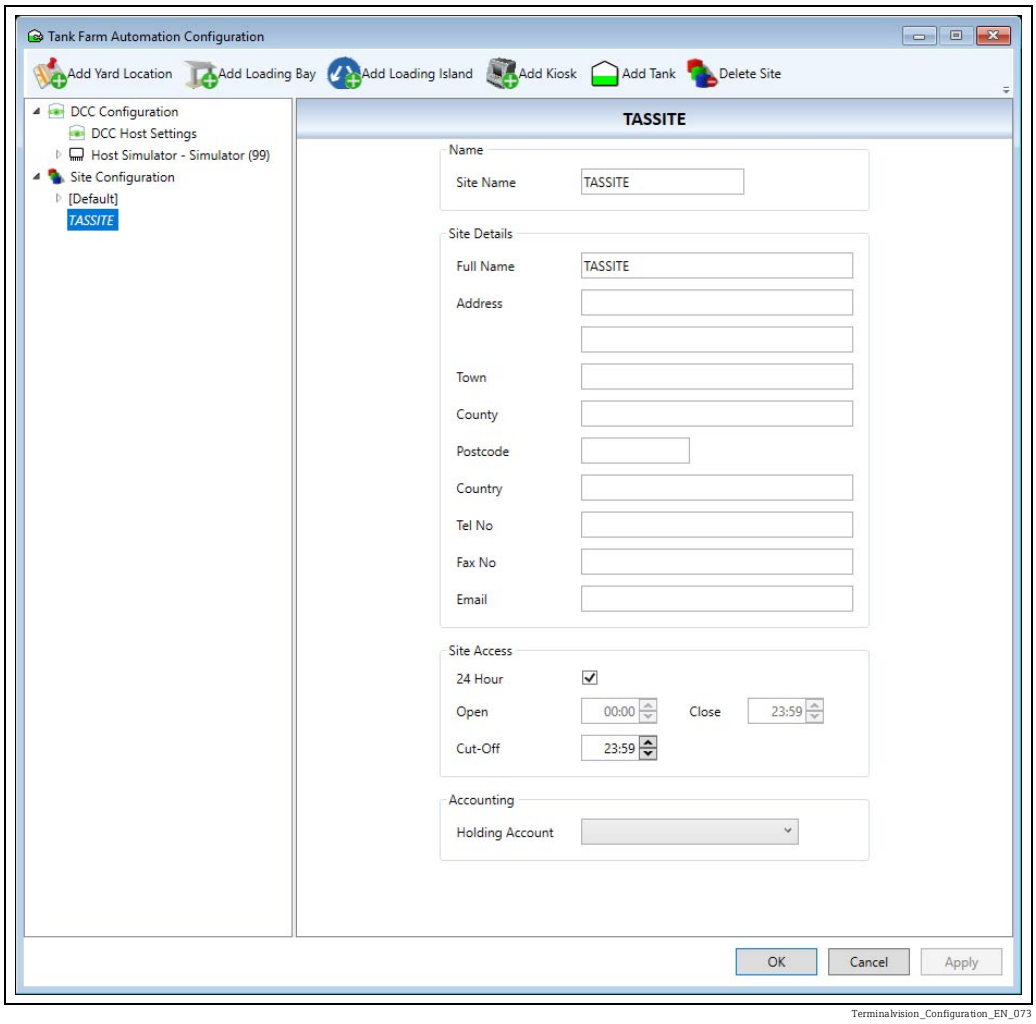
All electronic devices are connected to the physical interfaces of the computer running Terminalvision. Each physical interface requires a device driver to be allocated to the physical interface. Examples of physical interfaces are:
- Serial RS-232/RS-485 ports
- Ethernet Interface
- USB Interfaces

6.1 Configuring Host Interface Ports

Host interfaces poll a bus to communicate with slave devices such as Preset Meters, and Access Control Units. A Host interface can use any of the following communication media channels:
- Serial communications
- TCP/IP network communications
- OPC network communications
- XML [SOAP] network communications

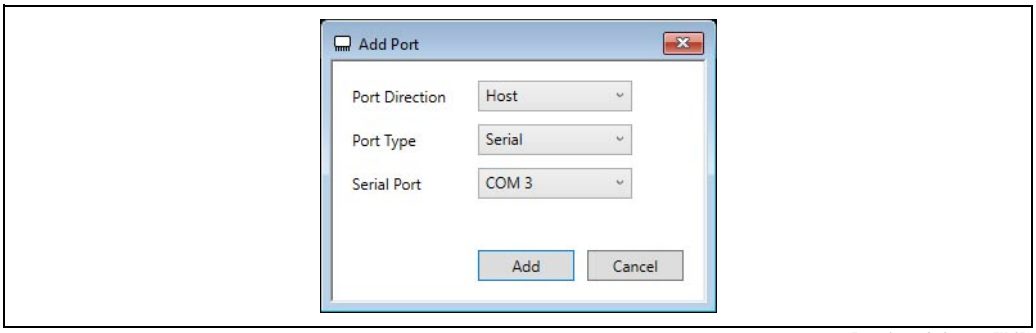
Consult the application notes corresponding to your equipment for the appropriate choices.

1. Launch the **Tank Farm Automation Configuration** application. **TAS → TAS Yard Configuration** menu. The window shown in figure below will be displayed.



Terminalvision_Configuration_EN_073

2. Select the **DCC Configuration** node on the left panel.
3. Click **Add Port**.
4. Select the appropriate parameters. For connections to a load computer, preset or access control unit the direction will be **Host**. The **Port Type** denotes the communications medium in use.
5. The options presented will alter depending on your **Port Type** selection. A serial interface will require the COM port to be selected.
6. Click **Add**, the window shown in figure below will be displayed.



The above process can be repeated for each physical interface required by the application.

6.1.1 Configuring the Host Port

Once the **Host Port** has been added you must then configure the protocol to be used to communicate over the port. Again the particular hardware devices with which you are communicating will dictate the appropriate options.

1. Select the port node on the panel on the left.
2. The options relevant to the port are presented on the right panel.
3. Set the port details then click **Apply**.

6.2 Site Configuration

The **Host Interface Ports** represent the structure of the cabling at the site, this is unlikely to match up with the physical layout of the site. The next stage of the configuration is to configure the devices and how they are laid out on the site and then map them to the host ports.

6.2.1 Site Configuration (TAS)

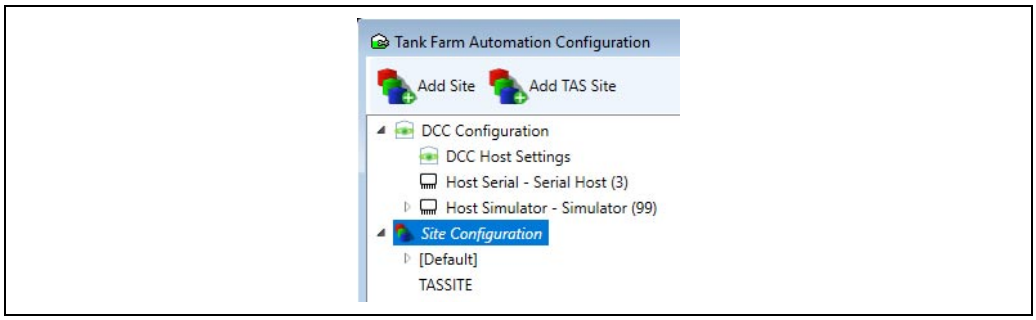
You must have at least one TAS Site configured. The TAS Site represents the location of your terminal. If you are using the computer for both Terminal Automation and Tank Gauging you will likely have a Tank Gauging site if you have already configured that system. Logically, the Terminal Automation site and the Tank Gauging site are different entities as the two software packages manage different types of devices. You cannot add a Level Gauge to a Terminal Automation site, equally you cannot add a Load Computer to Tank Gauging site.

The TAS Site information is duplicated in the Book Stock configuration data (→ 16). You can edit this data using either screen.

Adding a site

Select the **Site Configuration** node and click the **Add TAS Site** button, see figure below. A site named **New Site** will be created, enter the appropriate site details.

Many reports feature the site address, which is configured here.



Terminalvision_Configuration_EN_075

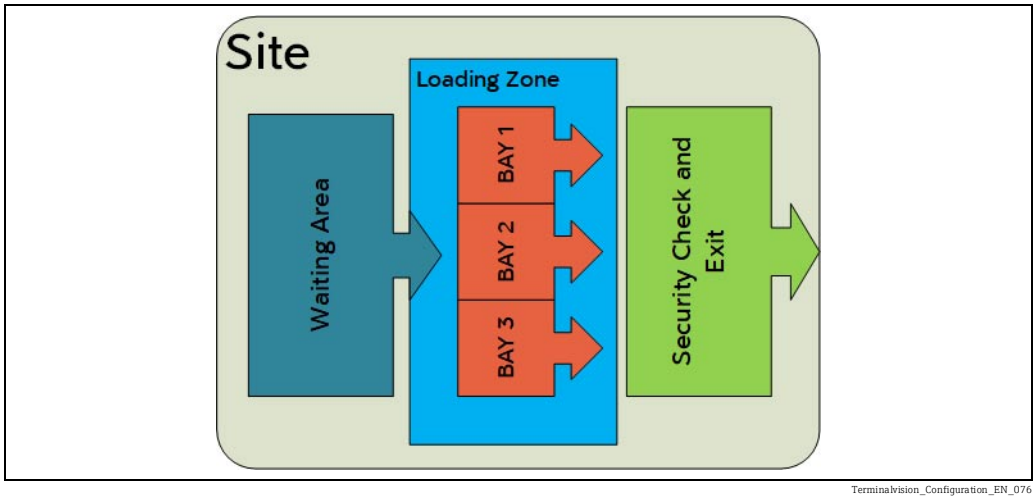
Deleting a site

Deleting a mature site which has previously been used for movements or TAS operations is not advised. It is recommended you restore a blank database and start the configuration again.
If you created a site inadvertently then delete the site by selecting it on the left panel and clicking **Delete Site**.

6.3 Yard Locations

Yard Locations are conceptually nested zones within a site that are delineated by Access Control Units. A Site is itself a **Yard Location**, it represents the highest level of location within which all other locations are found.

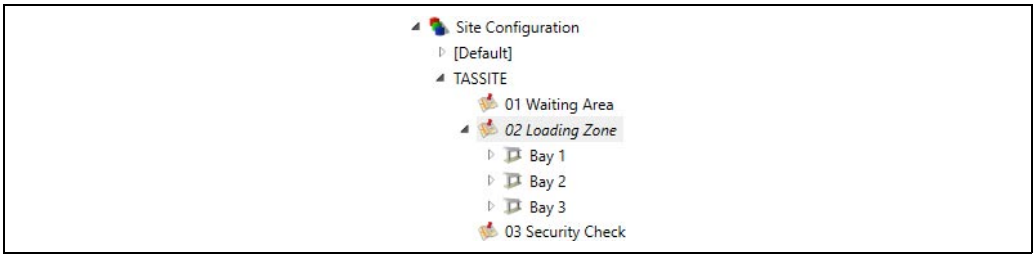
In the figure below the site is divided into 3 locations:
- A waiting area, where trucks wait their turn at the loading bays.
- A loading zone containing 3 loading bays, where the trucks are filled.
- The security check, where the trucks' documentation is validated and the vehicle inspected before leaving site.



Terminalvision_Configuration_EN_076

Upon entering a **Yard Location** the driver is expected to identify either himself, his vehicle, or both at an ACU. For instance, in the case of moving from the **Waiting Area** to a **Loading Bay** the driver will check in with an ACU at the entrance to the **Loading Zone** and again when he stops at the **Bay**. The drivers' movement around the site is monitored as he checks in at these ACUs providing a log of their visit to the site.
The simplest sites will just have loading bays under the site location, and the driver will identify himself just once when he is at the loading bay. If records of the checks performed when the driver was at site are not required, then this is all that needs to be configured.

The site diagram in the figure above would be represented in Terminalvision in the **Tank Farm Automation Configuration** screen as shown in figure below.



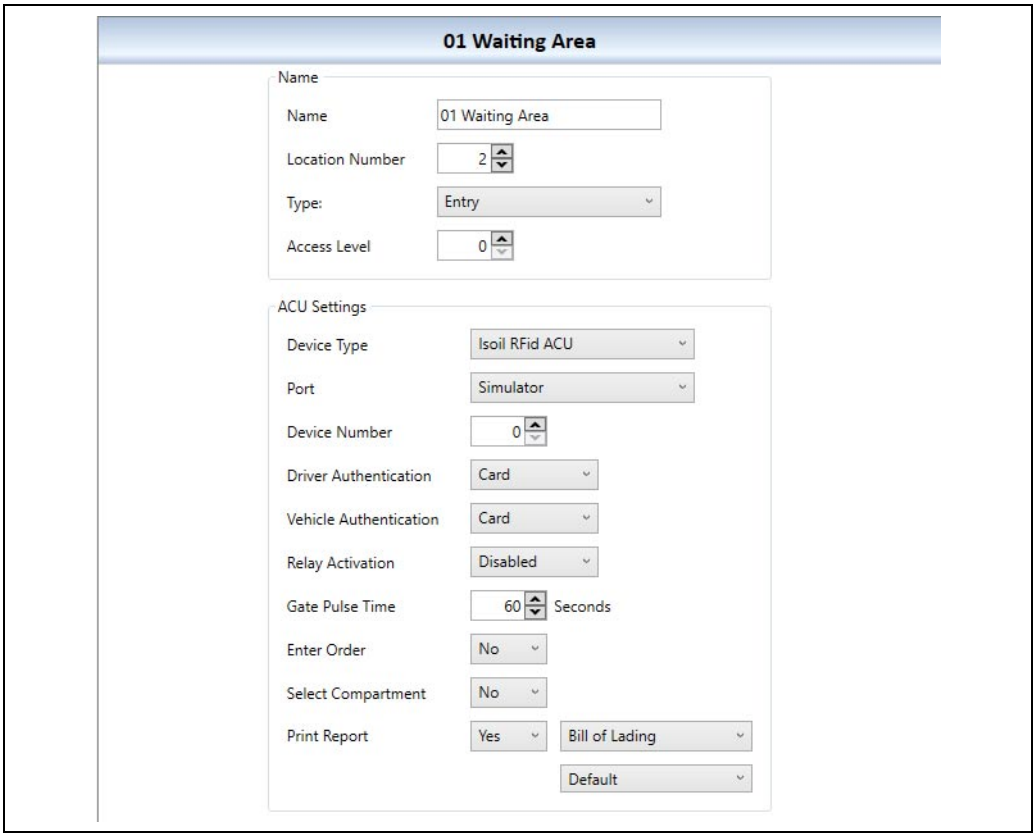
Terminalvision_Configuration_EN_077

6.3.1 Creating Yard Locations

To create a new yard location, select the location that the new location is to be a part of (e.g. this might be a site). Then click **Add Yard Location**.

6.3.2 Yard Location Details

Yard locations require the following details to be defined. This is illustrated in figure below.



Terminalvision_Configuration_EN_078

Field	Description
Name	A human readable name for the location.
Location Number	An identifier for the location.
Type	Determines how vehicles are marshalled through the location. See table to location types (→ 52).
Access Level	Places limits on drivers and vehicles access to the area.

Yard locations have either one or two ACUs defined for them. The ACU Settings are:

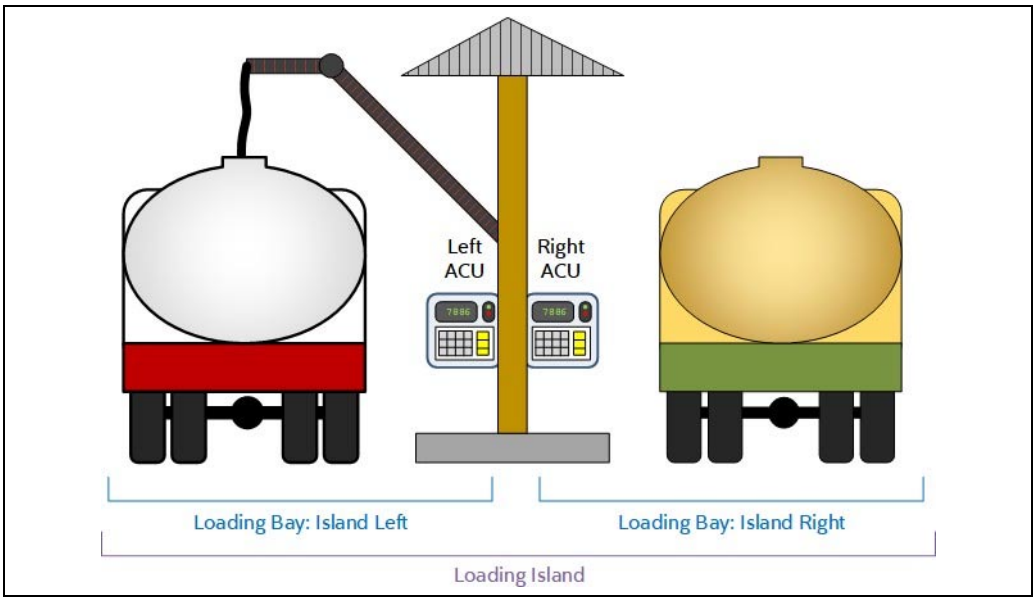
Field	Description
Device Type	The type of device to be used as the ACU for the location.
Port	The previously configured host communications port (→ 48).
Device Number	Device address of the ACU on the host communications port.
Driver Authentication	The method to be used for identifying the driver at the ACU. The appropriate selection will depend on the hardware capabilities of your ACU.
Vehicle Authentication	The method used to identify the vehicle at the ACU. The appropriate selection will depend on the hardware capabilities of your ACU.
Relay Activation	If the ACU is equipped with a relay, the relay can be configured to activate in response to drivers' interactions with the device. The relay can be operated in **Gate Mode**, where a pulse is sent for a predetermined length of time or **Traffic Light Mode** where the relay is kept closed while the ACU is in use.
Gate Pulse Time	The number of seconds a pulse lasts when the relay is in **Gate Mode**. Other relay activation modes do not use this setting.
Enter Order	Requires the driver to enter an order number at the ACU.
Select Compartment	Appropriate for an ACU at a loading bay, probably not elsewhere.
Print Report	Causes a FAN, QAN, or BOL to be printed when the driver uses the ACU.

Location Types

Location Type	Description
Entry	ACU records entry to the location, no record of when the driver or vehicle leaves the location is made.
Exit	ACU records the exit from the location of a driver or vehicle.
Entry/Exit	A single ACU records a vehicle or driver’s entry to and exit from the location.
Separate Entry/Exit	Two ACUs are used to record entry to and exit from the area; one is designated for each purpose.
Checkpoint	Similar to the **Entry/Exit** type, but in addition to recording the driver and vehicle's entry and exit a record of a check is made to indicate whether the check was passed or failed.

6.4 Loading Islands

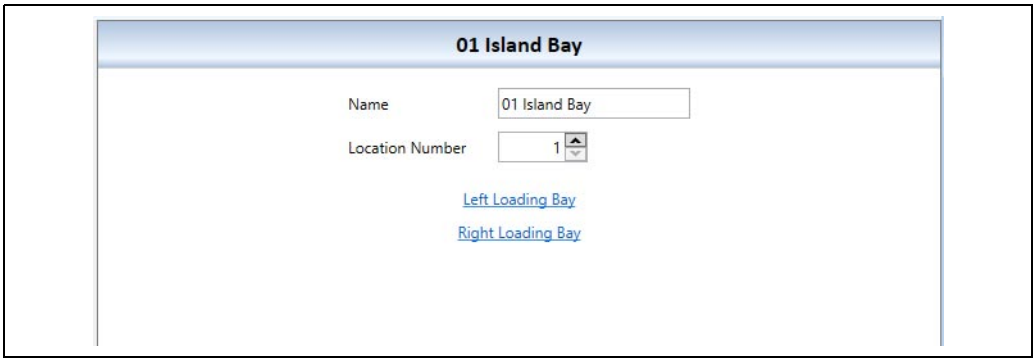
Loading islands are relatively uncommon, but are conceptually two adjacent loading bays that share loading equipment.
Normally, a loading bay can load on just one side. All vehicles using it must pull up on either the left or right-hand side of the bay to fill. An island loading bay permits vehicles on both sides of the skid to be loaded (a microswitch on the dispensing arm indicates whether the arm is facing the left or right side).
Each side of the island, however, requires an independent ACU to identify the vehicle on the left or right. Both sides of the island can be used at the same time, the drivers at each side negotiating where contention for the arms arises. The diagram below illustrates this.



Terminalvision_Configuration_EN_079

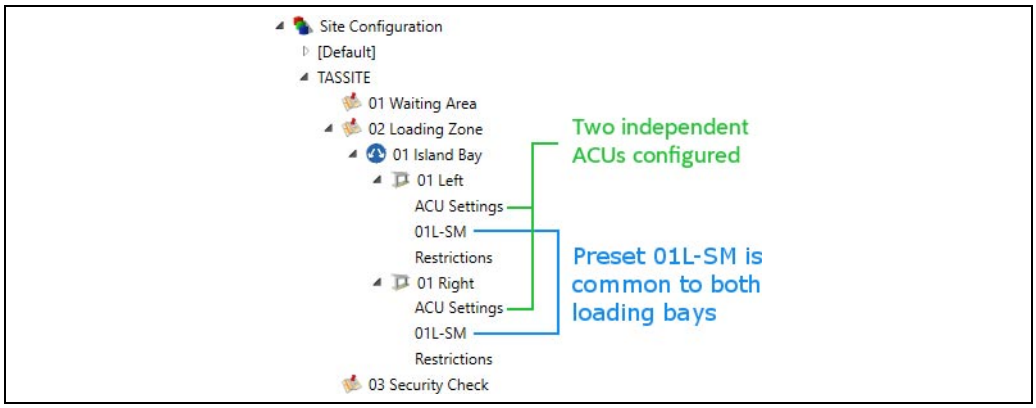
6.5 Island Bay Configuration

To add an island, select the location in which the island is situated and click **Add Loading Island**, then enter a suitable name for the island and a unique location number, as shown in figure below.



Terminalvision_Configuration_EN_080

Use the hyperlinks **Left Loading Bay** and **Right Loading Bay** to create and enter the loading bays on the island.
Enter the details of the pair of ACUs for the 2 sides of the island. When you add the Preset Meters to the loading bays you have the option of **Adding an Existing Preset Meter**. You should add a new preset meter for the first loading bay, then use the add existing command to share that preset with the second bay. Your configuration should be similar to the image shown in figure below.



Terminalvision_Configuration_EN_081

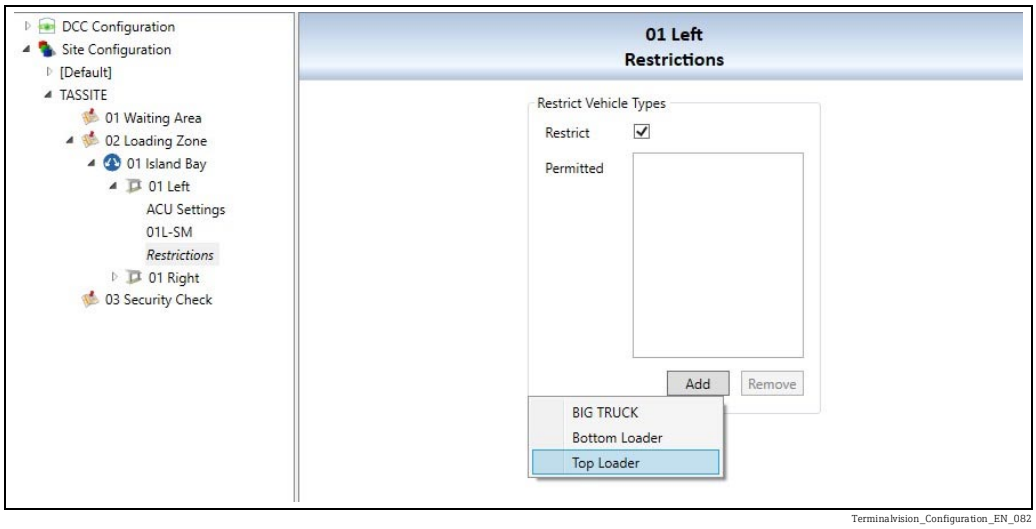
6.6 Loading Bays

A loading bay is a yard location in its own right, even the simplest of sites must have some form of ACU at the bay to identify which vehicle is there. Some loading computers act as both an ACU and a Preset, however in order to operate as a loading bay both functions must be provided for.

6.6.1 Loading Bay Restrictions

Vehicles can be restricted to using particular bays. You might want to do this if you have top and bottom loading bays to prevent the wrong type of vehicle from using the equipment. Set up vehicle types (→ 36) to distinguish the types of vehicles that are appropriate to use the bays. Then for each bay where restrictions apply select the loading bay **Restrictions** section. Tick the **Restrict** option and then use the **Add** button to designate the types of vehicle permitted to use the bay, as illustrated in figure below.

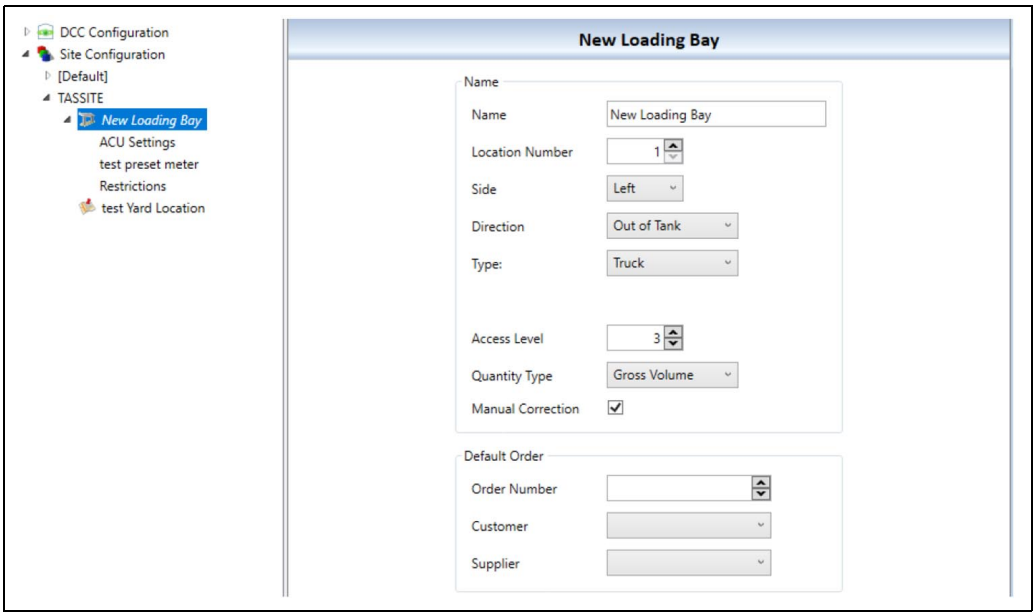
If the **Restrict** option is selected then at least one vehicle type must be chosen.



Terminalvision_Configuration_EN_082

6.6.2 Configuring a Loading Bay

The first step in configuring a loading bay is to add a loading bay to a yard location. If your site has no control over vehicles within the site, just add the loading bay directly to the site itself.
In **Tank Farm Automation Configuration** select the location for the loading bay and click **Add Loading Bay**. See figure below. A **New Loading Bay** entry will be created into which you will fill in the details and assign it a unique name and number. The rest of the bay details are described in the table below.

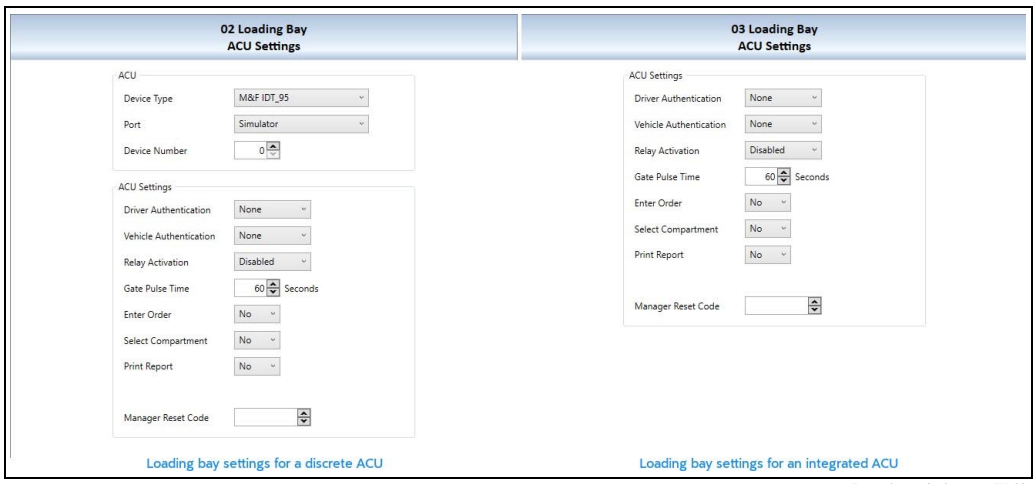


TeVi_NXS85_new loading bay

Field	Description
Side	Affects the way the bay is represented in the display screens, unless you have island loading bays this option has purely cosmetic effects.
Direction	Determines whether the bay is used to load product, receive product or both.
Quantity Type	If your site has bays with differing methods of measurement for dispensing products, you will need to set specific quantity types on your bays. In most circumstances all the bays use the same measurement methods and you can set a default for the system as a whole.
Manual Correction	Tick if this gantry does not use the volume correction parameters from the tanks connected to the arms. In this case the API table, density and temperature for each arm are saved separately from the tank values. They may be entered by a separate screen in the Yard Overview. This mode is typically used if the bay is used for receipt of product from tankers or ships.
Order Number	If you are not pre-configuring orders for your loading operation, the system can automatically create orders in response to activity at the bays. The order number assigned to the transaction at the bay is determined by this setting in the case of automatic order creation.
Customer	The customer applied to the transaction in automatically created orders.
Supplier	The supplied applied to the transaction when running with automatic order creation.

6.6.3 Loading Bay ACU

The ACU role at the loading bay is supported either by configuring a specific ACU device or a preset with ACU capabilities. In the former case after creating the loading bay, select the bay's **ACU Settings** section and configure the ACU. In the latter you must first add the preset meter to the bay and set it in **Gantry** mode. The settings will vary as shown in figure below, for detail see table below.



Terminalvision_Configuration_EN_084

Field	Description
Driver Authentication	The method by which drivers will identify themselves to the ACU. See table for Authentication Method below.
Vehicle Authentication	The method by which vehicles will be identified by their drivers at the bay. See table for Authentication Method below.
Relay Activation	If the ACU hardware supports it, a relay can be triggered in response to activity at the bay.
Gate Pulse Time	If the relay activation mode is **Gate**, then this number determines the time period the relay is pulsed. Otherwise this setting has no purpose.
Select Compartment	Whether the selection of the compartment is required on the ACU.
Print Report	Determines whether a report is automatically printed after conclusion of activities at the ACU. With a loading bay this is commonly used to automatically print a Bill of Lading after loading is complete.
Manager Reset Code	Enter a code number that needs to be entered before a manager reset command is sent to meter on a gantry. Leave blank if no code is required.

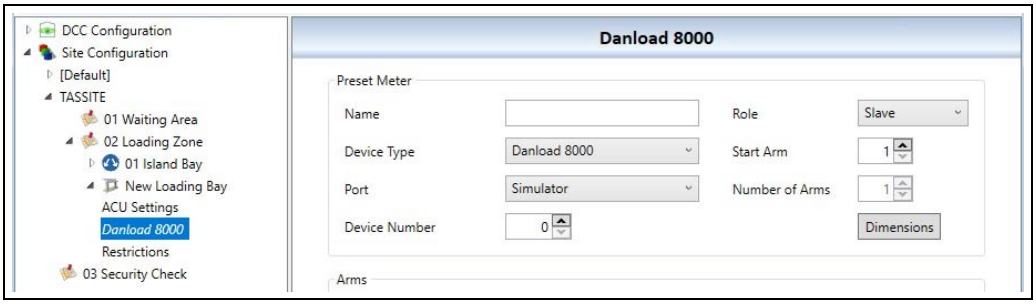
Authentication Method	Description
None	No method of identifying the driver or vehicle is to be used.
Card	Some form of card identification is to be used, such as MiFare or HID.
PIN	The driver will enter a PIN to identify himself or the vehicle.
Touch Key	A 'Dallas Key' is used to identify the driver or vehicle.

6.6.4 Loading Bay Presets

The preset is the device that manages the dispensing of the product to the vehicle, co-ordinating the status of permissives such as the grounding line, and the control of the valves and pumps providing the products. A loading bay can have any number of presets, one of the bay devices must act as the ACU and all others must act as slaves to that ACU. That is the driver will log in once at the ACU device and in doing so will unlock the other presets to enable him to load.

Adding a Preset Meter

To add a preset select the loading bay to add the preset to and click **Add New Preset Meter**. The settings for the preset will be displayed on the right. See figure below for an illustration, details of the settings are given in the table below.



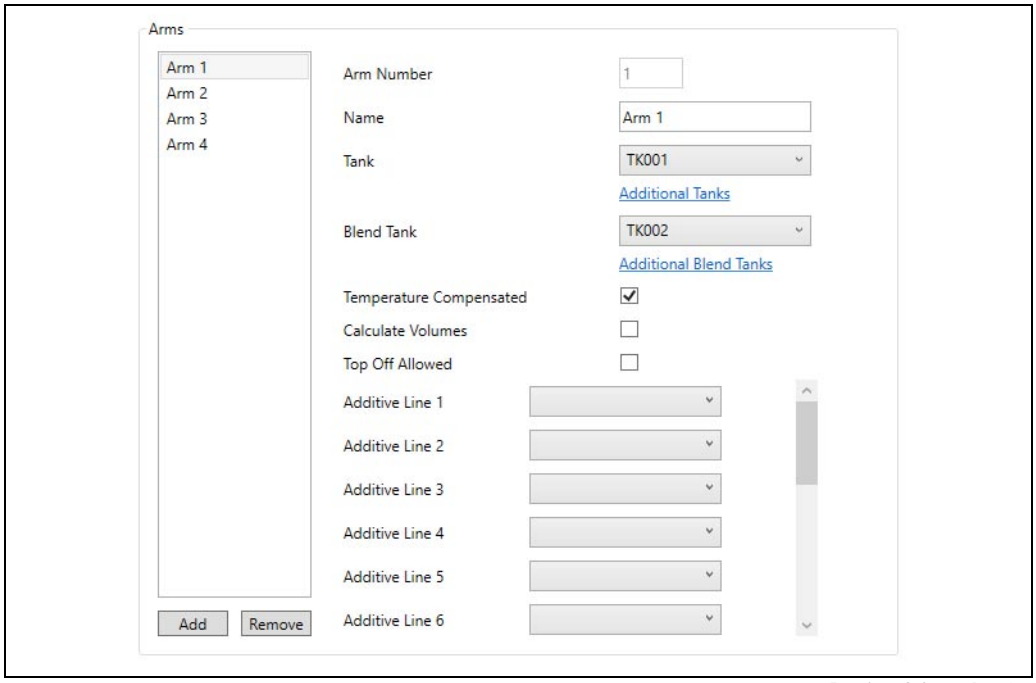
Terminalvision_Configuration_EN_085

Field	Description
Name	A unique name for the bay.
Role	The mode the preset will operate in. See table on Preset Modes below.
Device Type	The model and manufacturer of the preset.
Port	The interface port on which the computer communicates with the preset (→ 48).
Device Number	The hardware address of the preset.
Start Arm	The number of the first arm on the preset
Number of Arms	The number of arms the preset is equipped with

Preset Mode	Description
Gantry	In this mode the TAS software controls all actions on the gantry and authenticates all input, such as driver/vehicle identification, order selection and preset amounts. The preset also fulfills the requirements of bay ACU.
Slave	Similar to gantry mode in that the TAS software controls the actions on the preset, but authentication control is passed to the bay ACU.
Stand Alone	All Loading Computers can act on their own. There is little or no control from the TAS software, as it simply records transactions AFTER they occur.

6.6.5 Configuring Arms on a Preset Meter

To configure the arms on a **Preset Meter** select it in the left-hand panel in **Tank Farm Automation Configuration**. The lower portion of the **Preset Meter** panel pertains to the arms on that preset.
A list of arms on the preset is presented, clicking on each of the arms shows the settings for that particular arm. Clicking **Add** creates a new arm on the preset, **Remove** takes them away. See figure below for an example.



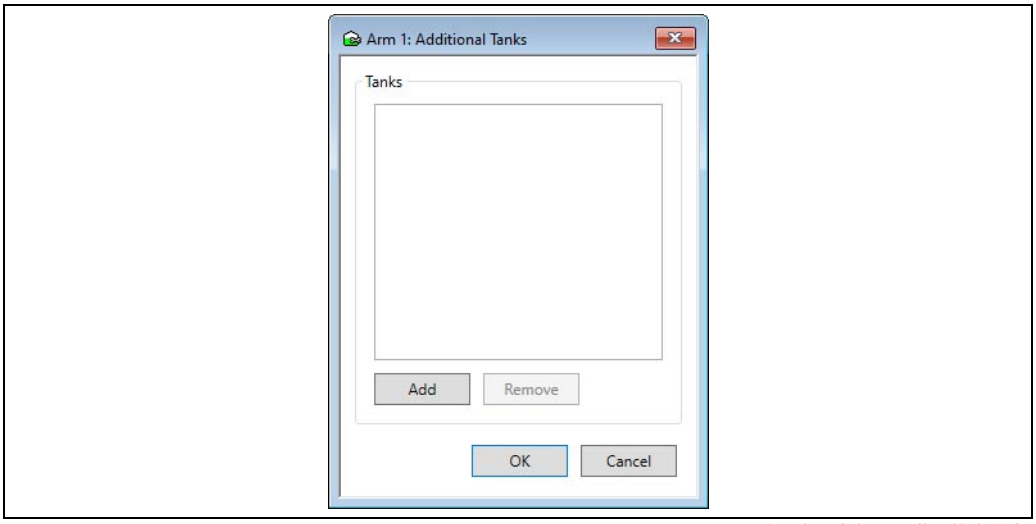
Terminalvision_Configuration_Preset_Arms

In many cases arms will not use all the features provided by the software. Where you preset is dispensing product directly out of the tank, for instance, the **Blend Tank** and **Additive Line** settings will not apply. Leave them blank, so as not to confuse matters for people charged with maintaining your handiwork. Descriptions of the arm fields are given in the table below.
Continue to add further arms as required.

Field	Description
Name	Enter a name for the arm. This is for display purposes only.
Tank	Select the tank that the arm is connected to.
Additional Tanks	Allows additional tanks to be added which are physically connected to the main tank.
Blend Tank	If the loading computer supports blending (e.g. Contrec 1010 DD, or SmithMeter Accuload III) then select the tank for the blend product.
Additional Blend Tanks	Allows additional blend tanks to be added which are physically connected to the blend tank.
Temperature Compensated	Tick to indicate the meter on the arm has temperature compensation. If unticked the density for transactions will always use the value from the tank connected to the arm.
Calculate Volumes	Tick to let Terminalvision calculate the Net volumes loaded in a batch. The net volume amount returned from the preset will be ignored. The calculation will use the API table selected in the Manual Correction screen.
Top Off Allowed	Tick to allow extra batches to be loaded in a compartment after the order amount has been achieved, up to the max compartment size. This is generally used on products such as LPG etc.

Field	Description
Destination Type	Select the method used for transporting the product. Currently the options are: ▪ Truck ▪ Tank ▪ Ship ▪ Pipeline ▪ Rail This determines the type of picture displayed in the Gantry Live data screen. The most common option is Truck.
Additive Line X	Determines which particular additive is associated with a given additive line. These can be left blank if you are not using additive injection in your recipes.

When either the **Additional Tanks** or **Additional Blend Tanks** links are clicked, a further screen will be displayed allowing selection of the additional tanks. See figure below.



Terminalvision_Configuration_Additional-Tanks_Window

Clicking the **Add** button will display of tanks which contain the same product as the tank. Selecting one of these will add it to the list of additional tanks.
To remove an additional tank, select it in the list and then click the **Remove** button.
Continue to add further arms as required.

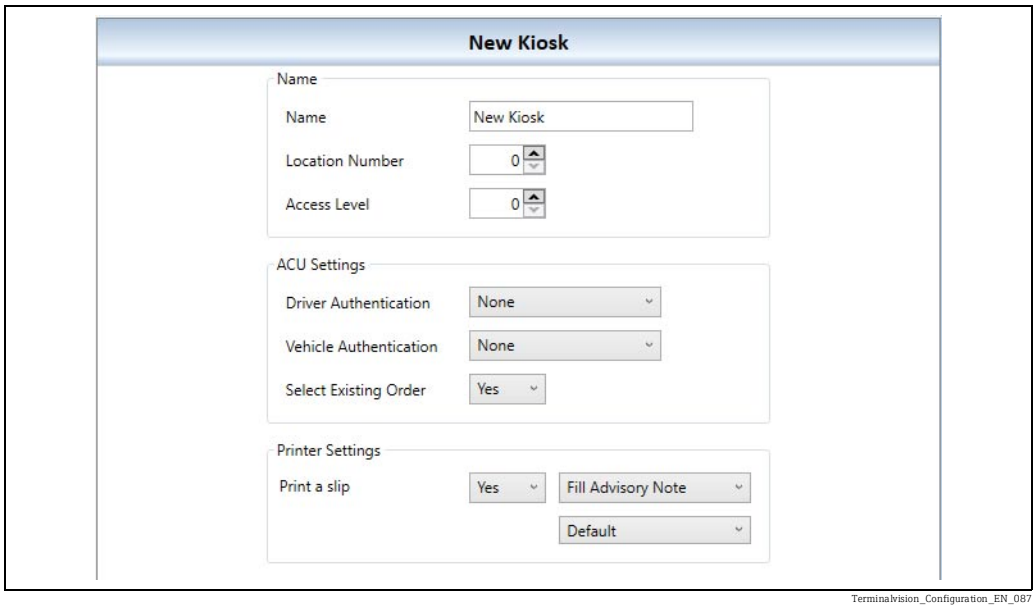
6.7 Kiosks

A kiosk is a device to be used by visiting drivers to enter their order details before they get to the loading bays. Using a kiosk, the driver can prepare his load configuration in advance, print out a Fill Advisory Note (FAN), get it confirmed by the site operators and be entered into a queue. This should smooth the path through the site for the driver, meaning that there should be fewer operational issues once the driver arrives at the loading bay.

A detailed explanation of the configuration and capabilities of kiosks is to be found in the Self-Service Kiosk manual BA01898G.

6.7.1 Adding a Kiosk

Select the site location in which the kiosk is located (in many cases this will be the site itself) and click **Add Kiosk**.
A new kiosk will be created in the tree view on the left-hand side and you will be presented with the settings (see figure below) of the new kiosk. You must give the kiosk a unique name and location number.



Terminalvision_Configuration_EN_087

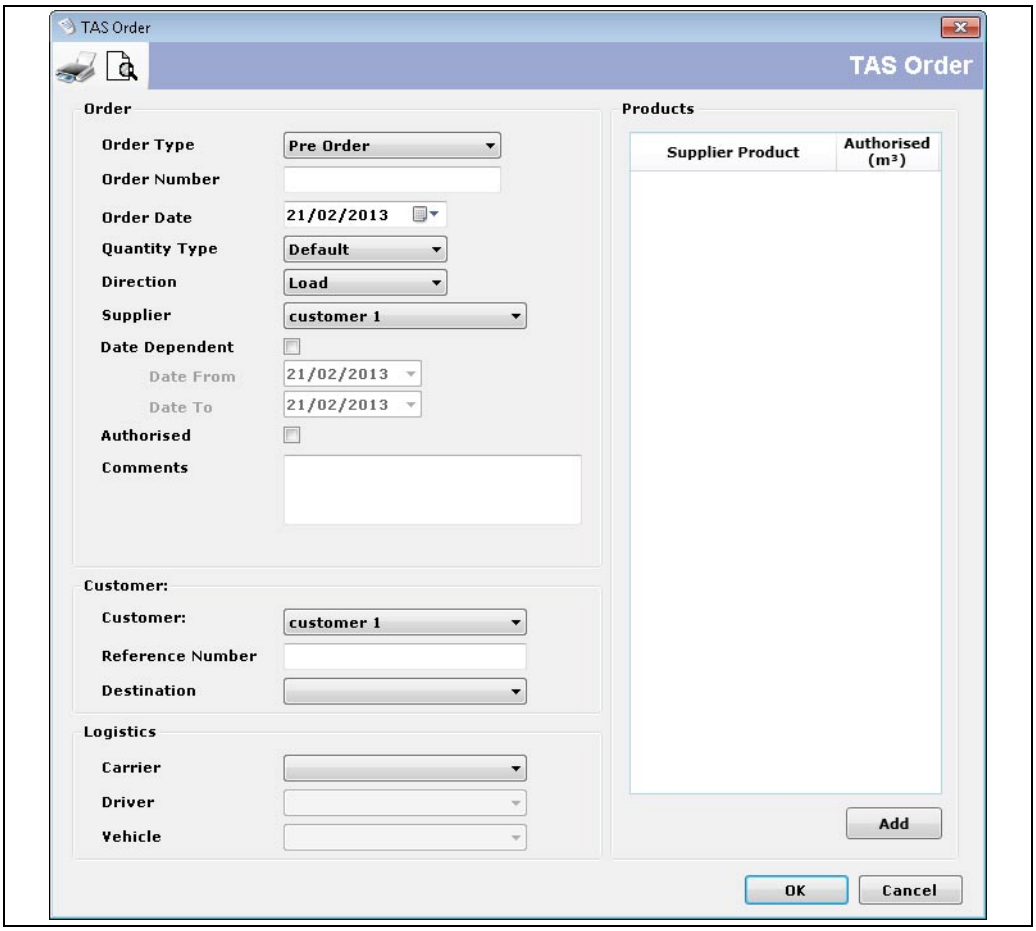
The kiosk itself acts as an ACU, the options to identify drivers and vehicles are in common with the location ACU and loading bay ACU options.
If you wish to use the kiosk to enter vehicles into a queue for the site's loading bays then a **Queuing System** must also be available.

6.8 Configuring an Order

When the Loading Computers are configured for Load Scheduling and Remote Authorisation all orders have to be handled by the Terminalvision system.

The system supports three different types of orders:
- **Compartment Order**: Specify the quantity of products by compartment for a specific vehicle. The capacity of the vehicle cannot be exceeded by this method assuming the vehicle has been correctly configured in the database.
- **Pre-Order**: Define a quantity of product(s) that is pre-allocated to a specific Customer/Drawer/Driver/Vehicle. The total quantity can be collected in any number of collections. Once the quantity has been taken the order is closed and no more product can be taken against that order.
- **Open Order**: Specify that a specific Customer/Drawer/Driver/Vehicle can take as much product as they like.

To configure an order, select the **TAS → New TAS Order** menu. The window shown in figure below will be loaded.



The following fields are mandatory with some examples shown:

Field	Example Value	Description
Order Type	-	Select Compartment Order, Pre-Order or Open Order from the list.
	Compartment Order	A **Compartment Order** is specific to a particular vehicle. When the vehicle is selected the vehicles compartment details will be displayed.
	Pre Order	A **Pre-Order** allows you to specify a list of Products with specific quantities which can be taken at any time. The order is completed when the specified Product Quantities have been taken.
	Open Order	An **Open Order** allows you to specify a list of Products which can be taken at any time. The Open Order allows you to take an unlimited quantity of each Product.
Order Number	1010	Enter the unique order number. If left blank, a number will be auto-generated. This number must be unique.
Order Date	20/02/2013	Select the date the order was created.
Quantity Type	Weight	Determines what parameter is used for all quantities, these can be: ▪ **Gross Volume** ▪ **Net Volume** ▪ **Weight** If left as **Default** then the parameter from the System Settings will be used. This field determines what units are displayed in the **Products** section on the order entry screen. For instance if set to **Weight**, then quantities will be displayed as kg, tonnes etc.

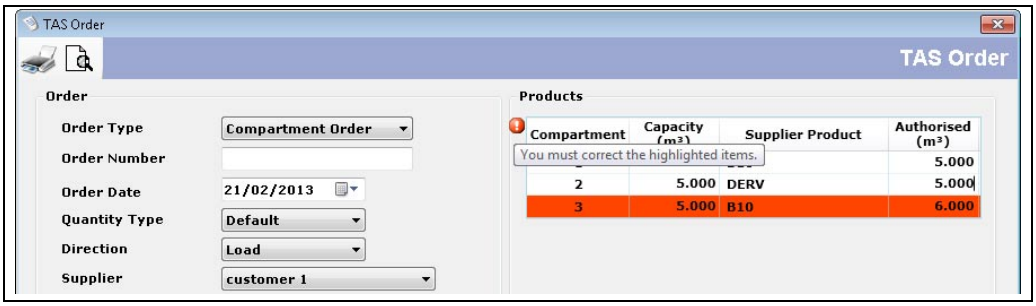
Field	Example Value	Description
Direction	**Load**	Set this the either **Load** or **Receipt**. For the order to be used for a transaction, the gantry direction must match this order direction.
Supplier	Oil Storage Ltd	Select the supplier from a list of all configured suppliers. These will be all those Customers configured with the **Supplier** box ticked. See previous section on configuring customers.
Date Dependent	Ticked	If the order is to used only during a specific time, tick this box and enter the **Date From** and **Date To** fields. The order may then only be used within these dates. If this is unticked then the order may be used on any date.
Authorised	Ticked	Tick this box to allow the order to be used. If this is not ticked the order cannot be used for any transactions.
Comments	-	Optional text that will be displayed on the BOL report.
Customer	Oil Storage Ltd	Select the customer from a list of all configured customers.
Reference Number	-	An optional text field that can contain the customer's order number. This will be displayed on the BOL report.
Destination	Forest Farms Ltd	Select the destination from a list of all configured destinations.
Carrier	-	Select the carrier from a list of all configured carriers. These will be all those Customers configured with the **Drawer** box ticked. See previous section on configuring customers. This field sets the allowed drivers and vehicles that may be selected.
Driver	-	Select the driver for the order, or leave blank if any driver can use this order. If no driver is selected and a carrier has been configured, then any driver using this order would have to belong to that carrier.
Vehicle	-	Select the vehicle for the order, or leave blank if any vehicle can use this order. If no vehicle is selected and a carrier has been configured, then any vehicle using this order would have to belong to that carrier. This field must be selected for a **Compartment** Order type.

Enter at least the mandatory fields and then configure the product quantities to be used for this order.
The remaining fields are optional but it is recommended that all fields are completed to make the system more usable.

Now configure the Product items for the order (see later sections) and click **OK** to save the order.
The order will now be available in the Terminalvision Orders screen for current orders and the **TAS Order History** screen for both current and completed orders.
Repeat the process for further orders.
These orders are now ready to be dispensed by the system.

6.8.1 Configuring Product for a Compartment Order

For Compartment Orders a Vehicle must be specified.
A list of all compartments will be displayed in the **Products** section, showing the maximum compartment **Capacity**.
Select a **Supplier Product** from the drop down menu and enter the **Authorised** amount that may be loaded into this compartment. This may not be larger than the maximum **Capacity** (see below).

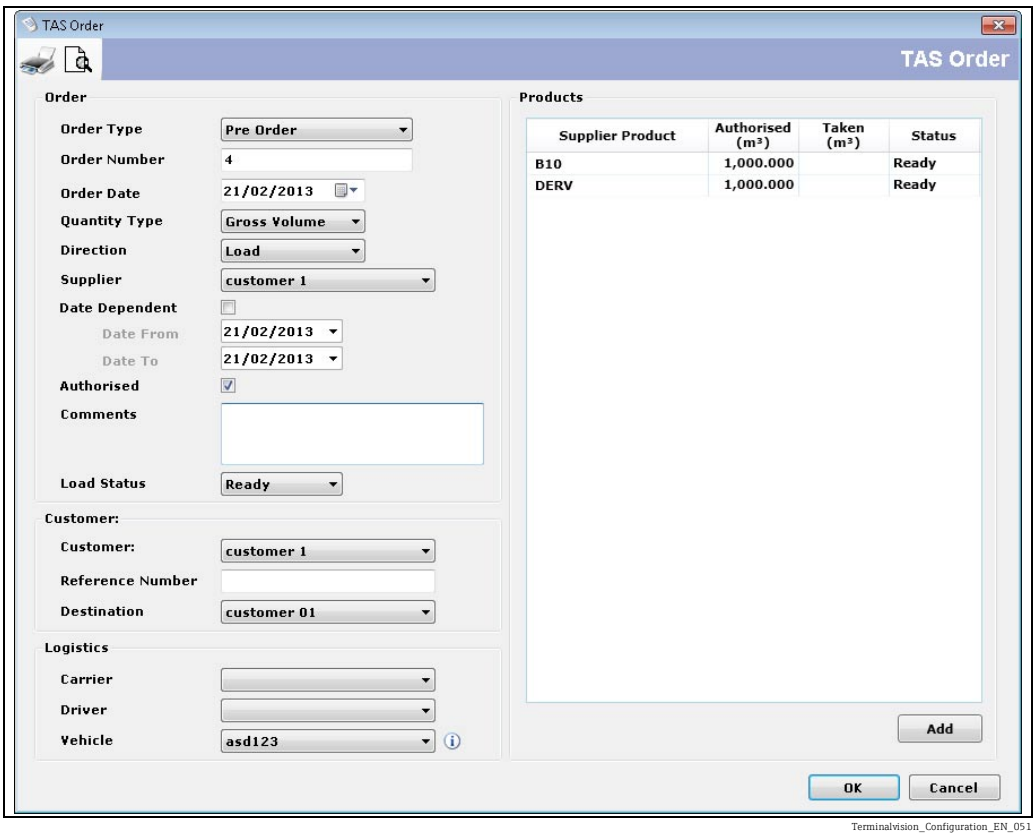


Terminalvision_Configuration_EN_050

The **Quantity Type** field determines the units displayed in this section. If set to **Volume**, then **Capacity** and **Authorised** fields will use litres, gallons etc. If set to **Weight** then **Capacity** and **Authorised** fields will use kg, tonnes etc.

6.8.2 Configuring product for an Open or Pre-Order

A list of all products included in the order will be displayed in the **Products** section. Click the **Add** button to add a new product. The window shown in figure below will be displayed.



Terminalvision_Configuration_EN_051

Select the **Supplier Product** from the drop down menu.
For Pre-Orders enter the **Authorised** amount that may be loaded.
For Open Orders no amount needs be configured.

The **Quantity Type** field determines the units displayed in this section. If this field is set to **Volume** the **Authorised** field will use m^3, litres etc. If set to **Weight** then **Authorised** will use kg, tonnes etc.

7 Post Configuration Checks

After all the configuration tasks in this manual have been completed all that remains is to check for communication with the configured devices.
The system is now ready to carry out transactions. For details on how to operate the system please refer to the Terminalvision Operation Guide BA01584G.

Index

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