WATER-INSIGHT

Application Notes

Rev 01

AN41 – Adding Editing and Removing IPCs using IMS

Introduction

IMS is used to manage the individual details of each sprinkler controller (IPC) on a farm. From time to time a farm will change an IPC details or remove an IPC from service or perhaps move a post or pod on which an IPC is mounted or add or extend the site with new IPCs. This application note shows how the complete view of all the IPCs on a site are maintained.

Some familiarity with using IMS, an EP3, FarmID and radio channels is needed in order to follow the processes described herein.

In this note we use the solid set mounting system (pod or post) synonymously but we will use post for convenience.

Adding an IPC

In order to add an IPC to a farm site you must first have created a farm under your account as Farm Owner. When you create a farm you also specify the location of the farm. This enables you to position devices on the farm for display. Note. Farm Delegates cannot create farms only the Farm Owner.

IPCs can be added to a site in three ways:

1. By adding them individually (which is detailed herein)
2. By importing an existing site project file from Water-Insight 's or RX Plastic's site scheduling software (useful for migrating to IMS from an exiting site that may or may not use an INC gateway)
3. By importing them from a spreadsheet (useful if you just have a list of serial numbers to work with and want to create something for installers to use. Check with Water-Insight as to how to construct such a file.)
4. By connecting to an INC gateway that is already managing a site (useful for sites already running the legacy previous generation of IMS).

The first method is convenient because a) it provides a process for installers to follow on their phone to update as they go about installing on a new site and b) small adjustments to existing sites can be undertaken quickly.

Step 1:

To add an IPC, click on the farm settings icon (cog) for the farm and select Manage Irrigation Devices from the pop-up menu (*figure 1*).

This brings up a list view of any existing IPCs on the farm plus a map of the farm including its boundaries. There are two buttons in the top right corner: "Add New Sprinkler" and "Update Gateway" (INC). Click the button to **add a new sprinkler**. (*figure 2*)

This will bring a form which needs to be filled in with the new IPC details (*figure 3*).

Step 2:

Now enter the specific information. Items marked with an asterisk are mandatory. Others are optional and can be omitted but may be necessary in order to ultimately communicate with the device.

Figure 1

a) Give the IPC a **Name**. We recommend that if you have had the site precision mapped for GPS then you use the post/pod positions numbered by the surveyor and prefix this with the paddock in which the device will be located. For example, post 28 in paddock 43 would use the IPC name 43028. You may only have a maximum of 5 alphanumeric characters in you name so use a convention that will accommodate all the IPCs you intend to have on the site in future. If you don't know where the device will be located then use a simple convention such as the zone (or pipe lateral) and post number e.g. Z1P28. If you are installing units on posts that have post names printed on tags attached to the post then use that name.

b) Enter the device **Serial Number**. The serial number is found on the label inside the IPC and can be seen through the clear plastic case. If you enter a valid serial number, IMS will look up the radio (MAC) address of the radio device in the IPC and automatically enter it in the MAC Address field. If it is not a valid serial number the address field will not be populated. Check the serial number and contact Water-Insight if the problem persists.
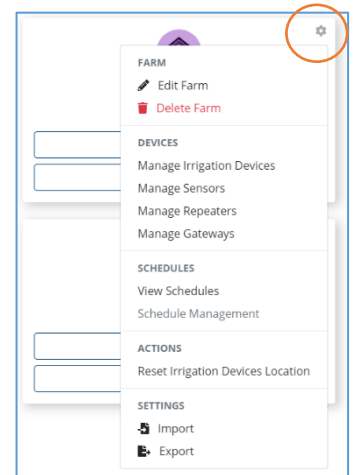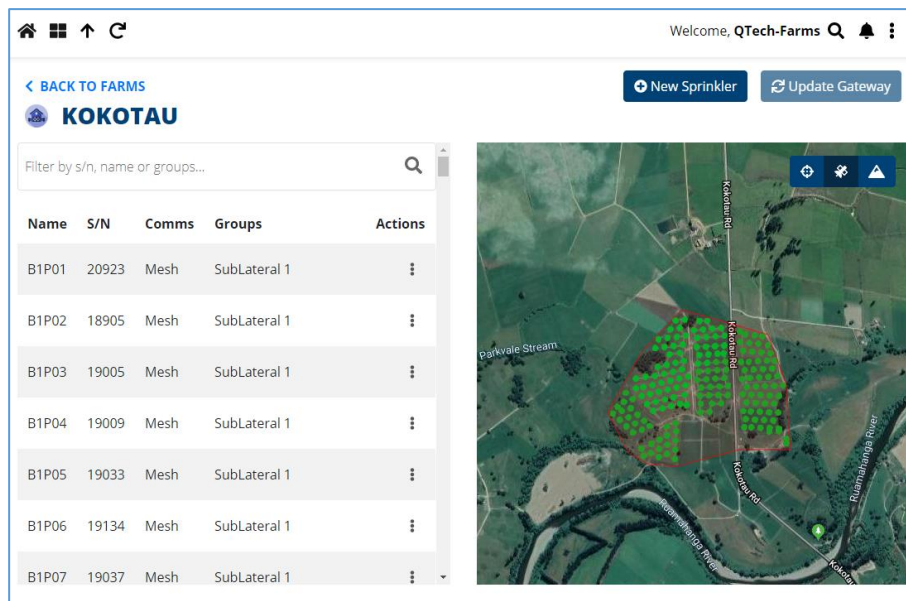
Figure 2

Step 2: (cont)

c) You can skip entering a serial number if you wish. When you skip adding the number, it will allow you to create a placeholder for an IPC without actually adding one. This is useful if you want to add an IPC to a post later on but create its name and position now. Placeholders will appear as a **pink dot** on the any map of the site.

d) Enter the **GPS location** of the post position there are several ways to do this (its best to do this on a big screen):

  i) Leave the values as 0. This will place a dot at the centre of the farm and later will be displayed in an array of dots when looking at the sprinkler map view. Do this if you don't know where the post is yet.

  ii) Type in the latitude and longitude in decimal form (you might get this from another map like google maps or irrigation cad software). For example: 172.85513810166913, -42.72513213378311

  iii) Click inside the boundaries on the map adjacent to the form it will place a **red dot** wherever you click, you can zoom in to refine where you click and you can click as many time as you like to move the dot about but stay within the farm boundaries (the pale red polygon outline)

  iv) Click on the button that says "use current location". Do this only if you are working on a phone and are standing at the spot where the post is. This is primarily for installers who are adding IPCs to posts but don't have a pre-populated map already loaded into IMS (a google map KML correctly formatted can be used to import a map)

e) Choose the **Communications Mode**. This will tell the gateway how to communicate with the IPC in the field. Choose local mode if the IPC is within direct line of sight the gateway and is less than 1000m away. Choose mesh otherwise for multi hop mesh communications. Local will result in faster communications but may well fail if the connection is marginal. Mesh communications takes longer but is more reliable over terrain and distance. If in doubt choose mesh.

   A third option (Hybrid) is available for sites that use repeaters. Do not use this option if you have no repeaters. If you think you might need a repeater then contact Water-Insight .

f) Enter the **FarmID**. When the Farm is created a Farm Identifier (FarmID) is allocated to the site. This number must be used in order to communicate with IPCs. The number is in the form nn:mm (e.g. 12:34). If your farm has not been allocated a FarmID contact Water-Insight . This field is optional because older pre-existing sites on version 3 (V3) IPC firmware did not use a FarmID. Leave this field blank if unsure or if you know your site uses V3 IPC firmware. Al new IPCs produced after mid 2018 use version 5 (V5) firmware and require a FarmID to communicate.

g) Enter the radio **Channel**. Radio channels are numbered 1-25 and if you have IPCs already on the site it should match the radio channel assignment of the other devices. If it is a new site you will be allocated a radio channel along with a FarmID when you create the site.

h) Select the **Group** to which the IPC belongs. IMS allows you to create groups of IPCs based on hydraulic requirements (pipe laterals), special purposes (part circle sprinklers), location (by a roadside) and so on. Eventually the site will be scheduled based on the requirements of each group but initially all IPCs belong to one group called "All Sprinklers". If you haven't yet created the groups to which you want the device to belong then select the "All Sprinklers" group. You can change it later.

Step 3:

Verify that you have entered all the information correctly, then click the **create** button. The red dot on the screen (if you added a location will change to **green**.

Continue to add other devices as necessary. Once you have made all changes in IMS you must synchronise the changes with the site to make them effective. Click **Update Gateway** to synchronise your change in IMS with the site. The button may be coloured red to indicate that it needs to be clicked.

Figure 3

Editing an IPC

Once added, you can subsequently edit details of an IPC. You should not use this method to replace one IPC with another (refer to AN-40 Swapping IPCs for this process). To edit an IPC select manage Irrigation devices from the Farm Settings (cog icon) and then either type in the name or serial number of the IPC you want to edit (at the top where it says filter by s/n) or scroll through the list of IPCs below to find it.

Click the more menu icon (three vertical dots) then click edit to bring up the details

Figure 4

This will bring up the same form as figure 3. In this form you can change any of the details except the serial number. Typical changes include:

a) Updating the IPC name to replace temporary names used during installation to final names (e.g. Paddock-post)
b) Modifying the position of the unit more accurately by clicking on the map or entering a precise GPS coordinate
c) Changing the mode of communications from local to mesh if contact with the device is only occasional
d) Adding the device to another group

Click update to update the settings in IMS. This will take you back to the main Manage Irrigation Devices list view.

Important. Some settings changes require new values to be sent to the Gateway (INC) on the farm. Remember to click the "**Update Gateway**" button to make any changes effective on the site. You can make multiple editing changes to different IPCs and only need to update the gateway when you are finished.

Taking an IPC out of Service

From time to time you may decide that a sprinkler controller is no longer needed in its current post/pod position and you want to remove it. Alternatively, it may be necessary to remove the device for servicing and it is likely to be out of action until it is put back on the post. Do this if you intend to put an IPC back on the post or if you want the post to remain on the map.

Follow the procedure to select the IPC (see above) and click the more icon (three vertical dots) but instead of clicking the edit option, click **Remove from Service** (see figure 4). This will change the colour of the device on the main may to **pink** indicating that there is no device present and therefore no watering will occur at that position.

The different colour is a way of differentiating those units that are out of contact from those that are not present and is provided as an aid to service personnel.

Important. Click **Update Gateway** to synchronise your change in IMS with the site after all changes in IMS have been made.

Removing an IPC

To remove a device completely from the site, select the device and from the more menu click **delete** (see figure 4). This will remove it from the IMS database. Click **Update Gateway** to synchronise your change in IMS with the site.

This process cannot be undone. It should only be done if that post/pod is no longer needed.

At present removing a device does not automatically reschedule the site to fil any gap left in watering times.

Additional Notes

Here are some additional notes to help guide you.

GPS positioning

When you add an IPC and use the button "Use Current Location" to position the IPC on the map please be aware that a typical smartphone only has a GPS accuracy of a radius of 3-10m. This means you can position the devices but the resulting map may not look nice and straight. The intention is to allow installers to form a relation between the post, the serial number and the position but if a farm has been precision mapped using an accurate GPS system this can be imported to improve the look of the map. These maps may not available at the time of installation because so the phone can be used as an interim method.

Alternatively, it may be acceptable for small sites that haven't been precision mapped. The position can also be manually updated by editing the IPC details (see above).

Sprinkler Groups

When adding an IPC, the very first time a group called "All Sprinklers" may or may not be present. If such a group cannot be found from the drop-down menu then simply type in the name of the Group (All Sprinklers) then you will find it in the menu on each subsequent IPC addition.

Farm Identifier

The FarmID and Radio Channel are a property of both the farm and the IPC. But in practice usually the farm uses a single unique identifier and radio channel, allocated to the block and supply by Water-Insight on application. (see also AN-08 "FarmID FAQ").

To save typing if you are creating a number of IPCs once the FarmID and radio channel have been entered the first time then all subsequent IPCs that are created will default to these values unless you type in other values.

IPC Names

To avoid confusion every IPC Name should be unique. However, at the time you create them in IMS you may not know the post position on which any given device will be mounted and therefore may not know the final name. for example, the label on the post may say P4328 but instead of allocating an IPC serial number to a post you may chose to install them by simply taking an IPC from its packaging and putting it on to the post then updating IMS.

In this case, we recommend creating the farm in IMS by adding (or importing) all the IPCs but give them dummy names (like P01, P02, P03 etc.) Then when a unit is placed on the post just update (edit) the IPC name in IMS using your phone and if desired update the location (don't forget to update the gateway after all is done after a day's installation).

For more information email support@waterinsight.co.nz