

\$ K + Welcome

Intelligent Maintenance, together with Intelligent Incident and Intelligent Parking, are companion products to Intelligent Control and make up the Intelligent Control suite of programs.

Intelligent Maintenance requires that Intelligent Control is installed and functional.

\$ @ + File

The File menu consists of the following options:

- AutoStartAutostart>Second
- Log OnLog_On>Second
- Log OffLog_Off>Second
- Change PasswordChange_Password>Second
- TimeoutTimeout>Second
- Extended LoggingExtended_Logging>Second
- Large Toolbar IconsLarge_Toolbar_Icons>Second
- Exit

\$ @ + Autostart

If the instance of Intelligent Maintenance that is running on a client computer running a video wall in a Traffic Management Center, you can start that instance of Intelligent Maintenance automatically, without having a user log in. In this case, the AutoStart option will have a check next to it in the File Menu list and when Intelligent Maintenance is started, the current map will automatically be displayed.

\$ @ + Log On

Use the Log On screen to enter a User and Password to access the Intelligent Maintenance software.

User is the name used to log on to the system. The name that is entered can be up to 10 characters in length and can consist of alpha and/or numeric characters. Note that the name is case sensitive.

The Password is unique to a User. It can be up to 10 characters in length and can consist of alpha and/or numeric characters. The password is case sensitive. Please make a note of the Password for each User.

Press enter or click on the OK button when the required information has been entered. If a valid User and Password is entered, the Log On window will close and the Main Menu will be enabled. If an invalid User or Password is entered, a message will be displayed advising you of the fact and allowing you to rectify and continue.

Only one User can be logged on at any one time. To log on as a different User, first log off as the current User and then log on again using another User name.

\$ @ + Log Off

Use the Log Off option to log off from the system. This function will not close the software. To close the software, select the Exit option.

If there is no activity for a specified period of time (as specified using the Timeout option on the File menu), a Log Off Warning window will appear, warning that the user will be logged off.

To remain logged on, click on the 'Stay Logged On' before the time indicated has elapsed.

\$ @ + Change Password

Use this utility to change passwords. The User is displayed for reference purposes. To change the Password, first enter the Old Password. If your entry for Old password is invalid, a message will be displayed advising you of the error. Correct the Old Password and then enter the new Password in both the Password field and the Confirm field. Click the Change button to update the User record with the new Password. If the same Password is entered in both fields (Password and Confirm), a message will be displayed advising that the password change was successful. The new Password will be effective immediately. Make a note of the new Password.

If the same Password is not entered in the Password and Confirm field, a message advising that the Passwords do not match will be displayed. The Change Password form will open again. Re-enter the same Password information into both fields and click the Change button to update the User record with the new Password.

Click on Close to close the form.

\$ @ + Timeout

Enter the number of minutes of inactivity that should pass before the timeout warning window is displayed. The value entered here can be between 5 and 60 minutes. Note that the default is 10 minutes and this value will automatically be entered when this option is selected from the File menu.

When the specified period of inactivity is reached, a warning will be displayed, allowing the User to choose to stay logged on.

Click on the Stay Logged On button within the time allowed to remain Logged On under the current User. If you do not click the Stay Logged On button you will be logged off the system.

\$ @ + Extended Logging

Extended Logging controls the amount and type of detail that is included in the log files. For standard operation, extended logging should not be turned on. It should only be turned on if additional detail is required in the log file for diagnostic purposes.

If Extended Logging is not selected, when the menu option is clicked, a window will open. Click the Yes button if extended logging should be activated or click No to leave extended logging inactive.

If Extended Logging is already selected, when the menu option is clicked, a window will open. Click the Yes button to turn extended Logging off or click No to leave Extended Logging active.

\$ @ + Large Toolbar Icons

All of the functions that can be accessed using the Menus in Intelligent Maintenance have associated Icons that are displayed on the left hand side of the screen. These Icons can be displayed in two sizes – normal and large. To have large icons displayed, select Large Toolbar Icons from the File menu. As soon as you do this, the Icons displayed will change to the larger size. To change from large toolbar icons to normal size, select Large Toolbar Icons from the File menu and the icons will immediately revert to the normal size.

A check mark next to Large Toolbar Icons in the File menu indicates that the large icons are selected.

\$ @ + Maintenance

This is where all the reported Maintenance can be viewed and are managed. When a maintenance event is reported, the operator will enter the details of the event here, by clicking the Manual tab and selecting and/or entering the correct options.

The Maintenance Screen consists of several tabs. These tabs are used to group the maintenance events into categories so that they can be more logically viewed and managed.

Manual	This is where maintenance events are manually entered.
Unconfirmed	This is a list of the maintenance events that have been reported but not yet confirmed
Pending	This is a list of maintenance events that have been reported or scheduled but are in a pending status.
Confirmed	This is a list of all the maintenance events that have been reported or scheduled and have been confirmed.

Expired	This is a list of maintenance events that have expired (their duration has passed) and they have not been cleared or closed.
Cleared	This is a list of maintenance events that have been cleared but cannot be closed yet as some further action is required.
Closed	This is a list of all the maintenance events that have been closed.

The Manual tab is different from all the others in that this is where the maintenance events are reported. All the other tabs have identical content.

Category	Indicates the broad category into which the maintenance falls. Examples would be repairs, unscheduled, routine maintenance etc. If the category that you wish to use does not display in the drop down list, you will have to add a new category as described in the Administration section of this User Guide.
Type	Further defines the maintenance in terms of its category. For example, in the repairs category you could have types like minor, major, emergency etc. If the type that you wish to use does not display in the drop down list, you will have to add a new type as described in the Administration section of this User Guide.
Source	<p>This indicates how the maintenance was entered:</p> <p>Manual It was called in, emailed in, or was viewed on camera and reported.</p> <p>Automatic The maintenance is scheduled – a routine expected event.</p> <p>Detection This maintenance was determined by detection devices.</p> <p>Central Schedule This maintenance was generated by the Central Schedule in Intelligent Control.</p>
Description	This is a brief description of the maintenance. It will display on the Maintenance lists and in all reports so it

	should be as meaningful as possible.
Resource Engineer	Select the responsible resource for this event from the drop down list. Resources are added in the Administration, Configure section.
Expected Duration	This indicates – either in days or hours, the length of time that it is anticipated that the maintenance will be active. This information is informational only.
Comment	This is a mandatory field and must be entered. It will be displayed in the log of the maintenance events and should contain further details of the maintenance event.
Map View	Select the map on which the maintenance event is to be displayed. Only the maps that have been created in Intelligent Control will be available for selection.
Impact	Indicate the impact that the maintenance is having on traffic. The available options are Low, Medium, High and Emergency.
Location Point	Select the location point for this maintenance event.
Standard Operating Procedure	If a standard operating procedure is to be attached to this maintenance event, select the procedure from the drop down list box. If no standard operating procedure exists, click on New to create one for this event.

Once all this information has been entered, click on the Save Maintenance button. The Maintenance will be added to the database as an “unconfirmed” maintenance event, and will appear in the Unconfirmed Tab list.

Once the Maintenance event is in the Unconfirmed Tab list, it will be reviewed by a supervisor or manager, who would then update its status accordingly.

Maintenance Due to Expire

The Maintenance Due to Expire button will flash when any maintenance (on any tab) is due to expire. This is in order to draw the operator’s attention to the expiring maintenance so that the information can be checked and updated if necessary. If a maintenance event is allowed to expire, it will be moved to the Expired tab.

Expired, Cleared and Closed Maintenance Tabs

In addition to the information that is included on the other tabs, these tabs have a section

that allows you to further define which maintenance events you want to include in your list when you view it.

Filter Maintenance

These are the parameters that can be chosen to narrow down the list that is displayed if necessary. You can chose to filter the maintenance list using any of the following:

Date	You can select only the maintenance events that fell within the last 30 days, or you can enter a specific date range.
Category	You can select only a specific category of maintenance for display.
Type	You can select only a specific type of maintenance within the category.
Impact	You can select maintenance events based on their impact.
Resources	You can select maintenance events based on the allocated resource

Once you have made your selections, click on the filter button and only the maintenance events that meet the parameters that you have entered will be included in the displayed list.

\$ @ + GIS Map View of Maintenance

This is a pictorial view of all confirmed maintenance events that have been reported. To view the Job Card for a particular event, double click on the Icon that depicts the event.

The map view can be manipulated using the buttons on the top task bar.

Map Views	You can select another map for viewing by clicking on the Map Views drop down list and highlighting the map that you wish to access.
Filter	Use the drop down list to display all the items available for display. Put a check in the box adjacent to this items that should display on the selected map. If an item is not checked, it will not display on the map.
Zoom in and Zoom out	When you Zoom In on a map, the detail level of the map itself will increase, as will the level of detail on the Icons for the Devices. To zoom in to an area, click the Zoom In button and then, holding the left hand mouse button down “draw” a box around the area that you want to look at, and release the mouse button.

	<p>The Map and the Device icons will be repositioned and resized, still correctly reflecting the correct geographical position of the Devices.</p> <p>To Zoom Out to get a wider view of the map area, click on the Zoom Out button and then click the left hand mouse button anywhere on the map. The Map will Zoom Out one level (the actual details levels are set by the administrator) with each click on the mouse. The Device Icons will be repositioned and resized with each level.</p>
Pan	<p>To pan to another area of a map, click on the Pan Icon. The cursor will change to look like a hand. Position the cursor on the Map, and holding down the left hand mouse button, move the map until east, west, north or south. The map will relocate, and the Devices will remain located in the actual geographical positions. Note that while you are actually moving the map, parts of the screen will appear blank, As soon as you release the mouse map, the entire screen will be redrawn with the new view area displayed.</p>
Full Extent	<p>To get back to the original map and display, click on the Full Extent button. This will revert the map to its original saved zoom level and icon display.</p>
Close	<p>Click here to close the map view.</p>

Use these options to zoom in for more detail on the map, or zoom out for less.

Use this option to move the map up, down, left or right.

Use this option to select items for display on the map

Click here to choose the map you want to view.

Click here to return the map view to its full extent

Click here to close the map.

\$ @ + Refresh Maintenance

This utility is used to refresh the database and the map view. Use it only if maintenance events are not appearing correctly in the Maintenance section or on the GIS Map View.

When you chose this option, the following warning will be displayed, advsing you tjat all other activity must be temporarily halted in order to refresh maintenance. Click yes to proceed and the database will be updated.

\$ @ + Run

This utility allows you to run other executable programs from within Intelligent Maintenance.

\$ @ + Configure Maintenance

The Configure section is where you configure some of the features in Intelligent Maintenance to accommodate your unique requirements.

- o [Category Management](#)Category_Management
- o [Device Management](#)Device_Management
- o [Device Models](#)Device_Models
- o [Location Management](#)Location_Management
- o [Resource Management](#)Resource_Management

\$ @ + Category Management

If you should find that a particular maintenance event that you are adding to the maintenance screen does not exist, this is where you would add the Category to cover that event.

When you select the Maintenance Category option a window opens, allowing you to add a new Maintenance Category, change some details of an existing category or delete a particular category.

Adding a New Maintenance category

To add a new maintenance category, click on the drop down list box and select “Add a New category”. The description field will be blank, allowing you to enter the description for the new category.

3. The Save button will be highlighted. Click on it and Save the new category to the database.

1. Click on the drop down list box and select Add a New category.

2. Enter the description of the category.

Maintenance Category is a drop down list that will display all the available maintenance categories. Additionally, it will display “Add a New category” which is the selection you should make to add a new maintenance category.

Description is a free format text field that describes the maintenance category. Make this name of the category as meaningful as possible so that any operator will understand the nature of the maintenance when it is displayed in Intelligent Maintenance.

Once you have entered the new maintenance category description, Click on the Save button to add the category to the database. Then click on the Associated Icon tab to select the icon that should be used when this maintenance category is reported elsewhere in Intelligent Maintenance.

3. Click on the Link To Icon to associate this icon with this category.
2. Click on the drop down list and select the required icon.
1. The newly entered category will be displayed here.

Either select an icon from the drop down list or select Add Icon to add a new icon.

If you select Add a new Icon, enter the Name for the new Icon and then browse to that icon by clicking on the Browse button. When you have selected the correct icon, click on Save, and that Icon will now be included in the drop down list above.

Now you can select the required icon. Highlight that Icon in the drop down list box and click on Link To Icon. That icon will now be used to depict that category when it is displayed in Intelligent Maintenance.

Now that you have associated an Icon for the category, you will be able to define the “types” of occurrence for that category. For example, the repair category can have several types - scheduled, emergency, routine etc.

Click on the Maintenance Types tab, and a new window will open. All the Maintenance Types that have been entered already will be displayed in the Maintenance Types window. You will be able to select the ones from this list that are applicable for the new category that you have created. Double click on the Maintenance Type and it will be displayed in the Category Maintenance Types window. If a type does not exist, you can add a new type by clicking on the “New” button, and entering the new type in the Edit field. Then click on Save to add that new type to the list.

Click Close to exit the Maintenance Category configuration utility.

\$ @ + Device Management

This utility allows you to view all the devices that are currently listed in Intelligent Maintenance.

The devices that are part of the Intelligent Control System can be added to the list by accessing the Intelligent Control database. Devices that are outside the spectrum of Intelligent Control can be added manually.

To edit information for a device that is already in the list, highlight that Device and click on Edit Device.

To add a new Device, click on the Add Device button and the Maintenance Device Model window will open.

\$ @ + Device Models

This is the screen which allows you to enter details for the devices that are managed by Intelligent Maintenance.

You can access this screen by double clicking on a device in the Device Summary Utility which is located in the Configure section of the Administration Menu, or you can select it by choosing Device Models from the Configure section of the Administration menu.

Maintenance Device

Select the Device from the drop down list. This is also where you indicate if the device is a system configured device (configured in Intelligent Control) or if it is a Maintenance Device that is entered into Intelligent Maintenance for maintenance purposes.

Device Location Point

Choose the desired location point.

Maintenance Device Name

This indicates the name of the selected Device as it will appear in the maintenance lists.

Device Model

Select the applicable device model from the drop down list.

Model name

The model name will display here.

Make

The device make will display here.

Manufacturer

The name of the manufacturer of the device will be displayed here.

Device Model Referenced Documents

Full details of any documents that are needed in the maintenance of the device will be listed here.

\$ @ + Location Management

Select Location Management from the Administration, Configure Maintenance menu. The following screen will be displayed:

Select the required map view from the Map Views drop down list.

Click on the New Location button and the cursor will change to a “Bullseye”. Drag the cursor to the required location on the map and right click the mouse. The icon will be displayed as a square with a T in it, indicating that it is a temporary location.

To make the location permanent, right click on the “T” Square a new window will open. Enter a description for this Maintenance location and click on the Save button. The icon will be changed to a blue square, indicating that it is permanent.

Click Close to close the Maintenance Location utility

\$ @ + Resource Management

This is where you would edit or add the resources that are available to you as part of the maintenance system. When you add a new maintenance Event, you are required to allocate a Resource Engineer to the event. This is where you enter the information for the resources.

To add a new resource, click on Add a new Resource in the drop down list attached to Resource.

Select the Resource Type from the drop down list. If the applicable resource type is not in that list, click on Add a New resource Type and enter that Resource Type in the field below.

Then enter the Contact Name and contact details as laid out in the screen.

Click Save to add the resource to the drop down list.

\$ @ + Operators

This is where you define which Operators have access to which information. Operators can only be added, deleted or changed in Intelligent Control. The Intelligent Maintenance Functions to which they have access are defined here.

\$ @ + Access Levels

Various access levels for each of the users that have access to the system can be set. The functions that a particular user can access are set based upon the Access Level that is allocated for each user.

Each user is allocated an access level when their details are added to the system. Up to 3 levels are provided for – Operations, Maintenance and Administration.

Every form in the system has controls on it. You can specify which controls should be accessible by which level of user.

To do this, click on the Forms drop down list box and highlight the form for which access levels are to be set.

Each control that is available on the form will be listed in the Control Name list.

The Description field provides a brief description of the function of the control.

Each level can have one of three types of access allocated – read write, read only or not accessible. Read write allows the operator full access to the field or control function, read only allows limited access (can only view the field or control function) and not accessible renders that field or control completely inaccessible to that level of operator.

To edit the access levels for a particular control or field, highlight that control or field in the list and its details will be displayed in the edit fields below the data window. Select the applicable access requirement for each Level and click on the Apply button.

Note about Menu Items: You can set the access levels for menu items in a similar manner to setting access levels on forms. The setting of access to menu items is done by selecting MDI from the “Forms” drop down list box. The menu items will be displayed and you can set the access levels for each level of user. Note that read-write will provide full access to the menu, read only will grey the menu item so that it can be viewed but is not actionable, while not accessible will cause the menu item to ‘disappear’ completely and the operator will not even know of its existence.

\$ @ + Profiles

The Profile function serves two main purposes. The first is to ensure that each and every form and control in Intelligent Maintenance is included in the database so that Access Levels can be correctly set for them. The second is to allow you to create and save different profiles. This feature would be used if you wanted to experiment with empowering users by giving them more authority. If you save the current profile before making those changes, you can easily revert to it if and when you decide that the experiment was unsuccessful. Alternatively, if you request Intelligent Devices, Inc to create a specific set of Access Levels, that set of Access Levels can be sent to you as a Saved profile and can be applied to your database by selecting it and making it the current profile.

Save Current profile As.....

Each level of user in Intelligent Maintenance can be assigned differing levels of access to each and every aspect of Intelligent Maintenance, as described in the Access Level section above. This allows the look and feel and authority for each level to be customized for your installation. Once you have set the Access Levels, you can save that group of settings into a Profile for future use. To do this, click on the Save Current Profile As... button. A window will open requesting you to enter a name for the profile:

Name the profile in such a way that you can easily recognize the authority levels that it represents. Click on OK to save the Profile.

Select Profile and make Current

This function is used to change the current profile. If you have set Access Levels that are not working to your satisfaction, you can revert to a previously saved profile. This allows you to easily recover from experiments that go wrong. Also, you would use this option to install a profile that is acquired from another source, for example if you had Intelligent Devices, Inc create a customized profile for you.

To select a particular profile, highlight the name of the profile in the profiles list and click on the Select profile and Make Current button. A window will open asking you to verify that you are sure that this is the action you wish to take:

Click OK to use the selected profile.

Verify Profile

This option will scan through Intelligent Maintenance and make sure that the Access Level form contains all the forms and controls in Intelligent Maintenance so that the Access Level settings are correct.

Delete Profile

This option allows you to delete an unused Profile. Highlight the Profile that is no longer required and click the Delete Profile button. A window will open asking you to verify your action:

Click OK to delete the selected Profile or Cancel to retain the Profile.

\$ @ + Help

The Help menu accesses the help file and provides details about the version of Intelligent Maintenance that is running.

\$ @ + Search

This will open the help file, enabling the utility to search for help on a specific topic.

\$ @ + About Intelligent Maintenance

Clicking on About Intelligent Maintenance will open a window that will detail the current version that is installed.

The System Info button will display a window, providing a summary of system details. This may be required for diagnostic purposes.

\$ @ + Operations

The Operations menu consists of the following options:

- [Maintenance](#)Maintenance>Second
- [GIS Map View of Maintenance](#)GIS_Map_View_of_Maintenance>Second
- [Refresh Maintenance](#)Refresh_Maintenance>Second
- [Run...](#)Run>Second

\$ @ + Administration

The Administration Menu consists of the following options:

- [Configure Maintenance](#)Configure_Maintenance>Second
- o [Category Management](#)Category_Management>Second
- o [Device Management](#)Device_Management>Second
- o [Device Models](#)Device_Models>Second
- o [Location Management](#)Location_Management>Second
- o [Resource Management](#)Resource_Management>Second
- [Operators](#)Operators>Second
- o [Access Levels](#)Access_Levels>Second
- o [Profiles](#)Profiles>Second

\$ @ + Job Card

The Job Card contains all the information that is displayed on the Maintenance Tab. In addition, it also contains Maintenance Current Status, which is where the current status of the maintenance event can be changed.

Unconfirmed	The maintenance event is still not confirmed and must remain on the unconfirmed list.
Pending	The maintenance event is confirmed but certain details are still pending. It will be moved to the pending tab list.
Confirmed	The maintenance event is confirmed and will be moved to the Confirmed tab list. It will also be displayed on the GIS Map View of Maintenance screen.
Duplicate	The maintenance event has already been reported and should be removed as a duplicate. This maintenance event will be removed from the unconfirmed tab.
Expired	The maintenance event has expired – its

	duration has passed- but it has not yet been cleared or closed on the system. The maintenance event will be transferred to the Expired tab.
Cleared	The maintenance event has been cleared and is no longer a problem, but some action is still required. The maintenance event will be moved to the Cleared tab.
Closed	The maintenance event is closed – no further action remains. The maintenance event will be moved to the Closed tab.
Remove	The maintenance event is invalid and must be removed from the database. This maintenance event will not appear on any of the tabs.

Once you have selected the appropriate status, the Maintenance Event Progress will automatically be updated. Click on Save to update the maintenance event and it will automatically be moved to the correct tab.

If at any time you wish to view a log of the progress of the maintenance event, double click on that event to open the Job Card, and then click on the Show Progress button.

Click on Close to close the Job card without making any changes.