



FieldCommander<sup>®</sup>

# **FCDomus**

**v2.0**

User's Guide



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## About this manual

Thank you for choosing FCDomus!

This document focuses on FCDomus from a user's perspective and explains how it is setup and used to control your domotica solution. FCDomus runs on top of the FieldCommander technology. Separate documentation on this development platform is available from our website at <http://www.cer.com>.



# 1. Overview of FCDomus

## 1.1 Introduction

You want comfort in your home or building ?

You want to visualize your building or home system ?

You want to easily setup your system ?

You want to save money ?

- save buying a separate scheduler for your home or building system.
- save buying a DCF time receiver for your home or building system.
- save buying logic control units for your home or building system.
- save buying a separate IP controller for your home or building system.

FCDomus is your complete domotica application tool to be linked to a wide range of systems. It runs on an embedded FieldCommander device, so you don't need a PC to control your domotica solution. With FCDomus you can create a Building or Home control box fast, easily and with a personal touch.

## 1.2 Key features

- **Control functions**

FCDomus provides logic function blocks to set up relations between input events (e.g. button pressed) and output actions (e.g. switch the light).

- **Monitoring/visualization**

Using the fully customizable HMI web pages, you can monitor and visualize your building around the globe in realtime.

- **Connectivity and interfacing**

FCDomus can not only be used with several interface systems like KNX/EIB, EnOcean or Kadex, it can integrate them in one project.

- **Scheduler**

With the built-in scheduler it is possible to plan an unlimited number of tasks (actions) based on clock time or calendar dates.

- **Support for many communication systems**

FCDomus is ready for internet support and is prepared for mobile phone communication.

- **Easy setup**

The system is easy to setup. Example projects are available.

- **Alerting**

With FCDomus you can be informed by SMS / e-mail when specific situations occur in your system.

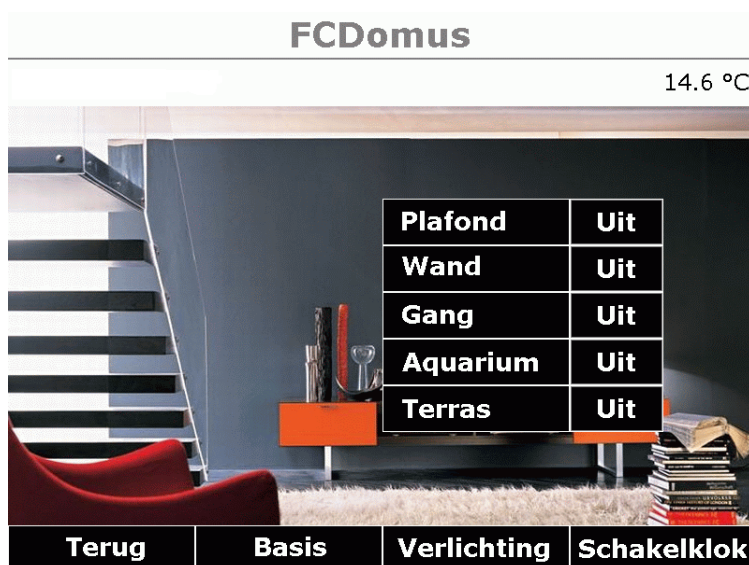
## 1.3 A quick overview

### 1.3.1 Users and Installers perspective

FCDomus can be divided in 2 parts:

#### The HMI (for Users)

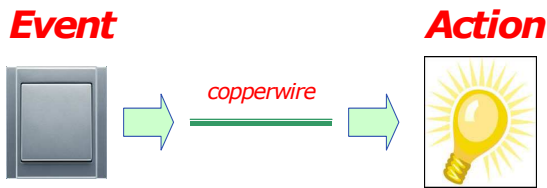
The HMI is the front end of FCDomus. Here the daily user can browse between screens, and control the domotica system. An example is displayed below.



#### The Config (for Installers)

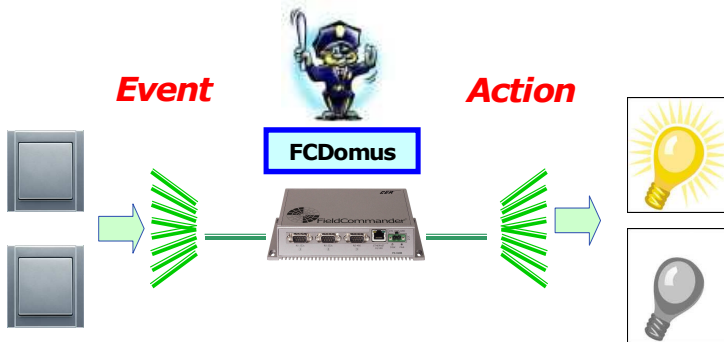
The Config is the back end of FCDomus. Here the installer and facility manager can set up and configure the domotica application. This part will be discussed extensively in this manual.

### 1.3.2 Events and Actions

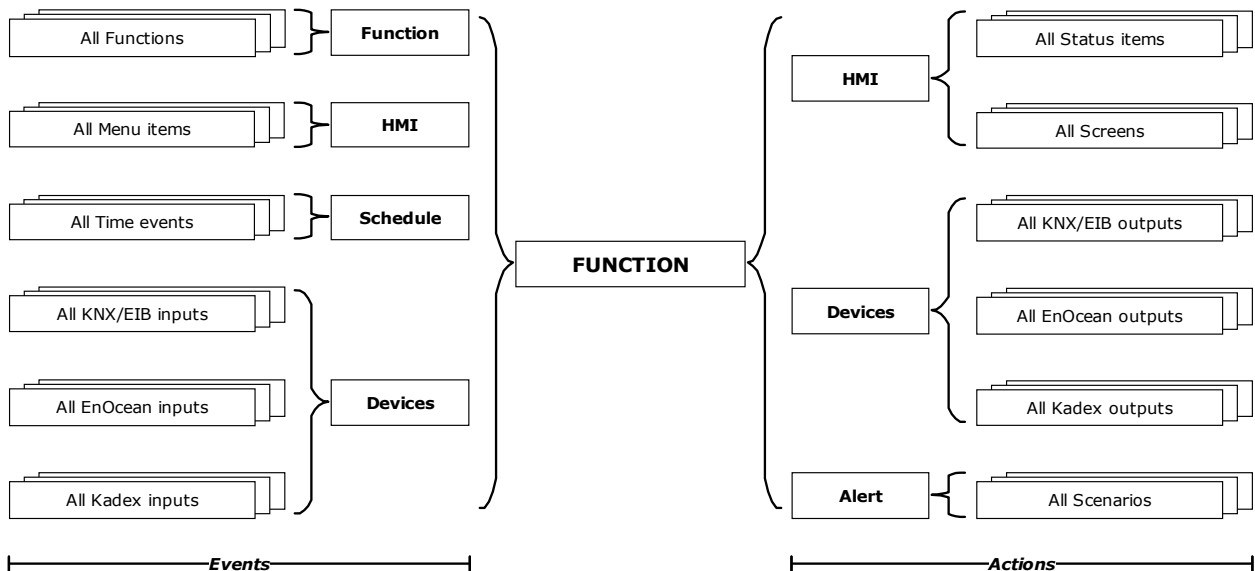


In a conventional situation a switch can be pressed to turn on a lamp. In this example pressing the switch is an event that will result in turning on the lamp, the action.

Events are momentary situations, for example when a button is pressed, when the time becomes 12 o'clock or the moment the temperature rises above 20°C. Actions define the things to do, like switching on a lamp or sending an e-mail.



FCDomus also evolves around *events* and *actions*, but introduces a logical relation between events and actions with *functions*.



You will find out more about the different events, actions and functions in this manual.

## 2. Installation of FCDomus

### 2.1 Connecting the FieldCommander

FCDomus is a software solution which runs on a FieldCommander device. You'll have to connect and install the FieldCommander before FCDomus can be employed. Please refer to the Installation Guide for the Hardware Platform of your FieldCommander to learn how to connect power and ethernet and assign the system an IP address.

Communication interfaces for e.g. KNX/EIB and EnOcean are optionally available. Refer to the appropriate Option Guide(s) for the options to find out how to set up and connect these to FieldCommander.

### 2.2 Installing onto FieldCommander

Note: When you have purchased 'FCDomusIns', FCDomus is already installed on your FieldCommander and you can skip this chapter.

To add the FCDomus application to FieldCommander, you'll have to copy its files to your FieldCommander. The files are found on the FCDomus CDROM or can be obtained in a ZIP package from the CER website ([www.cer.com](http://www.cer.com)).

#### 2.2.1 Connecting with FTP

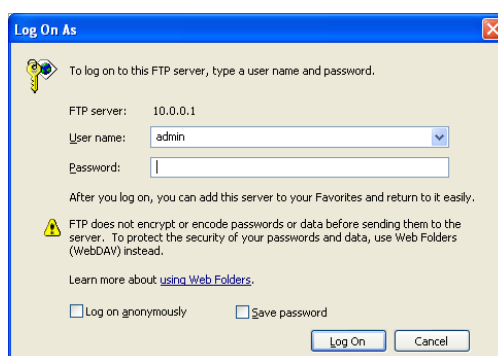
You can connect to the FTP server of FieldCommander using any common FTP client, or web browser which supports FTP. You need to provide the following details:

<i>User name</i>	profile in user settings, "admin" is preconfigured
<i>Password</i>	password defined for the user profile, "admin" in this case
<i>IP address</i>	address of FieldCommander, factory default is 10.0.0.1
<i>TCP port</i>	port number of FTP server, normally 21

To connect with a browser, type the following location in the address bar:

syntax:        `ftp://username@ipaddress:port`  
example:      `ftp://admin@10.0.0.1:21`

Now the browser will prompt you to supply the password, like this:













### 2.2.2 Copying the application

When the connection is made, the FTP client or browser gives a list of the files and directories on FieldCommander's disk. You will find a listing similar to this on the FCDomus CDROM or in the ZIP package.

Drag the content from the folders on CD or ZIP to the same directory on FieldCommander to copy them.

**CAUTION: by overwriting the files in the \database directory you loose all your data saved in the projects.**

FCDomus CD / ZIP	FieldCommander	Contents
 code\data	 data	FCDomus common system files
 code\database	 database	FCDomus project databases
 code\script	 script	FCDomus scripts
 code\www	 www	FCDomus HMI pages
 code\www-secure	 www-secure	FCDomus Configuration pages

## 3. FCDomus Configuration

In the previous chapter we learned how the FCDomus software is installed. Here we'll see how to use it in order to set up a custom domotica control application.

### 3.1 Opening the page

FCDomus is completely controlled from within a web browser, so open your favorite browser and point it to the IP address of FieldCommander. If it's located at 10.0.0.1 (the factory default), enter <http://<IP-Address>/config> as the location to open the FCDomus Configuration.

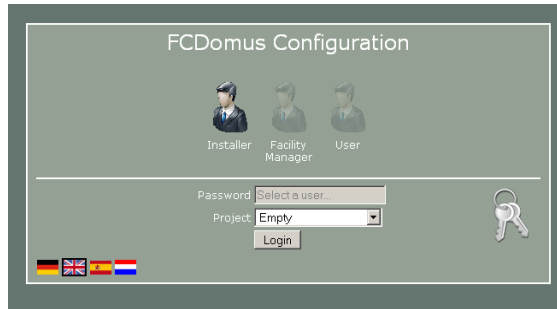
You will be redirected and taken to the login screen. Because it is located at the secure web server, the connection will be encrypted and your browser requests the security certificate from FieldCommander. Because it doesn't know FieldCommander the first time, you will be presented a dialog like this:



You can accept the certificate when you trust it and continue browsing. In case you don't want to accept it every time you access the secure web server, you should add it to your browser's list of trusted certificate authorities.

### 3.2 Logging in

After accepting the security certificate, you'll be presented with the FCDomus login page.



You can create your own user profiles later, but three profiles are set up by default, see also chapter 3.9.1. For now you can log in with administrator privileges with the following details:

User: **installer**  
 Password: **installation**

From the projects listbox, choose **Example1**. You'll learn more about projects in chapter 3.9.2.

At this point you can also change the language from the FCDomus Configuration by clicking the flag of your choice.

If login is successful, you will see the main menu for the FCDomus Config.

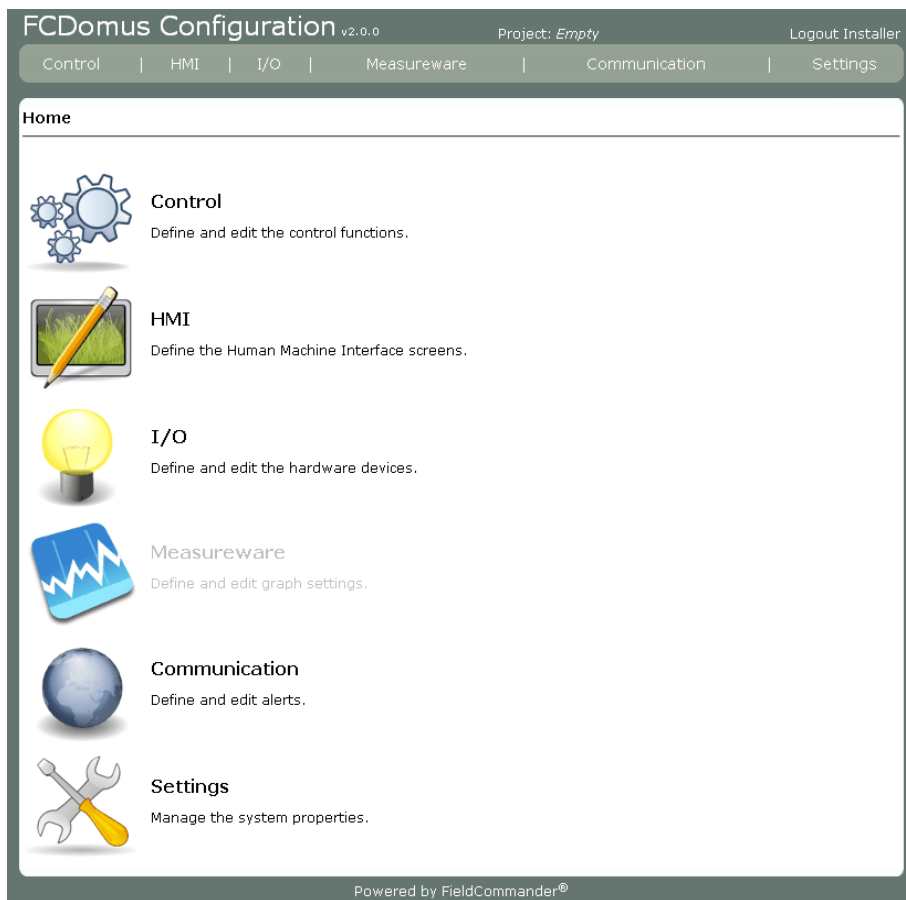


### 3.3 Basic navigation

In FCDomus you can navigate different parts of the configuration in three different ways:

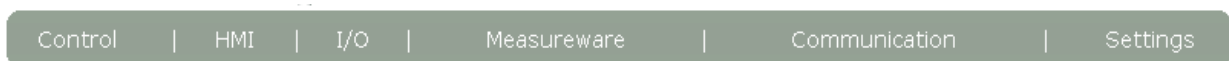
#### 3.3.1 Main Menu

You can start navigating FCDomus from the main menu, displayed below:



#### 3.3.2 Top Menu

When the main menu is not visible, you can always use the top menu for navigation. This menu will always be on top of the configuration pages.



### 3.3.3 Breadcrumb





Breadcrumb describes the path that brought you to where you are. Breadcrumbs are common on Web sites to help you navigate the site. When navigating the FCDomus configuration pages you will also see a breadcrumb projecting your trail allowing you to jump back to a previous page easily.

[Home](#) > [HMI](#) > [Menus](#) > [Menu Items](#) > **Edit**

---

### 3.3.4 Frequently used icons

In the configuration pages some icons with a dedicated function are used:

-  Edit
-  Delete
-  Add
-  Cancel
-  Save

### 3.4 Control

In this menu it's possible to control the FieldCommander. Functions can be made, rules can be created. And it's possible to configure ambiance settings and schedule items.



#### 3.4.1 Functions

In the *Functions* one can define the trigger- and data flow.

FCDomus is data driven, so for switching a lamp you only need to define a function that will send the data from a switch (on/off) to a lamp. One function can have multiple sources and can perform multiple destinations.

##### 3.4.1.1 Overview

When FCDomus does not contain any functions, you will find the phrase "No functions defined click [here](#) to add one" in the overview page. To create a function click "[here](#)".

If functions are already created, a listing of the functions is displayed. You can add, edit and remove functions here.

##### 3.4.1.2 Add a function

When you add a function, you have to enter the name of the function and select the type of the function. The different function types and properties are displayed in Appendix A.

##### 3.4.1.3 Edit a function

When you edit a function, you will see the screen below:

Function name:

Function type: Direct

Output type:

Function rights:  User can edit the destinations

**Source**  
Click the Add icon below to add sources to this function.

+

Direct

**Destination**  
Click the Add icon below to add destinations to this function.

+

**Function name**

Edit the name for the function here.

**Function type**

The function type is displayed here. This cannot be changed.

**Output Type**

The type of output (n/a, boolean, value or text) is displayed here. When nothing is displayed, the type is defined when the first source is selected.

**Function rights**

Check this checkbox if the user is allowed to edit the destination(s) of this function.

**Source**

By pressing the Add, Edit or Delete button, you can respectively add, edit or delete sources from your function.

**Destination**

By pressing the Add, Edit or Delete button, you can respectively add, edit or delete destinations from your function.

**Save / Cancel**

These buttons will resp. save or cancel the name and type of this function. Sources and Destinations are automatically saved.

**3.4.1.4 Sources in a function**

When the *Add* or *Edit* icon is clicked, the row changes to the edit mode. Select the desired source(s) from the pull down boxes.

Sources can be of the following type (Module):

Functions	an other Function is executed
Devices	a Device gives a trigger (KNX/EIB, EnOcean or Kadex)
HMI	a Menu item in the HMI is pressed
Schedule	a Schedule Event is occurred
Remote Client	an event of a Remote Client
System	a FieldCommander system event

Note: When you don't find the desired item in the pull down boxes, check the datatype of the function and the item.

### 3.4.1.5 Destinations in a function

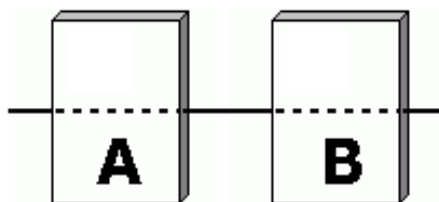
When the *Add* or *Edit* icon is clicked, the row changes to the edit mode. Select the desired destination(s) from the pull down boxes.

Destinations can be of the following type:

Devices	trigger a Device (KNX/EIB, EnOcean or Kadex)
HMI	display the value in a Status item or force switching to a Screen
Alert	execute an Alert Scenario
Remote Client	set the status for a Remote Client
Cameras	trigger a camera to take a snapshot

Note: When you don't find the desired item in the pull down boxes, check the datatype of the function and the item.

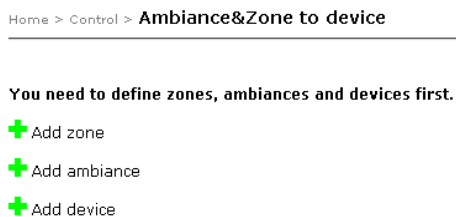
Note: You can only add function 'B' as a destination of function 'A', by adding function 'A' to the sources of function 'B'.



### 3.4.2 Ambiance&Zone to Device

In the *Ambiance&Zone to Device* one can define the action (device) when an ambiance and zone combination was triggered.

Before it is possible to setup a device it is necessary to create ambiences and zones. This can be done at the I/O > Definitions menu. It is also necessary to create some devices and to place a device in a zone.



#### 3.4.2.1 Overview

When there are some zones, ambiences and devices you will see the following screen:

With the arrows beneath the table it is possible to scroll through the table. In the

Show  ambiences per page

Zones	Ambiances	Living ceiling lamp	Living corner lamp	Living spotlights
Living	Sleep	No value	No value	No value
Living	Away	No value	No value	No value
Living	Wake up	No value	No value	No value
Living	Study	No value	No value	No value
Living	Cooking	No value	No value	No value

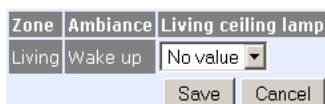
▲▼      ▲▼      ◀▶

first column you can select the desired zone. The second column shows the available ambiences. The third and following columns show the available devices for the selected zone.

Note: To avoid a large list of devices only the devices for the selected zone are displayed. When there are no devices for that zone you will get the following message "No devices for this zone."

#### 3.4.2.2 Setting a device

To setup a device for the desired ambiance zone combination just click on its value. This will take you to another screen.



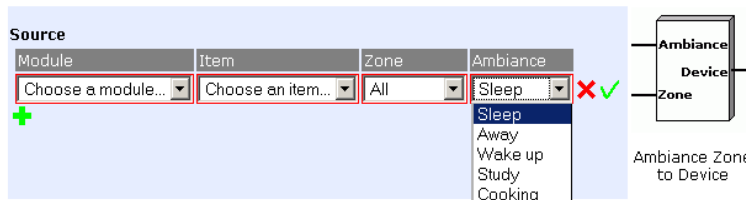
In the dropdown box you can select a value. Clicking save will save this value and return to previous screen.

### 3.4.2.3 Trigger an ambiance zone

An ambiance zone combination can be triggered in three different ways.

#### Functions

The first way to trigger an ambiance zone combination is with a function. Therefore you should use the function "Ambiance Zone."



In the first two cells the source that should trigger the ambiance zone could be selected. In the last two cells you could select the zone and ambiance.

#### OpenApi

With the openApi function "setAmbianceByName" it is possible to trigger an ambiance zone combination. For detailed description about this function see <http://<IP-Address>/openapi>.

#### HMIopen

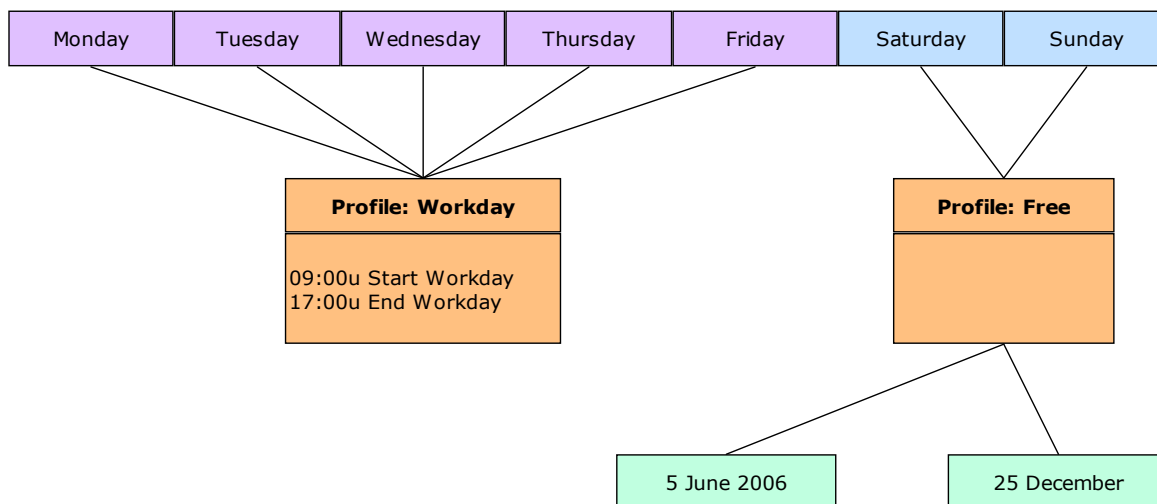
It is also possible to trigger an ambiance zone combination with the following HMIopen function "writeAmbianceActive." For detailed description about this function see Appendix D.

Note: The zone "all" will set all zones to the selected ambiance.

### 3.4.3 Scheduler

In *Schedule* one can set up FCDomus to generate events on specific times. These events can be used as a source in *Functions* to execute destinations (i.e. switching lamps on/off).

The picture below shows an example to set up the *Schedule*:



Two profiles are defined here:

- Workday

This profile contains an event at 09:00u and an event at 17:00u.

This profile is assigned to the workdays of the week

- Free

This profile contains no events.

This profile is assigned to the weekend days of the week and to some special days: Whitsunday and the first day of Christmas (yearly)

#### 3.4.3.1 Day profiles

Use *Day profiles* to create or edit profiles that can be assigned to a day. Profiles can contain events for a specific time of the day.

In the overview we see a listing of all profiles available. Here profiles can be added, removed or edited.

#### Time events

When editing a profile, a list of events is displayed. From this point you can add, remove or edit the events. For each event define a name (which will come back in *Functions*) and the time.

### **3.4.3.2 Weekly program**

Use *Weekly program* to assign a profile to each day of the week.

In the overview, press the edit icon behind the day for which you want to edit the profile. In the edit screen you can choose a profile from the available profiles.

### **3.4.3.3 Special days**

Use *Special days* to assign a profile to a specific day of the year. This can be a yearly returning day.

From the overview, you can add, edit or remove special days to your scheduler. Press the add or edit icon to add or edit a (new) special day. In the next window enter the day, month and year (4 digits), choose a profile from the available profiles and select if the special day is repeated yearly.

### **3.4.3.4 Calendar**

In the *Calendar* you can see an overview from the profiles added in the *Schedule*.

### 3.5 HMI

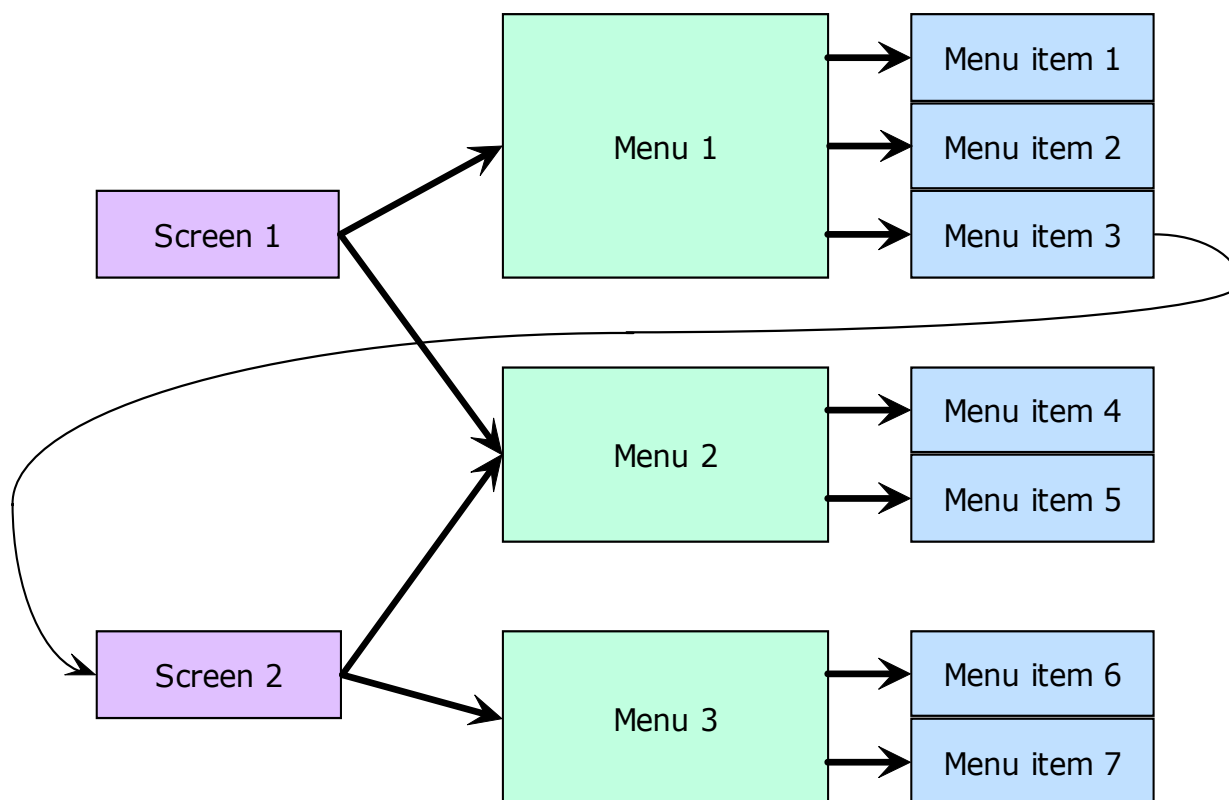


There are two kinds of HMI. The "normal" HMI (further called in this document as HMI) and HMIOpen.

In FCDomus you can create a Human Machine Interface to control functions and view the status of the system. There are two kinds of HMI. The "normal" HMI (further called in this document as HMI) and HMIOpen. HMIOpen will be discussed at the end of this chapter.

In the HMI, web pages known as *screens* can be created without programming HTML or Javascript. A page can contain one or more menu's and/or status items.

The picture below shows an example to set up the *HMI*:



- Screen 1 contains two menus: Menu 1 with three menu items/buttons and Menu 2 with two menu items
- Screen 2 contains two menus: Again Menu 2 (with two items) and Menu 3 with two other menu items
- When we press Menu item 3, we will be forwarded to Screen 2. This way a menu structure can be created.

### 3.5.1 Screens

From the Screens overview, you can add, edit or remove screens to/from your HMI.

Note: Don't forget to set one Screen as the Default page for the HMI.

Use the *add* or *edit* icon to add or edit a (new) screen:

Name:   
 Color:   
 Image:     
 Frame type:   
 Frame size:   
 URL:

Menus | Status Items | In Screen Frames

Menu name

#### Name

Enter the desired name for this screen.

#### Color

Optional enter the background color for this screen. More about web colors is found in Appendix B.

#### Image

Optional enter a background image. To do this, first press *Edit*, then press *Browse...*, select the image from your local system and press *Upload*. The image will be uploaded to the FieldCommander.

### Frame type

Default you would use 'No frame' for your screens, but if you want to display an external web page, you can set the screen in frame mode. In this way your FCDomus screen (with menu) can be displayed on top or on the left side of the external web page.

#### Horizontal frame



#### Vertical frame



### Frame size

Enter the pixel size of the frame. This is the size of the black frame in the example above.

### URL

Enter the URL of the web page that has to be displayed under or on the right side from the FCDomus Frame.

Note: The full web address has to be entered for external web pages (i.e. <http://www.cer.com>)

### Menus / Status Items / In Screen Frames

You can add Menus, Status items and In screen frames to your Screen.

Note: These items must have been created before you can add them.

### 3.5.2 Menus

Use *Menus* to create a set of buttons in your HMI.

Note: Add the Menu to a Screen in order to see it.

From the overview, you can add, edit or remove Menus to your HMI. Click the *add* or *edit* icon to add or edit a (new) menu.

The screenshot shows a configuration window for a menu. The fields are as follows:

- Name:** mainmenu
- Label:** (empty)
- Style:** Arial, 10px, black (with an **Edit** button)
- Position:** X: 1, Y: 1
- Image:** (empty) (with **Edit** and **Delete** buttons)
- Arrangement:** Open arrangement window

The **Menu Items** list is expanded, showing:

- Item name ▲
- empty

At the bottom of the list is a green plus sign (+) and **Save** and **Cancel** buttons.

#### Name

Enter the desired name for this menu

#### Label

Optional enter the label for this menu. This text will be displayed with the menu.

#### Style

Optional edit the style for the label. To do this, first press *Edit*, then you can choose a font type, enter a font size and enter a font color, then press *Save*.

#### Position

Optional edit the position (X and Y) in pixels where the Menu is located on the Screen.

#### Image

Optional add a background image for this menu. To do this, first press *Edit*, then press *Browse...*, select the image from your local system and press *Upload*. The image will be uploaded to the FieldCommander.

#### Arrangement

In the arrangement window it is possible to drag-n-drop an item to the desired position.

#### Menu Items

Here you can add Menu items to your Menu.

### 3.5.2.1 Menu items

From the overview, you can add, edit or remove Menu items to the Menu. Click the *add* or *edit* icon to add or edit a (new) menu item.

There are two types of menu items: buttons and sliders.

You are required to select one of these types when creating a new menu item after which you can no longer change it for that particular item.

Item type:  Button  Slider  
Item name:

#### Common:

##### Name

Enter the desired name for this Menu item.

##### Label

Optional enter the label for this menu item. This text will be displayed on a default button if no image is selected.

##### Style

Optional edit the style for the label. To do this, first press *Edit*, then you can choose a font type, enter a font size and enter a font color, then press *Save*.

##### Position

Optional edit the position (X and Y) in pixels where the Menu item is located. This is a position relative to the position from the Menu.

### 3.5.2.2 Button

**Name:**   
**Label:**   
**Style:**    
**Size:** H  W  (overrules default size)  
**Position:** X  Y  (relative to menu position)  
**Image:**     
**Link to:**

#### Size

Optional edit the size (H(eight) and W(idth)) in pixels for the default button.

#### Image

Optional add an image for this Menu item. To do this, first press *Edit*, then press *Browse...*, select the image from your local system and press *Upload*. The image will be uploaded to the FieldCommander.

#### Link to

Optional choose a Screen to link to or enter an URL that has to be opened in a new window when the button is pressed.

Note: To execute an (output) action when a button is pressed, add the Menu item as a source for a Function in *Functions*.

### 3.5.2.3 Slider

<b>General slider options:</b>	
Label always on top:	<input type="checkbox"/> Enable
Send values while dragging:	<input checked="" type="checkbox"/> Enable
Orientation:	Vertical
Steps:	100
Value:	0 Min 100 Max
<hr/>	
<b>Slider track options:</b>	
Length:	200
Width:	25
Colour:	A0A0A0
<hr/>	
<b>Slider handle options:</b>	
Length:	35
Width:	15
Colour:	F00000

#### Label always on top

If this checkbox is ticked the defined label - if any - will always be visible, otherwise the slider's handle can be slit over the label.

#### Send values while dragging

If this option is disabled the new value indicated by a slider will only be sent once the slider handle is released.

#### Orientation

This allows you to specify if the slider should be vertically or horizontally oriented.

#### Steps

The number of points on the slider that the handle can snap to. Reducing this will cause any functions that source the menu item to be triggered less often, but the values communicates will lose some precision.

#### Value

Minimum and maximum value of the slider

#### Length

Length of the object in pixels.

#### Width

Width of the object in pixels.

#### Colour

The hexadecimal RGB code of the desired colour for this object.

### 3.5.3 Status items

Use *Status items* to create objects that display the status of your system in your HMI.

Note: To really see the status, be sure to add the Status item as a destination to a function in *Functions*.

Note: Don't forget to add the Status item to a Screen to view it.

From the overview, you can add, edit or remove Status items. Click the *add* or *edit* icon to add or edit a (new) status item. When adding a Status item, enter the name and the control (image, textlabel, gauge) for the new Status item.

#### Image control

This type of Status item will display an image when set to 1 by a Function and another image when set to 0.

Name:	<input type="text" value="status"/>		
Type:	Boolean		
Position:	X <input type="text" value="0"/> Y <input type="text" value="0"/>		
Size:	H <input type="text"/> W <input type="text"/>		
On Image:	<input type="text"/>	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Off Image:	<input type="text"/>	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
<input type="button" value="Save"/>		<input type="button" value="Cancel"/>	

In the next window:

- optionally edit the name for this Status item
- optionally edit the size (height and width) in pixels for the Status item
- optionally edit the position (X and Y) in pixels where the Status item is located
- add an on- and off image for this Status item. The on image is displayed when the Status item is set to 1 and the off image is displayed when the Status item is set to 0. To configure these images, first press *Edit*, then press *Browse...*, select the image from your local system and press *Upload*. The images will be uploaded to the FieldCommander.

### Textlabel control

This type of status item will display a value or a text string.

Name:   
 Type: Value  
 Position: X  Y   
 Size: H  W   
 Format:   
 Style:

In the next window:

- optionally edit the name for this Status item
- optionally edit the size (height and width) in pixels for the Status item
- optionally edit the position (X and Y) in pixels where the Status item is located
- edit the format in which the value/text is displayed, see Appendix C for a description.
- optionally edit the style for the label. To do this, first press *Edit*, then you can choose a font type, enter a font size and enter a font color, then press *Save*.

### Gauge control

This type of status item will indicate a value interpreted as a percentage on a gauge.

Name:   
 Type: Value  
 Position: X  Y   
 Size: H  W   
 Fill colour:   
 Background colour:   
 value: Min  Max   
 Direction:

In the next window:

- optionally edit the size (height and width) in pixels for the Status item
- optionally edit the position (X and Y) in pixels where the Status item is located
- optionally edit the colour that'll be used to fill the gauge for an amount dictated by the percentage-interpreted value of it's source
- optionally edit the background color of the gauge
- optionally edit the minimum and maximum value of the gauge. When the actual value is greater then the maximum value, it will not be displayed.
- optionally edit the direction in which the gauge will fill (this also determines the gauge's orientation)

### 3.5.4 In screen frames

Use *In screen frames* to embed your own HTML code into the HMI.

Note: Don't forget to add the *In screen frame* to a Screen to view it.

From the overview, you can add, edit or remove In screen frames. Click the *add* or *edit* icon to add or edit a (new) In screen frame. When adding an In screen frame, enter the name for the new In screen frame.

Name:	<input type="text" value="frame"/>
Position:	X <input type="text" value="0"/> Y <input type="text" value="0"/>
Size:	W <input type="text" value="320"/> H <input type="text" value="240"/>
HTML Code:	<div style="border: 1px solid black; height: 50px;"></div>
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

#### **Name**

Enter the desired name for this Menu item.

#### **Position**

Optionally edit the position (X and Y) in pixels where the In screen frame is located.

#### **Size**

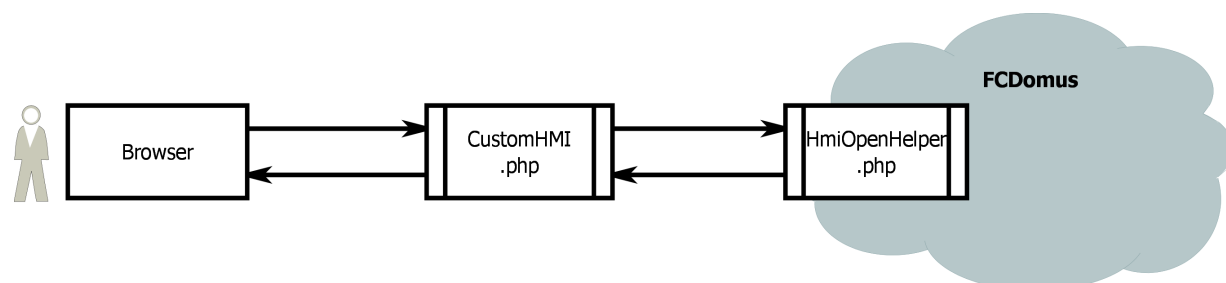
Optionally edit the size (H(eight) and W(idth)) in pixels.

#### **HTML Code**

Here you can enter your own HTML code. Also PHP code can be included when using the tags: `<?php` and `?>`.

### 3.5.5 HMIOpen

With the HMIOpen feature of FCDomus it is possible to create a highly customizable Human Machine Interface to control the domotica installation.



#### Use HMIOpenHelper

*Note: To use this feature some knowledge of PHP and HTML is required*

To create a custom HMI with HMIOpen, include the HmiOpenHelper class (located in `www/hmiopen`) in the PHP file like this:

```
set_include_path('/home/public/www/hmiopen/');  
include("hmiopen.php");
```

Then make a new instance of the class:

```
$hHOH = new HmiOpenHelper;
```

After that, all functions of HmiOpenHelper can be used in the PHP file like this:

```
$project = $hHOH->getProject();
```

All available functions are described in appendix D.

### **3.5.6 Viewing the HMI**

After the HMI is created, you can view it by browsing to: <http://<IP-Address>/>

The HMI can also be viewed using a PDA. To do this, simply browse to the URL above. FCDomus will detect a PDA is viewing the HMI and automatically display a simplified HMI.

## 3.6 I/O

In *I/O* one can create interfaces and devices. Depending on the installed options, some icons in the overview are grayed-out. It is also possible to create and edit some definitions.



### 3.6.1 Interfaces

To add an interface click on the icon of the interface type you are using. This will take you to another screen where an interface can be created or edited. When creating or editing an interface the following parameters can be found.

#### **Name**

Each interface must get an unique name.

#### **Port**

The communication port where the interface is connected with. Optionally the port settings like baudrate, databits, stopbit, parity can be changed.

#### **IP-address**

Some interfaces could be connected through the LAN. Therefore you must fill up the IP-address and IP-port of the interface.



#### **Slave ID**

Specific interfaces like modbus and RDA need an address of the interface at the bus. With the slave ID this address can be provided.

## 3.6.2 Device list




In the device list the actual inputs and outputs can be created and edited.

### 3.6.2.1 Adding a device

Before you can add a device you have to create an interface. This can be done at the interfaces menu (see previous paragraph). To add the first device you can enter the name and other properties immediately. When done, click on  to save. To add the next device, click on .

Note: The zone, facility subtype and cabletype are not required but recommended.

### 3.6.2.2 Edit a device

To change the name or other properties of a device, click on . When editing is done, click on  to save or  to cancel the changes.

Note: The interface, input/output and datatype can not be changed.

### 3.6.2.3 Delete a device

To delete a device from the list, click on . Confirm the delete action if you are sure to delete the selected device.

### 3.6.2.4 Device specific

#### KNX/EIB

FCDomus works with KNX/EIB group addresses in the form '1/2/3'.


#### OpenApi

With the openApi interface it is possible to use a HTTP-request as an input for FCDomus. OpenApi has only inputs. To trigger an openApi input see <http://<IP-Address>/openapi>.

### 3.6.3 Definitions


In the *definitions* menu definitions like ambiances, zone and cabletype can be created or edited. This definition will be used in FCDomus (e.g. to set the zone, cabletype for a device).

#### 3.6.3.1 Adding a definition

To add a definition click on the definition type you want to add. Next click on  to add a new definition. When done, click the save button to save.

Note: The picture that can be added with some definitions can be used with HMIopen.

#### 3.6.3.2 Edit a definition

To change the name or other properties of a definition, click on  . When editing is done, click on *save* to save or *cancel* to cancel the changes.

#### 3.6.3.3 Delete a definition

To delete a definition from the list, click on  . Confirm the delete action if you are sure to delete the selected device.

## 3.7 Communication

### 3.7.1 Alert

From the Alert tab, you can create scenarios that perform actions like sending an e-mail to an e-mail address, sending SMS messages to a telephone number or playing a WAV-file through a speaker set connected to your FieldCommander.



#### 3.7.1.1 Services

First you have to set up the services.

#### GSM Module:

##### GSM Module

GSM Port:

SIM PIN:

SMS Center:

If you have connected a GSM module to your FieldCommander, define the settings here.

#### GSM Port

The port to which the GSM module is connected

#### SIM PIN

The PIN code of the SIM card inserted in the GSM module

#### SMS Center

The number of the 'SMSC' from your telecom provider

## E-mail

### E-mail

Enabled:	<input type="checkbox"/>
SMTP Server:	<input type="text" value="192.168.10.1"/>
SMTP Port:	<input type="text" value="25"/>
Sender Name:	<input type="text"/>
Sender Address:	<input type="text" value="support@cer.com"/>

If you want to send e-mail, define the settings here.

### Enabled

Check this checkbox to enable sending e-mail

### SMTP Server

The IP address of the SMTP server from your internet provider

Note: If you enable DNS resolving (see the 'IP settings' in chapter 3.9.3) you can use a domain name here instead of the IP address.

### SMTP Port

The port number of the SMTP server (default 25)

### Sender Name

The name that'll be displayed in the 'From' field of an e-mail

### Sender Address

The e-mail address that'll be displayed in the 'From' field

## Audio:

### Audio

Audio port:	<input type="text" value="disable"/>
Output volume:	<input type="text" value="100"/> (0...100)

If you want to play audio files (selected models only), define the settings here.

### Audio Port


Select the (virtual) audio port to enable audio

### Output volume

The audio volume (0...100)

### 3.7.1.2 Messages

#### Overview

If FCDomus does not contain any Messages, you will find the phrase "No Messages defined. Click the Add icon below to add rows" on the overview page. To create a Message click .

If any Messages are already created, a listing of the Messages is displayed. You can add, edit and remove Messages here.


#### Add/Edit a Message

When you add a Message, you have to enter some information about the Message:

Name		The name you want to assign to your Message
Message Type		The type of Message (Text / Audio file)
Text	Subject	The subject of your Message (used when sending e-mail)
	Content	The text of your Message
Audio file	File	The audio file to play (choose from the listing of '/data/audio/')

### 3.7.1.3 Addressees

#### Overview

If FCDomus does not contain any Addressees, you will find the phrase "No Addressees defined. Click the Add icon below to add rows" on the overview page. To create an Addressee click .

If any Addressees are already created, a listing of the Addressees is displayed. You can add, edit and remove Addressees here.


#### Add/Edit an Addressee

When you add a Addressee, you have to enter some information about the Addressee:

Name	The name you want to assign to this Addressee
Addressee Type	Type of the Addressee (Telephone number / E-mail address / Speaker)
Info	The number / address of the Addressee

### 3.7.1.4 Scenarios

#### Scenario Overview


If FCDomus does not contain any Scenarios, you will find the phrase “*No Scenarios defined. Click the Add icon below to add rows*” on the overview page. To create a Scenario click .

If any Scenarios are already created, a listing of the Scenarios is displayed. You can add, edit and remove Scenarios here.

#### Add/Edit a Scenario

When you add a Scenario, you first have to enter a name for this Scenario.

Note: Press the [Save] button to save your changes and proceed.

Now you can add rows (rules) to your Scenario by clicking .

In the next screen you can select one of the created Messages and one of the created Addressees. Press the [Save] button to save your combination and press the [Back] button to return to the previous page.


Note: You can add multiple rules to your Scenario.

## 3.7.2 Snapshot viewer

In the *snapshot viewer* one can add IP-based camera's and edit settings for taking the snapshot. The snapshots will be saved in a temporary directory on the FieldCommander.

Note: Rebooting a FieldCommander will cause a loss of all snapshots.

### 3.7.2.1 Adding a camera

To add a camera click on . When done, click the save button to save.

Note: In the URL field is a preview of the URL where the camera get his snapshot.

### 3.7.2.2 Edit a definition

To change the name or other properties of a camera, click on .

When editing is done, click on *save* to save or *cancel* to cancel the changes.

### 3.7.2.3 Delete a definition


To delete a camera from the list, click on . Confirm the delete action if you are sure to delete the selected device.

### 3.7.3 Remote Client


FCDomus can communicate with remote clients (eg. Ipod). An event from the remote client can be processed within FCDomus. It is also possible to set a status for the remote client.

The remote client can generate an event and read statuses from FCDomus with HMIopen (see Appendix D).

#### 3.7.3.1 Adding remote client events and statuses


To add a remote client event or status click on the item you want to add. Next click on  to add a event or status. When done, click the save button to save.

#### 3.7.3.2 Edit remote client events and statuses

To change the name of a remote client event or status, click on .

When editing is done, click on *save* to save or *cancel* to cancel the changes.

#### 3.7.3.3 Delete a definition

To delete a remote client event or status from the list, click on . Confirm the delete action if you are sure to delete the selected device.

## 3.8 Settings



### 3.8.1 User management

In *User management* one can define the multi-user environment and the security for FCDomus.

By default FCDomus contains 3 users representing the 3 user levels:

<b>Username</b>	<b>Password</b>	<b>Full name</b>	<b>Level</b>
install	installation	Installer	Administrator
facmngr	facility	Facility Manager	Facility manager
user	comfort	User	User

More users can be added and the preconfigured users can be edited / deleted.

#### **Administrator**

Users with the Administrator level can do everything in FCDomus.

#### **Facility manager**

Users with the Facility manager level cannot access the pages for *Devices* and *Settings*. These items are grayed out in the main menu.

#### **User**

Users with the User level can change nothing in the configuration, except for the destination of the functions made available with the designated checkbox.

#### **Other Users**

The users above are all FCDomus users, which can differ for each project (see next chapter). Apart from these users there are also FieldCommander users, i.e. the one you have used when logging in on the FTP from FieldCommander: admin (with password: admin). Keep in mind that this are two different user systems!

### 3.8.2 Project management

In *Project management* one can make it possible to backup and restore.



All settings you have made in the FCDomus Config are collected in a project that is stored in a file with the extension `.db` in the directory `/database` (can be opened with FTP). In the overview you see the project *Example* in which we are working.

#### Add a project


If we want to start with an empty project, we have to add this project to the list. To do so, click the add-icon. In the next window you can enter the name and description of the project. Choose one of the databases which are available on the directory mentioned above, in this case: `empty.db`. After pressing *Add* we see the project is added.

If you want to edit this project, we have to logout and login on this project. If you want to run this project (viewed in HMI and functions will take affect), press the *Edit* button (on the top of the page), change the project and press *Save*.

#### Make a spare copy


To create a spare copy of a project, click on . Now a copy of the database is created with the name of the original followed by a "c", but this can be changed by clicking .

#### Backup

To make a backup of a project database click on  and select a location on your local computer to save it at.

Note: Pictures are not stored in a project, but saved separately in `/www/hmi/image`. This is accessible through FTP.

#### Restore

A backup can be restored by clicking on the restore (  ) button, selecting the backup file and confirming.

You'll see a warning that states the FieldCommander  needs to be restarted for the restore process to be completed successfully.

If you don't restart your changes may not (immediately) be applied.

Note: Users are also stored in a project.

### 3.8.3 FieldCommander Settings

Some common FieldCommander settings can be read / set using FCDomus.

#### 3.8.3.1 FieldCommander Info

Some useful information is shown here.

Model	Displays the Product model of FieldCommander
Serial number	Displays the Serial number of FieldCommander
Hardware platform	Displays the Hardware platform of FieldCommander
Software edition	Displays the Software edition of FieldCommander
Software version	Displays the Software version of FieldCommander
Uptime	Displays the time since the last boot of FieldCommander
Load average (5 min)	Displays the average load (%) of FieldCommander
System Reboot	Press this button to reboot FieldCommander

#### 3.8.3.2 Date / Time Settings

##### **Terminology**

NTP: Network Time Protocol

GMT: Greenwich Mean Time

UTC: Universal Coordinated Time

FieldCommander's internal clock is used in a variety of places in the system, so it is convenient to set it to the correct time. It is stored in UTC format and can be adjusted to your local time.

##### **Time zone and daylight saving**

Pick your local time zone from the list, and check the box to enable daylight saving if it applies to your location. You have to restart the system in order for new time zone settings to take effect.

##### **Manual system time/date**

Adjust the internal clock here by manually entering the current time and date and clicking "Save".

Note: The time should be entered in 24 hour format: *hh:mm:ss*

Note: The date should be entered as: *mm/dd/yyyy*.

**Use time server to synchronize time** (in selected models)

FieldCommander is capable of requesting the time and date from public time servers using the NTP protocol. Use this setting when you have access to a time server on your local network or when you have a permanent connection to the Internet. It ensures that FieldCommander always has the correct time.

When you have a time server on your LAN, it is advised to use this to synchronize FieldCommander. In other cases, visit <http://www.ntp.org> for a list of public NTP servers and choose one near your location for the shortest network path to minimize the time error. If you enable DNS resolving (see the 'IP settings' in this chapter) you can use a domain name here instead of the IP address.

NTP servers communicate with one another using UDP with a destination port of 123. You'll have to allow UDP traffic on source/destination port 123 between your server and the time server to which you are synchronizing.

**3.8.3.3 IP Settings**

These settings control the ethernet IP settings of FieldCommander. Be careful when making changes as you may lose access to your FieldCommander unit. Check the Installation Guide for detailed information on internet addressing and how to set it up in your network.

Fill out the IP address, subnet mask and default gateway/router address. Set the default gateway to 127.0.0.1 when you are not using a gateway or router.

You have to restart the system in order for the new settings to take effect. Note that you have to point your browser to the new address and log in again when you've changed IP settings.

Note: More advanced IP settings (DNS, uPnP) can be made in the FieldCommander Admin. To go to the system configuration web pages from FieldCommander, browse to: <http://<IP-Address>/admin/>. Information about this can be found in the *FieldCommander Software User's Guide*.

## 4. System administration

### 4.1 Firewall

When you place FieldCommander behind a firewall, you might need to enable traffic to/from certain ports, depending on what you want to allow. More information about this subject can be found in the chapter 'Firewall configuration' of the 'FieldCommander Software User's Guide'.

Note that FieldCommander has its own firewall to prevent misuse or attacks that can cause any harm.

### 4.2 Rebooting the system

There are several ways to reboot FieldCommander. First there is the "reset" button (on selected models). Pressing the button will cause a hard reset of the system, similar to power cycling the unit. You will hear a beep after a few seconds. It can take around a minute before FieldCommander is up and running.

When you have no physical access to the unit, you can reset FieldCommander using the web based configuration. Open the system configuration and log with a user profile that has the proper rights to reboot FieldCommander. The "Reboot system" button will now be shown at the lower right corner of the general screen. Note that your browser's connection with FieldCommander is interrupted for about a minute after clicking the reboot button.

Rebooting is also possible in the FCDomus Configuration pages by clicking the 'Reboot' button in the *FieldCommander Settings* page in the *Settings* menu.

In case a script was executing at the moment you resetted the system, it is interrupted which may cause your application to behave irregular. The script is automatically restarted when FieldCommander has finished booting. Note that you lose the application state and the content of the data buffers when rebooting.

## 4.3 Updating the software

CER International periodically releases software updates with enhancements, changes and fixes.

Updates of the software and documentation are available from [www.cer.com](http://www.cer.com). Pay close attention to the guidelines and instructions which go along with the update, else you can cause damage to the system or may lose your valuable data.

In this case there are two parts of the software that can be updated.

### 4.3.1 FieldCommander Software

These updates come in the form of binary images which can be uploaded directly to the unit. Log in to the FTP server and upload the image file to the "/update" directory (you'll need the appropriate user rights to do this). The new firmware is installed and takes effect after the system is rebooted.

### 4.3.2 FCDomus Software
















These updates come in the form of a zipped file (internet) which you have to unzip, or as a packet of files (CD). Installation of this update is done as described in chapter 2.2.




Note: Before overwriting all files on FieldCommander, be sure you have made a copy of the files in the "/database" directory. These files contain your projects!

## 4.4 Upgrading the system

Contact your supplier if you want to upgrade and / or install additional interfaces.

## Appendix A: Function types

	Function	Description	Sources	Destinations
	Direct	Simply sets data from source to destination	∞ n/a ∞ bool ∞ value ∞ text	1 n/a 1 bool 1 value 1 text
	OR	Sets destination to 1 when one of the sources is 1	∞ bool	1 bool
	AND	Sets destination to 1 when all sources are 1	∞ bool	1 bool
	Delay	Delays destination for x seconds	1 n/a 1 bool 1 value 1 text	1 n/a 1 bool 1 value 1 text
	On/Off Switch	Sets destination to 1 when ON-source is triggered Sets destination to 0 when OFF-source is triggered Toggles destination when TOGGLE-source is triggered	∞ n/a	1 bool
	Compare (<, > or =)	Compares source to entered data. Sets destination to 1 if condition is met.	1 bool 1 value 1 text	1 bool
	Compare 2 (<, > or =)	Compares a source to another source. Sets destination to 1 if condition is met.	2 bool 2 value 2 text	1 bool
	Math (*, /, + or -)	Multiplies, divides, adds or subtracts entered value with value on source	1 value	1 value
	Math 2 (*, /, + or -)	Multiplies, divides, adds or subtracts value on sources with each other	∞ value	1 value
	Toggle	Toggles the destination	1 n/a	1 bool
	OneShot	Sets destination to source value for 1 sec.	1 bool	1 bool
	Turn Off Delay	Sets destination to 1 immediately and to 0 after a delay	1 bool	1 bool
	Turn On Delay	Sets destination to 0 immediately and to 1 after a delay	1 bool	1 bool
	Counter 1	Counts destination in 100 steps from 0 to 100. Sets destination to 0 when 'Reset' source is triggered.	∞ n/a	1 bool
	Once	Triggers destination only when input is changed	1 bool	1 bool

	Variable	Stores a value for later reference as source in another function.	∞ bool ∞ value	1 bool 1 value
	Rule	Applies a logical comparison and can possibly set destination to a definable value.	∞ bool ∞ value	1 bool 1 value
	Ambiance Zone	Trigger the configured devices for the selected ambiance zone combination	∞ n/a ∞ bool	∞ devices

## Appendix B: Web colors

The named colors supported in the W3C HTML 4.0 standard are:

<b>Color Name</b>	<b>Color HEX</b>	<b>Color</b>
Aqua	#00FFFF	
Black	#000000	
Blue	#0000FF	
Fuchsia	#FF00FF	
Gray	#808080	
Green	#008000	
Lime	#00FF00	
Maroon	#800000	
Navy	#000080	
Olive	#808000	
Purple	#800080	
Red	#FF0000	
Silver	#C0C0C0	
Teal	#008080	
White	#FFFFFF	
Yellow	#FFFF00	

## Appendix C: Status Item Format

The format of the value / text displayed in the status item is the same format used in the printf command from C.

Each conversion specification consists of a hash sign (#), followed by one or more of these elements, in order:

1. An optional sign specifier that forces a sign (- or +) to be used on a number. By default, only the - sign is used on a number if it's negative. This specifier forces positive numbers to have the + sign attached as well.
2. An optional padding specifier that says what character will be used for padding the results to the right string size. This may be a space character or a 0 (zero character). The default is to pad with spaces. An alternate padding character can be specified by prefixing it with a single quote (').
3. An optional alignment specifier that says if the result should be left-justified or right-justified. The default is right-justified; a - character here will make it left-justified.
4. An optional number, a width specifier that says how many characters (minimum) this conversion should result in.
5. An optional precision specifier that says how many decimal digits should be displayed for floating-point numbers. When using this specifier on a string, it acts as a cutoff point, setting a maximum character limit to the string.

6. A type specifier that says what type the argument data should be treated as. Possible types:
- % - a literal percent character. No argument is required.
  - b - the argument is treated as an integer, and presented as a binary number.
  - c - the argument is treated as an integer, and presented as the character with that ASCII value.
  - d - the argument is treated as an integer, and presented as a (signed) decimal number.
  - e - the argument is treated as scientific notation (e.g. 1.2e+2).
  - u - the argument is treated as an integer, and presented as an unsigned decimal number.
  - f - the argument is treated as a float, and presented as a floating-point number (locale aware).
  - F - the argument is treated as a float, and presented as a floating-point number (non-locale aware).
  - o - the argument is treated as an integer, and presented as an octal number.
  - s - the argument is treated as and presented as a string.
  - x - the argument is treated as an integer and presented as a hexadecimal number (with lowercase letters).
  - X - the argument is treated as an integer and presented as a hexadecimal number (with uppercase letters).

Some examples of displaying the value 57.6:

<i>#d</i> <i>04d</i>	57 0057
<i>#e</i> <i>#.1e</i> <i>#.2e</i> <i>#.3e</i>	5.76000e+1 6.e+1 5.8e+1 5.76e+1
<i>#f</i> <i>#.0f</i> <i>#04.1f</i> <i>&amp;deg;C</i> <i>#05.1f</i> <i>#01.2f</i>	57.600000 58 57.6 °C 057.6 57.60 57.60

## Appendix D: HmiOpenHelper Class Reference

### Public Member Functions

- `getProject ()`
- `getZones ()`
- `getZone ($zoneid)`
- `getAmbiances ($zoneid)`
- `getAmbiance ($ambianceid)`
- `getOutputDevices ($zoneid)`
- `getDevice ($deviceid)`
- `getFacTypes ()`
- `getFacSubTypes ($factypeid)`
- `getRCStatuses ()`
- `getRCStatus ($statusid)`
- `getRCEvents ()`
- `readAmbianceActive ($zoneid)`
- `writeAmbianceActive ($zoneid, $ambianceid)`
- `readDeviceValue ($deviceid)`
- `writeDeviceValue ($deviceid, $value)`
- `readRCStatus ()`
- `writeRCEvent ($rceventid)`
- `readSnapshots ($count = 0)`
- `readMessageCount ()`
- `readMessages ($count = 0)`
- `readMessage ($messageid)`

### Detailed Description

Class to help developer create HMI for FCDomus.

## Member Function Documentation

### **getAmbiance ( *\$ambianceid* )**

Get information about the specified ambiance.

**Parameters:**

*\$ambianceid* An integer containing the ID of the ambiance.

**Returns:**

An array containing:

- id: An integer containing the ID of the ambiance
- name: A string containing the name of the ambiance
- iconfn: A string containing the file name of the icon of the ambiance

### **getAmbiances ( *\$zoneid* )**

Get information about all ambiances in the specified zone.

**Parameters:**

*\$zoneid* An integer containing the ID of the zone.

**Returns:**

An array with for each ambiance an array containing:

- id: An integer containing the ID of the ambiance
- name: A string containing the name of the ambiance
- iconfn: A string containing the file name of the icon of the ambiance

### **getDevice ( *\$deviceid* )**

Get information about the specified device.

**Parameters:**

*\$deviceid* An integer containing the ID of the device.

**Returns:**

an array containing:

- id: An integer containing the ID of the device
- name: A string containing the name of the device
- valuetype: An integer containing the ID of the valuetype of the device
- facsubtype: An integer containing the ID of the facility subtype of the device

### **getFacSubTypes ( *\$factypeid* )**

Get information about all facility sub types in the specified facility type.

**Parameters:**

*\$factypeid* An integer containing the ID of the facility type.

**Returns:**

An array with for each facility sub type an array containing:

- id: An integer containing the ID of the facility sub type
- name: A string containing the name of the facility sub type
- iconfn: A string containing the file name of the icon of the facility sub type

**getFacTypes ()**

Get information about all facility types.

**Returns:**

An array with for each facility type an array containing:

- id: An integer containing the ID of the facility type
- name: A string containing the name of the facility type
- iconfn: A string containing the file name of the icon of the facility type

**getOutputDevices ( \$zoneid )**

Get information about all output devices in the specified zone.

**Parameters:**

*\$zoneid* An integer containing the ID of the zone.

**Returns:**

An array with for each device an array containing:

- id: An integer containing the ID of the device
- name: A string containing the name of the device
- valtype: An integer containing the ID of the valuetype of the device
- facsubtype: An integer containing the ID of the facility subtype of the device

**getProject ()**

Get information about the running project.

**Returns:**

An array containing:

- id: An integer containing the ID of the project
- name: A string containing the name of the project
- moddate: A integer containing the Unix timestamp from the last modification in configuration

**getRCEvents ()**

Get information about all Remote Client Events.

**Returns:**

An array with for each zone an array containing:

- id: An integer containing the ID of the RCEvent
- name: A string containing the name of the RCEvent

**getRCStatus ( \$statusid )**

Get information about a specified Remote Client Status.

**Returns:**

An array containing:

- id: An integer containing the ID of the RCStatus
- name: A string containing the name of the RCStatus

**getRCStatuses ( )**

Get information about all Remote Client Statuses.

**Returns:**

An array with for each zone an array containing:

- id: An integer containing the ID of the RCStatus
- name: A string containing the name of the RCStatus

**getZone ( *\$zoneid* )**

Get information from the specified zone.

**Parameters:**

*\$zoneid* An integer containing the ID of the zone.

**Returns:**

An array containing:

- id: An integer containing the ID of the zone
- name: A string containing the name of the zone
- iconfn: A string containing the file name of the icon of the zone

**getZones ( )**

Get information about all zones.

**Returns:**

An array with for each zone an array containing:

- id: An integer containing the ID of the zone
- name: A string containing the name of the zone
- iconfn: A string containing the file name of the icon of the zone

**readAmbianceActive ( *\$zoneid* )**

Read the active ambiance for the specified zone.

**Returns:**

An array containing:

- id: An integer containing the ID of the ambiance
- name: A string containing the name of the ambiance

**readDeviceValue ( *\$deviceid* )**

Read the value of the specified device.

**Parameters:**

*\$deviceid* An integer containing the ID of the device.

**Returns:**

An integer containing the value of the device.

**readMessage ( *\$messageid* )**

Read the specified message.

**Parameters:**

*\$messageid* An integer containing the ID of the message to return.

**Returns:**

An array containing:

- id: An integer containing the ID of the message
- time: An integer containing the UNIX-timestamp of the date / time from the message
- sender: A string containing the name of the sender of the message
- subject: A string containing the subject of the message
- content: A string containing the contents of the message

**readMessageCount ( )**

Read the total count of received messages.

**Returns:**

An integer containing the number of messages.

**readMessages ( *\$count = 0* )**

Read the information of the latest message(s).

**Parameters:**

*\$count* An integer containing the count of messages to return (0 = all).

**Returns:**

An array with for each message an array containing:

- id: An integer containing the ID of the message
- time: An integer containing the UNIX-timestamp of the date / time from the message
- sender: A string containing the name of the sender of the message
- subject: A string containing the subject of the message

**readRCStatus ( )**

Read the value of the RCStatus and automatically reset.

**Returns:**

An integer containing the value of the RCStatus.

**readSnapshots ( *\$count = 0* )**

Read the latest snapshot(s).

**Parameters:**

*\$count* An integer containing the count of snapshots to return (0 = all).

**Returns:**

An array with for each snapshot an array containing:

- id: An integer containing the ID of the snapshot
- time: An integer containing the UNIX-timestamp of the date / time from the snapshot
- source: An integer containing the ID of the trigger source of the snapshot
- picture: A string containing the (local) file name of the snapshot picture

**writeAmbianceActive ( *\$zoneid*, *\$ambianceid* )**

Write which ambiance has to be active for a specified zone.

**Parameters:**

*\$zoneid* An integer containing the ID of the zone.

*\$ambianceid* An integer containing the ID of the ambiance.

**Returns:**

A boolean containing true on success (and false on error)

**writeDeviceValue ( *\$deviceid*, *\$value* )**

Write the value of the specified device.

**Parameters:**

*\$deviceid* An integer containing the ID of the status item.

*\$value* An integer containing the value to be assigned.

**Returns:**

A boolean containing true on success (and false on error)

**writeRCEvent ( *\$rceventid* )**

Write the ID of a Remote Client Event to trigger this event.

**Parameters:**

*\$rceventid* An integer containing the ID of the RCEvent.

**Returns:**

A boolean containing true on success (and false on error)

## Glossary

Action	Things to do, like switching on the light
Ambiance	A particular mood or atmosphere of an environment or surrounding influence.
Cabletype	The type of cable that is used for the installation.
Database	All customized configuration in FCDomus is stored in a single database file
Destination	The device or item that should be triggered.
Device	The actual inputs and outputs that control the external (domotica) systems
End User	User that employs the system configured by the Installer and facility manager
Event	Momentary situations, for example when a button is pressed
Facility Manager	User responsible for managing FCDomus after it is set up by the Installer
Facility type	The type of a device (e.g. lighting, heating, cooling)
Facility subtype	A property of a facility type (e.g. table lamp, spotlights)
Floor	The floor of a building
FTP	(File Transfer Protocol) Used on the Internet for sending and receiving files
Function	Logical link between event(s) and action(s)
HMI	Human Machine Interface, the web based user interface of FCDomus
HMIOpen	A highly customizable user interface that can be created using html/php code.
Installer	User responsible for setting up and configuring FCDomus
Interface	The interface is used to connect the FieldCommander to the domotica network.
OpenApi	A specific FCDomus interface that accepts HTTP-requests.
Project	All customized configuration in FCDomus is stored in a project file

Remote client	Another controller that want to connect to the FieldCommander.
Schedule	Time/date based calender to automate events based on the built in clock
Source	The device or item that is causing the input.
User	Three user types exist in FCDomus; <i>Installer, Facility Manager and End User</i>
Web browser	Software to use and configure FCDomus, e.g. Internet Explorer
Zone	An area distinguished on the basis of a particular characteristic, use, restriction, etc.



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Part no. FCDSWUG, revision 2.0.0