HMI

EDITOR

HMI Pad System

Deployment Guide.

Version 3.0

What is HMI Editor.

The HMI Editor app is the developer component of the HMI Pad system for creating Human Machine Interfaces for real time monitoring of industrial PLC based systems and processes. The other two components are the HMI View app and the HMI Pad Service.

Main features.

✓ Very fast native app, launches and connects immediately regardless of project size, not a web based app.

✓ All data types supported including Boolean, Integer and Floating Point values.

✓ Advanced Expressions Engine supporting Strings, Arrays and Dictionaries.

✓ Projects can be fully edited on-screen at the same time you run and monitor your process, and can be edited as a text file.

✓ Configurable User Accounts allow for project storage in the cloud and simple deployment to end users.

✓ The app connects to PLCs directly using native communication protocols connection without intermediate servers or boxes.

✓ TCP/IP based security.

The concept behind HMI Editor.

The HMI Editor and HMI View apps are built on top of two main modules: the *Communications Module* and the *Expressions Engine*. These modules interact with each other and to the user interface to provide most of the underlying capabilities and many advanced features.

The HMI Editor lets Integrators build fully customizable HMI interfaces by adding visual items or other objects to pages. Objects have properties that can be connected between them or with PLC tags through expressions. Virtually all properties can be linked through expressions. This architecture provides an extremely powerful environment for Integrators to create advanced HMi interfaces.

HMI Interfaces can be fully created and deployed from the app by dragging and connecting items together. Integrators can also chose to edit project files on a text editor. The app also fully supports copy/paste/duplicate of items, tags, connections etc, and has unlimited undo/redo capabilities.

The app comes with a free service on the cloud, the **HMI Pad Service**, to store your projects and associated assets for convenience and for further deployment to your End Users.

The complementary **HMI View** app lets you safely and securely deploy projects on End Users devices with no physical access to them. Projects on the HMiPad View app are deployed as encrypted, non-editable instances of your projects, thus keeping your work and know how safe.

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1 The HMI Pad System Components

The HMI Pad System is made up of 3 components:

HMI Editor.

This the app Integrators use to create and deploy HMI projects.

HMI Pad Service.

This is a server in the cloud that lets integrators store their projects for intermediate storage and before deployment to end users.

HMI Pad View.

This is the app where end users run HMI projects developed by integrators. Projects on the HMI View app are installed through the HMI Pad Service and are stored as encrypted instances that can not be edited or moved to other devices.

2 The HMI Editor and HMI View apps user Interface

The app interface consists of two main draggable panels, the *Application Panel* and the *Project Viewer.*

The Application Panel is shown on the left and there you will find options and settings related with the app.

The Project Viewer is on the right and lets you edit, review and run projects. The Project Viewer can be made fully visible by closing the Application Panel.
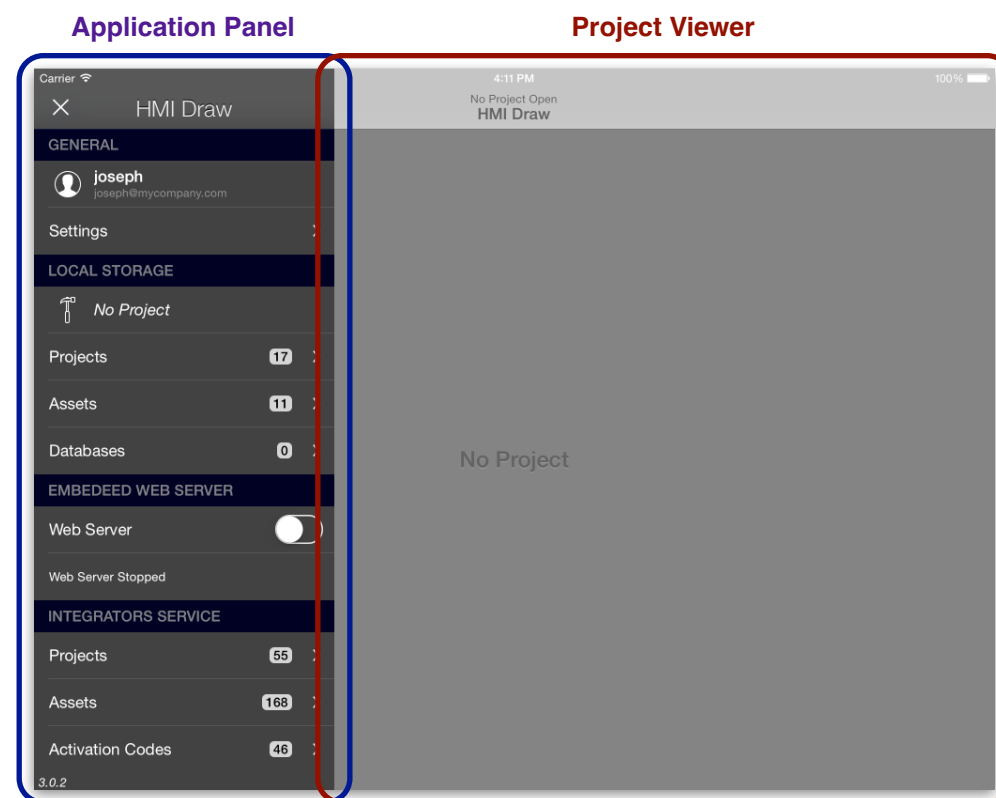
2.1 The Application Panel

The Application Panel lets you create and manage the following aspects of the app

- User Accounts and Settings.
- Projects and Assets stored locally.
- Projects and Assets stored on the HMI Pad Service
- Remote Deployment.

2.2 The Project Viewer

The Project Viewer is where you create, configure, edit and run projects. From the Project Viewer you get access to Pages, Connections, Alarms and the internal aspects of your project.

You do not use this panel for deployment.

3 Using the HMI Pad Service in the cloud

The HMI Pad app is designed to work with a service in the cloud named the HMI Pad Service.

The app seamlessly integrates this service to provide storage options in the cloud and convenient distribution and deployment of your HMI projects to your End Users or customers.

3.1 Creating an User Account

Before you can use the services provided by the HMI Pad Service you must create an iCloud user account. Your create an iCloud account follow the steps below:.

1. Open Apple's Setting app in your iOS device.

2. Tap on iCloud.

3. Create or manage your iCloud user account from there.

4. Open HMI Editor if you are an Automation Integrator or HMI View if you are an end user.

5. Tap on "iCloud User" that should appear on top of the Application Panel

6. Enter an username and email address. It does not need to be the same you used for your iCloud account. What you enter here helps us to identify you and give better support.

3.1.1 Project Users

In addition to iCloud users in the HMI Pad Service, projects may contain "project" users. Project users remain linked to a particular project and they only exist in the context of that project. They are transferred to HMI View along with the project.

A login screen is used for project users. This differs from the HMI Pad Service users which will use your Apple iCloud account.

For the purposes of project upload/download and deployment you do not need to log into project users, however you must be logged into an iCloud account in order to do so.

3.2 Uploading Projects and Assets

As you develop HMI Pad projects you can use the HMI Pad Service for storage purposes.

Storing individual assets in the cloud.

You can store individual file assets to the cloud at any time.

1. Log in with your iCloud account if you have not already done it (see previous sections).

2. Go to "Local Storage" -> "Assets" and enter Edit mode.

3. While on Edit Mode select the files you want to upload.

4. Use the "Upload to HMI Pad Server" option on the actions menu to start.

Storing a project in the cloud.

Projects can be stored in the cloud by using the activation panel. You can do this several times as you develop your project:

1. Log in with your iCloud account if you have not already done it (see previous sections).

2. Open the project you want to upload. "Projects" -> Your Project Name, right swipe to 'Open Project"

3. With the project open, tap on its name under "Local Storage" in the Application Panel.

4. Tap on 'Activate', then tap on 'Upload Project'. The current project and its associated assets will be uploaded to the HMI Pad Service

3.3 Attaching Assets to Projects

Projects may use assets such as image files to enhance visual presentation of information on screen.

In general, you do not need to attach assets while you are developing and testing your projects because at this stage assets will be loaded from the Local storage as they are needed by projects.

However, attaching assets to projects is necessary during final deployment because your assets will need to be available in end user devices for projects to use them.

Thus, at some point before you are done with your project and ready for deployment you should *associate* assets to your project. To associate assets to a project you perform the steps below.

1. Open the project you want to associate assets to, if it is not already open
2. Go to ."Local Storage" -> "Assets" and tap on the Check Mark icon for all the files you want to become associated.
3. Tap on "Confirm". Your selected assets will become associated to the current project

Assets become effectively *attached* to a particular project when the project is successfully uploaded to the HMI Pad Service. When you upload a project, all associated assets are uploaded to the HMI Pad Service along with the project.

3.4 Downloading Projects and Assets from the cloud

As you develop HMI Pad projects you can use the HMI Pad Service for storage purposes.

Retrieving individual assets from the cloud.

You can download assets you previously uploaded to the HMI Pad Service by following the steps below:

1. Log in with your iCloud account if you have not already done it
2. Go to ."Integrators Service" -> "Assets" and enter Edit mode.
3. While on Edit mode select the files you want to download.
4. Tap on the download icon.

Retrieving projects from the cloud.

You can download projects you previously uploaded to the HMI Pad Service by following the steps below:

1. Log in with your iCloud account if you have not already done it
2. Go to ."Integrators Service" -> "Projects" and enter Edit mode.
3. While on Edit mode select the project or projects you want to download.
4. Tap on the Download icon. You will be offered several options to download your projects.

## 4 Testing Projects Before Distribution and final Deployment

Before you distribute the project you created to your end users you may want to test it as if it was running on the **HMI View** application.

Essentially the project you have created will run exactly the same on the HMI Pad app and the HMI View app. However, since you may have added assets such as images to complete your project, we recommend to test your project as running with its attached assets.

In order to do so you can follow the steps below:

1. Log in with your iCloud account if you have not already done it

2. Download your project as described in Section: "Download Projects and Assets from the cloud". At step 4 select "Download For Testing".

3. Open the project you just downloaded. Note that the name of the downloaded project may contain a number appended to it. This is to prevent overwriting the original one, so at this time you will have two identical projects.

4. With the project open, tap on its name under "Local Storage" in the Application Panel.

5. Switch "Use Attached Assets" On

> *TIP: When "Use Attached Assets" is On the project will use its attached assets when running on the HMI Editor app as opposed to files on the local assets section. This is equivalent to projects running on the **HMI View** app.*
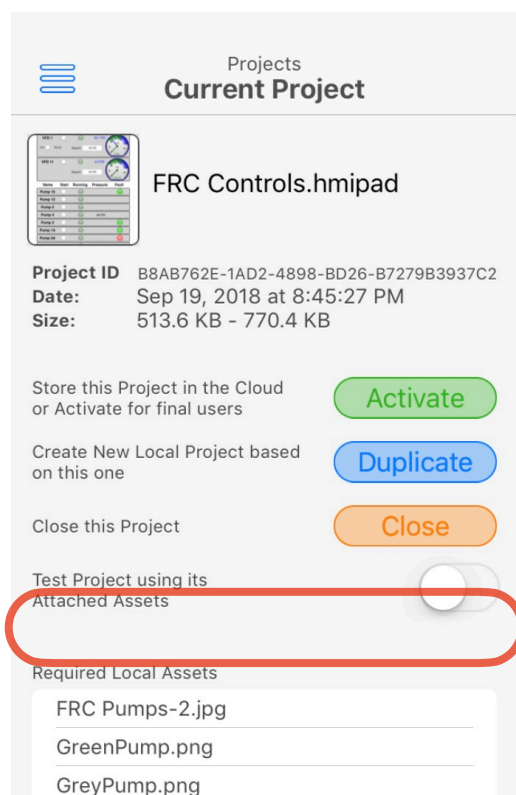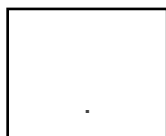
1. Now test your project by navigating through its pages and checking all your assets such as images look as expected.

5 Project Distribution and Deployment

The HMI Pad Service in the cloud makes project distribution and deployment within the HMI Pad system easy and convenient for Integrators. Remote deployment to End Users devices is performed through the creation, distribution and redemption of Activation Codes.

The steps involved in the process are discussed next, this section assumes you already created a project and uploaded it to the HMI Pad server.

5.1 Purchasing an Activation Code.

Before you can distribute your HMI projects to End Users you must activate them. A Project Activation implies the purchase of an Activation Code. Activation Codes are delivered to you after purchasing them on the In-App Store that will appear after successfully uploading a project. The Store for Activation Codes will look like this (differences may apply depending on actual app version) :
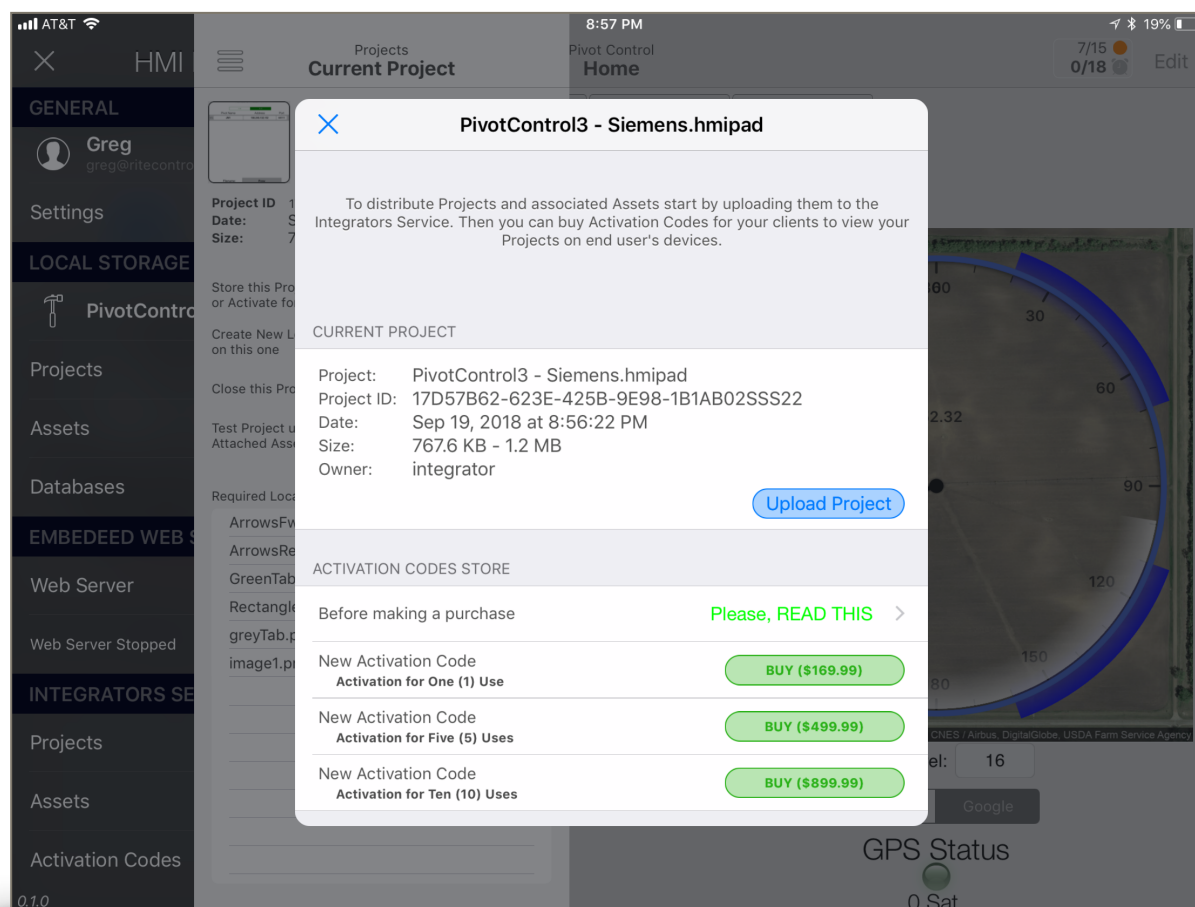
TIP: After you purchased an Activation Code you can still continue editing your project and re-upload it at any time without affecting the validity of their associated Activations. You will do this when you want to provide an update or bug fix for your project to your customers. When you do so you do not need to create or pay for another activation, as the existing one will continue to be valid for the same project.

5.2 Reviewing your purchased Activation Codes.

Purchased Activation Codes will be listed in "Activation Codes" under the Integrators Service section of the Application Panel. An Activation Code looks like this:

5.3 Sending Activation Codes to end users.

Once you created an Activation Code you can deliver it to your customer or end user for them to download your project. You can do this by sending an email right from within the app, which automatically will contain a file attachment ready for the recipient use. This attachment contains an Activation Code, not the actual project. Your end user will use the activation code to automatically download your project form the cloud. The email you send to your end users looks like this:

7 HMI View: Creating an User Account

Before end users can use the services provided by the HMI Pad Service and they are able to download a project, they must log into an Apple iCloud account on the HMI View app. Apple iCloud users are created and managed following the same exact steps in HMI Editor or HMI View.

The same iCloud account can be used for the purposes of creating a HMI project in HMI Editor and running it on HMI View. However, the general case is to separate users by their specific role. Also as an integrator you may want to give your client the choice of creating their own iCloud users on the HMI View app. All possibilities are valid and they do not interfere the project deployment process.

6 HMI View: Redemption of Activation Codes

Redemption of an Activation Code is the process that enable end users to download and run your projects on their devices. This is usually not an operation you will need to perform yourself, but your end users or customers on their own devices.

End users initiate a redemption by tapping on the file attached in the email they will receive from you.

The redemption panel on the HMI View app looks like this:
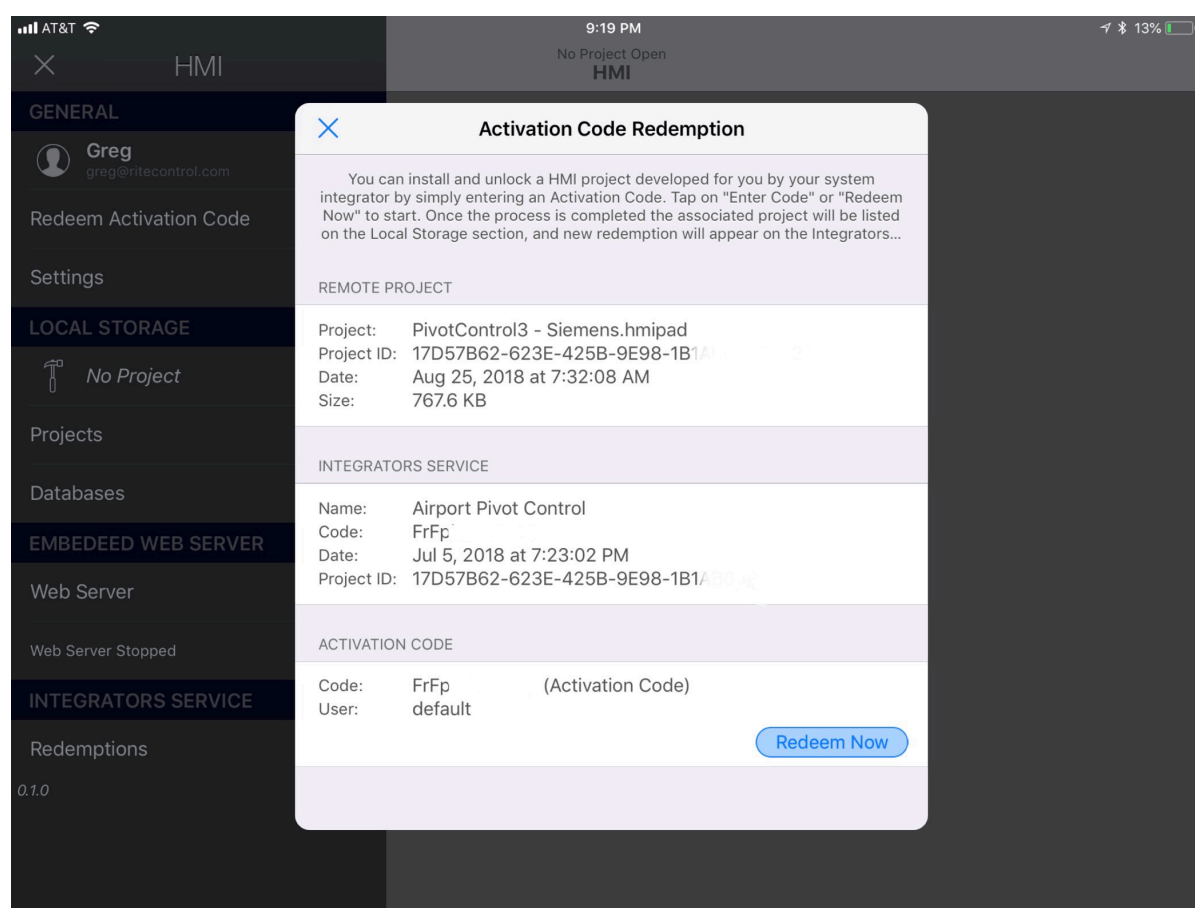
By simply taping on "Redeem Now" the Project and Assets you associated with the Activation Code will begin downloading.

TIP: Activation Codes can be only redeemed in the HMI View app. It is not currently possible to redeem an Activation Code in HMI Editor app.

7 HMI View: Project Users

In addition to iCloud users in the HMI Pad Service, projects may contain "project" users. Because project users remain tied to its project, they are transferred along with the project and become immediately available on the HMI View app after project redemption.

When an end user logs into a project user, all the available HMI Pad Service options such as Redemptions, Updates or HMI Pad Service Accounts become unavailable. In fact the entire Application Panel becomes unavailable. This prevents unauthorized end users to use the HMI View in undesired ways.

A customizable login screen is used for project users to sign in. You can customize this login screen in several ways with the $UsersManager object as described in the "HMI Editor Reference Manual".

An special user with username 'admin' is always available to enable access to the Application Panel. You configure a custom password for this user with the $UsersManager object as described in the "HMI Editor Reference Manual". The default password for the "admin" user is "admin"

8 HMI View: Updating Projects

End users can update existing projects on the HMI View app by going to "Local Storage -> Your-project-name" and then tapping on "Update". This can be done without having to enter a new activation code.

9 HMI View: Reusing Activation Codes / Deleting Redemptions

It is possible for end users to redeem activation codes multiple times if they need to. The key thing to remember is that Activation Codes are associated to particular projects, and resulting Redemptions are associated to particular devices. So if an Activation code is redeemed on the same device by the same end user the same project will be downloaded again.

If an end user needs to redeem an Activation Code on a different device -for example because a device needs replacement- He/She still can do so by first deleting the Redemption that was previously associated to the now unused device.

An option to delete Redemptions is available from the "Redemptions" tab.

After deleting a Redemption, end users can re-enter its associated Activation Code on a different device, to create a new Redemption that will now become associated to the new device.

Document Revision History

Refer to this section to look at changes on this document over different versions.

Version 4.0

• Replaced some screen captures.

• Updated to reflect new Company.

Version 3.0

• Replaced some screen captures.

• Updated to reflect the use of iCloud user accounts.

Version 2.0

• New sections added covering Project Users.

Version 1.0

• Initial Version

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