KREO HMI TUTORIAL
Recipes

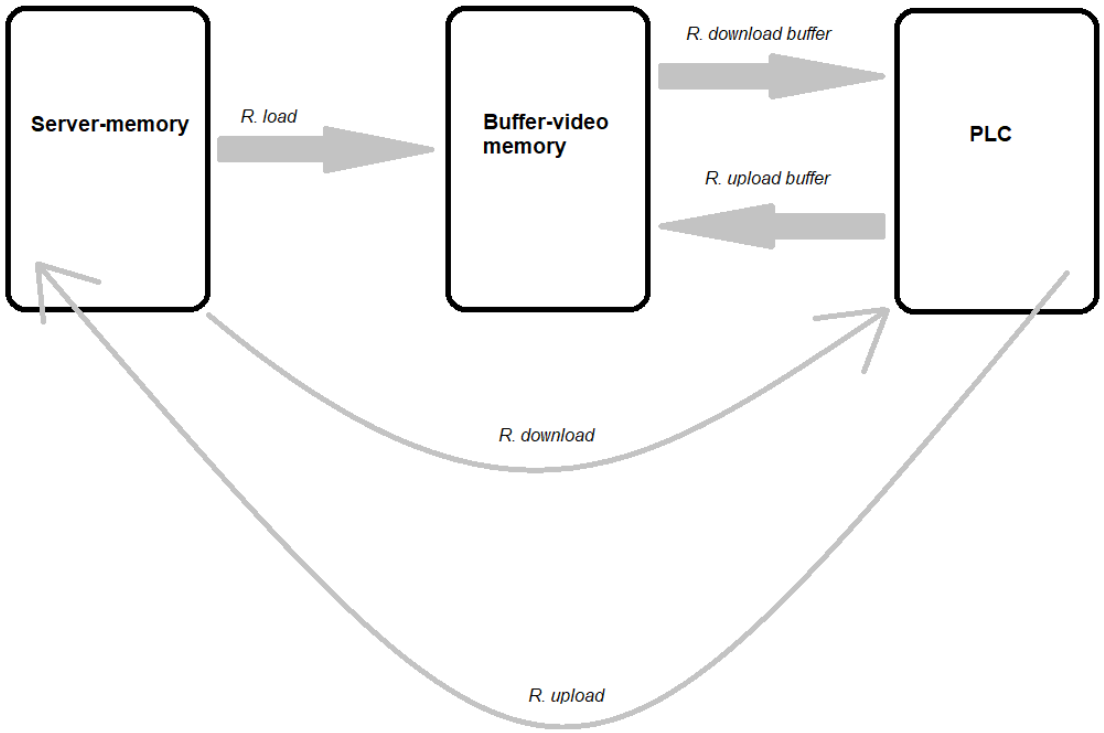
Tutorial dedicated to the Recipes programming and functionality

Connect
Ideas.
Shape
solutions.

Introduction

The recipes are nothing more than a set of data exchanged between SERVER-RUNTIME and PLC.
You can think of using them to transfer the setting-machine (multiple variables) with a single download operation.
Before seeing how to configure the recipes let's outline below some ESA concepts and terminologies for recipes.

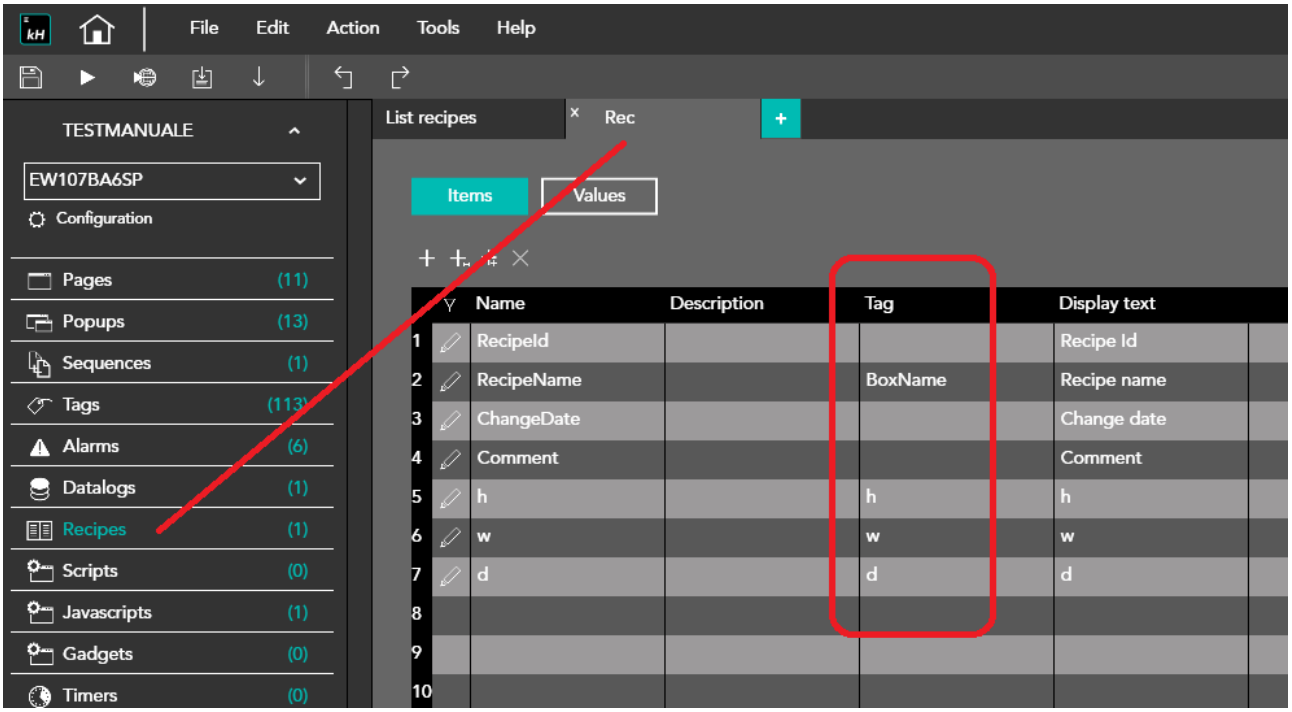
In short it can be said that the recipes are saved in SERVER-RUNTIME memory, loaded on the screen (BUFFER-VIDEO) and transferred to the PLC.
It is therefore good to keep in mind these 3 areas of memory and the functions associated with them:



How to do:

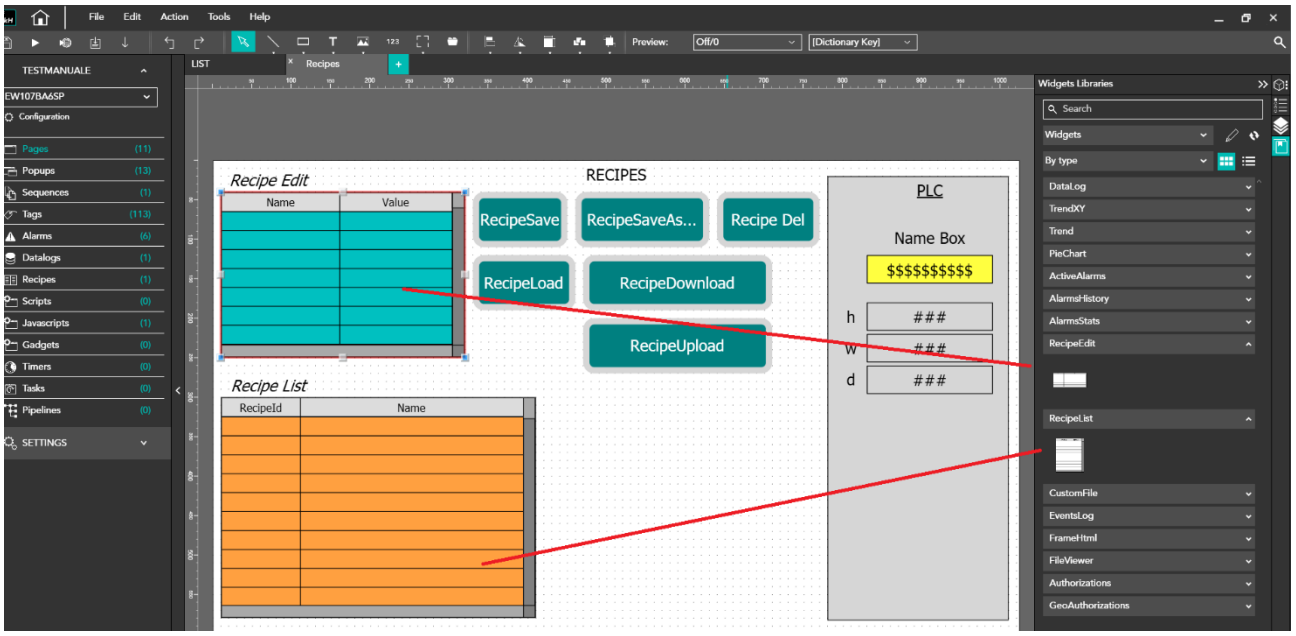
Let's see one of the different ways you can use recipes.

1) Suppose you have to set up a machine that produces boxes of various sizes and want to take advantage of the recipes to transfer with 1 click the setting-machine: height (h), width (w) and depth (d).
2) Create a new recipe that we will call RECIPE STRUCTURE to configure the 3 tags that define the size of the boxes



In the parameter list you can see the 3 plc tags **h,w,d** (INTEGER) as well as the tag-STRING **BoxName** that will contain the name of the recipe transferred to the PLC.

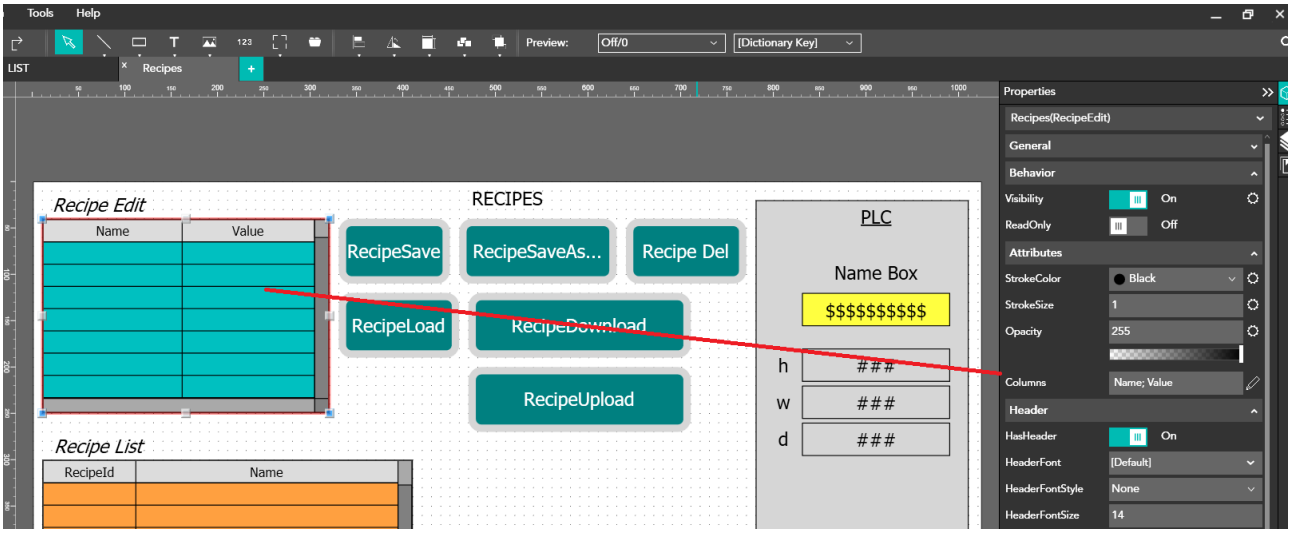
3) Now you just need to configure the project page with the objects to handle the recipe operations:



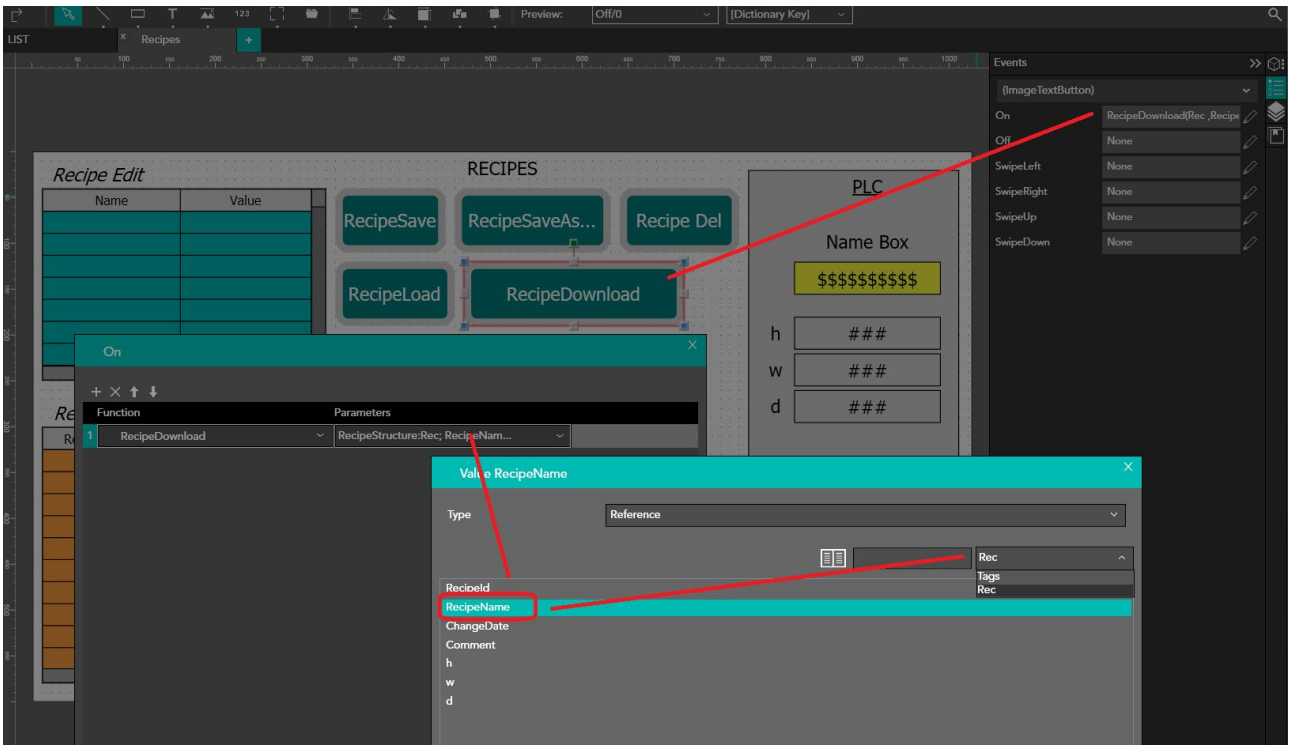
On the project page you can see the following objects:

- RECIPE_EDIT: where to edit and save the different recipes
- RECIPE_LIST: where you can see and select the saved recipes
- Some recipe command functionalities such as Recipe Save, Recipe Save As, Recipe Delete, Recipe Load, Recipe Download, Recipe Upload
- The PLC tags area (gray box) that displays the values of the tags of the last recipe transferred to the PLC

The 2 recipe-tables are associated with the RECIPE STRUCTURE.
This association must be defined in the COLUMNS property of the widget.
This is mandatory because you can configure multiple recipe structures in a project and multiple tables



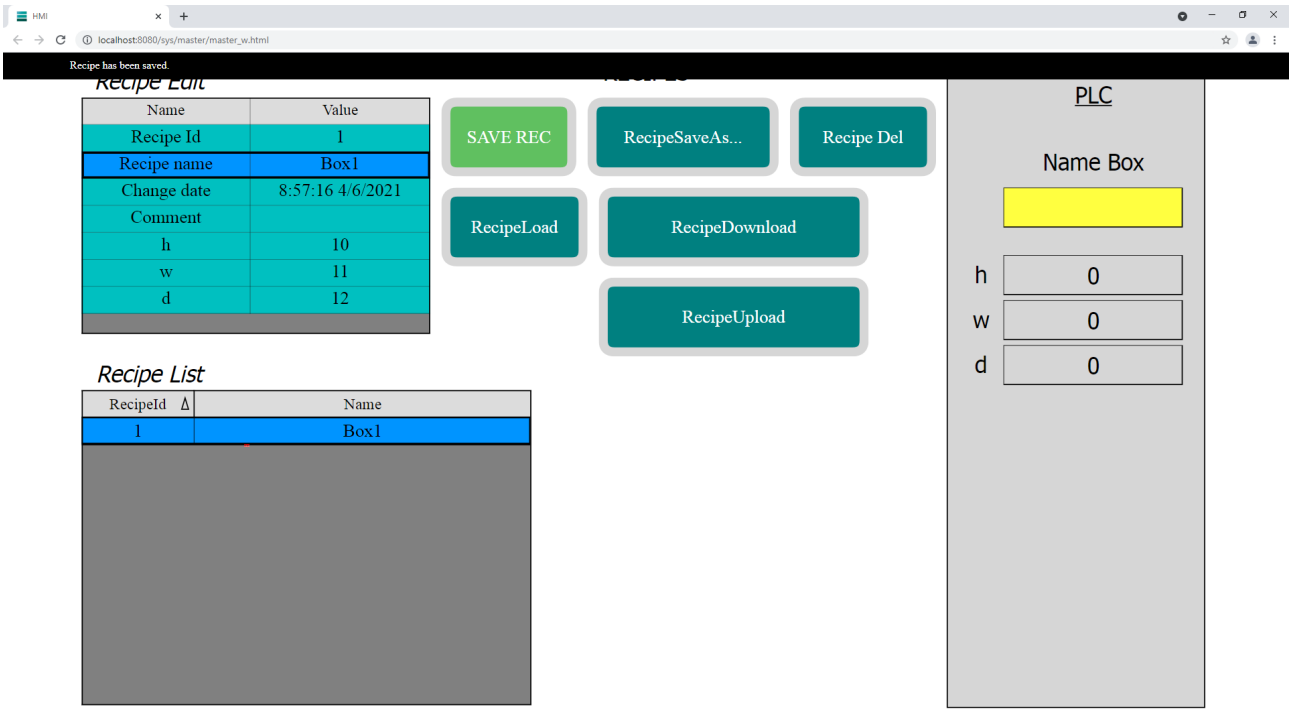
The buttons that fire the recipes command functions require the recipe name (LOAD / DOWNLOAD / UPLOAD / DELETE) mapped to the "internal" name of the recipe and not to the tag-string of the plc.
The PLC Tag will take the "recipe-name" after the PLC download.



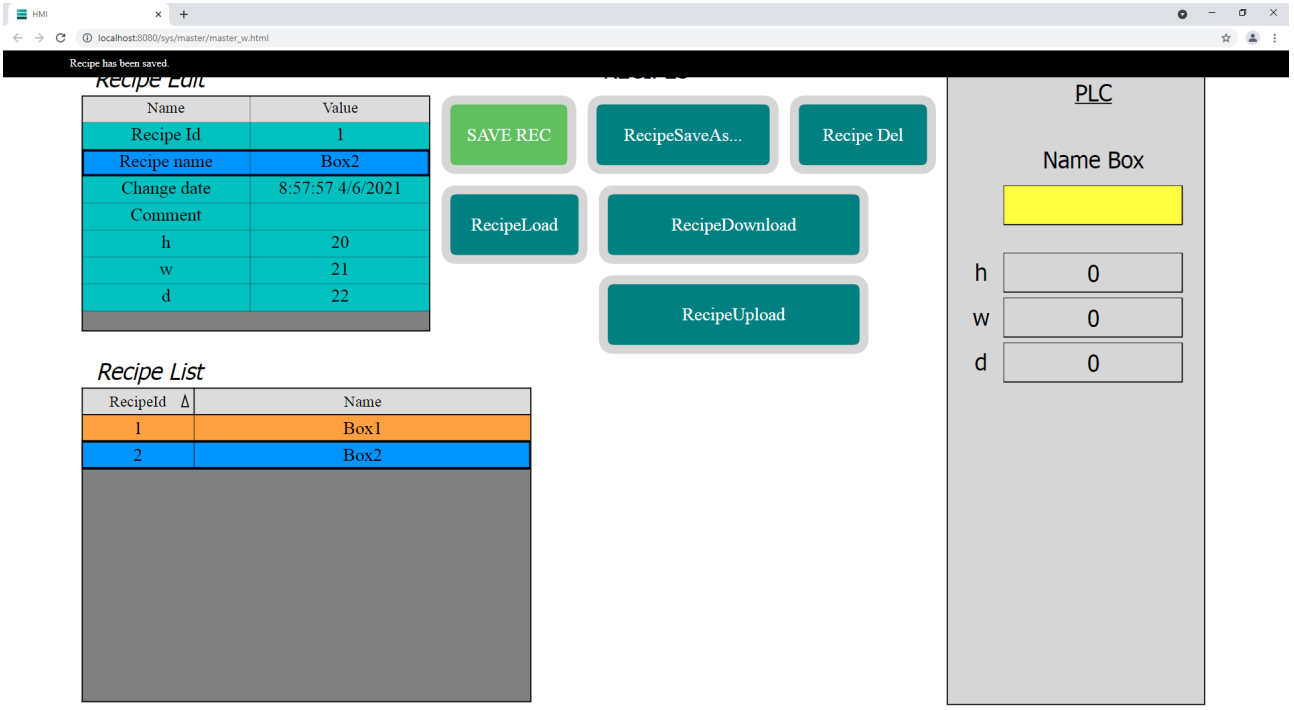
For example the RECIPE-DOWNLOAD function is mapped to the RecipeName of the structure and to the plc tag directly.

4) A classic recipe management can be developed with the following steps:

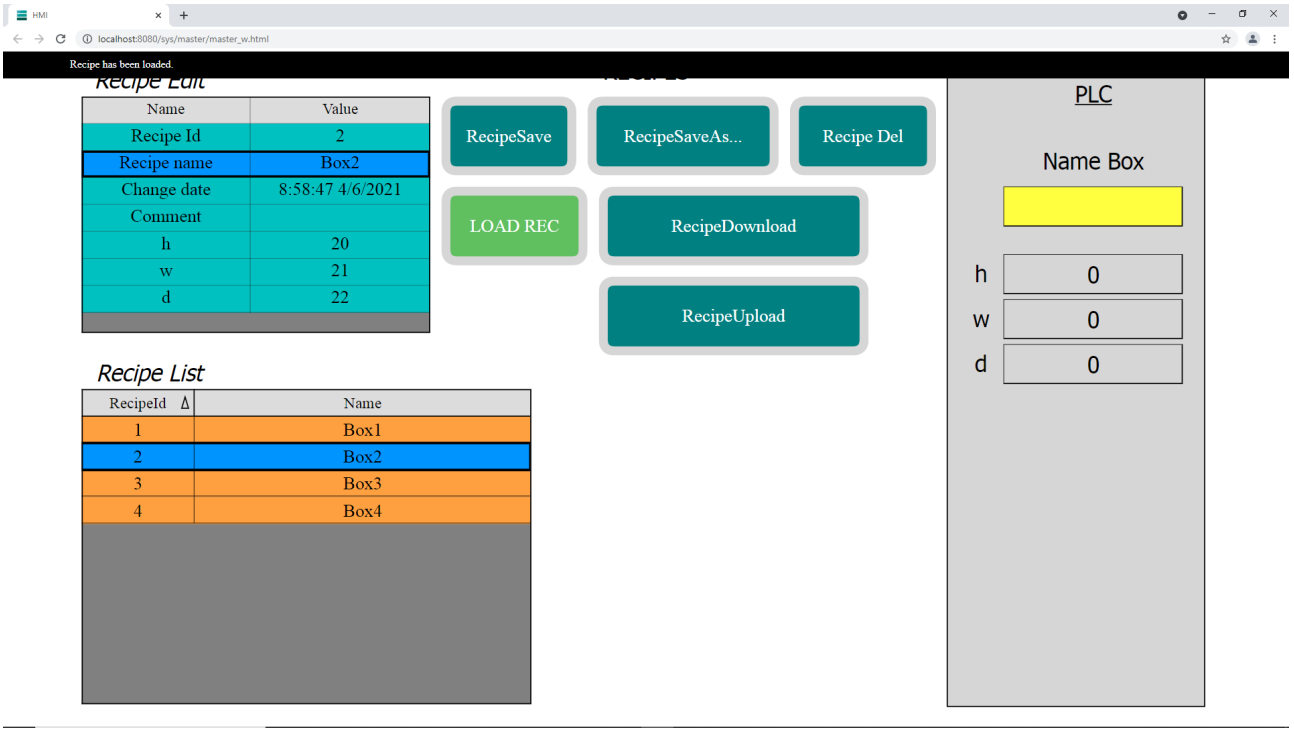
SAVE RECIPE: in the RecipeEdit table you can define the first machine setting (box size) saving the recipe with the name BOX1



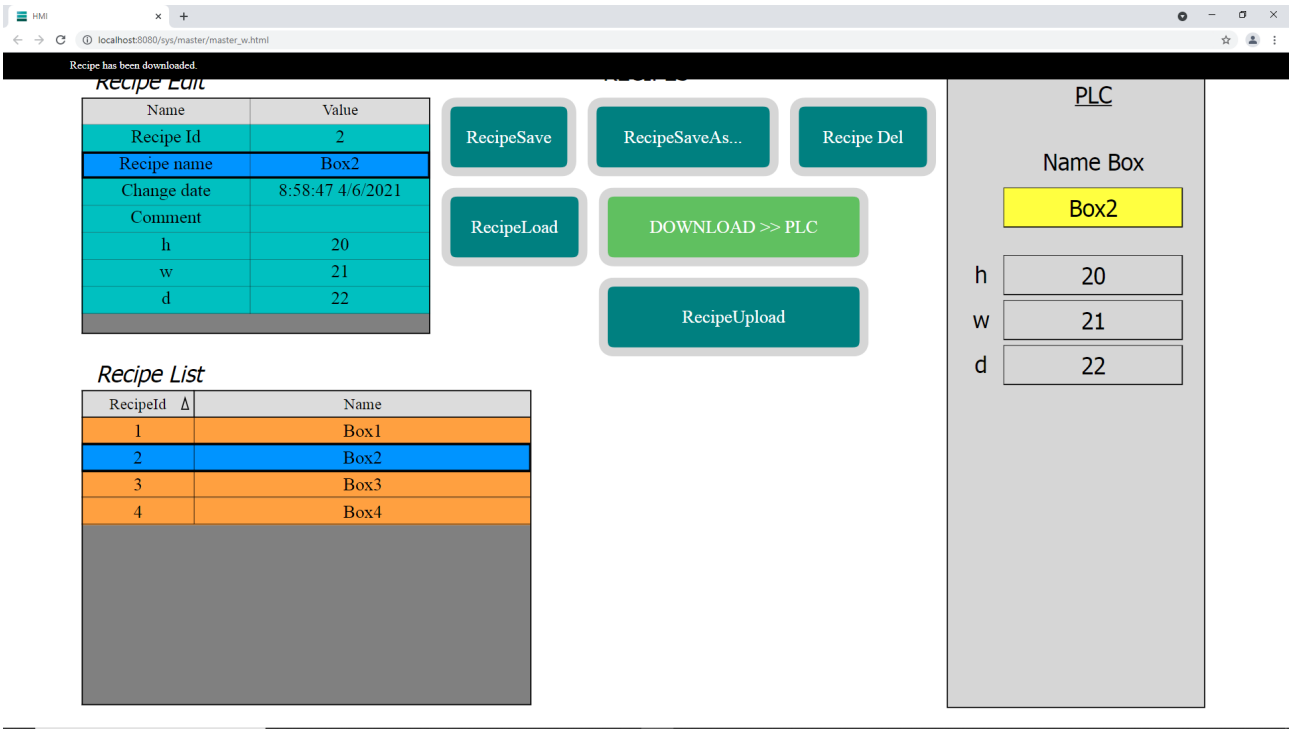
In RecipeList you now see the first saved recipe.
The same step can be repeated to save BOX2 and the following recipes.



LOAD RECIPE: among the various recipes saved the user has now to load on the screen (in RecipeEdit) the BOX2 to verify the correct values and then transfer them to the PLC.
You can then insert that name in RecipeEdit and press LOAD RECIPE.
In the same table the BOX2 predefined values will be displayed.



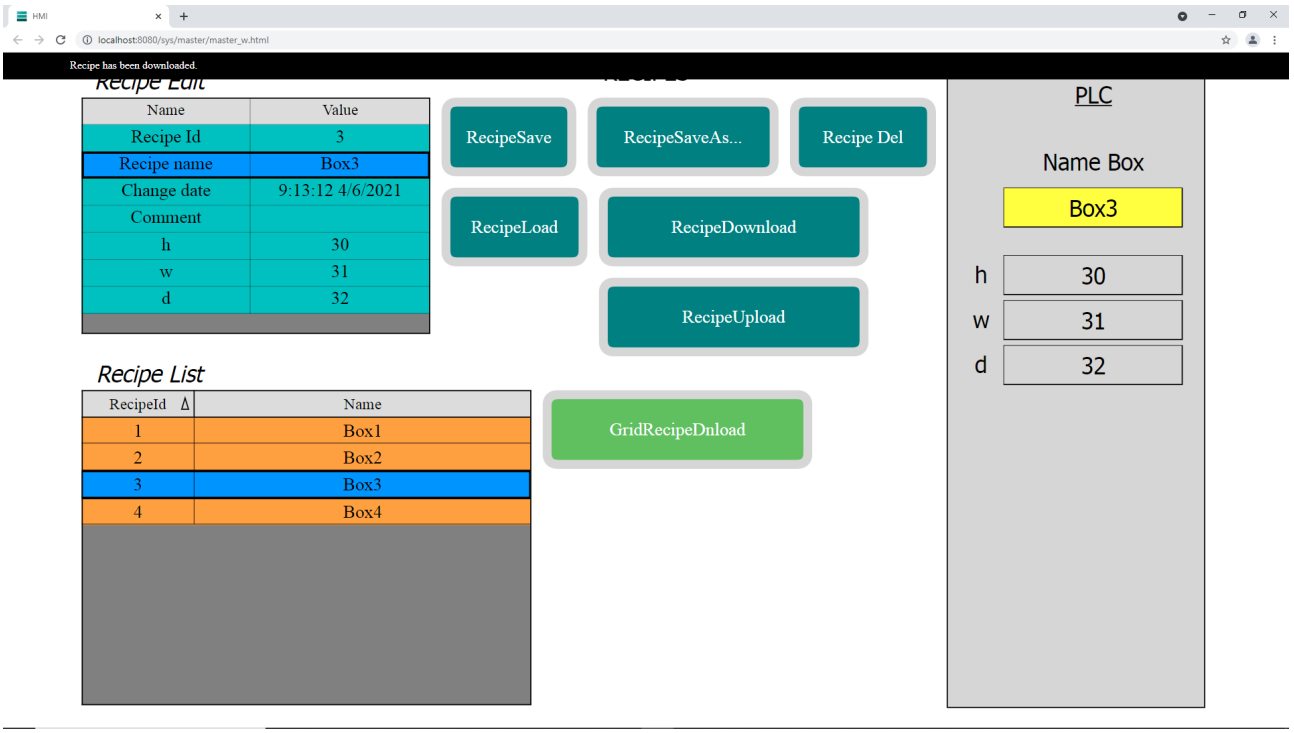
<u>DOWNLOAD RECIPE</u>: once the recipe is displayed on the screen you can transfer it to the PLC with the DOWNLOAD button:



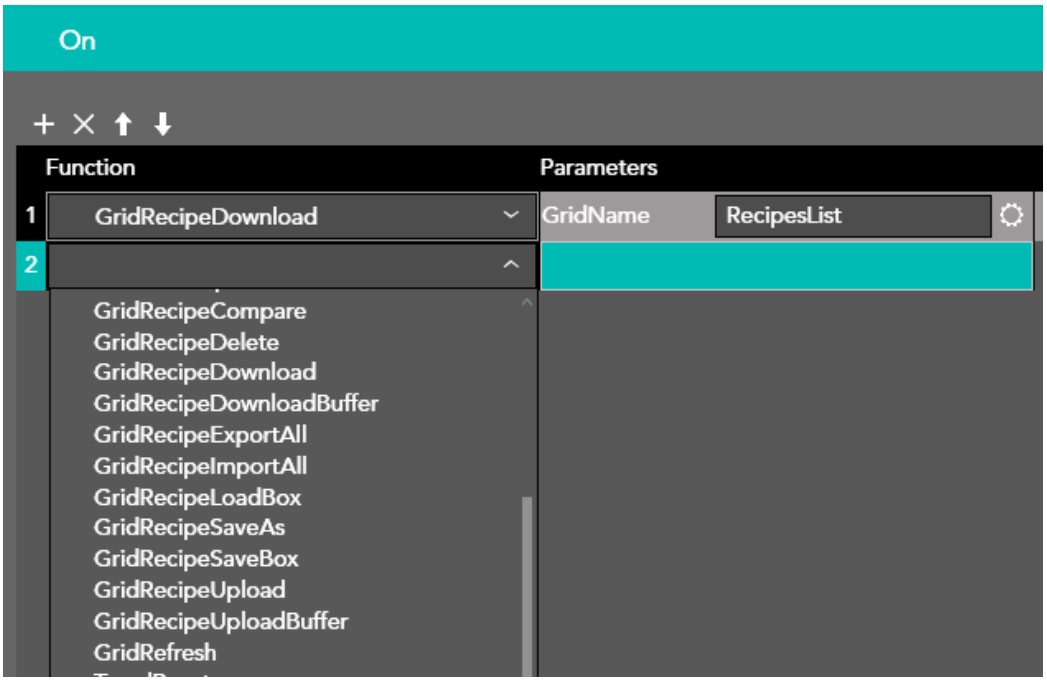
Note that the fields that point directly to the plc-tags (gray area) have now been populated with the same BOX2 recipe previously selected and uploaded to the screen.
<u>The recipe was transferred to the plc.</u>

At this point, once you have saved the recipes in the SERVER memory, simply select them and transfer them to change the setting-machine with 1 click.

The fastest way to download the recipe is to select it in the RecipeList and press the **GridRecipeDownload** button.

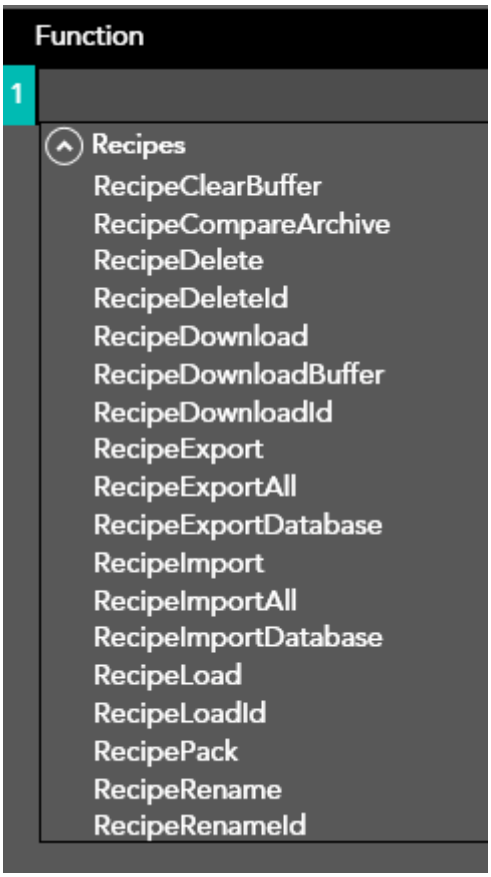


GRID commands refer to operations that can be performed at the specific grid level.
Think for example of multiple recipe structures with multiple RECIPE LIST tables.
You can make different downloads by pointing to different grids.
Below aprint-screen of the grid commands.

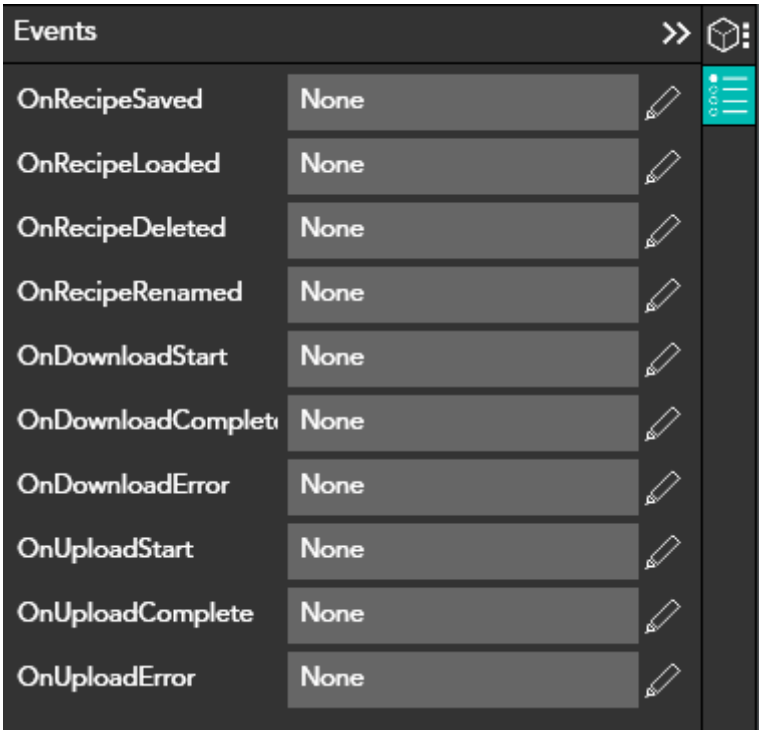


Notes: THE RECIPE STRUCTURES, as mentioned, are not necessarily unique in the project.
In a project you can have multiple structures with different tags.
For example, you can assume to have the first setting-structure with 3 box tags (h-w-d) and a second setting-structure with 5 box tags (h-w-d, color-label, date registered).
The combination of the 2 settings allows you to compose the desired box.

Default FUNCTIONS Table



Recipe EVENTS table:



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